CONFERENCE GUIDE

48TH INTERNATIONAL CONFERENCE AND EXPOSITION ON ADVANCED CERAMICS AND COMPOSITES

JAN 28 – FEB 2, 2024

HILTON DAYTONA BEACH RESORT AND OCEAN CENTER

DAYTONA BEACH, FL, USA

ceramics.org/icacc2024

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The American Ceramic Society
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Engineering Ceramics Division
The American Ceramic Society

Organized by the Engineering Ceramics Division of The American Ceramic Society

WELCOME

We would like to warmly welcome you to 48th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2024) in Daytona Beach, Florida. Since its inception in 1977, this prestigious conference has been organized by the Engineering Ceramics Division (ECD) of the American Ceramic Society (ACerS). Over the years, the conference has experienced tremendous growth in interest and participation from researchers, educators, technology developers, manufacturers, and end users from all over the world.

The 48th ICACC provides a platform for the state-of-the-art presentations and information exchange on the cutting-edge ceramic and composite technologies. The technical program of ICACC 2024 consists of nineteen Symposia, five Focused Sessions, one Special Focused Session, and the 13th Global Young Investigator Forum.

The well-established nineteen symposia at this conference include Mechanical Behavior of Ceramics and Composites, Advanced Ceramic Coatings, Solid Oxide Cells, Armor Ceramics, Bioceramics, Materials for Rechargeable Energy Storage, Nanomaterials for Energy Harvesting, Advanced Processing and Manufacturing Technologies, Porous Ceramics, Modeling and Design, Production Root Technologies, Nanolaminated Ternary Carbides/Nitrides, Nucelar Materials, Optical Materials, Additive Manufacturing, Geopolymers, Photonics, Ultra-High Temperature Ceramics, and Molecular-level Processing and Chemical Engineering. In addition to the core symposia, the technical program will include five Focused Sessions on emerging technologies: Bioinspiration and Green Processing, Thermoelectric and Thermionic Energy Conversion, Nanostructures and Low-Dimensional Materials for Chemical Sensors, Ceramic/Carbon Reinforced Polymers and High-Voltage Materials for Advanced Electrical Applications.

The 13th Global Young Investigator Forum and a Special Focused Session on Diversity, Entrepreneurship, and Commercialization recognize early career researchers and the ECD Jubilee Global Diversity Awardees along with other invited speakers who will present on recent developments in entrepreneurship and commercialization, respectively.

The ICACC Exposition will be held on Tuesday and Wednesday evenings in the adjacent Ocean Center and it will provide a place for attendees to connect with the business partners and explore new busininess opportunities, see new materials, processing and characterization tools, and products. Poster sessions will be held in conjunction with the Exposition.

The ECD Executive Committee, ICACC Programming Committee, and volunteer organizers, together with The American Ceramic Society, would like to thank you for joining us in Daytona Beach, Florida for what should be a stimulating and beneficial experience.

Finally, I would like to express our gratitude to our industrial sponsors as well as many other partners and exhibitors.

2024 ICACC Program Chair

Jie Zhang
Institute of Metal Research, China

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Final Program

2023-2024 Engineering Ceramics Division Officers

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Chair-Elect: **Jie Zhang** | Institute of Metal Research, China
Vice-Chair/Treasurer: **Amjad Almansour** | NASA Glenn Research Center, USA
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Welcome from The American Ceramic Society (ACerS)

The ACerS community is open to all, and we're happy to have you with us. ACerS values diverse and inclusive participation within the field of ceramic science and engineering. We strive to promote involvement and access to leadership opportunity regardless of race, ethnicity, gender, religion, age, sexual orientation, nationality, disability, appearance, geographic location, career path or academic level.

If you are a new member or joining us for the first time, please visit the ACerS registration desk to learn more.

For all guests, if you need access to a nursing mother's room or have other special needs, please ask us at the ACerS registration desk. For childcare services, please check with the hotel concierge for a listing of licensed and bonded caregivers.

We hope you enjoy the conference and want you to know that all individuals are welcome at ACerS conferences and events.

MEETING REGULATIONS

Cell phones silent

During oral sessions conducted during Society meetings, unauthorized photography, videotaping, and audio recording is strictly prohibited for two reasons:
(1) conference presentations are the intellectual property of the presenting authors and as such are protected, and
(2) engaging in photography, videotaping, or audio recording is disruptive to the presenter and the audience.
Failure to comply may result in the removal of the offender from the session or from the remainder of the meeting.

Note: The Society may engage photographers to photograph sessions for marketing and promotional purposes.

No photography/ recording

MEETING REGULATIONS

The American Ceramic Society is a nonprofit scientific organization that facilitates the exchange of knowledge meetings and publication of papers for future reference. The Society owns and retains full right to control its publications and its meetings. The Society has an obligation to protect its members and meetings from intrusion by others who may wish to use the meetings for their own private promotion purpose. Literature found not to be in agreement with the Society's goals, in competition with Society services or of an offensive nature will not be displayed anywhere in the vicinity of the meeting. Promotional literature of any kind may not be displayed without the Society's permission and unless the Society provides tables for this purpose. Literature not conforming to this policy or displayed in other than designated areas will be disposed. The Society will not permit unauthorized scheduling of activities during its meeting by any person or group when those activities are conducted at its meeting place in interference with its programs and scheduled activities. The Society does not object to appropriate activities by others during its meetings if it is consulted with regard to time, place, and suitability. Any person or group wishing to conduct any activity at the time and location of the Society meeting must obtain permission from the Executive Director or Director of Meetings, giving full details regarding desired time, place and nature of activity.

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Registration Requirements: Attendance at any meeting of the Society shall be limited to duly registered persons.

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AWARD AND PLENARY SPEAKERS

MONDAY, JANUARY 29 | 8:30 AM – 12:00 PM.

Opening Remarks and Awards 8:30 AM | COQUINA SALON D/E

JAMES L. MUELLER AWARD | 8:50 AM

Ghatu Subhash, Mechanical and Aerospace Engineering, University of Florida, Gainesville, FL, USA

Title: *Better properties do not always yield better performance: Mechanism-based approach for understanding the impact behavior of ceramics*

Abstract: The bed-rock principle of materials science 'better properties yield better performance' holds good for applications involving elastic response of materials and structures. However, such a doctrine falls short in materials designed to resist penetration during high velocity impact. In these applications, a material's inelastic and fracture behaviors play a dominant role in providing better performance although its mechanical properties may be inferior to its competing alternatives. Three examples are highlighted to illustrate the importance of mechanisms-based approach in understanding this behavior: (i) Boron carbide is lighter and stronger than silicon carbide, but the latter is preferred in light-weight protective systems; (ii) spinel out performs sapphire in high-velocity impact studies despite having lower strength and stiffness; Finally, (iii) a historic example is presented where the oldest fort in the US, the Castillo de St Marcos, St. Augustine, FL, withstood cannon-ball attack by the British Army against the Spanish fort in 1700s even though the fort walls were built with a highly porous sedimentary rock called 'Coquina', which is simply an aggregate of loosely bonded seashell fragments.

BRIDGE BUILDING AWARD | 9:30 AM

Kiyoshi Shimamura, Deputy Director, Research Center for Electronic and Optical Materials, National Institute for Materials Science (NIMS)

Title: *Novel single crystals for electro-optical applications*

Abstract: Electro-optical technology progress in a wide range of applications, and still demands the further development. Our intention is to explore novel single crystal materials for diverse applications, and to implement them in the industrial use.

β-Ga_2O_3 single crystal was proposed as a brand new wide-gap (Eg = 4.8 eV) semiconductor in 2001. 2 inchsize β-Ga_2O_3 single crystals were grown by the EFG technique. Shotky barrier diode of it was demonstrated in 2009. Since then, tremendous considerations for the industrial implementation have been on going.

A new concept of high-brightness white LED/LDs based on Ce: $Y_3Al_5O_{12}$ (YAG) single crystal phosphorplates (SCPPs), which can overcome the conventional temperature- and photo-degradation problems, has been proposed. SCPPs demonstrated excellent thermal stability, high values of luminous efficacy andincreased quantum efficiency. The implementation has started in 2017.

$Tb_3(Sc_{1-x}Lux)_2Al_3O_{12}$ (TSLAG) single crystals have been designed for high-power laser machinery. It showed a higher visible transparency and a larger Faraday rotation than the conventional $Tb_3Ga_5O_{12}$ (TGG).In 2013, mass production has started.

A drastic enhancement of the light yield of Ce:$Li_6Y(BO_3)_3$ (LYBO) single crystals by ~600% is achieved.Ce:LYBO could be of interest as efficient, low-cost, and stable solid-state materials for portable thermal neutron detection.

2024 PLENARY SPEAKERS | 10:40 AM

Elżbieta Pamuła, PhD DSc Eng, FBSE, Department of Biomaterials and Composites, AGH University of Science andTechnology, Krakow, Poland

Title: *Multifunctional ceramic, polymer and composite biomaterials for bone tissue regeneration and treatment*

Abstract: Infected or critical size bone injuries that do not heal spontaneously need special therapies and/or tissue engineering approach. Biomaterials supporting the treatment of such bone lesions should be designed to kill pathogenic bacteria, followed by facilitating osteogenic cell signalling and bone tissue expression processes. In our research, we design multifunctional biomaterials that provide mechanical support and are integrated with bone tissues (titania and zirconia ceramics) or are made of biodegradable polymers, so their disappearance from the treated lesion is correlated with the ingrowth of native tissue. Both types of biomaterials can be modified to deliver drugs or biologically active substances to support bone tissue regeneration. We found that the deposition of calcium phosphate, collagen, or sulphated hyaluronan on polymer scaffolds promotes cell osteogenic differentiation and the healing of osteochondral defects. We also developed biomaterials dedicated to infected bone in the form of polymeric micro-/nanoparticles loaded with antibiotics. They can be used as a component of injectable matrices or be immobilised on the pore walls of scaffolds, to obtain implantable medical devices, when mechanical support is particularly essential. The developed biomaterials release the drugs in a controlled manner to be adapted to the clinical needs.

2024 PLENARY SPEAKERS | 11:20 AM

Judy Jeevarajan, Ph.D., Vice President and Executive Director Electrochemical Safety Research Institute (ESRI) UL Research Institutes, TX, USA

Title: *Materials and designs to mitigate thermal runaway propagation in lithium-ion cell and battery shipments*

Abstract: Since the commercialization of lithium-ion batteries in the 1990s, this chemistry has grown from powering small low voltage low-capacity devices to kWh and GWh size batteries used in electric vehicles and stationary grid energy storage systems. Along with the advantages, comes a major concern due to their propensity to go into thermal runaway and experience venting, fire, smoke or any combination of these. Propagation of thermal runaway and fires have caused larger concerns as it leads to catastrophic results. ULRI-ESRI has been a member of the SAE G27 committee that is writing a standard for safe transportation of lithium-ion cells and batteries and has extended their research to not only characterize thermal runaway and its propagation characteristics but also to find ways to mitigate the propagation of thermal runaway. Several materials and designs including containers were studied to determine the efficacy of preventing propagation or containing it. The characterizations included understanding the fire containment properties, the ability to prevent propagation of fire and thermal runaway as well as the ability to absorb heat in an efficient manner. Our research studies on various materials and designs to determine their efficacy in preventing the propagation of thermal runaway in lithium-ion cells and modules as prepared for shipment will be presented.

SCHEDULE AT A GLANCE

SUNDAY, JANUARY 28

Conference registration	2:00 – 6:00 p.m.	Hilton Coquina Foyer, North tower, 3rd floor
Welcome reception	4:00 – 6:00 p.m.	Coquina Foyer, North Tower

MONDAY, JANUARY 29

Conference registration	7:00 a.m. – 5:30 p.m.	Hilton Coquina Foyer, North tower, 3rd floor
Opening ceremony & awards presentations	8:30 – 8:50 a.m.	Hilton Coquina Salon D/E, North tower, 3rd floor
Plenary session	8:50 a.m. – Noon	Hilton Coquina Salon D/E, North tower, 3rd floor
Lunch break	Noon – 1:30 p.m.	On own
Journal publishing workshop sponsored by Wiley	12:15 – 1:15 p.m.	Hilton Coquina Salon H
Concurrent technical sessions	1:30 – 5:30 p.m.	Hilton Coquina Salons, North tower; South tower ballrooms
ACerS Student and Young Professional Networking Mixer	7:30. – 9:00 p.m.	Grand Ballroom 6, 7, 8, South tower

TUESDAY, JANUARY 30

Conference registration	7:30 a.m. – 5:00 p.m.	Hilton Coquina Foyer, North tower, 3rd floor
Concurrent technical sessions	8:30 a.m. – Noon	Hilton Coquina Salons, North tower; South tower ballrooms
Lunch break	Noon – 1:30 p.m.	On own
Concurrent technical sessions	1:30 – 5:00 p.m.	Hilton Coquina Salons, North tower; South tower ballrooms
Exhibits and poster session A, including reception	5:00 – 8:00 p.m.	Ocean Center Arena

WEDNESDAY, JANUARY 31

Conference registration	7:30 a.m. – 5:00 p.m.	Hilton Coquina Foyer, North tower, 3rd floor
Concurrent technical sessions	8:30 a.m. – Noon	Hilton Coquina Salons, North tower; South tower ballrooms
Lunch break	Noon – 1:30 p.m.	On own
Concurrent technical sessions	1:30 – 5:00 p.m.	Hilton Coquina Salons, North tower; South tower ballrooms
Exhibits and poster session B, including reception	5:00 – 7:30 p.m.	Ocean Center Arena

THURSDAY, FEBRUARY 1

Conference registration	7:30 a.m. – 5:00 p.m.	Hilton Coquina Foyer, North tower, 3rd floor
Concurrent technical sessions	8:30 a.m. – 12:30 p.m.	Hilton Coquina Salons, North tower; South tower ballrooms
Diversity in Science Luncheon	Noon – 1:30 p.m.	Oceanview room, North tower, main floor
Lunch break	12:30 – 1:30 p.m.	On own
Concurrent technical sessions	1:30 – 5:30 p.m.	Hilton Coquina Salons, North tower; South tower ballrooms
Last night reception and trivia contest	6:00 – 7:00 p.m.	Hilton Coquina Foyer, North tower, 3rd floor Trivia contest in Coquina Salon E

FRIDAY, FEBRUARY 2

Conference registration	8:00 a.m. – Noon	Hilton Coquina Foyer, North tower, 3rd floor
Concurrent technical sessions	8:30 a.m. – Noon	Hilton Coquina Salons

SPECIAL EVENTS

Welcome Reception

SUNDAY, JANUARY 28 | 4:00 – 6:00 PM
COQUINA FOYER

Network with colleagues at this reception. Enjoy food, drink, live entertainment, and networking with your colleagues at this kick-off event.

Journal Publishing Workshop: Expand your Impact

MONDAY, JANUARY 29 | 12:15 – 1:15 PM
HILTON COQUINA SALON H
NORTH TOWER, 3RD FLOOR

Sponsored by: WILEY

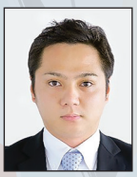
Successful research impacts both the field of the research and broader society. While most researchers understand academic impact of publications, few are trained to address societal impact.

This workshop discusses methods for improving the reach of your publications including options for sharing your work. Furthermore, the workshop provides insight on the need for and hands-on experience with formulating societal impact language.

The ECD Global Young Investigator Award

TUESDAY, JANUARY 30 | 3:20 PM | HILTON COQUINA SALON D

The Global Young Investigator Award laureate delivers the opening keynote lecture as a part of the 9th Global Young Investigator Forum.



Yuki Nakashima, Research Scientist at Multi-Materials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)

Title: *Tailored sintering route, engineered microstructure-performance relationship and artificial intelligence-based property determinations in silicon nitride ceramics*

Engineering Ceramics Division (ECD) Jubilee Global Diversity Award

MONDAY, JANUARY 29 | 1:30 – 3:40 PM
HILTON COQUINA SALON D

This award is intended to recognize exceptional early- to mid-career professionals who are women and/or underrepresented minorities (i.e. based on race, ethnicity, nationality and/or geographic location) in the area of ceramic science and engineering.


Fiorilli

1:30 PM

Sonia Lucia Fiorilli, Ph.D., Associate Professor, Department of Applied Science and Technology, Politecnico di Torino

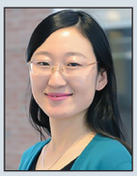
Title: *Nanostructured bioceramics as a multifunctional delivery platform for the regeneration of functional (hard and soft) tissues*


Tokoro

2:40 PM

Chiharu Tokoro, Ph.D., Professor of Engineering at Waseda University/the University of Tokyo, Japan

Title: *Creation of a new resource circulation loop realized by diversity and new separation technology*


Li

3:10 PM

Yan Li, Assistant Professor, Thayer School of Engineering, Dartmouth College

Title: *Design and manufacturing of new functional ceramic composites*

ACerS Student and Young Professional Networking Mixer

MONDAY, JANUARY 29 | 7:30 – 9:00 PM
OCEANVIEW ROOM AND TERRACE, NORTH TOWER, MAIN FLOOR

Student and Young Professional Networking Mixer. Join your fellow students and young professionals for food and drink at this networking event.

Shot Glass Contest

TUESDAY, JANUARY 30 | 6:45 – 8:00 PM

THE OCEAN CENTER, EXHIBIT SHOW FLOOR

Organized by ACerS President's Council of Student Advisors (PCSA)

Test your skills with this design contest! Competing teams of four will be given 15 pipe cleaners to build a protective device for their shot glass provided by SCHOTT. Then, the glasses will be dropped from increasing heights until the breaking threshold is reached. The glass with the highest successful drop distance wins!

Exposition & Poster Session Hours

TUESDAY, JANUARY 30 | 5:00 – 8:00 PM
WEDNESDAY, JANUARY 31 | 5:00 – 7:30 PM
OCEAN CENTER CONFERENCE CENTER / ARENA

Visit with vendors from the ceramic and glass industry and check out over 100 scientific posters!

Diversity in Science Luncheon

THURSDAY, FEBRUARY 1 | NOON – 1:30 PM
OCEANVIEW ROOM, NORTH TOWER, MAIN FLOOR

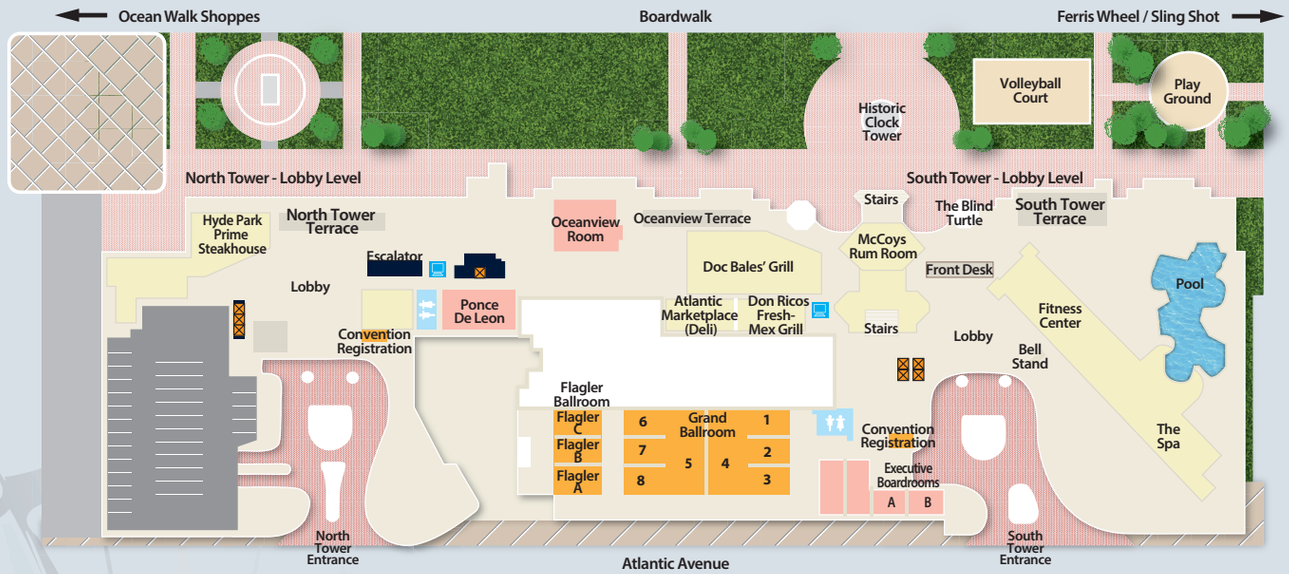
Network with colleagues at this reception. Enjoy lunch while discussing diversity initiatives with your colleagues.

Last night reception with trivia contest

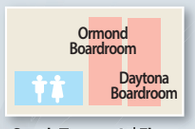
THURSDAY, FEBRUARY 1 | 6:00 – 7:00 PM
HILTON COQUINA FOYER, NORTH TOWER, 3RD FLOOR
TRIVIA CONTEST, COQUINA SALON E

Recap the week's excitement with your colleagues and friends.
Join in the trivia contest held in Coquina Salon E during the reception.

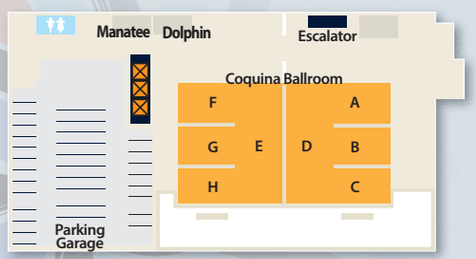
HILTON MEETING ROOM FLOOR PLAN



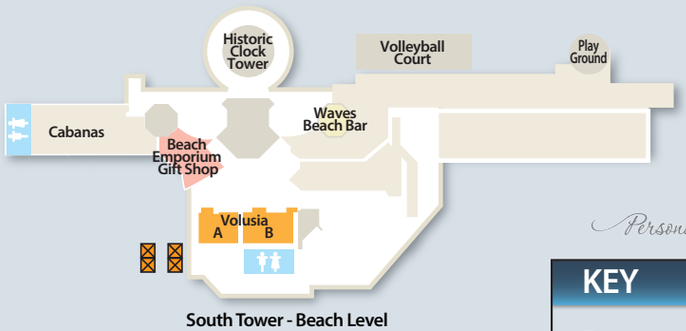
North Tower - 5th Floor



South Tower - 3rd Floor



North Tower - 3rd Floor



South Tower - Beach Level

Personal Concierge MAP

KEY

- Elevators
- Restrooms
- Connectivity Station

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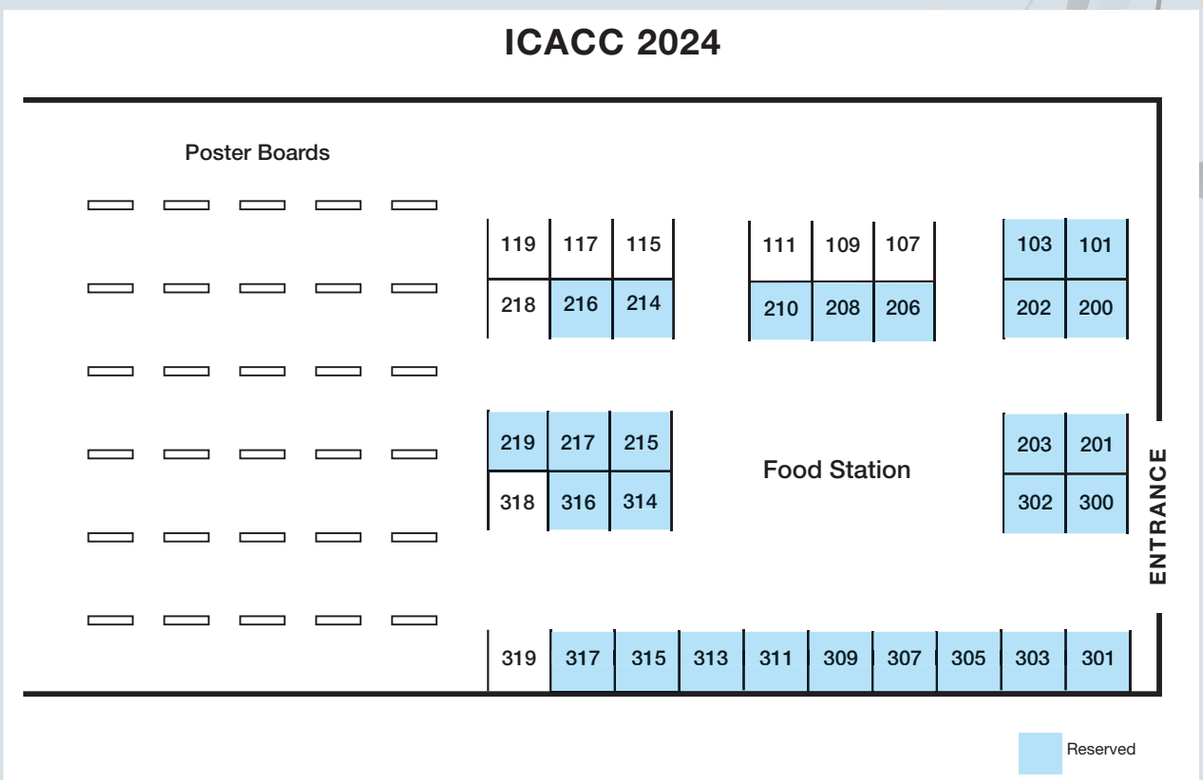
EXHIBIT FLOOR PLAN AND BOOTH INFORMATION

TUESDAY, JANUARY 30 | 5:00 – 8:00 PM
WEDNESDAY, JANUARY 31 | 5:00 – 7:30 PM

OCEAN CENTER (across the street from the Hilton)



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ICACC EXPO PREVIEW

Exhibit dates:

Tuesday, January 30 | 5:00 – 8:00 p.m. | Wednesday, January 31 | 5:00 – 7:30 p.m.

3D Ceram Sinto
Booth 307
3DCERAM Sinto offers unparalleled expertise in additive manufacturing (3D Printing) of technical ceramics. 3DCERAM Sinto offers a complete systems approach. 3DCERAM Sinto offers not only the sales of a complete line of printers and materials, but also we offer our clients a choice of ceramics, advice on production specifications, research and development, modifications of the 3D Parts for the manufacturing process, and full service support on their journey into additive manufacturing of technical ceramics into production.
sales@sintoamerica.com
https://3dceram.com

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AdValue Technology, LLC
Booth 219
AdValue Technology is a leading supplier of high purity materials for advanced material research and production. We offer a variety of materials such as Alumina, Fused Quartz, Sapphire, Boron Nitride, Aluminum Nitride, Zirconia, Transparent Ceramics, etc. We provide a large stock of standard products such as crucibles, tubes & rods, plates & discs, etc. Custom-made components are also available. In addition, we offer high purity powders and thick film pastes for AlN substrates.
sales@advaluetech.com
https://www.advaluetech.com

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American Ceramic Society (The)
Booth 101
More than 10,000 scientists, engineers, researchers, manufacturers, plant personnel, educators, students, marketing and sales professionals from more than 80 countries make up the members of The American Ceramic Society. The Society provides members and subscribers access to an extensive array of periodicals and books, meetings and expositions, and online technical information. In addition, ACerS Journals are three of the most cited ceramic publications in the world. ACerS educates and provides forums to connect individuals working in ceramics-related materials through hosted technical meetings and communities in order to better advance the ceramics community. Since 1898, ACerS has been the hub of the global ceramics community and one of the most trusted sources of ceramic materials & applications knowledge. If ceramic material and technologies are a significant part of your work, then ACerS is the professional society for you.
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Archer Technicoat Ltd.
Booth 314
ATL provides solutions to materials problems using advanced coating processes including chemical vapour deposition. We work globally to solve coating and materials challenges across a wide range of industries. With expertise in research, development, systems engineering and consultancy, we can offer the complete solution to your coating requirement.
info@cvd.co.uk
http://www.cvd.co.uk

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AVS, Inc.
Booth 203
AVS specializes in design, engineering, fabrication and complete integration of custom furnaces. We specialize in applications involving combinations of high temperatures to 2400°C, vacuum to 10-6 torr, and gas pressures up to 3000 psig (200 bar). We also manufacture furnaces that include hydraulic hot pressing from 5 tons to over 1000 tons of force, complex gas controls such as MIM and CVD, as well as combination debinding/sintering furnaces. Some AVS furnace applications involve induction heating, but most utilize either graphite or metal resistance heating. AVS leads the industry with its ACE Data Acquisition and Control System, a fully integrated control system that provides graphical user interface screens with point-and-click selection and control of furnace components, runtime parameter displays, recipe screens, user-configurable recipes, status screens, statistics screen and trend screens, including a split-screen feature, allowing direct trend screen comparisons.
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Centorr Vacuum Industries
Booth 216
Centorr Vacuum Industries is a manufacturer of vacuum and controlled atmosphere furnaces for sintering, debinding, and heat treatment of advanced ceramics such as SiC, Si3N4, AlN, BN, and B4C, metals, cermets, and hardmetals. Available in laboratory to production size at temperatures to 3000°C with Graphite or refractory metal hot zones.
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Ceramic Composites
Booth 208
The Ceramic Composites is an association of companies and research institutions in the field of ceramic matrix composites. We promote the industrial use of ceramic matrix composites in mechanical and plant engineering, mobility and the energy industry and support sustainable use.
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Ceramics Expo USA
Booth 315
North America's leading technical ceramics exhibition and conference. Ceramics Expo brings together the global ceramics and glass supply chains to source the latest materials, components and technologies, provide face to face networking and business opportunities and discuss the future challenges and opportunities facing the technical ceramics industry.
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Fraunhofer Institute for Ceramic Technologies & Systems - IKTS
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As a research and technology service provider, the Fraunhofer IKTS develops advanced high-performance ceramic materials, industrial manufacturing processes as well as prototype components and systems in complete production lines up to the pilot-plant scale.
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Haiku Tech offers tape casting (coating) equipment; as well as sheet blankers, stackers, isostatic laminators, furnaces, and materials for the development and manufacturing of Multilayer Ceramic products, including Substrates, SOFC, SOEC, etc. We also offer prototyping and consulting services to develop tape casting formulations for standard or customized ceramic powders.
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ICACC EXPO PREVIEW

Exhibit dates:

Tuesday, January 30 | 5:00 – 8:00 p.m. | Wednesday, January 31 | 5:00 – 7:30 p.m.

Oxy-Gon Industries, Inc.

Booth 215

35-year-old Oxy-Gon offers a wide range of furnaces for, Ceramic Firing, Annealing, Brazing, Hot Pressing and more. Oxy-Gon furnaces have temperatures up to 3000°C (5400°F) and controlled atmospheres, rough to ultra-high vacuum, inert gas, nitrogen, hydrogen or reducing gas. Oxy-Gon is "Degrees Ahead in Quality" since 1988.

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Shanghai Chenhua Science Technology Corp., Ltd

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Shanghai Chenhua has 20 years experience, mainly producing and selling the following products: Spark plasma sintering furnace; hot press sintering furnace; gas pressing sintering furnace; vacuum sintering furnace and vacuum melting furnace. Owning ISO9001:2015 certification, CE certification. Tools of Leica laser tracker, etc. used to inspect and ensure quality. Annual capacity of 300 sets of vacuum furnaces and other high-temperature equipment.

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Springer Nature

Booth 201

Springer Nature advances discovery by publishing trusted research, supporting the development of new ideas and championing open science. We are committed to playing our part in accelerating solutions to address the world's urgent challenges. Visit us in booth 201 to view our most recent publications on advances on ceramics, glass, and related materials research!

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TESCAN develops state-of-the-art SEMs, FIB-SEMs, micro-CTs, and 4-D STEMs that are capable of imaging with both high resolution and high contrast. TESCAN's systems have a strong reputation for manufacturing systems for many different applications.

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Booth 206

TevTech provides custom designed vacuum furnaces and components for CVD, CVI, Sintering, Annealing and Purification systems. From laboratory to Production furnaces, with metal or graphite hot zones, high vacuum to atmospheric pressure, temperatures to 3,000C and exceptional automated control systems for improved product quality. Worldwide commissioning, training and services.

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Thermcraft is an international leading manufacturer of heaters, furnaces and ovens for temperatures up to 1,700°C (3,092°F). We offer a full range of products from laboratory benchtop sizes up to full size industrial production systems. With over 50 years of thermal processing experience, we can help you to find the heaters, furnace or oven solution that best fits your needs.

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Trade Show Services Worldwide

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Ceramitec is the world's leading trade fair for technologies, innovations, and materials in the ceramics industry and will take place April 9-12, 2024 in Munich, Germany. Over 600 exhibitors and more than 10,000 trade visitors took part in 2022. For more information on visiting or exhibiting go to www.ceramitec.com/en or contact me at kglass@tssworldwide.com

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UL Research Institutes

Booth 309

At the Electrochemical Safety Research Institute—one of five UL Research Institutes—we conduct fundamental scientific research to understand the safety and performance of energy technologies. Through our discovery-driven research, we innovate, test, model, and lay the foundation for electrochemical energy storage that is reliable and safe.

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SYMPOSIA ORGANIZERS

2024 PROGRAM CHAIR: **Jie Zhang,** Institute of Metal Research, China

S1: MECHANICAL BEHAVIOR AND PERFORMANCE OF ADVANCED CERAMICS & COMPOSITES

Amjad Almansour, NASA Glenn Research Center, USA; Dong (Lilly) Liu, University of Bristol, UK; Jonathan Salem, NASA Glenn Research Center, USA; Monica Ferraris, Politecnico di Torino, Italy; Gerard Vignoles, University of Bordeaux, France; Dileep Singh, Argonne National Laboratory, USA; Craig Przybyla, Air Force Research Laboratory, USA; Dietmar Koch, University of Augsburg, Germany; Emmanuel Maillet, GE Research, USA; Kamala Raghavan, US Department of Energy, USA; Kevin Strong, Sandia National Laboratory, USA

S2: ADVANCED CERAMIC COATINGS FOR STRUCTURAL, ENVIRONMENTAL, AND FUNCTIONAL APPLICATIONS

Peter Mechnich, German Aerospace Center (DLR), Germany; Douglas E. Wolfe, The Pennsylvania State University, USA; Jie Zhang, Institute of Metal Research, CAS, China; Bryan Harder, NASA Glenn Research Center, USA; Eugene Medvedovski, Endurance Technologies Inc., Canada; Elizabeth Opila, University of Virginia, USA; Eric H. Jordan, The University of Connecticut, USA; Robert Vaßen, Forschungszentrum Jülich, Germany; Kang N. Lee, NASA Glenn Research Center, USA; Satoshi Kitaoka, Japan Fine Ceramics Center, Japan; Byung-Koog Jang, Kyushu Universtiy, Japan; David Poerschke, University of Minnesota, USA; Ping Xiao, University of Manchester, UK; Julin Wan, GE Global Research, USA; Yutaka Kagawa, University of Tokyo, Japan; Rodney W. Trice, Purdue University, USA; Ravisankar Naraparaju, German Aerospace Center, Germany; Nadia Rohbeck, Pratt and Whitney; USA; Kuiying Chen, NRC Ottawa, Canada

S3: 21TH INTERNATIONAL SYMPOSIUM ON SOLID OXIDE CELLS (SOC): MATERIALS, SCIENCE AND TECHNOLOGY

Mihails Kusnezoff, Fraunhofer IKTS, Germany; Federico Smeacetto, Politecnico di Torino, Italy; John Hardy, Pacific Northwest National Laboratory, USA; Narottam P. Bansal, NASA Glenn Research Center, USA; Prabhakar Singh, University of Connecticut, USA; Scott A. Barnett, Northwestern University, USA; Henrik Lund Frandsen, DTU Energy Conversion and Storage, Denmark; Vincenzo Esposito, DTU Energy Conversion and Storage, Denmark; Tae Ho Shin, Korea Institute of Ceramic Engineering & Technology, South Korea; Ruey-Yi Lee, Institute of Nuclear Energy Research, Taiwan; Tatsumi Ishihara, Kyushu University, Japan; Julie Mougin, CEA, France; Sebastian Molin, Gdansk University of Technology, Poland

S4: PROTECTIVE CERAMICS – CHALLENGES AND NEW DEVELOPMENTS

Anthony DiGiovanni, DEVCOM ARL, USA; Jerry LaSalvia, DEVCOM ARL, USA' Jeffrey Swab, DEVCOM ARL, USA; Michael Bakas, DEVCOM ARO, USA; Kristopher Behler, DEVCOM ARL, USA; Neil Middleton, DSTL, UK; Ghatu Subhash, University of Florida, USA

S5: NEXT GENERATION BIOCERAMICS AND BIOCOMPOSITES

Katalin Balazsi, Center for Energy Research, Hungary; Hui-Suk Yun, Korea Institute of Materials Science, Korea; Cristina Balagna, Politecnico di Torino, Italy; Roger Narayan, University of North Carolina, USA; Eva Hemmer, University of Ottawa, Canada; Akiyoshi Osaka, Okayama University, Japan; Antonia Ressler, University of Zagreb, Croatia; Aldo Boccaccini, University of Erlangen-Nuremberg, Germany; Monika Tatarková, Slovak Academy of Sciences, Slovakia

S6: ADVANCED MATERIALS AND TECHNOLOGIES FOR RECHARGEABLE ENERGY STORAGE

Palani Balaya, National University of Singapore, Singapore; Olivier Guillon, Forschungszentrum Jülich, Germany; Naoaki Yabuuchi, Yokohama National University, Japan; Valerie Pralong, CNRS CRISMAT, France; Mali Balasubramanian, Oak Ridge National Laboratory, USA; Prabeer Barpanda, Indian Institute of Science, India; Byounwoo Kang, Pohang University of Science and Technology, Republic of Korea; Richard M Laine, University of Michigan, USA; Yu Yau Wai Denis, City University of Hong Kong, Hong Kong; Shih-Kang Lin, National Cheng Kung University, Taiwan

S7: 18TH INTERNATIONAL SYMPOSIUM ON FUNCTIONAL NANOMATERIALS AND THIN FILMS FOR SUSTAINABLE ENERGY HARVESTING, ENVIRONMENTAL AND HEALTH APPLICATIONS

Muhammet S. Toprak, KTH Royal Institute of Technology, Sweden; Sanjay Mathur, University of Cologne, German; Shashank Mishra, University of Lyon, France; Sedat Ballikaya, Istanbul University, Turkey; Andreu Cabot, Catalonia Institute for Energy Research, Spain

S8: 18TH INTERNATIONAL SYMPOSIUM ON ADVANCED PROCESSING AND MANUFACTURING TECHNOLOGIES FOR STRUCTURAL AND MULTIFUNCTIONAL MATERIALS AND SYSTEMS (APMT18)

Hisayuki Suematsu, Nagaoka University of Technology, Japan; Young-Wook Kim, University of Seoul, Republic of Korea; Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Weimin Wang, Wuhan University of Technology, China; Enrico Bernardo, University of Padova, Italy; Surojit Gupta, University of North Dakota, USA; Eugene Medvedovski, Endurance Technologies Inc., Canada; Tohru S. Suzuki, National Institute for Materials Science (NIMS), Japan; Yiquan Wu, Alfred University, USA; Chang-Jun Bae, Korea Institute of Materials Science, Republic of Korea; Satoshi Tanaka, Nagaoka University of Technology, Japan; Manuel Belmonte, Institute of Ceramics and Glass (ICV-CSIC), Spain; Kyu Hyoung Lee, Yonsei University, Republic of Korea; Csaba Balazsi, Centre for Energy Research ELKH, Hungary; Heping Li, Huazhong University of Science and Technology, China; Zhixiao Zhang, Hebei University of Engineering, China

S9: POROUS CERAMICS: NOVEL DEVELOPMENTS AND APPLICATIONS

Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Tobias Fey, University of Erlangen-Nuremberg, Germany; Paolo Colombo, University of Padova, Italy; Farid Akhtar, Lulea University of Technology, Sweden; Ulfe Betke, Otto-von-Guericke-University, Germany; Ulla Simon, Technischee Universitat Berlin, Germany; Samuel Bernard, Institut de Recherche sur les Céramiques de Limoges, France; Doug Wing, Corning Incorporated, USA; Elie Kamseu, Laboratory of Materials, Cameroon; C.D. Madhusoodana, Ceramic Technological Institute Bharat Heavy Electricals Ltd., India; Yuki Nakashima, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Jian-feng Yang, Xi'an Jiaotong University, China

S10: MODELING AND DESIGN OF CERAMICS AND COMPOSITES

Jingyang Wang, Institute of Metal Research, Chinese Academy of Sciences, China; Valentino Cooper, Oak Ridge National Laboratory, USA; Bin Liu, Shanghai University, China; Jian Luo, University of California, San Diego, USA; Yixiu Luo, Institute of Metal Research, Chinese Academy of Sciences, China; Katsuyuki Matsunaga, Nagoya University, Japan; Sergei Manzhos, Tokyo Institute of Technology, Japan; Paul Rulis, University of Missouri-Kansas City, USA; Gerard L. Vignoles, University of Bordeaux, France; William J. Weber, University of Tennessee, USA

S11: ADVANCED MATERIALS AND INNOVATIVE PROCESSING IDEAS FOR PRODUCTION ROOT TECHNOLOGIES

Chisung Ahn, Korea Institute of Industrial Technology, Korea; Sungwook Mhin, Kyonggi University, Korea; Tadachika Nakayama, Nagaoka University of Technology, Japan; Kyoung Il Moon, Korea Institute of Industrial Technology, Korea; Byungkoog Jang, Kyushu University, Japan; Kouichi Yasuda, Tokyo Institute of Technology, Japan; Hyuksu Han, Konkuk University, Korea; Hosung Kang, Cornell University, USA

S12: ON THE DESIGN OF NANOLAMINATED TERNARY TRANSITION METAL CARBIDES/NITRIDES (MAX PHASES) AND BORIDES (MAB PHASES), SOLID SOLUTIONS THEREOF, AND 2D COUNTERPARTS (MXENES, MBENES)

Surojit Gupta, University of North Dakota, USA; Miladin Radovic, Texas A&M University, USA; Konstantina Lambrinou, University of Huddersfield, UK; Jochen M. Schneider, RWTH Aachen University, Germany; Thierry Cabioch, Université de Poitiers, France; Sylvain Dubois, Université de Poitiers, France; Per Eklund, Linköping University, Sweden; Johanna Rosen, Linköping University, Sweden; Jesus Gonzalez, RWTH Aachen University, Germany; Chenxu Wang, Peking University, China

S13: DEVELOPMENT AND APPLICATIONS OF ADVANCED CERAMICS AND COMPOSITES FOR NUCLEAR FISSION AND FUSION ENERGY SYSTEMS

Takaaki Koyanagi, Oak Ridge National Laboratory, USA; Kyle Brinkman, Clemson University, USA; Monica Ferraris, Politecnico di Torino, Italy; Tatsuya Hinoki, Kyoto University, Japan; Dong Liu, University of Bristol, UK; Gyanender Singh, Idaho National Laboratory, USA; Konstantina Lambrinou, University of Huddersfield, UK; Krista Carlson, University of Nevada, USA; David Sprouster, Stony Brook University, USA; Samuel Humphry-Baker, Imperial College London, UK

S14: CRYSTALLINE MATERIALS FOR ELECTRICAL, OPTICAL AND MEDICAL APPLICATIONS

Kiyoshi Shimamura, National Institute for Materials Science, Japan; Noboru Ichinose, Waseda University; Luisa E. Bausá, Autonomous University of Madrid; Victoria Blair, U.S. Army Research Laboratory; Nerine J. Cherepy, Lawrence Livermore National Laboratory; Yoshihiko Imanaka, S-Nanotech Co-Creation; Kenji Toda, Niigata University; Yiquan Wu, Alfred University, USA; Takayuki Yanagida, Nara Institute of Science and Technology; Romaine Gaume, University of Central Florida, USA; Mariya Zhuravleva, University of Tennessee

S15: 8TH INTERNATIONAL SYMPOSIUM ON ADDITIVE MANUFACTURING AND 3D PRINTING TECHNOLOGIES

Michael Halbig, NASA Glenn Research Center, USA; Soshu Kirihara, Osaka University, Japan; Mrityunjay Singh, Ohio Aerospace Institute, USA; Arnaldo Moreno Berto, ITC, Spain; Zhangwei Chen, Shenzhen University, China; Corson L. Cramer, Oak Ridge National Laboratory, USA; Giorgia Franchin, Università di Padova, Italy; Yan Li, Dartmouth College, USA; Russell Maier, NIST, USA; Majid Minary, University of Texas at Dallas, USA; Alberto Ortona, SUPSI, Switzerland; Tobias A. Schaedler, HRL Laboratories LLC, USA; Martin Schwentenwein, Lithoz GmbH, Austria; Hui-Suk Yun, KIMS, Korea

S16: GEOPOLYMERS, INORGANIC POLYMERS AND SUSTAINABLE CONSTRUCTION MATERIALS

Waltraud M. Kriven, University of Illinois at Urbana-Champaign, USA; Joseph Davidovits, Geopolymer Institute, St. Quentin, France; Henry A. Colorado, Universidad de Antioquia, Medellin, Colombia; Enrico Bernardo, University of Padova, Italy

S17: ADVANCED CERAMIC MATERIALS AND PROCESSING FOR PHOTONICS AND ENERGY

Alberto Vomiero, Luleå University of Technology, Sweden; Federico Rosei, INRS, Canada; Yasuhiro Tachibana, RMIT University, Australia; David Kisailus, University of California at Riverside, U.S.; Tohru Sekino, Osaka University, Japan; Isabella Concina, Luleå University of Technology, Sweden; Haiguang Zhao, Qingdao University, China; Francesco Enrichi, National Research Council (CNR), Italy; Kassa Belay Ibrahim, Ca' Foscari University of Venice, Italy

S18: ULTRA-HIGH TEMPERATURE CERAMICS

Bai Cui, University of Nebraska-Lincoln, USA; William G. Fahrenholtz, Missouri University of Science and Technology, USA; Sea-Hoon Lee, Korea Institute of Materials Science, Korea; Frederic Monteverde, National Research Council-Institute of Science and Technology for Ceramics, Italy; Guo-Jun Zhang, Donghua University, Shanghai, China; Carolina Tallon, Virginia Tech, USA; Ji Zou, Wuhan University of Technology, China; Lisa Rueschhoff, Air Force Research Laboratory, USA; Emanuel Ionescu, Technical University Darmstadt, Germany; Lavina Backman, Naval Research Laboratory, USA; Simon Middleburgh, Bangor University, UK

S19: MOLECULAR-LEVEL PROCESSING AND CHEMICAL ENGINEERING OF FUNCTIONAL MATERIALS

Sanjay Mathur, University of Cologne, Germany; Emanuel Ionescu, Technische Universität Darmstadt, Germany; Samuel Bernard, University of Limoges, France; Gurpreet Singh, Kansas University, USA; Ravi Kumar, IIT Madras, India; Peter Kroll, University of Texas at Arlington, USA; Shashank Mishra, University of Lyon, France; Maarit Karppinen, Aalto University, Finland; Gunnar Westin, Uppsala University, Sweden; Ausrine Bartasyte, University of Franche-Comté, France; Hiromitsu Kozuka, Kansai University, Japan; Hirokazu Katsui, Tohoku University, Japan; Yoshiyuki Sugahara, Waseda University, Japan; Dong-Pyo Kim, Pohang University of Science and Technology, South Korea; Ulrich Wiesner, Cornell University, USA

SYMPOSIA ORGANIZERS

FOCUSED SESSION 1: Bioinspiration, Green Processing, and Related Technologies of Advanced Materials

Zhaoyong Zou, Wuhan University of Technology, China; Thomas Speck, Universität Freiburg, Germany; Bastian Rapp, University of Freiburg, Germany; Manoj K Mahapatra, University of Alabama at Birmingham, USA; Hualing Gao, University of Science and Technology of China, China; André Studdart, ETH Zürich, Switzerland; Hao Bai, Zhejiang University, China, Zhao Qin, Syracuse University, USA

FOCUSED SESSION 2: Materials for Thermoelectric and Thermionic Energy Conversion

Michitaka Ohtaki, Kyushu University, Japan; Kyu Hyoung Lee, Yonsei University, Republic of Korea; Armin Feldhoff, Leibniz University Hannover, Germany; Sunmi Shin, National University of Singapore, Singapore; Mari-Ann Einarsrud, Norwegian University of Science and Technology, Norway; Peng Jiang, Dalian Institute of Chemical Physics, China; Theodora Kyratsi, University of Cyprus, Cyprus; Takao Mori, National Institute for Materials Science, Japan; Amin Nozariasbmarz, Pennsylvania State University, USA; Daryoosh Vashaee, North Carolina State University, USA; Mona Zebarjadi, University of Virginia, USA; Jon C. Goldsby, NASA Glen Research, USA

FOCUSED SESSION 3: Nanostructures and Low-Dimensional Materials for Chemical Sensors

Ho Won Jang, Seoul National University, Republic of Korea; Alberto Vomiero, Ca' Foscari University of Venice, Italy; Kengo Shimanoe, Kyushu University, Japan; Nicolae Barsan, University of Tuebingen, Germany; Geyu Lu, Jilin University, China; Sheikh A. Akbar, The Ohio State University, USA

FOCUSED SESSION 4: Ceramic/Carbon Reinforced Polymers

Satoshi Kobayashi, Tokyo Metropolitan University, Japan; Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Joung-Man Park, Gyeongsang National University, South Korea; Toshio Ogasawara, Tokyo University of Agriculture and Technology, Japan; Shinji Ogihara, Tokyo University of Science, Japan; Tomohiro Yokozeki, The University of Tokyo, Japan; Takenobu Sakai, Saitama University, Japan; Masato Sakaguchi, Salesian Polytechnic, Japan; Mohammad Fikry, Tokyo University of Science, Japan

FOCUSED SESSION 5: High-Voltage Materials for Advanced Electrical Applications

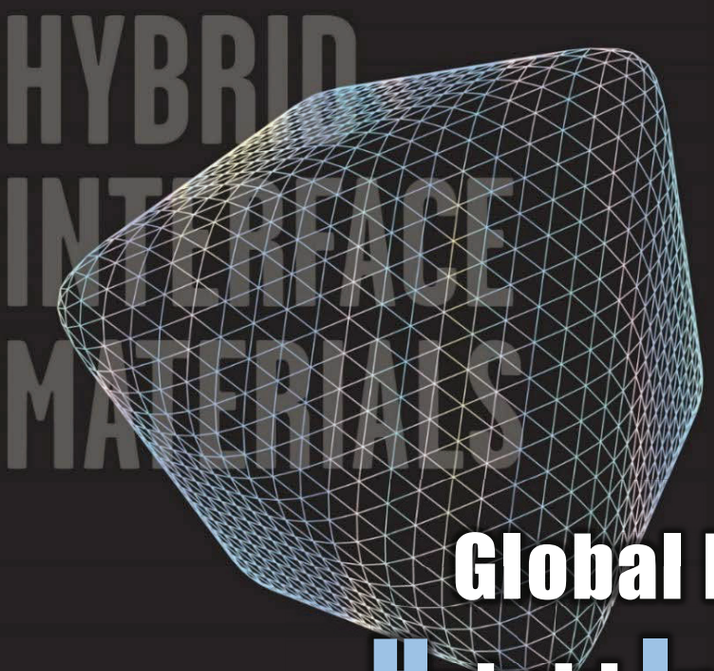
Maricela Lizcano, NASA Glenn Research Center USA; Diana Santiago, NASA Glenn Research Center, USA; Amjad Almansour, NASA Glenn Research Center, USA; Michael F. Mulzer, DuPont, USA; Gian Carlo Montanari, University of Bologna, Italy; Ian Cotton, University of Manchester, UK; Michael Cullinan, University of Texas, USA; Mehran Tehrani, University of California, San Diego, USA; Vesselin Shanov, University of Cincinnati, USA; Marina Gandini, Prysmian Group, Italy; Chanyeop Park, University of Wisconsin, USA; Zhiting Tian, Cornell University, USA

13TH GLOBAL YOUNG INVESTIGATOR FORUM

Dong (Lily) Liu, University of Bristol, UK; Meeland Ranaiefar, NASA Glenn Research Center, USA; Bai Cui, University of Nebraska-Lincoln, USA; Jakson Majher, Glass Coatings & Concepts, LLC, USA; Chenxu Wang, Peking University, China; James Wade-Zhu, UK Atomic Energy Agency, UK; Nor Ezzaty Ahmad, Universiti Teknologi Malaysia, Malaysia; Luchao Sun, Institute of Metal Research, China; Yuki Nakashima, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Elisa Zanchi, Politecnico di Torino, Italy; Ho Jin Ma, Korea Institute of Materials Science, Republic of Korea; Yuki Nakashima, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Elisa ZAnchi, Politenico di Torino, Italy; Ho Jin Ma, Korea Institute of Materials Science, Republic of Korea

SPECIAL FOCUSED SESSION ON DIVERSITY, ENTREPRENEURSHIP, AND COMMERCIALIZATION

Valerie L Wiesner, NASA Langley Research Center, USA; Surojit Gupta, University of North Dakota, USA; Kristin Breder, Saint Gobain Research, USA; Jie Zhang, Institute of Metal Research, CAS, China; Theresa (Tessa) Davey, Bangor University, UK



과학기술정보통신부
Ministry of Science and ICT
Global Frontier Project

Global Frontier Center for Hybrid Interface Materials

About "HIM"

- **Date of establishment : 2013. 11. 26.**
- **Director** : Prof. Kwang-Ho Kim
  (Pusan National University)

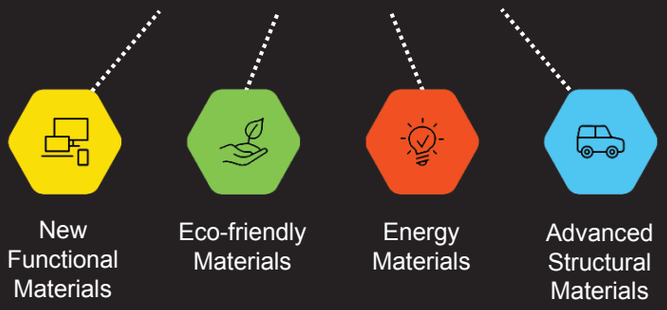
Research Goal

- Development of world best basic/fundamental technologies for innovative products based on Hybrid Interface Technology (HIT)
- Development of future materials/parts/products for commercialization of the core technologies

Project Scope

- Observation of physical/chemical/electrical properties at the interfaces of hybrid materials with materials computation methodology
- Design and development of innovative interface materials with multi-functionality
- Demonstration and categorization of the hybrid materials for the core technologies

HIM's Platforms



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TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
PLENARY SESSION	Jan. 29	8:30 AM - NOON	Coquina D/E
SPECIAL FOCUSED SESSION ON DIVERSITY, ENTREPRENEURSHIP, AND COMMERCIALIZATION			
Special Focused Session on Diversity Entrepreneurship and Commercialization	Jan. 29	1:30 PM - 5:10 PM	Coquina C
13TH GLOBAL YOUNG INVESTIGATOR FORUM			
13th Global Young Investigator Forum	Jan. 29	1:30 PM - 5:10 PM	Coquina D
13th Global Young Investigator Forum: Microstructure, thermo-mechanical properties	Jan. 29	1:30 PM - 3:20 PM	Coquina D
13th Global Young Investigator Forum: Microstructure, thermo-mechanical properties	Jan. 29	3:20 PM - 5:50 PM	Coquina D
13th Global Young Investigator Forum: Ceramics for batteries	Jan. 30	8:30 AM - 10:20 AM	Coquina D
13th Global Young Investigator Forum: Design and processing	Jan. 30	10:20 AM - 12:00 PM	Coquina D
13th Global Young Investigator Forum: Design and processing	Jan. 30	1:30 PM - 3:20 PM	Coquina D
13th Global Young Investigator Forum: Design and processing	Jan. 30	3:20 PM - 5:20 PM	Coquina D
FOCUSED SESSION 1: BIOINSPIRATION, GREEN PROCESSING, AND RELATED TECHNOLOGIES OF ADVANCED MATERIALS			
Bioinspiration, Green Processing, and Related Technologies of Advanced Materials	Jan. 31	1:30 PM - 3:00 PM	Ponce de Leon
Bioinspiration, Green Processing, and Related Technologies of Advanced Materials	Jan. 31	3:30 PM - 5:00 PM	Ponce de Leon
Bioinspiration, Green Processing, and Related Technologies of Advanced Materials	Feb. 1	8:30 AM - 10:00 AM	Ponce de Leon
Bioinspiration, Green Processing, and Related Technologies of Advanced Materials	Feb. 1	10:00 AM - 11:10 AM	Ponce de Leon
Bioinspiration, Green Processing, and Related Technologies of Advanced Materials	Feb. 1	1:30 PM - 3:20 PM	Ponce de Leon
Bioinspiration, Green Processing, and Related Technologies of Advanced Materials	Feb. 1	3:20 PM - 4:40 PM	Ponce de Leon
FOCUSED SESSION 2: ADVANCED MATERIALS FOR THERMOELECTRIC AND THERMIONIC ENERGY CONVERSION			
Advanced Materials for Thermoelectric and Thermionic Energy Conversion	Feb. 1	8:30 AM - 12:10 PM	Coquina C
Advanced Materials for Thermoelectric and Thermionic Energy Conversion	Feb. 1	1:30 PM - 5:20 PM	Coquina C
Advanced Materials for Thermoelectric and Thermionic Energy Conversion	Feb. 2	8:30 AM - 12:10 PM	Coquina C
FOCUSED SESSION 3: NANOSTRUCTURES AND LOW-DIMENSIONAL MATERIALS FOR CHEMICAL SENSORS			
Nanostructures and Low-Dimensional Materials for Chemical Sensors	Jan. 31	1:30 PM - 4:50 PM	Flagler A
Chemical sensors using na	Feb. 1	8:30 AM - 11:40 AM	Flagler A
Nanostructures and Low-Dimensional Materials for Chemical Sensors	Feb. 1	1:30 PM - 3:50 PM	Flagler A
FOCUSED SESSION 4: CERAMIC/CARBON REINFORCED POLYMERS			
Characterization	Feb. 1	1:30 PM - 3:20 PM	Flagler C
Processing and Stress Analysis	Feb. 1	3:20 PM - 5:40 PM	Flagler C
FOCUSED SESSION 5: HIGH VOLTAGE MATERIALS FOR ADVANCED HIGH POWER ELECTRICAL APPLICATIONS			
High Voltage Materials for Advanced High Power Electrical Applications	Feb. 1	8:30 AM - 12:00 PM	Ballroom 4
High Voltage Materials for Advanced High Power Electrical Applications	Feb. 1	1:30 PM - 5:00 PM	Ballroom 4
SYMPOSIUM 1: MECHANICAL BEHAVIOR AND PERFORMANCE OF ADVANCED CERAMICS & COMPOSITES			
Mechanical testing and characterization of ceramic matrix composites (CMCs)	Jan. 29	1:30 PM - 5:40 PM	Coquina E
Environmental effects and thermomechanical performance of ceramic matrix composites (CMCs)	Jan. 30	8:30 AM - 12:00 PM	Coquina E
Fracture mechanics, failure analysis and fractography	Jan. 30	1:30 PM - 5:10 PM	Coquina E
Ceramics processing–microstructure–mechanical properties correlation	Jan. 31	8:30 AM - 12:10 PM	Coquina E
Sustainable manufacturing, joining, and repair approaches of ceramics	Jan. 31	1:30 PM - 5:20 PM	Coquina E
Ceramics for concentrated solar–thermal power and industrial process heat I	Feb. 1	8:30 AM - 12:00 PM	Coquina E
Ceramics for concentrated solar–thermal power and industrial process heat II	Feb. 1	1:30 PM - 3:30 PM	Coquina E
Mechanical testing and characterization of ceramics	Feb. 1	3:30 PM - 5:50 PM	Coquina E

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TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
SYMPOSIUM 2: ADVANCED CERAMIC COATINGS FOR STRUCTURAL, ENVIRONMENTAL, AND FUNCTIONAL APPLICATIONS			
Thermal Barrier Coatings I	Jan. 29	1:30 PM - 4:00 PM	Flagler C
Innovative Processing of Coatings	Jan. 30	8:40 AM - 10:00 AM	Flagler C
Environmental Barrier Coatings I	Jan. 30	10:20 AM - 11:40 AM	Flagler C
Environmental Barrier Coatings III	Jan. 30	1:30 PM - 4:50 PM	Flagler C
Environmental Barrier Coatings III	Jan. 31	8:30 AM - 10:00 AM	Flagler C
CMAS-type corrosion and mitigation strategies I	Jan. 31	10:00 AM - 12:00 PM	Flagler C
CMAS-type corrosion and mitigation strategies II	Jan. 31	1:30 PM - 4:50 PM	Flagler C
Coatings for wear, corrosion protection	Feb. 1	8:40 AM - 10:20 AM	Flagler C
High- and ultrahigh temperature coatings	Feb. 1	10:20 AM - 12:00 PM	Flagler C
SYMPOSIUM 3: 21ST INTERNATIONAL SYMPOSIUM ON SOLID OXIDE CELLS (SOC): MATERIALS, SCIENCE, AND TECHNOLOGY			
System design and demonstration	Jan. 29	1:30 PM - 3:00 PM	Ballroom 1-2
Electrolysis and applications	Jan. 29	3:00 PM - 5:10 PM	Ballroom 1-2
Air electrode	Jan. 30	8:30 AM - 11:40 AM	Ballroom 1-2
Proton conducting ceramic cells	Jan. 30	1:30 PM - 5:10 PM	Ballroom 1-2
Novel Processing / System Design	Jan. 1	8:30 AM - 11:20 AM	Ballroom 1-2
Simulation, testing and degradation / Progress in SOC development	Jan. 31	1:30 PM - 6:30 PM	Ballroom 1-2
Fuel Electrode & Electrolytes / System modelling and validation	Feb. 1	8:30 AM - 11:50 AM	Ballroom 1-2
Metal supported cells, interconnect coating and interfaces	Feb. 1	1:30 PM - 5:00 PM	Ballroom 1-2
SYMPOSIUM 4: PROTECTIVE CERAMICS—FUNDAMENTAL CHALLENGES AND NEW DEVELOPMENTS			
Protective Ceramics - Fundamental Challenges and New Developments	Jan. 29	1:30 PM - 5:30 PM	Ponce de Leon
SYMPOSIUM 5: NEXT-GENERATION BIOCERAMICS AND BIOCOMPOSITES			
Next Generation Bioceramics and Biocomposites	Jan. 29	1:30 PM - 3:30 PM	Coquina B
Next Generation Bioceramics and Biocomposites	Jan. 29	3:30 PM - 5:00 PM	Coquina B
Next Generation Bioceramics and Biocomposites	Jan. 30,	8:30 AM - 10:20 AM	Coquina B
Next Generation Bioceramics and Biocomposites	Jan. 30	10:20 AM - 11:10 AM	Coquina B
SYMPOSIUM 6: ADVANCED MATERIALS AND TECHNOLOGIES FOR RECHARGEABLE ENERGY STORAGE			
Electrode/electrolyte interface characterization for lithium batteries	Jan. 29	1:30 PM - 3:00 PM	Ballroom 5
Diagnostics and materials characterization for lithium batteries	Jan. 29	3:00 PM - 5:30 PM	Ballroom 5
Solid electrolytes for batteries I	Jan. 30	8:30 AM - 10:00 AM	Ballroom 5
Solid electrolytes for batteries II	Jan. 30	10:00 AM - 12:30 PM	Ballroom 5
All-solid-state batteries III	Jan. 30	1:30 PM - 3:00 PM	Ballroom 5
All-solid-state batteries IV	Jan. 30	3:00 PM - 5:00 PM	Ballroom 5
Sodium batteries, potassium batteries, magnesium batteries and calcium batteries	Jan. 31	8:30 AM - 10:00 AM	Ballroom 5
Advanced anode and cathode materials for lithium batteries	Jan. 31	10:00 AM - 12:00 PM	Ballroom 5
Advanced anode and cathode materials for lithium and multivalent batteries	Jan. 31	1:30 PM - 3:00 PM	Ballroom 5
All-solid-state batteries VI	Jan. 31	3:00 PM - 5:00 PM	Ballroom 5
All-solid-state batteries VII	Feb. 1	9:00 AM - 10:00 AM	Ballroom 5
Solid electrolytes for batteries VIII	Feb. 1	10:00 AM - 12:00 PM	Ballroom 5
Lithium-ion, Lithium-sulphur and all-solid-state batteries	Feb. 1	1:30 PM - 3:00 PM	Ballroom 5
Advanced anode and cathode materials for sodium battery and capacitors	Feb. 1	3:00 PM - 5:00 PM	Ballroom 5

Sessions	Date	Time	Location
SYMPOSIUM 7: 18TH INTERNATIONAL SYMPOSIUM ON FUNCTIONAL NANOMATERIALS AND THIN FILMS FOR SUSTAINABLE ENERGY, ENVIRONMENTAL, AND HEALTH APPLICATIONS			
Nanomaterials for energy conversion, storage and catalysis	Jan. 30	1:30 PM - 4:10 PM	Coquina B
18th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy, Environmental and Health Applications	Jan. 31	8:30 AM - 11:50 AM	Coquina B
18th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy, Environmental and Health Applications	Jan. 31	1:30 PM - 3:20 PM	Coquina B
Nanotoxicity, bio-imaging, drug-delivery and tissue engineering with tailored nano-bio conjuguates	Jan. 31	3:20 PM - 5:00 PM	Coquina B
Nanomaterials for energy conversion, storage and catalysis	Feb. 1	8:30 AM - 11:30 AM	Coquina B
Nanomaterials for energy conversion, storage and catalysis	Feb. 1	1:30 PM - 3:30 PM	Coquina B
Synthesis, functionalization and assembly of inorganic and hybrid nanostructures	Feb. 1	3:30 PM - 4:00 PM	Coquina B
SYMPOSIUM 8: 18TH INTERNATIONAL SYMPOSIUM ON ADVANCED PROCESSING AND MANUFACTURING TECHNOLOGIES FOR STRUCTURAL AND MULTIFUNCTIONAL MATERIALS AND SYSTEMS (APMT18)			
Microwave processing, SPS, flash sintering, high pressure assisted sintering I	Jan. 29	1:30 - 3:20 PM	Coquina F
Microwave processing, SPS, flash sintering, high pressure assisted sintering II	Jan. 29	3:20 PM - 5:30 PM	Coquina F
Microwave processing, SPS, flash sintering, high pressure assisted sintering III	Jan. 30	8:30 AM - 9:00 AM	Coquina F
Joining, integration, machining, repair, and refurbishment technologies	Jan. 30	9:00 AM - 10:20 AM	Coquina F
Aqueous synthesis, colloidal processing, bio-inspired synthesis and processing	Jan. 30	10:20 AM - 10:50 AM	Coquina F
Polymer-based processing	Jan. 30	10:50 AM - 12:10 PM	Coquina F
Novel forming/sintering technologies, near-net shaping I	Jan. 30	1:30 PM - 3:10 PM	Coquina F
Novel forming/sintering technologies, near-net shaping II	Jan. 30	3:10 PM - 5:00 PM	Coquina F
Advanced composite manufacturing technologies, hybrid processes I	Jan. 31	8:30 AM - 10:20 AM	Coquina F
Advanced composite manufacturing technologies, hybrid processes II	Jan. 31	10:20 AM - 11:30 AM	Coquina F
Design-oriented manufacturing and processing	Jan. 31	1:30 PM - 2:20 PM	Coquina F
Green manufacturing, global environmental issues and standards	Jan. 31	2:20 PM - 3:20 PM	Coquina F
Rapid prototyping, 3D printing, patterning, templates and self-assembly	Jan. 31	3:20 PM - 4:40 PM	Coquina F
Advanced powder synthesis and processing	Jan. 31	4:40 PM - 5:20 PM	Coquina F
SYMPOSIUM 9: POROUS CERAMICS: NOVEL DEVELOPMENTS AND APPLICATIONS			
Innovations in Processing Methods & Synthesis of Porous Ceramics	Jan. 31	8:30 AM -12:10 PM	Coquina D
Engineered Porous Architectures Enabled by Additive Manufacturing Technologies	Jan. 31	1:30 PM - 2:30 PM	Coquina D
Computational Techniques in Porous ceramics	Jan. 31	2:30 PM - 3:50 PM	Coquina D
Structure and Properties of Porous Ceramics	Jan. 31	3:50 PM - 5 PM	Coquina D
Structure and Properties of Porous Ceramics	Feb. 1	8:30 AM - 10:30 AM	Coquina D
Porous Ceramics for Environmental, Energy, Biological and Functional Applications I	Feb. 1	10:30 AM - 11:10 AM	Coquina D
Porous Ceramics for Environmental, Energy, Biological and Functional Applications II	Feb. 1	1:30 PM - 3:00 PM	Coquina D
SYMPOSIUM 10: MODELING AND DESIGN OF CERAMICS AND COMPOSITES			
Modeling and design of ceramics and composites	Jan. 31	1:30 PM - 4:40 PM	Coquina G
Modeling and design of ceramics and composites	Feb. 1	8:30 AM - 11:40 AM	Coquina G
Modeling and design of ceramics and composites	Feb. 1	1:30 PM - 4:40 PM	Coquina G
Modeling and design of ceramics and composites	Feb. 2	8:30 AM - 11:20 AM	Coquina G

TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
SYMPOSIUM 11: ADVANCED MATERIALS AND INNOVATIVE PROCESSING IDEAS FOR PRODUCTION ROOT TECHNOLOGIES			
Sustainable energy concepts and applications	Jan. 30	9:00 AM - 10:20 AM	Ponce de Leon
Coating, forming and shaping processes for industrial applications	Jan. 30	10:20 AM - 12:00 PM	Ponce de Leon
Starting materials: Mining, particles, bulk, and functional materials and precursors	Jan. 30	1:50 PM - 3:20 PM	Ponce de Leon
New concepts and emerging technologies for enhanced product performance I	Jan. 30	3:20 PM - 4:30 PM	Ponce de Leon
New concepts and emerging technologies for enhanced product performance II	Jan. 31	8:50 AM - 10:20 AM	Ponce de Leon
Recycling and reuse processes	Jan. 31	10:20 AM - 11:10 AM	Ponce de Leon
SYMPOSIUM 12: DESIGN AND APPLICATIONS OF NANOLAMINATED TERNARY TRANSITION METAL CARBIDES/NITRIDES (MAX PHASES) AND BORIDES (MAB PHASES), THEIR SOLID SOLUTIONS AND 2D COUNTERPARTS (MXENES, MBENES)			
Design of novel compositions and manufacturing methods	Jan. 31	1:30 PM - 4:30 PM	Ballroom 3
Design and Applications of Nanolaminated Ternary Transition Metal Carbides/Nitrides (MAX Phases) and Borides (MAB Phases), their Solid Solutions and 2D Counterparts (MXenes, MBenes)	Feb. 1	8:30 AM - 11:40 AM	Ballroom 3
Design and Applications of Nanolaminated Ternary Transition Metal Carbides/Nitrides (MAX Phases) and Borides (MAB Phases), their Solid Solutions and 2D Counterparts (MXenes, MBenes)	Feb. 1	1:30 PM - 5:10 PM	Ballroom 3
SYMPOSIUM 13: DEVELOPMENT AND APPLICATIONS OF ADVANCED CERAMICS AND COMPOSITES FOR NUCLEAR FISSION AND FUSION ENERGY SYSTEMS			
Novel ceramics materials for nuclear systems	Jan. 29	1:30 PM - 3:20 PM	Ballroom 4
Ceramics and ceramic-based composites in nuclear fusion	Jan. 29	3:20 PM - 5:20 PM	Ballroom 4
Graphite and carbon materials for nuclear applications	Jan. 30	8:30 AM - 10:20 AM	Ballroom 4
Advanced characterization techniques and methods	Jan. 30	10:20 AM - 12:00 PM	Ballroom 4
Ceramic fuel materials, technologies, and characterization	Jan. 30	1:30 PM - 3:20 PM	Ballroom 4
Emerging and novel material technologies for nuclear systems	Jan. 30	3:20 PM - 5:00 PM	Ballroom 4
Chemical compatibility and corrosion	Jan. 31	8:30 AM - 10:20 AM	Ballroom 4
Joining and coating technologies for reactor components	Jan. 31	10:20 AM - 12:00 PM	Ballroom 4
Fuel, cladding, assembly, and core evolutions and performance modeling	Jan. 31	1:30 PM - 3:20 PM	Ballroom 4
Material technologies for accident tolerant fuel cladding and core structures for light water reactors	Jan. 31	3:20 PM - 4:50 PM	Ballroom 4
SYMPOSIUM 14: CRYSTALLINE MATERIALS FOR ELECTRICAL, OPTICAL, AND MEDICAL APPLICATIONS			
Optical transparent ceramics	Feb. 1	8:30 AM - 12:10 PM	Coquina H
Phoosphor, Laser, Isolator, NLO materials	Feb. 1	1:30 PM - 5:40 PM	Coquina H
Scintillator materials	Feb. 2	8:30 AM - 11:30 AM	Coquina H
SYMPOSIUM 15: 8TH INTERNATIONAL SYMPOSIUM ON ADDITIVE MANUFACTURING AND 3D PRINTING TECHNOLOGIES			
Vat Photopolymerization / Stereolithography I	Jan. 29	1:30 PM - 3:00 PM	Coquina H
Vat Photopolymerization / Stereolithography II	Jan. 29	3:00 PM - 5:50 PM	Coquina H
Additive Manufacturing Processing, Characterization, and Applications I	Jan. 30	8:30 AM - 10:00 AM	Coquina H
Additive Manufacturing Processing, Characterization, and Applications II	Jan. 30,	10:00 AM - 12:10 PM	Coquina H
Binder Jetting and Powder Bed Fusion Processes I	Jan. 30	1:30 PM - 2:40 PM	Coquina H
Binder Jetting and Powder Bed Fusion Processes II	Jan. 30	3:00 PM - 5:00 PM	Coquina H
Fused Filament Fabrication and Direct Ink Writing I	Jan. 31	8:30 AM - 10:00 AM	Coquina H
Fused Filament Fabrication and Direct Ink Writing II	Jan. 31	10:00 AM - 12:00 PM	Coquina H
Direct Writing and Multi-Materials I	Jan. 31	1:30 PM - 3:00 PM	Coquina H
Direct Writing and Multi-Materials II	Jan. 31	3:00 PM - 5:10 PM	Coquina H

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TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
SYMPOSIUM 16: GEOPOLYMERS, INORGANIC POLYMERS, AND SUSTAINABLE CONSTRUCTION MATERIALS			
Synthesis, processing, microstructure	Jan. 30	8:30 AM - 10:10 AM	Coquina C
Conversion to ceramics	Jan. 30	10:10 AM - 11:30 AM	Coquina C
Conversion to ceramics II	Jan. 30	1:30 PM - 2:00 PM	Coquina C
Extrusion and 3D printing	Jan. 30	2:00 PM - 4:30 PM	Coquina C
Use of waste materials	Jan. 30	4:30 PM - 5:00 PM	Coquina C
Use of waste materials	Jan. 31	8:30 AM - 9:00 AM	Coquina C
Mechanical properties	Jan. 31	9:00 AM - 10:20 AM	Coquina C
Sustainable materials and novel applications	Jan. 31	10:20 AM - 12:00 PM	Coquina C
Sustainable materials and novel applications	Jan.31	1:30 PM - 3:20 PM	Coquina C
Sustainable materials and novel applications	Jan. 31	3:20 PM - 5:00 PM	Coquina G
SYMPOSIUM 17: ADVANCED CERAMIC MATERIALS AND PROCESSING FOR PHOTONICS AND ENERGY			
Multi-functional materials	Jan. 29	1:30 PM - 5:50 PM	Coquina G
Multi functional materials	Jan. 30	8:30 AM - 11:40 AM	Coquina G
Multi-functional materials and Advanced and nanostructural materials for photo-voltaics and solar fuels	Jan. 30	1:30 PM - 5:10 PM	Coquina G
Advanced and nanostructural materials for photo-voltaics and solar fuels	Jan. 31	8:30 AM - 12:20 PM	Coquina G
SYMPOSIUM 18: ULTRAHIGH-TEMPERATURE CERAMICS			
Compositionally Complex UHTCs	Jan. 29	1:30 PM - 5:00 PM	Coquina A
Super-hard UHTCs	Jan. 30	8:30 AM - 10:10 AM	Coquina A
Response in Extreme Environments	Jan. 30	10:20 AM - 12:00 PM	Coquina A
Novel Processing Methods	Jan. 30,	1:30 PM - 4:30 PM	Coquina A
Advanced Characterizations and Simulations	Jan. 31	8:30 AM - 11:30 AM	Coquina A
Processing-Microstructure-Property Relationship	Jan. 31	1:30 PM - 4:50 PM	Coquina A
SYMPOSIUM 19: MOLECULAR-LEVEL PROCESSING AND CHEMICAL ENGINEERING OF FUNCTIONAL MATERIALS			
Functional Carbides & Nitrides	Jan. 29	1:30 PM - 3:20 PM	Ballroom 3
Functional Carbides & Nitrides II	Jan. 29	3:20 PM - 5:30 PM	Ballroom 3
Energy-Related Matters I	Jan. 30	8:30 AM - 10:20 AM	Ballroom 3
Energy-Related Matters I	Jan. 30	10:20 AM - 11:40 AM	Ballroom 3
Additive Manufacturing	Jan. 30	1:30 PM - 3:20 PM	Ballroom 3
Additive Manufacturing	Jan. 30	3:20 PM - 5:00 PM	Ballroom 3
Gas-Phase Synthesis Approaches	Jan. 31	8:30 AM - 10:20 AM	Ballroom 3
Energy-Related Matters II	Jan. 31	10:20 AM - 11:10 AM	Ballroom 3
POSTERS			
Poster Session I- Group A presenting	Jan. 30	5:30 PM - 8:00 PM	Ocean Center
Poster Session II- Group B presenting	Jan. 31	5:00 PM - 7:30 PM	Ocean Center

Oral Presenters

Name	Date	Time	Room	Page Number
		A		
Abdul Jabbar, M.	1-Feb	3:20PM	Ballroom 1-2	62
Abel, J.	30-Jan	11:30AM	Coquina H	21
Abernathy, H.W.	31-Jan	2:00PM	Ballroom 1-2	45
Adepalli, K.	1-Feb	1:30PM	Ballroom 1-2	62
Aepuru, V.	1-Feb	2:20PM	Coquina B	63
Ahmad, S.	30-Jan	3:50PM	Coquina G	25
Ahmad, Z.	30-Jan	4:20PM	Coquina H	29
Ahn, C.	30-Jan	11:20AM	Ponce de Leon	22
Akhbarifar, S.	1-Feb	2:40PM	Coquina C	59
Akhtar, F.	29-Jan	5:20PM	Coquina G	11
Akono, A.	30-Jan	8:30AM	Coquina C	17
Alexander, J.	29-Jan	3:50PM	Coquina D	14
Aliouat, A.	31-Jan	11:30AM	Coquina E	36
Allan, S.M.	31-Jan	4:10PM	Coquina E	45
Almansour, A.S.	1-Feb	2:30PM	Ballroom 4	60
Andersson, A.D.	31-Jan	1:30PM	Ballroom 4	43
Andreu, T.	31-Jan	9:00AM	Coquina B	37
Anelli, S.	30-Jan	4:30PM	Ballroom 1-2	27
Ansell, T.Y.	31-Jan	2:40PM	Coquina A	44
Armstrong, B.L.	29-Jan	4:20PM	Ballroom 5	14
Arregui-Mena, J.D.	30-Jan	9:20AM	Ballroom 4	17
Arregui-Mena, J.D.	31-Jan	4:30PM	Ballroom 4	48
Asghar, M.	30-Jan	3:50PM	Ballroom 1-2	27
Asthana, R.	30-Jan	9:20AM	Coquina F	20
Ayhan, Y.S.	30-Jan	11:20AM	Ballroom 1-2	19
Azure, A.	29-Jan	4:50PM	Coquina C	9
		B		
Backman, L.	29-Jan	3:50PM	Coquina A	11
Badran, A.	31-Jan	4:20PM	Coquina G	42
Bae, K.	30-Jan	3:20PM	Ballroom 1-2	27
Bagci, C.	30-Jan	11:30AM	Coquina C	23
Baggio, A.	31-Jan	11:20AM	Coquina H	39
Balagna, C.	30-Jan	8:30AM	Coquina B	19
Balaya, P.	30-Jan	8:30AM	Coquina D	16
Balaya, P.	30-Jan	2:20PM	Ballroom 5	27
Balazsi, C.	31-Jan	9:40AM	Coquina F	38
Balazsi, K.	29-Jan	4:40PM	Coquina B	16
Ballikaya, S.	1-Feb	9:30AM	Coquina B	56
Balzarotti, R.	1-Feb	1:50PM	Coquina D	63
Ban, C.	29-Jan	3:50PM	Ballroom 5	14
Ban, C.	30-Jan	9:00AM	Coquina D	16
Baranger, E.	29-Jan	2:40PM	Coquina E	12
Baranger, E.	31-Jan	2:00PM	Coquina G	42
Barnett, S.	31-Jan	6:10PM	Ballroom 1-2	46
Barnett, S.	1-Feb	10:50AM	Ballroom 1-2	56
Barron, P.	29-Jan	3:20PM	Ballroom 4	15
Barsoum, M.	31-Jan	1:30PM	Ballroom 3	43
Battistini, A.	30-Jan	2:40PM	Ballroom 4	25
Bausa, L.E.	1-Feb	2:00PM	Coquina H	61
Bavdekar, S.	29-Jan	3:30PM	Ponce de Leon	9
Bawane, K.	29-Jan	1:30PM	Coquina D	8
Bekele, Y.	1-Feb	3:30PM	Ballroom 4	60
Belhadj Larbi, M.	1-Feb	11:20AM	Coquina G	54
Ben Miled, M.	31-Jan	10:50AM	Ballroom 3	41
Benelli, A.	1-Feb	3:40PM	Flagler C	64
Berens, S.	31-Jan	4:10PM	Flagler C	42
Bernardo, E.	31-Jan	9:20AM	Coquina F	38
Bernardo, E.	31-Jan	11:30AM	Coquina C	41
Bernardo, E.	31-Jan	1:30PM	Coquina D	46
Berry, E.	30-Jan	9:00AM	Ballroom 4	16
Bertero, A.	31-Jan	2:10PM	Coquina D	47
Bertrand, M.	30-Jan	4:40PM	Ballroom 5	29
Betke, U.	31-Jan	9:20AM	Coquina D	38
Betke, U.	1-Feb	9:20AM	Coquina H	54
Bhandari, S.	30-Jan	4:20PM	Coquina D	30
Bhandari, S.	31-Jan	9:20AM	Coquina H	34
Bhardwaj, D.	30-Jan	4:40PM	Ballroom 4	31
Bianchi, G.	30-Jan	11:50AM	Coquina H	21
Biasetto, L.	31-Jan	10:20AM	Coquina H	39
Bierschenk, S.	30-Jan	9:00AM	Flagler C	20
Bignozzi, M.C.	31-Jan	8:30AM	Coquina C	34
Binner, J.	30-Jan	9:20AM	Coquina E	18
Binner, J.	30-Jan	2:40PM	Coquina A	26
Birkel, C.	29-Jan	2:00PM	Ballroom 3	11
Birkel, C.	1-Feb	8:30AM	Ballroom 3	54
Blennow, P.	29-Jan	5:20PM	Ballroom 1-2	14
Bodi, A.	1-Feb	4:30PM	Coquina E	65
Bogle, R.	31-Jan	11:00AM	Flagler C	39
Bohanon, R.H.	29-Jan	2:40PM	Ballroom 4	10
Boussebha, H.	31-Jan	4:40PM	Coquina F	49
Bouville, F.	30-Jan	4:30PM	Coquina E	27
Bouville, F.	1-Feb	2:00PM	Ponce de Leon	59
Brandvold, A.S.	30-Jan	3:40PM	Coquina C	29
Braun, J.	31-Jan	9:30AM	Coquina E	36
Brockman, C.	30-Jan	10:50AM	Coquina E	18
Brune, P.	29-Jan	4:20PM	Coquina A	11
Brune, V.	30-Jan	11:10AM	Ballroom 3	23
Budianto, J.P.	31-Jan	2:30PM	Coquina B	46
Bukcu, E.S.	1-Feb	2:20PM	Coquina D	64
Bura, R.	1-Feb	8:40AM	Flagler C	57
Burke, P.	29-Jan	1:30PM	Ballroom 1-2	12
Busa, C.	30-Jan	9:00AM	Coquina G	17
Byun, H.	1-Feb	3:20PM	Flagler A	59
		C		
Cabalo, L.I.	30-Jan	2:40PM	Ponce de Leon	28
Cabot, A.	30-Jan	1:30PM	Coquina B	28
Cabot, A.	30-Jan	2:30PM	Coquina B	28
Cakir, D.	1-Feb	2:20PM	Ballroom 3	61
Calpa, M.	1-Feb	1:30PM	Ballroom 5	63
Camargo, I.	31-Jan	11:00AM	Coquina H	39
Canepa, P.	30-Jan	3:50PM	Ballroom 5	29
Casalegno, V.	31-Jan	2:40PM	Coquina E	45
Casiraghi, C.	31-Jan	11:50AM	Coquina G	35
Castano, V.M.	31-Jan	11:20AM	Coquina G	35
Cerbelaud, M.	31-Jan	11:40AM	Coquina D	38
Çetinkaya, Z.	30-Jan	4:40PM	Coquina F	30
Chaker, M.	29-Jan	2:30PM	Coquina G	10
Champagne, V.	29-Jan	3:20PM	Flagler C	9
Chang, C.	1-Feb	2:00PM	Ballroom 1-2	62
Chang, J.	1-Feb	2:00PM	Coquina B	63
Chaugule, P.S.	1-Feb	2:10PM	Coquina E	62
Chaumat, V.	31-Jan	10:20AM	Ballroom 4	40
Chen, C.	31-Jan	2:40PM	Ponce de Leon	41
Chen, H.	30-Jan	9:30AM	Coquina D	16
Chen, K.	29-Jan	2:00PM	Flagler C	9
Chen, K.	1-Feb	9:30AM	Ballroom 3	54
Chen, Y.	29-Jan	4:20PM	Coquina D	14
Chevalier, J.	1-Feb	4:00PM	Coquina E	65
Chien, R.	1-Feb	4:20PM	Ballroom 5	64
Cho, Y.	30-Jan	11:20AM	Ballroom 5	21
Choi, M.	1-Feb	10:20AM	Ballroom 1-2	56
Chotard, J.	30-Jan	1:30PM	Ballroom 5	27
Choudhary, A.	30-Jan	3:50PM	Ballroom 3	31
Chua, D.	30-Jan	10:50AM	Coquina G	17
Chua, D.	1-Feb	2:40PM	Coquina B	63
Chuirazzi, W.	30-Jan	10:50AM	Ballroom 4	22
Chukwuneke, J.L.	31-Jan	5:00PM	Coquina E	45
Cillessen, D.	29-Jan	4:10PM	Coquina H	13
Cinbiz, M.N.	30-Jan	4:00PM	Ballroom 4	31
Clark, C.	31-Jan	9:30AM	Ballroom 1-2	36
Clemens, F.	30-Jan	10:50AM	Coquina F	23
Colombo, P.	31-Jan	9:00AM	Coquina D	38
Colorado L., H.A.	31-Jan	2:30PM	Coquina C	44
Costa, G.	31-Jan	9:00AM	Flagler C	33
Croy, J.R.	31-Jan	1:30PM	Ballroom 5	46
Cui, B.	29-Jan	1:30PM	Ballroom 4	10
Cui, B.	31-Jan	4:20PM	Coquina F	48
Curtarolo, S.	29-Jan	3:20PM	Coquina A	11

Presenting Author List

Oral Presenters

Name	Date	Time	Room	Page Number
		D		
Da Igreja, H.R.	1-Feb	4:10PM	Ballroom 3	61
Dai, J.	31-Jan	10:50AM	Coquina E	36
Davey, T.	31-Jan	10:20AM	Coquina A	35
De Marzi, A.	31-Jan	4:10PM	Coquina H	47
de Souza, F.L.	31-Jan	11:30AM	Coquina B	37
Debelle, A.	31-Jan	8:30AM	Coquina E	36
DeLellis, D.P.	1-Feb	8:50AM	Coquina D	57
Denk, J.	30-Jan	4:50PM	Coquina G	26
DeSalle, C.	31-Jan	3:20PM	Flagler C	42
Deshpande, V.	31-Jan	3:30PM	Coquina D	47
Deshpande, V.	1-Feb	3:40PM	Coquina G	60
Detwiler, K.	31-Jan	1:30PM	Coquina A	44
Di Fonzo, F.	31-Jan	10:50AM	Ballroom 4	40
Di Fonzo, F.	31-Jan	11:40AM	Ballroom 4	40
Dickerson, M.B.	30-Jan	2:30PM	Ballroom 3	26
DiGiovanni, A.A.	29-Jan	5:10PM	Ponce de Leon	10
Ding, D.	30-Jan	2:30PM	Ballroom 1-2	27
Dixit, M.	1-Feb	10:20AM	Ballroom 5	58
Djire, A.	31-Jan	2:30PM	Ballroom 3	43
Do, T.	31-Jan	2:40PM	Coquina F	47
Dominko, R.	29-Jan	3:20PM	Ballroom 5	14
Dornbusch, D.	1-Feb	9:30AM	Ballroom 5	56
Du, M.	30-Jan	2:20PM	Coquina H	25
Du, Z.	1-Feb	2:40PM	Ballroom 5	63
Dubois, S.	1-Feb	3:30PM	Ballroom 3	61
Dujovic, M.	29-Jan	5:10PM	Coquina D	14
Dujovic, M.	1-Feb	2:50PM	Ballroom 3	61
		E		
Elangovan, S.	29-Jan	4:20PM	Ballroom 1-2	14
Eldridge, J.I.	29-Jan	2:40PM	Flagler C	9
Epifani, M.	30-Jan	10:20AM	Coquina G	17
Estrader, M.	31-Jan	10:40AM	Coquina B	37
		F		
Fahrenholtz, W.	29-Jan	1:30PM	Coquina A	11
Faierson, E.	31-Jan	2:00PM	Coquina A	44
Failla, S.	29-Jan	2:00PM	Coquina F	13
Falgoust, M.	1-Feb	4:00PM	Coquina G	61
Fam, D.	30-Jan	10:50AM	Ballroom 5	21
Fang, Q.	1-Feb	1:30PM	Ballroom 4	60
Faral, M.	31-Jan	2:20PM	Coquina H	43
Fare', S.	29-Jan	3:30PM	Coquina B	16
Faruqe, O.	1-Feb	10:20AM	Ballroom 4	53
Feldhoff, A.	1-Feb	2:00PM	Coquina C	59
Feng, Z.	29-Jan	5:10PM	Coquina F	16
Ferchaud, C.J.	30-Jan	10:30AM	Ballroom 1-2	19
Ferraris, M.	31-Jan	11:20AM	Ballroom 4	40
Fey, T.	31-Jan	2:30PM	Coquina D	47
Fichtner, M.	31-Jan	2:30PM	Ballroom 5	46
Fields, A.	31-Jan	4:00PM	Coquina C	49
Fields, A.	31-Jan	4:20PM	Coquina C	49
Filipovic, S.	29-Jan	2:20PM	Coquina A	11
Finsterbusch, M.	1-Feb	8:30AM	Ballroom 5	21
Fiorilli, S.	29-Jan	1:30PM	Coquina C	8
Fischer, T.	31-Jan	8:30AM	Ballroom 3	35
Fischer, T.	31-Jan	9:50AM	Coquina B	37
Fiume, E.	29-Jan	2:00PM	Coquina H	10
Förster, J.E.	30-Jan	3:50PM	Coquina A	26
Franchin, G.	30-Jan	9:40AM	Coquina H	17
Franchin, G.	30-Jan	4:00PM	Coquina C	29
Fu, Z.	30-Jan	11:20AM	Coquina D	21
Fukuhara, S.	30-Jan	9:00AM	Coquina E	18
Fukushima, M.	31-Jan	4:20PM	Coquina D	49
Funahashi, R.	2-Feb	10:20AM	Coquina C	65
Furlan, K.P.	31-Jan	8:30AM	Coquina D	38
Furuno, H.	30-Jan	3:50PM	Ponce de Leon	30
Furuse, H.	1-Feb	2:30PM	Coquina H	61
Furushima, R.	31-Jan	3:20PM	Coquina G	42

Name	Date	Time	Room	Page Number
		G		
Gabrieli, R.	29-Jan	2:30PM	Coquina B	12
Gaillard, L.	1-Feb	11:30AM	Coquina D	58
Gandini, M.	1-Feb	2:00PM	Ballroom 4	60
Garcia-Diaz, B.L.	29-Jan	4:20PM	Ballroom 4	15
Gasmi, A.	30-Jan	3:20PM	Coquina C	29
Gauthe, M.	31-Jan	9:40AM	Coquina H	34
Gavalda Diaz, O.	29-Jan	3:20PM	Coquina D	14
Gavalda Diaz, O.	31-Jan	11:10AM	Coquina E	36
Ghaffari, K.	31-Jan	3:40PM	Coquina G	42
Ghaffari, K.	31-Jan	4:00PM	Coquina G	42
Gharavi, P.	1-Feb	3:50PM	Ponce de Leon	64
Gharzouni, A.	31-Jan	9:00AM	Coquina C	38
Ghuman, K.K.	2-Feb	8:30AM	Coquina G	66
Giannini, V.	31-Jan	9:00AM	Coquina G	34
Gild, J.	1-Feb	9:00AM	Coquina H	54
Goldsby, J.C.	1-Feb	10:20AM	Coquina C	52
Goller, R.	31-Jan	3:20PM	Coquina E	45
Gomez, S.G.	29-Jan	3:50PM	Coquina H	13
Gowtham, R.	29-Jan	2:50PM	Coquina B	12
Grader, G.	29-Jan	4:10PM	Coquina F	15
Grant, L.O.	31-Jan	11:40AM	Coquina H	39
Graule, T.	30-Jan	4:10PM	Coquina F	30
Grutzik, S.	30-Jan	3:20PM	Coquina E	27
Guenster, J.	29-Jan	4:50PM	Coquina H	13
Guidi, V.	1-Feb	10:20AM	Flagler A	53
Guijosa Garcia, C.Y.	30-Jan	11:20AM	Flagler C	22
Guillon, O.	30-Jan	2:00PM	Ballroom 5	27
Guitton, A.	1-Feb	2:00PM	Ballroom 3	61
Gupta, A.	29-Jan	4:20PM	Coquina E	12
Gupta, S.	29-Jan	2:00PM	Coquina B	12
Gupta, S.	30-Jan	11:20AM	Coquina F	23
Gurlo, A.	30-Jan	1:30PM	Ballroom 3	26
		H		
Hahn, Y.	1-Feb	10:20AM	Coquina B	56
Halbig, M.C.	30-Jan	9:00AM	Coquina F	20
Hampshire, S.	30-Jan	8:30AM	Coquina F	20
Harder, B.J.	30-Jan	2:00PM	Flagler C	24
Harley, J.	31-Jan	2:40PM	Ballroom 4	43
Harrison, S.	30-Jan	3:20PM	Ballroom 4	30
Hayes, H.	1-Feb	11:50AM	Coquina D	58
He, Q.	31-Jan	11:10AM	Coquina F	41
Hemmer, E.	30-Jan	8:30AM	Coquina G	17
Hernandez, E.	2-Feb	9:40AM	Coquina G	66
Heshmati, N.	1-Feb	10:50AM	Coquina B	56
Heshmati, N.	1-Feb	11:10AM	Coquina B	56
Hinks, J.A.	30-Jan	3:40PM	Ballroom 4	30
Hirle, A.	1-Feb	11:20AM	Flagler C	58
Hodges, J.	1-Feb	11:40AM	Coquina C	52
Hofbauer, P.J.	29-Jan	1:30PM	Ponce de Leon	9
Hoffman, L.C.	30-Jan	4:10PM	Flagler C	24
Hoffmann, P..	1-Feb	11:10AM	Coquina D	58
Holgate, C.S.	31-Jan	2:00PM	Flagler C	42
Holley, T.	30-Jan	4:40PM	Ballroom 3	31
Honda, S.	31-Jan	3:50PM	Coquina D	49
Hong, J.	31-Jan	10:30AM	Ballroom 1-2	36
Hossain, S.S.	30-Jan	2:40PM	Coquina C	29
Howe, A.	1-Feb	11:00AM	Coquina H	55
Hu, B.	1-Feb	3:50PM	Ballroom 1-2	63
Hu, C.	1-Feb	1:30PM	Coquina G	60
Huang, K.	30-Jan	11:00AM	Ballroom 1-2	19
Huang, S.	31-Jan	3:20PM	Ballroom 4	48
Humphry-Baker, S.A.	30-Jan	10:20AM	Coquina A	22
		I		
Ibáñez, M.	1-Feb	8:30AM	Coquina B	56
Ibáñez, M.	1-Feb	3:20PM	Coquina C	59
Ignaczak, J.	1-Feb	4:40PM	Ballroom 1-2	63
Iijima, M.	31-Jan	3:20PM	Coquina F	48

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Name	Date	Time	Room	Page Number
Iimura, R.	1-Feb	4:00PM	Ballroom 5	64
Ito, A.	31-Jan	10:20AM	Coquina F	41
Ivanova, M.E.	30-Jan	2:00PM	Ballroom 1-2	27
J				
Jacobsohn, L.G.	1-Feb	11:20AM	Coquina H	55
Jang, H.	31-Jan	1:30PM	Flagler A	41
Jasinski, P.	29-Jan	3:50PM	Ballroom 1-2	14
Jedlinski, J.	29-Jan	1:30PM	Flagler C	9
Jeevarajan, J.	29-Jan	11:20AM	Coquina D/E	8
Jeffs, S.	29-Jan	2:20PM	Coquina E	12
Jenkins, M.G.	29-Jan	1:30PM	Coquina E	11
Jenkins, M.G.	31-Jan	3:50PM	Ballroom 4	48
Jeon, H.	30-Jan	4:10PM	Ponce de Leon	30
Ji, H.	31-Jan	10:50AM	Ballroom 5	40
Ji, S.	31-Jan	11:10AM	Coquina B	37
Ji, W.	30-Jan	3:40PM	Coquina F	30
Joester, D.	1-Feb	8:30AM	Ponce de Leon	52
Johnson, N.	29-Jan	5:10PM	Ballroom 5	14
Jribi, K.	30-Jan	3:50PM	Coquina E	27
Juberi, A.	1-Feb	4:20PM	Ballroom 4	60
Jun, B.	31-Jan	11:40AM	Flagler C	39
Jung, F.	1-Feb	10:20AM	Ballroom 3	54
Jung, F.	2-Feb	11:00AM	Coquina G	66
Jung, Y.	31-Jan	2:30PM	Flagler A	41
K				
Kamoda, K.	30-Jan	1:30PM	Coquina H	25
Kamseu, E.	30-Jan	11:00AM	Coquina C	23
Kamseu, E.	1-Feb	2:40PM	Coquina D	64
Kanazawa, S.	30-Jan	9:50AM	Coquina E	18
Kaplan, A.J.	30-Jan	3:30PM	Coquina A	26
Kata, D.B.	30-Jan	10:20AM	Coquina H	21
Katase, T.	2-Feb	9:00AM	Coquina C	65
Katoh, Y.	29-Jan	4:50PM	Ballroom 4	15
Katsumata, S.	1-Feb	3:20PM	Flagler C	64
Kaufman, J.	30-Jan	2:00PM	Coquina A	26
Kaur, M.	1-Feb	4:20PM	Ponce de Leon	64
Kawaguchi, N.	2-Feb	9:00AM	Coquina H	66
Kebbede, A.	1-Feb	2:30PM	Coquina E	62
Kebbede, A.	1-Feb	2:50PM	Coquina E	62
Kelly, J.	1-Feb	11:40AM	Coquina E	55
Kikuchi, M.	30-Jan	9:40AM	Coquina B	19
Kim, D.	1-Feb	11:20AM	Ballroom 5	58
Kim, H.	31-Jan	2:00PM	Flagler A	41
Kim, H.	1-Feb	9:00AM	Ballroom 5	56
Kim, H.	1-Feb	9:30AM	Coquina C	52
Kim, J.	29-Jan	3:20PM	Ballroom 1-2	14
Kim, J.	31-Jan	11:40AM	Ballroom 5	40
Kim, J.	1-Feb	3:20PM	Ponce de Leon	64
Kim, S.	31-Jan	2:20PM	Flagler C	42
Kim, S.	1-Feb	1:30PM	Flagler A	59
Kim, T.	1-Feb	2:30PM	Flagler A	59
Kim, W.	2-Feb	10:50AM	Coquina C	66
Kim, Y.	30-Jan	1:30PM	Coquina F	28
Kim, Y.	31-Jan	8:30AM	Ballroom 1-2	36
Kim, Y.	1-Feb	9:30AM	Flagler A	53
Kirihara, S.	29-Jan	5:10PM	Coquina H	13
Kisailus, D.	31-Jan	1:30PM	Ponce de Leon	41
Kiyek, V.	31-Jan	4:40PM	Ballroom 5	48
Klein, A.	30-Jan	4:50PM	Coquina E	27
Kobayashi, H.	31-Jan	11:20AM	Ballroom 5	40
Koch, D.	31-Jan	3:50PM	Coquina E	45
Kodaki, S.	1-Feb	3:20PM	Ballroom 5	64
Koester, K.	31-Jan	9:40AM	Ballroom 5	37
Konegger, T.	30-Jan	2:00PM	Ballroom 3	26
Konegger, T.	31-Jan	3:50PM	Coquina F	48
Koshimizu, M.	2-Feb	10:20AM	Coquina H	66
Kosmata, J.	31-Jan	2:20PM	Ballroom 4	43
Kostogiannes, A.	1-Feb	10:40AM	Coquina H	55
Kotrbova, L.	1-Feb	10:20AM	Coquina H	55
Kovnir, K.	1-Feb	3:50PM	Coquina C	59
Kovnir, K.	1-Feb	5:20PM	Coquina H	62
Kowalski, B.	30-Jan	11:00AM	Flagler C	22
Koyanagi, T.	30-Jan	11:40AM	Coquina A	23
Koyanagi, T.	31-Jan	4:10PM	Ballroom 4	48
Krishna, R.	30-Jan	11:10AM	Coquina E	19
Kriven, W.M.	31-Jan	4:40PM	Coquina C	49
Kroll, P.	29-Jan	3:50PM	Ballroom 3	15
Kroll, P.	1-Feb	4:20PM	Coquina G	61
Kubitza, N.	31-Jan	4:10PM	Ballroom 3	43
Kumar, A.	1-Feb	10:50AM	Flagler A	53
Kuroiwa, M.	31-Jan	9:20AM	Ballroom 5	37
Kusnezoff, M.	29-Jan	2:00PM	Ballroom 1-2	12
L				
Laine, R.M.	1-Feb	2:20PM	Ballroom 5	63
Lalk, R.	2-Feb	10:50AM	Coquina H	66
Lallukka, M.	30-Jan	9:20AM	Coquina B	19
Lambrinou, K.	1-Feb	9:00AM	Ballroom 3	54
Lambrinou, K.	1-Feb	11:50AM	Ballroom 3	54
Lambros, J.	29-Jan	3:30PM	Coquina E	12
Lamm, B.W.	30-Jan	4:00PM	Coquina H	29
Lamm, B.W.	31-Jan	9:40AM	Ballroom 4	34
Langhof, N.	1-Feb	4:20PM	Flagler C	64
Langhof, N.	1-Feb	5:10PM	Coquina E	65
LaSalvia, J.	29-Jan	4:50PM	Ponce de Leon	10
Latorre-Suarez, P.C.	29-Jan	4:50PM	Coquina D	14
Lattanzi, L.	31-Jan	11:00AM	Coquina C	40
Le Ferrand, H.	31-Jan	4:30PM	Ponce de Leon	49
Lecointre, L.A.	1-Feb	5:10PM	Flagler C	65
Lecomte-Nana, G.	1-Feb	9:30AM	Coquina D	57
Lee, D.	30-Jan	3:20PM	Ponce de Leon	30
Lee, K.	31-Jan	9:40AM	Flagler C	33
Lee, T.H.	1-Feb	11:20AM	Coquina E	55
Lei, Y.	31-Jan	9:20AM	Ballroom 4	34
Leite, M.	30-Jan	4:20PM	Coquina G	26
Lejeune, A.	1-Feb	9:20AM	Flagler C	57
Leonelli, C.	30-Jan	4:30PM	Coquina C	31
Lepple, M.	29-Jan	1:30PM	Ballroom 3	11
Lepple, M.	31-Jan	8:30AM	Flagler C	33
Leriche, A.L.	30-Jan	3:10PM	Coquina F	29
Li, L.	30-Jan	11:30AM	Coquina E	19
Li, Q.	2-Feb	8:30AM	Coquina C	65
Li, Y.	29-Jan	3:10PM	Coquina C	8
Li, Y.	1-Feb	10:50AM	Ballroom 3	54
Liang, K.	31-Jan	2:00PM	Ballroom 3	43
Lichtenberg, A.	30-Jan	10:20AM	Ballroom 3	23
Lin, S.	31-Jan	3:50PM	Ballroom 5	48
Lis, J.	30-Jan	10:20AM	Coquina F	23
Liu, J.	30-Jan	9:00AM	Ballroom 1-2	19
Liu, J.	31-Jan	2:10PM	Coquina B	46
Liu, X.	30-Jan	9:40AM	Ballroom 1-2	19
Liu, Y.	31-Jan	2:30PM	Coquina G	42
Lizcano, M.	1-Feb	9:00AM	Ballroom 4	53
Lopez Honorato, E.	30-Jan	1:30PM	Ballroom 4	24
Lopez Pernia, C.	30-Jan	2:40PM	Coquina E	26
Louzon, C.J.	31-Jan	10:20AM	Flagler C	39
Luceri, A.	30-Jan	9:00AM	Coquina B	19
Luceri, A.	30-Jan	4:40PM	Coquina D	30
Luckhardt, C.	31-Jan	10:40AM	Flagler C	39
Luo, J.	29-Jan	3:20PM	Coquina F	15
Luo, J.	1-Feb	2:00PM	Coquina G	60
Luo, Y.	30-Jan	2:00PM	Coquina D	24
Luo, Y.	1-Feb	9:30AM	Coquina G	54
Lv, X.	1-Feb	10:40AM	Flagler C	58
M				
Ma, B.	1-Feb	1:50PM	Coquina E	62
MacIsaac, M.P.	29-Jan	3:50PM	Ponce de Leon	9
Madan, D.	1-Feb	11:10AM	Coquina C	52
Maeda, T.	1-Feb	11:00AM	Coquina G	54

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Name	Date	Time	Room	Page Number
Magnuson, M.	31-Jan	3:20PM	Ballroom 3	43
Magnuson, M.	1-Feb	9:00AM	Coquina G	54
Magnusson, A.	29-Jan	4:50PM	Coquina F	16
Magrini, T.	1-Feb	2:30PM	Ponce de Leon	59
Maier, R.	30-Jan	9:00AM	Coquina H	17
Makurunje, P.	30-Jan	2:00PM	Ballroom 4	25
Makurunje, P.	30-Jan	4:10PM	Coquina A	26
Malinverni, C.	31-Jan	2:20PM	Coquina E	45
Malusky, M.	1-Feb	3:50PM	Ballroom 3	61
Mana-ay, H.I.	30-Jan	11:20AM	Coquina G	18
Mariani, M.	30-Jan	10:20AM	Coquina D	21
Mariani, M.	30-Jan	3:40PM	Coquina H	29
Marina, O.A.	31-Jan	1:30PM	Ballroom 1-2	45
Marnot, A.	31-Jan	3:50PM	Coquina H	47
Martinez Sanchez, A.I.	31-Jan	10:50AM	Ponce de Leon	40
Martucci, A.	31-Jan	8:30AM	Coquina G	34
Martucci, A.	1-Feb	2:00PM	Flagler A	59
Mascher, P.	30-Jan	2:30PM	Coquina G	25
Masi, G.	30-Jan	2:20PM	Coquina C	28
Mastropasqua, L.	1-Feb	11:20AM	Ballroom 1-2	56
Mathur, S.	29-Jan	5:00PM	Ballroom 3	15
Matthey, B.	29-Jan	2:50PM	Ponce de Leon	9
McCormack, S.J.	31-Jan	8:30AM	Coquina A	35
McDarby, S.P.	1-Feb	11:40AM	Ballroom 4	53
McIlwaine, N.S.	30-Jan	9:30AM	Coquina A	18
Mechnich, P.	31-Jan	4:30PM	Flagler C	42
Medri, V.	31-Jan	1:30PM	Coquina C	44
Mena Garcia, J.	31-Jan	2:00PM	Coquina F	46
Menghani, J.	1-Feb	9:00AM	Flagler C	57
Meynard, J.	1-Feb	3:20PM	Coquina G	60
Mhin, S.	30-Jan	9:30AM	Ponce de Leon	20
Michaelis, A.	29-Jan	3:50PM	Coquina C	8
Midouni, A.	1-Feb	3:40PM	Ballroom 5	64
Mika, V.	30-Jan	10:40AM	Flagler C	22
Milich, M.	29-Jan	4:40PM	Coquina A	11
Milojkovic, A.	1-Feb	9:40AM	Coquina H	55
Minary, M.	29-Jan	1:30PM	Coquina H	10
Mirza, F.	29-Jan	5:00PM	Coquina E	12
Mittan, S.	31-Jan	2:00PM	Coquina C	44
Mo, S.	1-Feb	4:50PM	Coquina C	59
Moewes, A.	29-Jan	2:30PM	Ballroom 3	11
Mohammadi, F.	1-Feb	9:20AM	Coquina E	55
Mohammed, A.	1-Feb	3:30PM	Coquina E	65
Mohammed, A.	1-Feb	4:00PM	Coquina B	65
Mokhtari, P.	30-Jan	9:30AM	Coquina C	17
Molin, S.	1-Feb	2:20PM	Ballroom 1-2	62
Montecillo, R.H.	1-Feb	4:40PM	Ballroom 5	64
Moore, T.W.	29-Jan	4:30PM	Ponce de Leon	9
Morata, A.	30-Jan	2:00PM	Coquina B	28
Morata, A.	31-Jan	11:00AM	Ballroom 1-2	36
Moretti, E.	29-Jan	4:50PM	Coquina G	11
Moritz, T.	31-Jan	1:30PM	Coquina H	43
Mougin, J.	31-Jan	3:30PM	Ballroom 1-2	45
Moussaoui, H.	29-Jan	4:50PM	Ballroom 1-2	14
Mujib, S.	29-Jan	4:10PM	Ballroom 3	15
N				
Naccache, R.	29-Jan	3:50PM	Coquina G	10
Nair, J.R.	30-Jan	8:30AM	Ballroom 3	18
Nakamura, T.	31-Jan	2:00PM	Ballroom 5	46
Nakashima, Y.	30-Jan	3:20PM	Coquina D	30
Nakashima, Y.	1-Feb	4:00PM	Flagler C	64
Nakayama, T.	30-Jan	10:50AM	Ponce de Leon	22
Naleway, S.E.	31-Jan	4:00PM	Ponce de Leon	49
Naraparaju, R.	31-Jan	1:30PM	Flagler C	42
Narayan, R.	30-Jan	2:00PM	Coquina G	25
Narayanan, B.	31-Jan	8:30AM	Ballroom 5	37
Narita, A.	1-Feb	2:00PM	Ballroom 5	63
Naughton Duszova, A.	29-Jan	2:00PM	Coquina A	11
Ncho, W.	30-Jan	2:00PM	Coquina C	28
Nemani, S.	31-Jan	3:50PM	Ballroom 3	43
Ngige, G.	1-Feb	4:30PM	Ballroom 3	61
Ngo, M.	1-Feb	10:20AM	Coquina G	54
Nguyen, S.	31-Jan	9:40AM	Ponce de Leon	38
Niakolas, D.K.	1-Feb	8:30AM	Ballroom 1-2	55
Nnakwo, K.C.	31-Jan	4:40PM	Coquina E	45
Nojeh, A.	1-Feb	9:00AM	Coquina C	52
Nozariasbmarz, A.	2-Feb	11:20AM	Coquina C	66
O				
O'Quinn, E.	30-Jan	10:20AM	Ballroom 4	22
Ogihara, S.	1-Feb	4:40PM	Flagler C	65
Ohji, T.	1-Feb	2:30PM	Coquina G	60
Ohta, I.	31-Jan	10:30AM	Coquina E	36
Ohtaki, M.	1-Feb	2:20PM	Coquina C	59
Okawa, A.	30-Jan	9:00AM	Ponce de Leon	20
Olson, R.A.	31-Jan	11:10AM	Coquina D	38
Ong, F.	29-Jan	3:50PM	Coquina F	15
Onose, T.	30-Jan	11:40AM	Ponce de Leon	22
Opila, E.	30-Jan	10:20AM	Flagler C	22
Orgiu, E.	31-Jan	10:50AM	Coquina G	35
Orikasa, Y.	31-Jan	3:20PM	Ballroom 5	47
Ortona, A.	29-Jan	2:00PM	Ponce de Leon	9
Ortona, A.	31-Jan	3:20PM	Coquina H	47
Osaka, A.	30-Jan	10:20AM	Coquina B	23
Osborne, R.	1-Feb	4:20PM	Coquina H	62
Osborne, R.	1-Feb	5:00PM	Coquina H	62
Oshima, S.	1-Feb	2:30PM	Flagler C	60
Ouyang, B.	1-Feb	10:50AM	Ballroom 5	58
Ozaki, S.	1-Feb	10:40AM	Coquina G	54
Ozaki, T.	30-Jan	9:40AM	Coquina F	20
Ozer, A.	31-Jan	10:20AM	Coquina C	40
P				
Paddock, R.A.	1-Feb	2:50PM	Ballroom 4	60
Pamula, E.	29-Jan	10:40AM	Coquina D/E	8
Park, C.	1-Feb	8:30AM	Ballroom 4	53
Patel, P.B.	31-Jan	4:10PM	Coquina A	44
Paul, J.	31-Jan	3:40PM	Coquina C	49
Pein, M.	30-Jan	10:40AM	Ballroom 3	23
Pelanconi, M.	30-Jan	3:20PM	Coquina H	29
Penner, D.	31-Jan	8:30AM	Coquina H	34
Perween, S.	30-Jan	9:30AM	Ballroom 3	18
Perween, S.	31-Jan	1:30PM	Coquina B	46
Peters, A.B.	30-Jan	1:30PM	Coquina A	26
Piat, R.	1-Feb	8:30AM	Coquina G	53
Pinna, N.	29-Jan	2:00PM	Coquina G	10
Pinna, N.	31-Jan	3:50PM	Flagler A	41
Polo, F.	29-Jan	4:20PM	Coquina G	10
Polo, F.	1-Feb	11:10AM	Flagler A	53
Ponder, J.	30-Jan	11:50AM	Coquina F	24
Popovic-Neuber, J.	29-Jan	2:00PM	Ballroom 5	13
Posey, N.D.	30-Jan	4:20PM	Ballroom 3	31
Pralong, V.	31-Jan	9:00AM	Ballroom 5	37
Priese, A.	1-Feb	9:00AM	Ballroom 1-2	55
Prikhna, T.	30-Jan	9:40AM	Flagler C	20
Prikhna, T.	31-Jan	11:50AM	Coquina E	36
Prikhna, T.	1-Feb	4:50PM	Ballroom 3	61
Pryds, N.	1-Feb	1:30PM	Coquina C	59
Q				
QI, X.	1-Feb	3:30PM	Coquina B	65
Qin, Z.	31-Jan	3:30PM	Ponce de Leon	49
Quiney, Z.	29-Jan	4:40PM	Coquina E	12
Quinn, G.D.	30-Jan	8:30AM	Coquina H	17
Quinn, G.D.	30-Jan	1:30PM	Coquina E	26
Quinn, L.	30-Jan	10:50AM	Coquina B	23
Quinn, L.	1-Feb	10:10AM	Coquina D	57

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Name	Date	Time	Room	Page Number
		R		
Raghavan, K.C.	1-Feb	8:30AM	Coquina E	55
Rahman, M.	29-Jan	4:30PM	Coquina H	13
Ramanujam, P.	29-Jan	5:30PM	Coquina D	15
Ramirez, M.	1-Feb	3:50PM	Coquina H	62
Ranaiefar, M.	31-Jan	10:40AM	Coquina H	39
Ranganathan, S.	1-Feb	4:40PM	Ballroom 4	60
Rath, M.	31-Jan	4:00PM	Ballroom 1-2	45
Reed, N.	31-Jan	4:50PM	Coquina H	47
Reigel, M.	29-Jan	4:20PM	Coquina C	8
Reimanis, I.	31-Jan	8:30AM	Coquina F	37
Reiter, B.	31-Jan	5:20PM	Ballroom 1-2	45
Richter, S.	1-Feb	11:00AM	Flagler C	58
Ricote, S.	30-Jan	1:30PM	Ballroom 1-2	27
Riedl, H.	31-Jan	3:20PM	Coquina A	44
Riffe, W.	31-Jan	4:30PM	Coquina A	44
Rohde, M.	30-Jan	4:20PM	Ballroom 5	29
Rudzik, T.	1-Feb	4:40PM	Coquina H	62
Rufner, J.	29-Jan	2:20PM	Coquina F	13
Ruggles-Wrenn, M.	30-Jan	8:30AM	Coquina E	18
Rüscher, C.	30-Jan	1:30PM	Coquina C	25
Rüßmann, M.	30-Jan	9:20AM	Flagler C	20
		S		
Sa Ribeiro, R.A.	30-Jan	10:20AM	Coquina C	17
Sabato, A.	30-Jan	11:40AM	Ballroom 5	21
Sabato, A.	31-Jan	9:00AM	Ballroom 1-2	36
Saffirio, S.	30-Jan	11:40AM	Coquina D	21
Saffirio, S.	1-Feb	11:40AM	Ballroom 5	58
Saha, P.C.	1-Feb	11:00AM	Ballroom 4	53
Saini, R.	29-Jan	2:20PM	Ballroom 4	10
Sajgalik, P.	29-Jan	1:30PM	Coquina F	13
Sakai, T.	1-Feb	2:00PM	Flagler C	60
Salameh, C.	30-Jan	3:20PM	Ballroom 3	31
Salazar Alvarez, G.	31-Jan	8:30AM	Coquina B	37
Salem, J.	30-Jan	2:00PM	Coquina E	26
Samuel, D.	30-Jan	9:00AM	Coquina C	17
Samuel, D.	30-Jan	10:40AM	Coquina C	23
Sandhage, K.	1-Feb	10:20AM	Coquina E	55
Sänger, J.C.	29-Jan	2:40PM	Coquina H	10
Sänger, J.C.	29-Jan	5:30PM	Coquina H	13
Sanson, A.	30-Jan	4:10PM	Ballroom 1-2	27
Santarelli, M.	29-Jan	2:30PM	Ballroom 1-2	12
Santato, C.	29-Jan	1:30PM	Coquina G	10
Santiago, D.	1-Feb	3:50PM	Ballroom 4	60
Sarner, S.	31-Jan	9:50AM	Ballroom 1-2	36
Sarrafi-Nour, R.	30-Jan	1:30PM	Flagler C	24
Sato, F.	31-Jan	4:20PM	Ballroom 5	48
Sattar, S.	30-Jan	4:10PM	Coquina E	27
Sauchuk, V.	31-Jan	2:50PM	Ballroom 1-2	45
Sawada, T.	30-Jan	2:20PM	Coquina E	26
Schäfer, L.	30-Jan	4:50PM	Ballroom 1-2	27
Schafföner, S.	31-Jan	9:00AM	Coquina E	36
Schafföner, S.	1-Feb	9:40AM	Ballroom 1-2	56
Schauperl, R.	31-Jan	5:50PM	Ballroom 1-2	46
Schneller, A.	31-Jan	1:30PM	Coquina E	44
Schonfeld, H.B.	31-Jan	9:20AM	Coquina A	35
Schubert, N.H.	30-Jan	2:00PM	Coquina H	25
Schüppel, D.K.	31-Jan	2:00PM	Coquina E	45
Schwentenwein, M.	29-Jan	2:20PM	Coquina H	10
Sciti, D.	31-Jan	9:00AM	Coquina A	35
Seo, D.	31-Jan	10:20AM	Ballroom 5	40
Setlur, A.	31-Jan	9:20AM	Flagler C	33
Seznec, V.	29-Jan	2:30PM	Ballroom 5	13
Shafiq, M.	1-Feb	9:30AM	Ballroom 4	53
Shan, X.	30-Jan	9:00AM	Ballroom 5	19
Sharma, V.	31-Jan	2:00PM	Coquina H	43
Shen, Z.	30-Jan	4:30PM	Ponce de Leon	30
Shi, Y.	31-Jan	10:50AM	Coquina F	41
Shiang, J.	1-Feb	1:30PM	Coquina E	62
Shifa, T.A.	31-Jan	9:30AM	Coquina G	34
Shimamura, K.	29-Jan	9:30AM	Coquina D/E	8
Shimanoe, K.	1-Feb	9:00AM	Flagler A	53
Shin, S.	30-Jan	10:50AM	Coquina D	21
Shin, S.	2-Feb	11:50AM	Coquina C	66
Shiomi, T.	31-Jan	4:30PM	Ballroom 1-2	45
Shiratori, D.	2-Feb	8:30AM	Coquina H	66
Shirvan, K.	31-Jan	8:30AM	Ballroom 4	34
Shiskin, A.	1-Feb	1:30PM	Coquina D	63
Shivakumar, S.	1-Feb	9:40AM	Coquina E	55
Siaj, M.	30-Jan	1:30PM	Coquina G	25
Simon, S.	31-Jan	1:50PM	Coquina D	46
Singh, D.	1-Feb	10:50AM	Coquina E	55
Singh, G.	30-Jan	9:00AM	Ballroom 3	18
Singh, G.	31-Jan	2:00PM	Ballroom 4	43
Slama, M.	31-Jan	2:50PM	Coquina D	47
Smeacetto, F.	1-Feb	2:40PM	Ballroom 1-2	62
Smith, J.	2-Feb	11:10AM	Coquina H	66
Smith, S.M.	29-Jan	2:40PM	Coquina A	11
Smith, S.M.	31-Jan	9:40AM	Coquina A	35
Snarr, P.	30-Jan	4:40PM	Coquina H	29
Snead, L.	30-Jan	9:40AM	Ballroom 4	17
Snyder, J.	1-Feb	8:30AM	Coquina C	52
So, Y.	31-Jan	9:20AM	Ponce de Leon	38
Sobczak, N.	31-Jan	4:40PM	Coquina D	49
Sodisetty, V.	29-Jan	5:20PM	Coquina E	12
Sotiriou, G.	31-Jan	3:20PM	Coquina B	48
Spicer, J.B.	1-Feb	11:40AM	Flagler C	58
Spirrett, F.	29-Jan	3:20PM	Coquina H	13
Sprouster, D.	30-Jan	4:20PM	Ballroom 4	31
Sreelakshmi, A.	30-Jan	9:20AM	Ballroom 1-2	19
Srivastava, A.	1-Feb	1:30PM	Ballroom 3	61
Stack, P.	31-Jan	2:40PM	Flagler C	42
Stainer, F.	30-Jan	2:40PM	Ballroom 5	27
Stein, Z.	31-Jan	3:50PM	Flagler C	42
Steiner, M.A.	31-Jan	9:00AM	Ballroom 3	35
Stern, C.	29-Jan	4:30PM	Coquina F	15
Stokes, J.L.	29-Jan	2:30PM	Coquina D	8
Stotts, J.C.	30-Jan	11:20AM	Coquina A	23
Subhash, G.	29-Jan	8:50AM	Coquina D/E	8
Sudandaradoss, M.V.	31-Jan	5:00PM	Coquina F	49
Sudo, Y.	1-Feb	10:20AM	Flagler C	58
Suematsu, H.	31-Jan	8:50AM	Ponce de Leon	38
Suematsu, H.	31-Jan	2:20PM	Coquina F	47
Sumant, A.	30-Jan	10:20AM	Ponce de Leon	22
Sun, L.	30-Jan	1:30PM	Coquina D	24
Sung, Y.	31-Jan	1:50PM	Coquina B	46
Suyama, S.	31-Jan	9:00AM	Ballroom 4	34
Suzuki, M.	1-Feb	1:30PM	Ponce de Leon	58
Suzuki, T.S.	30-Jan	2:00PM	Coquina F	28
Suzuki, T.S.	1-Feb	8:30AM	Coquina H	54
Svintsitski, R.	30-Jan	10:50AM	Coquina H	21
		T		
Takaki, T.	2-Feb	9:00AM	Coquina G	66
Takemura, H.	30-Jan	9:20AM	Coquina H	17
Tamayo, A.	29-Jan	4:30PM	Ballroom 3	15
Tameni, G.	31-Jan	10:40AM	Coquina C	40
Tanaka, S.	31-Jan	1:30PM	Coquina F	46
Tang, Y.	29-Jan	4:10PM	Ponce de Leon	9
Tangsuwanjinda, S.	30-Jan	3:50PM	Coquina B	28
Tao, J.	1-Feb	9:00AM	Ponce de Leon	52
Tatami, J.	30-Jan	1:50PM	Ponce de Leon	28
Tatami, J.	1-Feb	9:20AM	Ballroom 1-2	56
Teng, H.	30-Jan	9:30AM	Ballroom 5	20
Thukral, A.	30-Jan	2:20PM	Coquina D	24
Tian, Z.	1-Feb	10:40AM	Ballroom 4	53
Tian, Z.	1-Feb	4:20PM	Coquina C	59
Tiernan, E.	31-Jan	11:20AM	Flagler C	39
Toda, K.	1-Feb	1:30PM	Coquina H	61
Tokoro, C.	29-Jan	2:10PM	Coquina C	8
Toprak, M.S.	31-Jan	3:50PM	Coquina B	48

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Name	Date	Time	Room	Page Number
Toprak, M.S.	1-Feb	9:00AM	Coquina B	56
Trindade, A.C.	31-Jan	9:30AM	Coquina C	39
Tuchfeld, Z.J.	31-Jan	2:40PM	Coquina H	44
U				
Ueda, M.	1-Feb	1:30PM	Flagler C	59
Ueda, T.	1-Feb	8:30AM	Flagler A	53
V				
Vailonis, K.	1-Feb	11:20AM	Ballroom 4	53
Varghese, O.K.	30-Jan	3:20PM	Coquina G	25
Varghese, O.K.	31-Jan	4:20PM	Flagler A	42
Veith, G.	29-Jan	1:30PM	Ballroom 5	13
Vetrone, F.	29-Jan	3:20PM	Coquina G	10
Vignoles, G.L.	29-Jan	4:00PM	Coquina E	12
Vignoles, G.L.	31-Jan	9:00AM	Coquina F	37
Vignoles, G.L.	2-Feb	10:30AM	Coquina G	66
Vinci, A.	30-Jan	10:50AM	Coquina A	22
Virtudazo, R.V.	31-Jan	10:20AM	Ponce de Leon	40
Vozar, A.	30-Jan	2:20PM	Flagler C	24
W				
Wachsman, E.D.	30-Jan	8:30AM	Ballroom 1-2	19
Wade-Zhu, J.	29-Jan	3:50PM	Ballroom 4	15
Wan, J.	30-Jan	2:40PM	Flagler C	24
Wang, C.	29-Jan	4:50PM	Ballroom 5	14
Wang, J.	31-Jan	9:50AM	Coquina E	36
Wang, J.	31-Jan	1:30PM	Coquina G	42
Wang, J.	2-Feb	9:20AM	Coquina G	66
Wang, K.	29-Jan	2:00PM	Ballroom 4	10
Wang, K.	31-Jan	10:50AM	Coquina A	35
Wang, Y.	29-Jan	2:20PM	Flagler C	9
Wang, Y.	29-Jan	4:20PM	Coquina B	16
Wang, Y.	30-Jan	8:40AM	Flagler C	20
Weatherstone, C.	30-Jan	11:10AM	Coquina H	21
Webster, R.I.	30-Jan	3:50PM	Flagler C	24
Wei, J.	1-Feb	9:00AM	Coquina E	55
Weichelt, M.	31-Jan	9:40AM	Coquina D	38
Weidenkaff, A.	31-Jan	10:20AM	Ballroom 3	41
Weinberger, C.R.	30-Jan	9:00AM	Coquina A	18
Westin, G.	29-Jan	3:20PM	Ballroom 3	15
Westin, G.	31-Jan	10:20AM	Coquina G	35
White, E.	30-Jan	2:20PM	Ballroom 4	25
Wilkening, M.	30-Jan	10:20AM	Ballroom 5	21
Witharamage, C.S.	30-Jan	4:30PM	Flagler C	24
Witulski, B.	31-Jan	9:30AM	Coquina B	37
Wolf, S.E.	1-Feb	9:30AM	Ponce de Leon	52
Wolfe, D.E.	30-Jan	8:30AM	Coquina A	18
Wu, W.	30-Jan	10:30AM	Coquina E	18
Wu, Z.	1-Feb	9:10AM	Coquina D	57
X				
Xing, C.	30-Jan	3:20PM	Coquina B	28
Xu, P.	30-Jan	11:40AM	Ballroom 4	22
Y				
Yager, R.A.	1-Feb	8:30AM	Coquina D	57
Yamaguchi, S.	30-Jan	2:40PM	Coquina D	24
Yamamoto, K.	30-Jan	3:20PM	Ballroom 5	29
Yanagida, T.	2-Feb	9:30AM	Coquina H	66
Yang, S.	29-Jan	4:00PM	Coquina B	16
Yang, Y.	30-Jan	2:30PM	Coquina F	28
Yasuhara, R.	1-Feb	3:20PM	Coquina H	61
Yasui, S.	2-Feb	9:30AM	Coquina C	65
Yonkauske, J.J.	1-Feb	4:50PM	Coquina E	65
Yoon, J.	31-Jan	3:20PM	Flagler A	41
Yu, K.	1-Feb	9:40AM	Flagler C	57
Yuan, G.	30-Jan	11:20AM	Ballroom 4	22
Yuan, J.	1-Feb	1:30PM	Coquina B	63
Yucel, O.	30-Jan	2:20PM	Ponce de Leon	28
Yucel, O.	31-Jan	9:00AM	Coquina H	34
Yun, H.	29-Jan	1:30PM	Coquina B	12
Z				
Zamudio Garcia, J.	31-Jan	2:30PM	Ballroom 1-2	45
Zanchi, E.	30-Jan	5:00PM	Coquina D	30
Zanchi, E.	1-Feb	4:20PM	Ballroom 1-2	63
Zare, A.	29-Jan	2:30PM	Ponce de Leon	9
Zebarjadi, M.	1-Feb	10:50AM	Coquina C	52
Zettsu, N.	30-Jan	8:30AM	Ballroom 5	19
Zhai, W.	31-Jan	10:40AM	Coquina D	38
Zhai, W.	1-Feb	10:50AM	Ponce de Leon	57
Zhang, J.	30-Jan	3:20PM	Flagler C	24
Zhang, J.	31-Jan	10:20AM	Coquina D	38
Zhang, Q.	29-Jan	2:00PM	Coquina D	8
Zhang, Y.	30-Jan	8:30AM	Ballroom 4	16
Zhao, L.	29-Jan	3:40PM	Flagler C	9
Zhou, Y.	29-Jan	2:00PM	Coquina E	11
Zhou, Y.	31-Jan	2:20PM	Coquina A	44
Zhou, Y.	31-Jan	3:50PM	Coquina A	44
Zhukova, I.	31-Jan	11:10AM	Coquina A	35
Zocca, A.	31-Jan	4:30PM	Coquina H	47
Zou, Y.	30-Jan	2:20PM	Coquina A	26
Zou, Z.	1-Feb	10:20AM	Ponce de Leon	57
Zubko, Y.	31-Jan	3:20PM	Coquina C	49

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Name	Date	Time	Room	Page Number
A				
Alharbi, Y.	30-Jan	5:30PM	Ocean Center	32
Alves, P.F.	30-Jan	5:30PM	Ocean Center	31
Anelli, S.	31-Jan	5:00PM	Ocean Center	50
Ansell, T.Y.	31-Jan	5:00PM	Ocean Center	51
Arugay, I.B.	30-Jan	5:30PM	Ocean Center	33
B				
Baranwal, R.	31-Jan	5:00PM	Ocean Center	52
Bender, S.	31-Jan	5:00PM	Ocean Center	51
Bhandari, S.	31-Jan	5:00PM	Ocean Center	50
C				
Chen, C.	30-Jan	5:30PM	Ocean Center	32
Chen, H.	31-Jan	5:00PM	Ocean Center	50
Chen, P.	31-Jan	5:00PM	Ocean Center	51
Cho, Y.	30-Jan	5:30PM	Ocean Center	32
Chodisetti, S.	30-Jan	5:30PM	Ocean Center	32
Choi, J.	31-Jan	5:00PM	Ocean Center	50
D				
Dey, S.	30-Jan	5:30PM	Ocean Center	33
Dujovic, M.	31-Jan	5:00PM	Ocean Center	51

Poster Presenters

Name	Date	Time	Room	Page Number
F				
Ferraris, M.	31-Jan	5:00PM	Ocean Center	50
Foschini, C.R.	30-Jan	5:30PM	Ocean Center	32
G				
Gabrieli, R.	30-Jan	5:30PM	Ocean Center	32
Garcia, C.	30-Jan	5:30PM	Ocean Center	32
Gasmi, A.	31-Jan	5:00PM	Ocean Center	51
Gómez-Cano, D.	30-Jan	5:30PM	Ocean Center	33
Grinfeld, M.N.	31-Jan	5:00PM	Ocean Center	51
H				
Hendrickson, H.	31-Jan	5:00PM	Ocean Center	50
Hernandez, C.	31-Jan	5:00PM	Ocean Center	52
Higashi, R.	30-Jan	5:30PM	Ocean Center	32
Hossain, S.S.	31-Jan	5:00PM	Ocean Center	51
I				
Ijiri, M.	31-Jan	5:00PM	Ocean Center	52
Izumi, K.	30-Jan	5:30PM	Ocean Center	31
J				
Jabile, L.	31-Jan	5:00PM	Ocean Center	50
Jang, S.	30-Jan	5:30PM	Ocean Center	32
Jenkins, M.G.	30-Jan	5:30PM	Ocean Center	31
Jeon, H.	30-Jan	5:30PM	Ocean Center	32
Jones, K.V.	30-Jan	5:30PM	Ocean Center	32
Jung, F.	30-Jan	5:30PM	Ocean Center	32
Jung, F.	31-Jan	5:00PM	Ocean Center	51
Jung, J.	30-Jan	5:30PM	Ocean Center	32
K				
Kim, A.M.	31-Jan	5:00PM	Ocean Center	51
Kim, H.	31-Jan	5:00PM	Ocean Center	50
Kim, S.	30-Jan	5:30PM	Ocean Center	33
King, J.P.	31-Jan	5:00PM	Ocean Center	51
Kobayashi, S.	31-Jan	5:00PM	Ocean Center	51
Koch, D.	30-Jan	5:30PM	Ocean Center	32
Kolanthai, E.	30-Jan	5:30PM	Ocean Center	31
Koo, B.	30-Jan	5:30PM	Ocean Center	31
Koshimizu, M.	31-Jan	5:00PM	Ocean Center	51
L				
Lawrence, H.	31-Jan	5:00PM	Ocean Center	50
Lecomte-Nana, G.	30-Jan	5:30PM	Ocean Center	33
Lichtenberg, A.	30-Jan	5:30PM	Ocean Center	33
M				
Marquez Rios, N.O.	31-Jan	5:00PM	Ocean Center	51
Medri, V.	30-Jan	5:30PM	Ocean Center	33
Medri, V.	31-Jan	5:00PM	Ocean Center	51
Mittal, A.	30-Jan	5:30PM	Ocean Center	33
Mondal, P.	31-Jan	5:00PM	Ocean Center	50
Muccillo, R.	31-Jan	5:00PM	Ocean Center	51
Mujib, S.	30-Jan	5:30PM	Ocean Center	33
Muly, K.	30-Jan	5:30PM	Ocean Center	32
N				
Nakazawa, A.	30-Jan	5:30PM	Ocean Center	32
Nemani, S.	31-Jan	5:00PM	Ocean Center	51
Nick, R.M.	31-Jan	5:00PM	Ocean Center	51
O				
Ogihara, S.	31-Jan	5:00PM	Ocean Center	51
Oh, Y.	31-Jan	5:00PM	Ocean Center	50
Osada, T.	31-Jan	5:00PM	Ocean Center	51
Oshima, S.	31-Jan	5:00PM	Ocean Center	52
Ozer, A.	30-Jan	5:30PM	Ocean Center	33
P				
Park, C.	31-Jan	5:00PM	Ocean Center	50
Park, S.	30-Jan	5:30PM	Ocean Center	33
R				
Restrepo Arcila, S.M.	30-Jan	5:30PM	Ocean Center	33
Rohde, M.	30-Jan	5:30PM	Ocean Center	32
Rosner, R.	31-Jan	5:00PM	Ocean Center	50
S				
Sabato, A.	31-Jan	5:00PM	Ocean Center	50
Saffirio, S.	31-Jan	5:00PM	Ocean Center	50
Sakaguchi, M.	31-Jan	5:00PM	Ocean Center	51, 52
Sanket, K.	30-Jan	5:30PM	Ocean Center	32
Schüppel, D.K.	30-Jan	5:30PM	Ocean Center	31
Seubert, D.	31-Jan	5:00PM	Ocean Center	50
Silva, D.G.	31-Jan	5:00PM	Ocean Center	50
Singh, B.	31-Jan	5:00PM	Ocean Center	50
Singh, G.	30-Jan	5:30PM	Ocean Center	33
Singh, Y.	30-Jan	5:30PM	Ocean Center	32
So, Y.	30-Jan	5:30PM	Ocean Center	32
Stainer, F.	30-Jan	5:30PM	Ocean Center	32
Steiner, M.A.	31-Jan	5:00PM	Ocean Center	50
T				
Tu, C.	30-Jan	5:30PM	Ocean Center	32
W				
White, E.	30-Jan	5:30PM	Ocean Center	33
Witulski, B.	30-Jan	5:30PM	Ocean Center	33
Wojewoda-Budka, J.	31-Jan	5:00PM	Ocean Center	50
Wyckoff, C.	31-Jan	5:00PM	Ocean Center	51
X				
Xie, B.	31-Jan	5:00PM	Ocean Center	52
Y				
Yigiter, I.	31-Jan	5:00PM	Ocean Center	50
Z				
Zanchi, E.	31-Jan	5:00PM	Ocean Center	50

Monday, January 29, 2024

Plenary Session

Plenary Session

Room: Coquina D/E

Session Chairs: Young-Wook Kim, University of Seoul; Jie Zhang, Institute of Metal Research, Chinese Academy of Sciences

8:30 AM

Opening Remarks and 2023 Best Paper Awards

8:50 AM

(ICACC-PLEN-001-2024) James I. Mueller Memorial Award: Better Properties Do Not Always Yield Better Performance: Mechanism-Based ApproachFor Understanding the Impact Behavior of Ceramics

G. Subhash*[1]

1. University of Florida, Mechanical and Aerospace Engineering, USA

9:30 AM

(ICACC-PLEN-002-2024) ECD Bridge Building Award: Novel single crystals for electro-optical applications

K. Shimamura*[1]

1. National Institute for Materials Science, Japan

10:10 AM

Break

10:40 AM

(ICACC-PLEN-003-2024) Plenary: Multifunctional ceramic, polymer and composite biomaterials for bone tissue regeneration and treatment

E. Pamula*[1]

1. AGH University of Science and Technology, Department of Biomaterials and Composites, Poland

11:20 AM

(ICACC-PLEN-004-2024) Plenary: Materials and Designs to Mitigate Thermal Runaway Propagation in Lithium-ion Cell and Battery Shipments

J. Jeevarajan*[1]

1. UL Resarch Institutes, Electrochemical Safety Research Institute (ESRI), USA

13th Global Young Investigator Forum

13th Global Young Investigator Forum: Microstructure, thermo-mechanical properties

Room: Coquina D

Session Chairs: Meelad Ranaiefar, NASA Glenn Research Center; Yan Chen, Oak Ridge National Lab

1:30 PM

(ICACC-GYIF-001-2024) Irradiation, nanomechanical and thermal performance of high entropy carbides for nuclear applications (Invited)

K. Bawane*[1]; L. Trinh[3]; Z. Hua[1]; L. Wadle[3]; L. Malakkal[1]; L. He[2]; B. Cui[3]

1. Idaho National Laboratory, USA
2. North Carolina State University, Nuclear Engineering, USA
3. University of Nebraska–Lincoln, Mechanical & Materials Engineering, USA

2:00 PM

(ICACC-GYIF-002-2024) Irradiation-induced dimensional and stress changes in carbon coatings of TRISO fuel particles (Invited)

Q. Zhang*[1]; H. Huang[1]; J. McGladdery[2]; N. Tzelepi[2]; D. Goddard[3]; S. Knol[4]; J. A. Vreeling[4]; M. Davies[5]; D. Liu[6]

1. University of Bristol, School of Physics, United Kingdom
2. National Nuclear Laboratory, Central Laboratory, United Kingdom
3. National Nuclear Laboratory, Preston Laboratory, United Kingdom
4. NRG, Netherlands
5. Ultra Safe Nuclear Corporation, USA
6. University of Bristol, United Kingdom

2:30 PM

(ICACC-GYIF-003-2024) Thermochemical and microstructural contributions of high temperature particle erosion durability in CMAS exposed EBCs (Invited)

J. L. Stokes*[1]; M. J. Presby[2]; L. C. Hoffman[3]; J. A. Setlock[1]; B. J. Harder[2]

1. University of Toledo, Environmental Effects and Coatings Branch, USA
2. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
3. HX5, LLC, Environmental Effects & Coatings, USA

3:00 PM

Break

Special Focused Session on Diversity Entrepreneurship and Commercialization

Special Focused Session on Diversity, Entrepreneurship, and Commercialization

Room: Coquina C

Session Chairs: Surojit Gupta, University of North Dakota; Valerie Wiesner, NASA Langley Research Center

1:30 PM

(ICACC-DIV-001-2024) Jubilee Global Diversity Award: Nanostructured bioceramics as a multifunctional delivery platform for the regeneration of functional (hard and soft) tissues

S. Fiorilli*[1]

1. Politecnico di Torino, Applied Science and Technology, Italy

2:10 PM

(ICACC-DIV-002-2024) Jubilee Global Diversity Award: Creation of a new resource circulation loop realized by diversity and new separation technology

C. Tokoro*[1]

1. Waseda University, Japan

2:50 PM

Break

3:10 PM

(ICACC-DIV-003-2024) Jubilee Global Diversity Award: Design and Manufacturing of New Functional Ceramic Composites

Y. Li*[1]

1. Dartmouth University, Thayer School of Engineering, USA

3:50 PM

(ICACC-DIV-004-2024) Commercialization of high temperature electrolysis for green hydrogen and syngas production (Invited)

A. Michaelis*[1]

1. Fraunhofer IKTS, Germany

4:20 PM

(ICACC-DIV-005-2024) Team Development for Improving Project Outcomes (Invited)

M. Reigel*[1]

1. Saint-Gobain Ceramics & Plastics, USA

4:50 PM

(ICACC-DIV-006-2024) On the design of novel perovskites for functional applications

A.Azure*[2]; S.Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA
2. United Tribes Technical College and University of North Dakota, USA

S2 Advanced Ceramic Coatings for Structural/ Environmental & Functional Applications

SYMPOSIUM 2: Thermal Barrier Coatings I

Room: Flagler C

Session Chairs: Peter Mechnich, DLR - German Aerospace Center; Douglas Wolfe

1:30 PM

(ICACC-S2-001-2024) High Temperature Oxidation Behaviour of Ni-based Alumina-Forming Bond Coat Materials: A Brief Survey (Invited)

J. Jedlinski*[1]

1. AGH University of Kraków, Faculty of Materials Science and Ceramics, Physical Chemistry and Modeling of Processes, Poland

2:00 PM

(ICACC-S2-002-2024) On Lifetime Prediction of Thermal Barrier Coatings

WITHDRAWN

K. Chen*[1]

1. National Research Council Canada, Aerospace Research Centre, Canada

2:20 PM

(ICACC-S2-003-2024) TBC Thermal Cycling Tests: Laser Rig Test vs Simulated Flame Torch Rig Test

Y. Wang*[1]; L. Zhao[1]; P. Hsu[1]

1. Florida Institute of Technology, Mechanical Engineering, USA

2:40 PM

(ICACC-S2-004-2024) Development of Luminescence Lifetime-Based Surface Temperature Mapping for Environmental Barrier Coatings

J. I. Eldridge*[1]; K. Lee[1]; J. A. Setlock[2]

1. NASA Glenn Research Center, USA
2. University of Toledo, USA

3:00 PM

Break

3:20 PM

(ICACC-S2-005-2024) Rare earth and transition metal doping of ZrO_2-$YTaO_4$ for radiative barrier coatings

V. Champagne*[1]; J. Deijkers[2]; C. Lothrop[2]; D. Clarke[1]; H. N. Wadley[2]

1. Harvard University, Materials Science, USA
2. University of Virginia, USA

3:40 PM

(ICACC-S2-006-2024) A Thermal Conductivity Model of Porous Air Plasma Sprayed Yttrium-Stabilized Zirconia Coatings

L. Zhao*[1]; P. Hsu[1]

1. Florida Institute of Technology, Mechanical Engineering, USA

S4 Protective Ceramics-Fundamental Challenges and New Developments

SYMPOSIUM 4: Protective Ceramics - Fundamental Challenges and New Developments

Room: Ponce de Leon

Session Chair: Kristopher Behler, DEVCOM-Army Research Lab

1:30 PM

(ICACC-S4-001-2024) Reactive Infiltration of Silicon Melt into C/C Preforms: Mechanism, Modeling, and Disturbing Effects (Invited)

P. J. Hofbauer*[1]

1. ArianeGroup, High Temperature Materials & Technologies, Germany

2:00 PM

(ICACC-S4-002-2024) Reactive melt infiltration of liquid silicon based alloys into porous carbonaceous materials: Modelling and 1D to 3D experimental validation (Invited)

M. Naikade[2]; T. Graule[2]; L. Weber[3]; A. Ortona*[1]

1. SUPSI, MEMTi, Switzerland
2. Empa, Laboratory for High Performance Ceramics, Switzerland
3. EPFL, Switzerland

2:30 PM

(ICACC-S4-003-2024) Design of brittle solids for extreme dynamic environments: Challenges and developments

A. Zare*[1]; D. G. Giovanis[3]; K. Ramesh[2]

1. Washington State University, School of Mechanical and Materials Engineering, USA
2. Johns Hopkins University, Mechanical Engineering, USA
3. Johns Hopkins University, Department of Civil and Systems Engineering, USA

2:50 PM

(ICACC-S4-004-2024) Thermal and mechanical properties of silicon carbide bonded diamond composites with broad variations of microstructure

B. Matthey*[1]; S. Kunze[1]; M. Herrmann[1]

1. Fraunhofer IKTS, Germany

3:10 PM

Break

3:30 PM

(ICACC-S4-005-2024) Data-driven Design and Discovery of High Hardness Ceramics for Extreme Environments

S. Bavdekar*[2]; G. Subhash[1]; R. G. Hennig[2]

1. University of Florida, Mechanical and Aerospace Engineering, USA
2. University of Florida, Materials Science and Engineering, USA

3:50 PM

(ICACC-S4-006-2024) A Machine Learned Interatomic Potential for Silicon Carbide

M. P. MacIsaac*[1]; S. Bavdekar[2]; D. Spearot[1]; G. Subhash[1]

1. University of Florida, Mechanical & Aerospace Engineering, USA
2. University of Florida, Materials Science and Engineering, USA

4:10 PM

(ICACC-S4-007-2024) Influence of Bismuth Oxide as a Sintering Aid on the Densification of Cold Sintering of Zirconia

N. Bhootpur[1]; H. Brouwer[2]; Y. Tang*[1]

1. Delft University of Technology, Aerospace engineering, Netherlands
2. Delft University of Technology, Faculty of Mechanical, Maritime and Materials Engineering (3mE) Materials Science and Engineering (MSE), Netherlands

4:30 PM

(ICACC-S4-008-2024) Refractory Metal-Reinforced SiC-B_4C Composites Fabricated by Hot-Pressing

T. W. Moore*[1]; J. LaSalvia[2]

1. DEVCOM-Army Research Lab, SURVICE Engineering, USA
2. DEVCOM Army Research Laboratory, USA

4:50 PM

(ICACC-S4-011-2024) Fundamentals of Reaction-Bonded Ceramic Matrix Composites by Liquid Silicon Infiltration

C. Garcia*[1]; J. Rodriguez[1]; T. Scharf[1]; A.DiGiovanni[2]; J. LaSalvia[2]
1. Department of Materials Science and Engineering, University of North Texas, USA
2. DEVCOM Army Research Laboratory, USA

5:10 PM

(ICACC-S4-010-2024) Diamond-SiC Microstructures Evolved from Infiltrated and Simulated Powder Packings

A. A. DiGiovanni*[1]; M. C. Guziewski[1]; J. Sietins[1]
1. DEVCOM Army Research Laboratory, USA

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Novel ceramics materials for nuclear systems

Room: Ballroom 4

Session Chair: James Wade-Zhu, UKAEA

1:30 PM

(ICACC-S13-001-2024) Will "high entropy" carbide ceramics be enabling materials for nuclear energy applications? (Invited)

B. Cui*[1]; F. Wang[1]; L. Trinh[1]; X. Yan[1]; K. Bawane[2]; Z. Hua[2]; C. Dennett[2]; L. Malakkal[2]; L. He[3]; Y. Lu[1]
1. University of Nebraska–Lincoln, USA
2. Idaho National Laboratory, USA
3. North Carolina State University, USA

2:00 PM

(ICACC-S13-002-2024) Radiation damage of ion-irradiated high entropy ceramics

K. Wang*[1]
1. Alfred University, USA

2:20 PM

(ICACC-S13-003-2024) Cermet waste forms for immobilizing the waste from advanced reactors

R. Saini*[1]; S. K. Sundaram[2]; A. Goel[1]
1. Rutgers University, Materials Science and Engineering, USA
2. Alfred University, Inamori School of Engineering, USA

2:40 PM

(ICACC-S13-004-2024) Hydrogen Barrier Coatings to Improve Thermal Stability of Hydride Moderators

R. H. Bohanon*[1]; F. R. Caliari[2]; E. Garcia Granados[2]; S. Sampath[2]; E. P. Luther[1]; S. S. Raiman[3]
1. Los Alamos National Lab, USA
2. Stony Brook University, Center for Thermal Spray Research, USA
3. University of Michigan, USA

3:00 PM

Break

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Vat Photopolymerization / Stereolithography I

Room: Coquina H

Session Chair: Fiona Spirrett, Osaka University

1:30 PM

(ICACC-S15-001-2024) Additive Manufacturing of YSZ Ceramics for Solid Oxide Electrolyzer (SOECs) Applications (Invited)

M. Khakzad[1]; M. Minary*[1]
1. University of Texas at Dallas, Mechanical Engineering, Afghanistan

2:00 PM

(ICACC-S15-002-2024) CeO_2-stabilized zirconia composites: Addressing current challenges in Digital Light Processing

E. Fiume*[1]; B. Coppola[1]; B. Inserra[1]; T. Jean Marc[1]; L. Montanaro[1]; P. Palmero[1]
1. Politecnico di Torino, Department of Applied Science and Technology, Italy

2:20 PM

(ICACC-S15-003-2024) Vat photopolymerization of alumina-toughened zirconia

M. Schwentenwein*[1]; J. Sohl[1]; S. M. Allan[2]
1. Lithoz GmbH, Austria
2. Lithoz America, LLC, USA

2:40 PM

(ICACC-S15-004-2024) Tailoring the damage tolerance of 3D printed ceramics with lithography-based ceramic manufacturing

J. C. Sänger*[1]; A. Hofer[2]; J. Schlacher[1]; R. Bermejo[3]
1. Montanuniversität Leoben, Austria
2. Montanuniversitaet Leoben, Materials Science, Austria
3. Montanuniversitaet Leoben, Institut fuer Struktur- und Funktionskeramik, Austria

S17 Advanced Ceramic Materials and Processing for Photonics and Energy

SYMPOSIUM 17: Multi functional materials

Room: Coquina G

Session Chairs: Federico Polo, Ca' Foscari University of Venice; Eva Hemmer, University of Ottawa

1:30 PM

(ICACC-S17-001-2024) Ion-gated transistor and atomic force microscopy studies of metal oxide electrode materials in Li-ion batteries to prolonge their life time (Invited)

C. Santato*[1]; J. Herrera Garza[1]; F. Soavi[2]; L. Neres Chagas Da Silva[1]; L. Pereira Camargo[1]
1. Ecole Polytechnque de Montreal, Canada
2. U Bologna, Italy

2:00 PM

(ICACC-S17-002-2024) Photocatalysis and photosensitization using atomically precise metal nanoclusters for solar energy harvesting and conversion (Invited)

N. Pinna*[1]; Y. Wang[1]; Y. Liu[1]
1. Humboldt-Universität zu Berlin, Department of Chemistry, Germany

2:30 PM

(ICACC-S17-003-2024) Phase engineering vanadium dioxide-based thin film battery electrodes via doping (Invited)

D. Koch[1]; A. Mirzaei[1]; W. Xiang[1]; H. Dai[1]; J. Capdevila[1]; A. Payeur[1]; S. Sun[1]; M. Chaker*[1]
1. INRS, Energie materiaux télécommunications, Canada

3:00 PM

Break

3:20 PM

(ICACC-S17-004-2024) Luminescent Theranostic Nanoplatforms (Invited)

F. Vetrone*[1]
1. INRS, Université du Québec, Centre Énergie, Matériaux et Télécommunications, Canada

3:50 PM

(ICACC-S17-005-2024) Catalysts of Tomorrow: Green Nanomaterials Paving the Green Energy Path (Invited)

R. Naccache*[1]
1. Concordia University, Chemistry and Biochemistry, Canada

4:20 PM

(ICACC-S17-011-2024) Efficient Solar-Light-Driven Photodegradation of Metronidazole by Nickel Hexacyanoferrate Nanocubes (Invited)

F. Polo*[1]; E. Lushaj[1]; L. Liccardo[1]; M. Bordin[1]; E. Moretti[1]
1. Ca' Foscari University of Venice, Molecular Sciences and Nanosystems, Italy

4:50 PM

(ICACC-S17-007-2024) Customizing inorganic nanomaterials synthesis for environmental remediation (Invited)

E. Moretti*[1]; L. Liccardo[1]; M. Bordin[1]

1. Ca' Foscari University of Venice, Department of Molecular Sciences and Nanosystems, Italy

5:20 PM

(ICACC-S17-008-2024) Structured porous ammonia carriers for seasonal energy storage (Invited)

F. Akhtar*[1]

1. Lulea University of Technology, Division of Materials Science, Sweden

S18 Ultra-High Temperature Ceramics

SYMPOSIUM 18: Compositionally Complex UHTCs

Room: Coquina A

Session Chairs: William Fahrenholtz, Missouri University of Science & Technology; Stefano Curtarolo, Duke University

1:30 PM

(ICACC-S18-001-2024) Hardness and Elevated Temperature Strength of Compositionally Complex Boride and Carbide Ceramics (Invited)

W. Fahrenholtz*[1]; L. Feng[1]; G. Hilmas[1]

1. Missouri University of Science & Technology, Materials Science and Engineering, USA

2:00 PM

(ICACC-S18-002-2024) Mechanical properties and wear characteristics of (Ti-Zr-Nb-Ta-Hf)C/(Ti-Zr-Nb-Ta-Hf)B_2 dual-phase ceramics

A. Naughton Duszova*[1]

1. The Institute of Materials Research, Slovak Academy of Sciences, Slovakia

2:20 PM

(ICACC-S18-003-2024) Synthesis and Properties of (Hf,Mo,Ti,W,Zr)B_2-(Hf,Mo,Ti,W,Z)C Dual Phase Ceramics

S. Filipovic*[1]; G. Hilmas[1]; W. Fahrenholtz[1]; N. Obradovic[2]; S. Curtarolo[3]

1. Missouri University of Science and Technology, Materials Science and Engineering, USA
2. Institute of technical sciences of SASA, Materials, Serbia
3. Duke University, Materials Science, Electrical Engineering and Physics, USA

2:40 PM

(ICACC-S18-004-2024) Densification kinetics of high entropy ceramics during spark plasma sintering

S. M. Smith*[1]; W. Fahrenholtz[1]; G. Hilmas[1]; S. Curtarolo[2]

1. Missouri University of Science & Technology, Materials Science and Engineering, USA
2. Duke University, Materials Science, Electrical Engineering and Physics, USA

3:00 PM

Break

3:20 PM

(ICACC-S18-005-2024) Extreme applications of high-entropy carbides (Invited)

S. Curtarolo*[1]

1. Duke University, Materials Science, Electrical Engineering and Physics, USA

3:50 PM

(ICACC-S18-006-2024) Synthesis and Characterization of High Entropy Carbonitrides (Invited)

L. Backman*[2]; J. Tsai[2]; H. Ryou[1]; E. Patterson[1]; S. Mills[1]; J. Wollmershauser[1]; E. Gorzkowski[1]; J. Maxwell[2]

1. U.S. Naval Research Laboratory, Materials Science & Technology Division, USA
2. U.S. Naval Research Laboratory, Spacecraft Engineering Division, USA

4:20 PM

(ICACC-S18-007-2024) Thermal and Electrical Properties of Single Phase High Entropy Carbides with Varying Compositions

P. Brune*[1]; G. Hilmas[1]; W. Fahrenholtz[1]; J. Watts[1]

1. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

4:40 PM

(ICACC-S18-008-2024) Ablation Threshold and Temperature Dependent Thermal Conductivity of High Entropy Carbide Thin Films

M. Milich*[1]; K. Quiambao-Tomko[2]; M. D. Hossain[3]; J. Tomko[2]; J. Maria[3]; P. E. Hopkins[2]

1. University of Virginia, Mechanical and Aerospace Engineering, USA
2. University of Virginia, USA
3. Pennsylvania State University, USA

S19 Molecular-level Processing and Chemical Engineering of Functional Materials

SYMPOSIUM 19: Functional Carbides & Nitrides

Room: Ballroom 3

Session Chair: Gurpreet Singh, Kansas State University

1:30 PM

(ICACC-S19-001-2024) Investigation of polymer-derived ceramics as thermal and environmental barrier coatings: Oxidation behavior (Invited)

N. Petry[2]; A. S. Ulrich[3]; M. Bik[4]; M. T. Sitarz[4]; R. Riedel[5]; E. Ionescu[5]; M. C. Galetz[2]; M. Lepple*[1]

1. Justus-Liebig-University Giessen, Department of Inorganic and Analytical Chemistry, Germany
2. DECHEMA-Forschungsinstitut, Materials and Corrosion, Germany
3. University of Bayreuth, Metals and Alloys II, Germany
4. AGH University of Science and Technology, Faculty of Materials Science and Ceramics, Poland
5. Technical University Darmstadt, Materials Science, Germany

2:00 PM

(ICACC-S19-002-2024) Sol gel-based syntheses towards functional carbides (Invited)

N. Kubitza[2]; C. Birkel*[1]

1. Arizona State University, USA
2. Technical University Darmstadt, Eduard-Zintl-Institute, Germany

2:30 PM

(ICACC-S19-003-2024) Defect and Dopant Energy Levels in Next Generation Nitride Phosphors (Invited)

A. Moewes*[1]

1. University of Saskatchewan, Physics & Engineering Physics, Canada

3:00 PM

Break

S1 Mechanical Behavior and Performance of Ceramics & Composites

SYMPOSIUM 1: Mechanical testing and characterization of ceramic matrix composites (CMCs)

Room: Coquina E

Session Chairs: Marina Ruggles-Wrenn, Air Force Institute of Technology; Dong Liu, University of Bristol

1:30 PM

(ICACC-S1-001-2024) Compressive Strength of CMC Tubular Components in High-Temperature Reactor (HTR) Nuclear Applications: ASTM Draft Standard for Axially-Loaded Tubes (Invited)

M. G. Jenkins*[1]; J. E. Gallego[1]

1. Bothell Engineering and Science Technologies, USA

2:00 PM

(ICACC-S1-002-2024) Inplane Shear Strength Characterization Methods of MI SiC/SiC CMC

Y. Zhou*[1]

1. GE Aviation, Engineering Material System, USA

2:20 PM

(ICACC-S1-003-2024) Assessment of a SiC_f/SiC Ceramic Matrix Composite through acoustic emission and vibration analysis

S. Jeffs*[1]; J. Stephen[1]; Z. Quiney[1]; G. Garcia Luna[2]

1. Swansea University, Institute of Structural Materials, United Kingdom
2. Rolls-Royce plc., United Kingdom

2:40 PM

(ICACC-S1-004-2024) Influence of grinding on the damageable behaviour of SiC/SiC filament wound tubes under cycling tension-compression loadings (Invited)

E. Baranger*[1]; C. Morel[2]; J. L. Lamon[3]; J. Braun[5]; C. Lorrette[4]

1. LMPS (Université Paris-Saclay, CentraleSupélec, ENS Paris-Saclay), France
2. Université de Toulouse, Institut Clément Ader, France
3. CNRS, France
4. Université Paris-Saclay, CEA, Service de Recherche en Matériaux et procédés Avancés, France
5. CEA/DAM, France

3:10 PM

Break

3:30 PM

(ICACC-S1-005-2024) Damage characterization and multiscale modeling of joint failure in oxide/oxide ceramic matrix composites (Invited)

K. Sanghvi[1]; B. Mazurowski[2]; C. A. Duarte[2]; J. Lambros*[1]

1. University of Illinois Urbana-Champaign, Aerospace Engineering, USA
2. University of Illinois at Urbana-Champaign, Civil and Environmental Engineering, USA

4:00 PM

(ICACC-S1-006-2024) Contribution of X-ray tomographic imaging to studies of ceramic-matrix composites damage and ablation

G. L. Vignoles*[1]; G. Couegnat[1]; O. Caty[1]; A. Ebel[1]; F. Rebillat[1]; L. Maille[1]; Y. Lepetitcorps[1]; J. Braun[1]; S. Couthures[1]; T. Malard[1]; M. Fradin[2]; T. Bourdeau[1]

1. University Bordeaux, LCTS - Lab for ThermStructural Composites, France
2. ArianeGroup SAS / LCTS, France

4:20 PM

(ICACC-S1-007-2024) Electrical Resistance of Non-Oxide CMCs: Health Monitoring and Design Considerations

A. Gupta*[1]; G. N. Morscher[1]

1. University of Akron, Mechanical Engineering, USA

4:40 PM

(ICACC-S1-008-2024) Matrix Cracking Onset Analysis and Pattern Recognition of Acoustic Emission Signals to Characterise Damage Modes in SiC/SiC Ceramic Matrix Composites

Z. Quiney*[1]; L. Gale[2]; S. Pattison[2]; G. Garcia Luna[2]; C. Newton[1]; M. R. Bache[1]; S. Jeffs[1]

1. Swansea University, Institute of Structural Materials, United Kingdom
2. Rolls-Royce Plc., Materials Engineering, United Kingdom

5:00 PM

(ICACC-S1-009-2024) Characterization of stress-induced solid particle erosion behavior of oxide/oxide CMCs in a combustion environment

F. Mirza*[1]; G. N. Morscher[1]

1. University of Akron, Mechanical Engineering, USA

5:20 PM

(ICACC-S1-010-2024) Damage Tolerance Study in Quasi-Statically Indented Alumina-Based Oxide/Oxide Ceramic Matrix Composites

V. Sodisetty*[1]; A. K. Singh[1]

1. Baylor University, Mechanical Engineering, USA

S3 21th Intl Symp on Solid Oxide Cells Materials Science & Technology

SYMPOSIUM 3: System design and demonstration

Room: Ballroom 1-2

Session Chair: Federico Smeacetto, Politecnico di Torino

1:30 PM

(ICACC-S3-001-2024) (ICACC-S3-004-2024) Overview of DOE/ FECM R-SOFC Technology Development (Invited)

J. Kim*[1]

1. University of Utah, Chemical & Fuels Engineering, USA

2:00 PM

(ICACC-S3-002-2024) Status and challenges of Solid Oxide Cells in fuel cell, electrolysis and reversible operation (Invited)

M. Kusnezoff*[1]; S. Megel[1]; N. Trofimenko[1]; S. Mosch[1]; S. Rothe[1]; V. Sauchuk[1]

1. Fraunhofer IKTS, Germany

2:30 PM

(ICACC-S3-003-2024) Solid Oxide Fuel Cells for the commercial sector: Results of the Comsos EU project (Invited)

M. Santarelli*[1]; M. Gandiglio[1]; P. Marocco[1]

1. Politecnico di Torino, Energy, Italy

S5 Next-Generation Bioceramics and Biocomposites

SYMPOSIUM 5: Next Generation Bioceramics and Biocomposites

Room: Coquina B

Session Chair: Katalin Balazsi, Centre for Energy Research HAS

1:30 PM

(ICACC-S5-001-2024) Supportless Ceramic Additive Manufacturing of Calcium Phosphate in a Hydrogel Bath (Invited)

H. Yun*[1]

1. Korea Institute of Materials Science, Republic of Korea

2:00 PM

(ICACC-S5-002-2024) Synthesis and Characterization of 3D Printed PEEK-based Composites for Biomedical Applications (Invited)

A. Thorne[1]; S. Gupta*[1]

1. University of North Dakota, Mechanical Engineering, USA

2:30 PM

(ICACC-S5-003-2024) Development and characterization of TPMS hydroxyapatite scaffolds

R. Gabrieli*[1]; A. Schiavi[2]; M. Schwentenwein[3]; E. Vernè[1]; F. Baino[1]; L. D'Andrea[4]; P. Vena[4]

1. Politecnico di Torino, Applied Science and Technology (DISAT), Italy
2. National Institute of Metrological Research (INRiM), Italy
3. Lithoz GmbH, Austria
4. Politecnico di Milano, Italy

2:50 PM

(ICACC-S5-004-2024) Synthesis and Robocasting of Hydroxyapettite, tri calcium phosphate and wollastonite based composites

R. Gowtham*[1]; G. Akshay[2]

1. Alagappa College of Technology, Anna Uiversity., Ceramic Technology, India
2. Anna University, Ceramic Technology, India

3:10 PM

Break

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Electrode/electrolyte interface characterization for lithium batteries

Room: Ballroom 5

Session Chairs: Palani Balaya, National University of Singapore; Valerie Pralong, CNRS ENSICAEN

1:30 PM

(ICACC-S6-001-2024) Probing Buried Interfaces in situ Through Neutron Scattering (Invited)

G. Veith*[1]

1. Oak Ridge National Laboratory, USA

2:00 PM

(ICACC-S6-002-2024) Interfacial chemistry and electrolyte approaches for enabling metal anode batteries (Invited)

J. Popovic-Neuber*[1]

1. University of Stavanger, Norway

2:30 PM

(ICACC-S6-003-2024) Towards High Energy Density Batteries: Ultrathick Electrodes with Architectures by Spark Plasma Sintering and Hard Templating Approach (Invited)

V. Seznec*[1]; P. Rozier[2]

1. Laboratoire LRCS, France
2. Laboratoire CIRIMAT, France

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Microwave processing, SPS, flash sintering, high pressure assisted sintering I

Room: Coquina F

Session Chair: Hisayuki Suematsu, Nagaoka University of Technology

1:30 PM

(ICACC-S8-001-2024) Oxidation resistant dense silicon carbide ceramics (Invited)

P. Sajgalik*[1]; O. Hanzel[1]; M. Hicak[1]; A. Kovalcikova[3]; Y. Kim[2]

1. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Ceramic Department, Slovakia
2. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea
3. Institute of Materials Research, Slovak Academy of Scienes, Slovakia

2:00 PM

(ICACC-S8-002-2024) Advanced processing techniques for B_4C-TiB_2-Based Materials: Sintering with and without pressure

S. Failla*[1]; S. Taraborelli[1]; D. Sciti[1]

1. Institute of Science, Technology and Sustainability for Ceramics (CNR-ISSMC), Department of Chemical Sciences and Materials Technologies, Italy

2:20 PM

(ICACC-S8-003-2024) Electrical, thermal, and mechanical properties of spatially tailored fiber orientations in 3D printed carbon-carbon composites for EFAS/SPS

J. Rufner*[1]; A. Preston[1]; A. Gorman[1]; A. Matthews[1]

1. Idaho National Lab, Materials Science and Manufacturing, USA

2:40 PM

Break

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Vat Photopolymerization / Stereolithography II

Room: Coquina H

Session Chair: Majid Minary, University of Texas at Dallas

3:00 PM

Break

3:20 PM

(ICACC-S15-005-2024) Fabrication of complex components for functional and structural applications by ceramic stereolithography (Invited)

F. Spirrett*[1]; A. Oi[1]; S. Kirihara[1]

1. Osaka University, Joining and Welding Research Institute, Japan

3:50 PM

(ICACC-S15-006-2024) Tracking the effects of thermal post-processing on 3D-printed 94wt% debased alumina via stress mapping and chemical characterization

S. G. Gomez*[1]; D. Cillessen[2]; J. Duay[2]; K. Sadzewicz[2]; E. MacDonald[1]

1. The University of Texas at El Paso, Aerospace & Mechanical Engineering, USA
2. Sandia National Laboratories, USA

4:10 PM

(ICACC-S15-007-2024) Dimensional performance of a debased 94% alumina manufactured with Lithography-based Ceramic Manufacturing (LCM)

D. Cillessen*[1]; S. G. Gomez[2]; E. MacDonald[2]

1. Sandia National Laboratories, USA
2. The University of Texas at El Paso, Aerospace & Mechanical Engineering, USA

4:30 PM

(ICACC-S15-008-2024) Enhancing Piezoresistivity of Polymer Derived SiOC Ceramics with β-Silicon Carbide Nanopowder Reinforcement

M. Rahman*[1]; S. Kim[1]

1. University of Calgary, Mechanical and Manufacturing Engineering, Canada

4:50 PM

(ICACC-S15-009-2024) Tailoring powder properties for the light based volumetric additive manufacture of Ceramics

J. Guenster*[1]; J. C. Sänger[2]; B. Pauw[1]

1. BAM Federal Institute for Materials Research and Testing, Germany
2. Montan University et Leoben, Austria

5:10 PM

(ICACC-S15-010-2024) Stereolithographic Additive Manufacturing of Solid Electrolytes for Effective Energy Storage

S. Kirihara*[1]; F. Spirrett[1]

1. Osaka University, Joining and Welding Research Institute, Japan

5:30 PM

(ICACC-S15-011-2024) 2PP-printed technical ceramics from transparent powder based feedstocks

J. C. Sänger*[2]; B. Riechers[1]; B. Pauw[1]; J. Guenster[1]

1. BAM Federal Institute for Materials Research and Testing, Germany
2. Montanuniversität Leoben, Austria

S3 21th Intl Symp on Solid Oxide Cells Materials Science & Technology

SYMPOSIUM 3: Electrolysis and applications

Room: Ballroom 1-2

Session Chair: Massimo Santarelli, Politecnico di Torino

3:00 PM

Break

3:20 PM

(ICACC-S3-005-2024) Status of the development of solid oxide fuel and electrolysis technologies in Poland (Invited)

P. Jasinski*[1]

1. Gdansk University of Technology, Department of Functional Materials Engineering, Poland

3:50 PM

(ICACC-S3-006-2024) Role of Solid Oxide Cell Technology in Energy Landscape (Invited)

S. Elangovan*[1]; J. Hartvigsen[1]; J. Elwell[1]; J. Pike[1]; M. Hollist[1]; T. Hafen[1]; E. Alvarado[1]; D. Larsen[1]

1. OxEon Energy, USA

4:20 PM

(ICACC-S3-007-2024) Update on Sunfire activities: Advancing SOEC technology and durability insights (Invited)

M. Koza*[1]; C. Tsai[1]; C. Geipel[1]

1. Sunfire, Stack development, Germany

4:50 PM

(ICACC-S3-008-2024) Upscaling and commercialization of SOEC for Power-to-X applications

P. Blennow*[1]; T. Heiredal-Clausen[1]; J. Rass-Hansen[1]; M. Hultqvist[1]; P. Moses[1]

1. Topsoe A/S, Denmark

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Diagnostics and materials characterization for lithium batteries

Room: Ballroom 5

Session Chairs: Chunmei Ban, University of Colorado, Boulder; Olivier Guillon, Forschungszentrum Juelich

3:00 PM

Break

3:20 PM

(ICACC-S6-004-2024) Electrochemical sensor printed on the separator for detection of metal ions (Invited)

T. Paljk[1]; V. Bracamonte[2]; T. Syrovy[3]; S. Drvarič Talian[1]; S. Hočevar[1]; R. Dominko*[1]

1. National Institute of Chemistry, Slovenia
2. Universidad Nacional de Córdoba, Argentina
3. University of Pardubice, Czechia

3:50 PM

(ICACC-S6-005-2024) Surface/Grain Boundary Engineering for Garnet Solid-State Electrolyte (Invited)

C. Ban*[1]

1. University of Colorado, Boulder, Mechanical Engineering, USA

4:20 PM

(ICACC-S6-006-2024) Development of Temperature Sensitive Paint and Battery Management System (BMS) for Energy Storage System (ESS) Safety (Invited)

B. L. Armstrong*[1]; C. Kumara[1]; H. Wang[1]

1. Oak Ridge National Lab, Material Science & Technology, USA

4:50 PM

(ICACC-S6-007-2024) Using in-situ biasingTEM to directly measure the electrical properties of solid electrolyte interphase in rechargeable batteries

C. Wang*[1]

1. Pacific Northwest National Lab, USA

5:10 PM

(ICACC-S6-008-2024) Multi-Scale, Multi-Modal Non-Destructive Defect Characterization in Solid State Batteries

N. Johnson*[1]; Y. Trenikhina[1]; S. Kelly[1]; H. Bale[1]

1. Carl Zeiss Research Microscopy Solutions, USA

13th Global Young Investigator Forum

13th Global Young Investigator Forum: Microstructure, thermo-mechanical properties

Room: Coquina D

Session Chairs: Dong Liu, University of Bristol; Palani Balaya, National University of Singapore

3:20 PM

(ICACC-GYIF-004-2024) Achieving stable crack growth in ceramics at the nanoscale: Transformation toughening in zirconia (Invited)

O. Gavalda Diaz*[1]; M. Emmanuel[1]; K. Marquardt[2]; E. Saiz[1]; F. Giuliani[3]

1. Imperial College, Materials, United Kingdom
2. University of Oxford, United Kingdom
3. Imperial College London, United Kingdom

3:50 PM

(ICACC-GYIF-005-2024) Development of Functionally Gradient Ceramic-Metal Interpenetrating Composites for Ballistic Applications (Invited)

J. Alexander*[1]; J. Binner[1]; C. Footer[2]

1. University of Birmingham, Ceramic Science & Engineering, United Kingdom
2. QinetiQ, United Kingdom

4:20 PM

(ICACC-GYIF-006-2024) In situ Studies of Temperature- and Stress-induced Structure Evolution in Functional Oxides by Time-of-flight Neutron Diffraction (Invited)

Y. Chen*[1]; K. An[1]

1. Oak Ridge National Lab, USA

4:50 PM

(ICACC-GYIF-007-2024) Measuring the Wear and Abrasive Resistance of Air Plasma Sprayed Aluminum Oxide for Lunar Exploration

P. C. Latorre-Suarez*[1]; Q. Fouliard[2]; C. Wohl[3]; V. L. Wiesner[3]; S. Raghavan[1]

1. Emby-Riddle Aeronautical University, Aerospace Engineering, USA
2. University of Central Florida, Mechanical and Aerospace Engineering, USA
3. NASA Langley Research Center, USA

5:10 PM

(ICACC-GYIF-008-2024) Innovative Small-Scale Investigation of MAX Phase's Single-Crystal Deformation and Fracture Response

M. Dujovic*[1]; M. Radovic[1]; A. Srivastava[2]; T. Ouisse[3]

1. Texas A&M University, Materials Science and Engineering (MSEN), USA
2. Texas A&M University, USA
3. Grenoble INP, France

5:30 PM

(ICACC-GYIF-009-2024) Effect of microstructural differences in Alumina on the thermoelectric properties of polymer Composites for Thermal interface materials (TIMs)

P. Ramanujam*[1]; S. Khan[2]; H. Revankar[2]; S. P[2]; A. Acharya[2]; N. Kapuri[2]; S. K. Bal[1]; V. Tathavadkar[3]

1. Hindalco Speciality Alumina, Sales & Marketing, India
2. Hindalco Innovation Center- Alumina, Research & Development, India
3. Hindalco Industries Limited, MCOE-Technical, India

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Ceramics and ceramic-based composites in nuclear fusion

Room: Ballroom 4

Session Chair: Bai Cui, University of Nebraska–Lincoln

3:20 PM

(ICACC-S13-005-2024) Progress of development in SiCf/SiC manufacturing technology for SCYLLA blanket (Invited)

T. Sugiyama[1]; C. Baus[1]; S. Ogawa[1]; P. Barron*[1]; A. D'Angio[1]; R. Pearson[1]; K. Mukai[1]; K. Kawasaki[1]; J. Lee[4]; S. Konishi[3]; T. Hinoki[2]

1. Kyoto Fusioneering Ltd. Japan
2. Kyoto University, Japan
3. Kyoto University, Institute of Advanced Energy, Japan
4. Kyoto University, Graduate School of Energy Science, Japan

3:50 PM

(ICACC-S13-006-2024) Advanced ceramics and their contribution towards sustained fusion energy production (Invited)

J. Wade-Zhu*[1]; A. J. Leide[1]; M. T. Rigby-Bell[1]; H. M. Gardner[1]

1. UKAEA, Materials Division, United Kingdom

4:20 PM

(ICACC-S13-007-2024) Solid Electrolyte Development for Direct LiT Electrolysis in Molten Li Mixtures (Invited)

B. L. Garcia-Diaz*[1]; C. S. Dandeneau[1]; D. Hitchcock[1]; P. Ganesan[1]; K. Brinkman[2]; R. Rajeev[2]; S. Jadhav[2]

1. Savannah River National Lab, USA
2. Clemson University, Materials Science and Engineering, USA

4:50 PM

(ICACC-S13-008-2024) Structural composite R&D roadmap for fusion energy (Invited)

Y. Katoh*[1]; T. Koyanagi[1]; L. Snead[2]; S. E. Ferry[3]; H. Gietl[4]

1. Oak Ridge National Laboratory, USA
2. Stony Brook University, USA
3. Massachusetts Institute of Technology, USA
4. Idaho National Lab, USA

S19 Molecular-level Processing and Chemical Engineering of Functional Materials

SYMPOSIUM 19: Functional Carbides & Nitrides II

Room: Ballroom 3

Session Chair: Thomas Fischer, University of Cologne

3:20 PM

(ICACC-S19-004-2024) Solution processing of metal carbide composites (Invited)

G. Westin*[1]

1. Uppsala University, Sweden

3:50 PM

(ICACC-S19-005-2024) Kumada-rearrangement and Yajima-process investigated by AIMD Simulation

P. Kroll*[1]

1. University of Texas, Arlington, USA

4:10 PM

(ICACC-S19-006-2024) Improved Oxidation Resistance of HfC-SiCN Ceramic Mini Composites by Using Single Source Liquid Phase Precursors

S. Mujib*[1]; A. Roy[1]; M. Rasheed[1]; B. Walke[1]; S. R. Arunachalam[2]; G. Singh[1]

1. Kansas State University, Mechanical and Nuclear Engineering, USA
2. Spirit AeroSystems Inc., USA

4:30 PM

(ICACC-S19-007-2024) Sol-gel derived SiOC(H) particles as inorganic components of hybrid bigels based on polyelectrolyte complexes for HIV prevention (Invited)

F. Notario[2]; A. Martin-Illana[2]; R. Cazorla-Luna[2]; A. Tamayo*[1]

1. Institute of Ceramics and Glass, CSIC, Spain
2. Complutense University of Madrid, Faculty of Pharmacy, Spain

5:00 PM

(ICACC-S19-008-2024) Chemically Engineered Functional Nanostructures for Energy and Health Applications (Invited)

S. Mathur*[1]

1. University of Cologne, Institute of Inorganic Chemistry, Germany

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Microwave processing, SPS, flash sintering, high pressure assisted sintering II

Room: Coquina F

Session Chair: Pavol Sajgalik, Institute of Inorganic Chemistry, Slovak Academy of Sciences

3:20 PM

(ICACC-S8-005-2024) From Ultrafast Sintering with versus without Electric Fields to Controlling Microstructural Evolution with Applied Electric Fields (Invited)

J. Luo*[1]

1. University of California, San Diego, USA

3:50 PM

(ICACC-S8-006-2024) Interparticle-necking assisted grain size control and tetragonal phase stabilization of flash-sintered 1.5 mol% yttria-stabilized zirconia

F. Ong*[1]; K. Kawamura[2]; K. Hosoi[2]; B. Feng[1]; K. Matsui[1]; Y. Ikuhara[1]; H. Yoshida[1]

1. The University of Tokyo, Next Generation Zirconia Social Cooperation Program, Japan
2. Inorganic Materials Research Laboratory, Tosoh Corporation, Japan

4:10 PM

(ICACC-S8-007-2024) Carbon Contamination Prevention During Spark Plasma Sintering of Transparent MgO and YAG

G. Grader*[1]; M. Sakajio[1]; M. Mann-Lahav[1]; G. E. Shter[1]; Z. Shay[2]

1. Technion - Israel Institute of Technology, Chemical Engineering, Israel
2. RAFAEL, Israel

4:30 PM

(ICACC-S8-008-2024) Reactive spark plasma sintering of ceramics with garnet structure for plasma etching applications

C. Stern*[1]; C. Schwab[1]; M. Kindelmann[2]; M. Stamminger[3]; I. Park[1]; M. Bram[4]; O. Guillon[4]

1. Forschungszentrum Juelich, Institute of Energy and Climate Research, Germany
2. Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons, Germany
3. Heraeus Noblelight GmbH, Germany
4. Forschungszentrum Juelich, Institute IEK-1, Germany

4:50 PM

(ICACC-S8-009-2024) State of the art capabilities in Hot Isostatic Pressing for Advanced Ceramics

A. Magnusson*[1]; C. Beamer[2]; J. Shipley[1]

1. Quintus Technologies, Business development, Sweden
2. Quintus Technologies, Application Development, USA

5:10 PM

(ICACC-S8-010-2024) Effect of Au doping on cuprate superconductor superconductivity under high pressure

Z. Feng*[1]; Y. Noa[1]; T. Do[2]; T. Nakayama[1]; H. Suematsu[1]

1. Nagaoka University of Technology, Japan
2. Nagaoka University of Technology, Nuclear System Safety Engineering, Japan

S5 Next-Generation Bioceramics and Biocomposites

SYMPOSIUM 5: Next Generation Bioceramics and Biocomposites

Room: Coquina B

Session Chair: Cristina Balagna, Politecnico di Torino

3:30 PM

(ICACC-S5-005-2024) Biomimetic polymeric scaffolds for 3D in vitro bone tissue models (Invited)

S. Fare'*[1]

1. Politecnico di Milano, Dept Chemistry, Materials and Chemical Engineering, Italy

4:00 PM

(ICACC-S5-006-2024) Diffusion-Controlled Formation of Biomineral-Hydrogel Composites toward Biomedical Applications

S. Yang*[1]

1. Korea National University of Education, Chemistry Education, Republic of Korea

4:20 PM

(ICACC-S5-007-2024) Effects of different amounts of calcium citrate in bone repairing materials on apatite formation in simulated body fluid test

Y. Wang*[1]; T. Yokoi[2]; M. Shimabukuro[2]; M. Kawashita[2]

1. Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Japan
2. Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan

4:40 PM

(ICACC-S5-008-2024) Environmentalfriendly preparation and structural characterization of calcium silicates derived from eggshell and silica gel

M. Houria Kaou[1]; M. Furko[1]; H. B. Rachid[1]; K. Balazsi*[1]; C. Balazsi[1]

1. Centre for Energy Research, Hungary

Tuesday, January 30, 2024

13th Global Young Investigator Forum

13th Global Young Investigator Forum: Ceramics for batteries

Room: Coquina D

Session Chairs: Bai Cui, University of Nebraska–Lincoln; Yuki Nakashima, National Institute of Advanced Industrial Science and Technology (AIST)

8:30 AM

(ICACC-GYIF-010-2024) Fast-chargeable, Safe and Inexpensive Li-ion Batteries (Invited)

M. Law[1]; S. S. Ramakrishnan[1]; K. Morekonda Ganesh Babu[1]; P. Balaya*[1]

1. National University of Singapore, Singapore

9:00 AM

(ICACC-GYIF-011-2024) The Role of Grain Boundaries in the Ion and Electron Transport Properties of Solid Lithium-Ion Electrolytes (Invited)

C. Ban*[1]

1. University of Colorado, Boulder, Paul M Rady Department of Mechanical Engineering, USA

9:30 AM

(ICACC-GYIF-012-2024) Design and Development of Novel Cathode and Solid Electrolyte Materials for All-solid-state Li-ion Batteries Assisted by In Situ Characterizations (Invited)

H. Chen*[1]

1. Georgia Institute of Technology, Mechanical Engineering, USA

10:00 AM

Break

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Graphite and carbon materials for nuclear applications

Room: Ballroom 4

Session Chair: William Chuirazzi, Idaho National Lab

8:30 AM

(ICACC-S13-009-2024) Microstructure and mechanical property correlation in the pyrocarbon buffer layer of TRISO fuel particles (Invited)

Y. Zhang*[1]

1. University of Wisconsin Madison, Department of Nuclear Engineering and Engineering Physics, USA

9:00 AM

(ICACC-S13-010-2024) In-situ synchrotron x-ray tomography observations of thermal strains in nuclear graphite via digital volume correlation and image analyses

E. Berry*[1]; J. D. Arregui-Mena[2]; C. I. Contescu[2]; P. D. Edmondson[2]; W. Bodel[5]; X. Zhang[5]; V. Kachkanov[6]; P. Mummery[4]; N. C. Gallego[3]; J. B. Spicer[1]

1. Johns Hopkins University, Materials Science and Engineering, USA
2. Oak Ridge National Lab, Materials Science and Technology Division, USA
3. Oak Ridge National Lab, Chemical Sciences Division, USA
4. University of Manchester, Nuclear Materials, United Kingdom
5. University of Manchester, School of Mechanical, Aerospace, and Civil Engineering, United Kingdom
6. Diamond Light Source, United Kingdom

9:20 AM

(ICACC-S13-011-2024) Characterization of the neutron irradiation effects in glassy carbon

J. D. Arregui-Mena*[1]; T. Koyanagi[2]; D. Cullen[2]; M. Zachman[2]; P. D. Edmondson[2]; Y. Katoh[2]

1. Oak Ridge National Lab, Nuclear Materials Science & Technology Group, USA
2. Oak Ridge National Laboratory, USA

9:40 AM

(ICACC-S13-012-2024) Nitrogen and Chlorine Levels in Modern and Historic Graphite and Their Impact on i-Graphite Waste

L. Snead*[1]; K. Shirvan[2]; D. Sprouster[1]

1. Stony Brook University, USA
2. Massachusetts Institute of Technology, USA

10:00 AM

Break

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Additive Manufacturing Processing, Characterization, and Applications I

Room: Coquina H

Session Chair: Dariusz Kata, AGH University of Science and Technology

8:30 AM

(ICACC-S15-012-2024) Fractographic observations from a pilot round robin on flexural strength of a photolithography manufactured high-purity alumina (Invited)

G. D. Quinn*[1]; R. Maier[2]

1. National Institute of Standards and Technology, Materials Measurement Sciences Division, USA
2. National Institute of Standards and Technology, USA

9:00 AM

(ICACC-S15-013-2024) Novel Sintering Techniques for Low Temperature Densification of Ceramics

R. Maier*[1]

1. National Institute of Standards and Technology, USA

9:20 AM

(ICACC-S15-014-2024) Promoting 3D Additive Manufacturing Technology in Japan's Advanced Ceramics Industry

H. Takemura*[1]; K. Kuroki[1]

1. Japan Fine Ceramics Association, Japan

9:40 AM

(ICACC-S15-015-2024) Sol-gel processes for additive manufacturing of porous and dense components

G. Franchin*[1]; A. Zanini[1]; P. Colombo[1]

1. University of Padova, Industrial Engineering, Italy

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSIUM 16: Synthesis, processing, microstructure

Room: Coquina C

Session Chair: Enrico Bernardo, University of Padova

8:30 AM

(ICACC-S16-001-2024) Geopolymer Nanocomposites Reinforced with Carbon-Based Nanomaterials: State-of-the-art and Underlying Mechanisms (Invited)

A. Akono*[1]

1. North Carolina State University, USA

9:00 AM

(ICACC-S16-002-2024) Synthesis and characterization of geopolymers using organic bases (Invited)

D. Samuel*[1]; W. M. Kriven[1]

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

9:30 AM

(ICACC-S16-003-2024) Investigation of Geopolymer Efflorescence Durability Problems; Causes and Possible Solutions (Invited)

P. Mokhtari*[3]; A. Ozer[3]; R. A. Sa Ribeiro[1]; D. Samuel[3]; W. M. Kriven[2]

1. INPA-National Institute for Amazonian Research, Green Building and Engineering Laboratory, Brazil
2. University of Illinois at Urbana-Champaign, USA
3. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

10:00 AM

Break

10:20 AM

(ICACC-S16-004-2024) Thermal transitions in metakaolin-based geopolymer composites reinforced with fine sand particles and basalt or bamboo fibers (Invited)

R. A. Sa Ribeiro*[1]; M. G. Sá Ribeiro[2]; A. Ozer[3]; P. Numkiatsakul[3]; D. Samuel[3]; W. M. Kriven[3]

1. INPA-National Institute for Amazonian Research, Green Building and Engineering Laboratory, Brazil
2. National Institute for Amazonian Research (INPA), Green Building and Engineering Laboratory (LECVerde), Brazil
3. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA

S17 Advanced Ceramic Materials and Processing for Photonics and Energy

SYMPOSIUM 17: Multi-functional materials

Room: Coquina G

Session Chairs: Silvia Gross, University of Padova; Nicola Pinna, Humboldt-Universität zu Berlin

8:30 AM

(ICACC-S17-009-2024) Tuning the Optical Features of Lanthanides via Structural Control at a Nanoparticle Level (Invited)

N. Liu[1]; C. Homann[1]; E. Hemmer*[1]

1. University of Ottawa, Chemistry and Biomolecular Sciences, Canada

9:00 AM

(ICACC-S17-010-2024) Scaling-up of Ceramic-based Components for Advanced Applications (Invited)

C. Busa*[1]

1. Technology Innovation institute, Advanced Materials, United Arab Emirates

10:00 AM

Break

10:20 AM

(ICACC-S17-013-2024) Solvothermal synthesis of unusual transition metal oxides structures and their water remediation properties (Invited)

M. Epifani*[1]

1. CNR-IMM, Italy

10:50 AM

(ICACC-S17-014-2024) Designing metal oxides and sulphides incorporated carbon nanocomposites for clean energy applications (Invited)

D. Chua*[1]

1. National University of Singapore, Materials Science & Engineering, Singapore

11:20 AM

(ICACC-S17-015-2024) Achieving high two-dimensional photoconductivity in Gd-modified bismuth ferrite via ferroelectric polarization

H. I. Mana-ay*[1]; C. Chen[2]; R. Chien[1]; C. Tu[3]; P. Chen[1]

1. Ming Chi University of Technology, International Ph.D. Program in Innovative Technology of Biomedical Engineering and Medical Devices, Taiwan
2. Hwa Hsia University of Technology, Mechanical Engineering, Taiwan
3. Fu Jen Catholic University, Department of Physics, Taiwan

S18 Ultra-High Temperature Ceramics

SYMPOSIUM 18: Super-hard UHTCs

Room: Coquina A

Session Chairs: Douglas Wolfe, Pennsylvania State University; Christopher Weinberger, Colorado State University

8:30 AM

(ICACC-S18-010-2024) Synthesis & Characterization of Bulk Materials Towards the Development of Spinodally-Hardened, Superhard High Entropy Ceramics (Invited)

D. E. Wolfe*[1]; C. DeSalle[2]; C. Ryan[2]; R. Crealese[2]; S. Divilov[2]; S. Curtarolo[3]; W. Fahrenholtz[4]; J. Maria[1]; H. Eckert[5]; D. Brenner[6]; E. Zurek[7]

1. Pennsylvania State University, USA
2. Penn State ARL, USA
3. Duke University, Materials Science, Electrical Engineering and Physics, USA
4. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
5. Duke University, Mechanical Engineering and Materials Science, USA
6. North Carolina State University, Materials Science and Engineering, USA
7. University of Buffalo, Chemistry Department, USA

9:00 AM

(ICACC-S18-011-2024) Mechanisms of Anomalous Hardness in Sub-Stoichiometric Transition Metal Carbides (Invited)

B. Watkins[1]; G. Thompson[2]; C. R. Weinberger*[1]

1. Colorado State University, Department of Mechanical Engineering, USA
2. University of Alabama, Metallurgical & Materials Engineering, USA

9:30 AM

(ICACC-S18-012-2024) Optimizing Hardness of High-Entropy Boride Thin Films by Modulating the Bipolar HiPIMS Kick-Pulse

N. S. McIlwaine*[1]; J. Maria[1]; N. O. Marquez Rios[1]

1. The Pennsylvania State University, Materials Science and Engineering, USA

9:50 AM

Break

S19 Molecular-level Processing and Chemical Engineering of Functional Materials

SYMPOSIUM 19: Energy-Related Matters I

Room: Ballroom 3

Session Chair: Anke Weidenkaff, Fraunhofer IWKS

8:30 AM

(ICACC-S19-009-2024) Smart use of functional materials in polymers and their implecations in solid-state lithium metal batteries (Invited)

J. R. Nair*[1]

1. Fraunhofer Gesellschaft, IWKS, Germany

9:00 AM

(ICACC-S19-010-2024) Opportunities for polymer-derived ceramics composites in sodium and potassium-ion batteries (Invited)

S. Dey[2]; S. Mujib[1]; G. Singh*[1]

1. Kansas State University, Mechanical and Nuclear Engineering Dept., USA
2. Kansas State University, Mechanical Engineering, USA

9:30 AM

(ICACC-S19-011-2024) Topochemical reactions and the corresponding strategies to develop novel photocatalysts with tailored optical properties (Invited)

S. Perween*[1]; O. Clemens[1]

1. University of Stuttgart, Institute for Materials Science, Germany

10:00 AM

Break

S1 Mechanical Behavior and Performance of Ceramics & Composites

SYMPOSIUM 1: Environmental effects and thermomechanical performance of ceramic matrix composites (CMCs)

Room: Coquina E

Session Chairs: Gerard Vignoles, University Bordeaux; Craig Smith, NASA Glenn Research Center

8:30 AM

(ICACC-S1-011-2024) Fatigue of a SiC/SiC Ceramic Composite with an Ytterbium-Disilicate Environmental Barrier Coating at Elevated Temperature (Invited)

M. Ruggles-Wrenn*[1]; T. Williams[1]

1. Air Force Institute of Technology, Aeronautics & Astronautics, USA

9:00 AM

(ICACC-S1-012-2024) Modeling oxide scale growth behavior of CMC

S. Fukuhara*[1]; S. Kanazawa[2]; M. Begley[3]

1. IHI Corporation, Japan
2. IHI Americas Inc., USA
3. University of California, Santa Barbara, USA

9:20 AM

(ICACC-S1-013-2024) Mechanical and Physical Properties of CVI-based UHTCMCs (Invited)

J. Binner*[1]; V. Venkatachalam[2]

1. University of Birmingham, Ceramic Science & Engineering, United Kingdom
2. University of Birmingham, Metallurgy and Materials, United Kingdom

9:50 AM

(ICACC-S1-014-2024) Stress rupture mechanisms of an orthogonal 3-D woven amorphous SiC fiber/SiC/YSi_2-Si Matrix Composites at elevated temperature in air

S. Kanazawa*[1]; T. Matsumoto[2]; N. Yamazaki[3]; Y. Asakura[3]; T. Aoki[4]; T. Ogasawara[2]; F. W. Zok[5]

1. IHI Americas Inc., USA
2. Tokyo University of Agriculture and Technology, Japan
3. IHI Corporation, Japan
4. Japan Aerospace Exploration Agency, Advanced Composite Research Center, Institute of Aeronautical Technology, Japan
5. University of California, Santa Barbara, USA

10:10 AM

Break

10:30 AM

(ICACC-S1-015-2024) Environmental Degradation Mechanisms of SiC/SiC Composites with SiC/PyC Bilayer Interphase in Wet Oxygen

W. Wu*[1]; Y. Song[1]; G. Yu[1]; X. Gao[1]

1. Nanjing University of Aeronautics and Astronautics, China

10:50 AM

(ICACC-S1-016-2024) Influence of Temperature on Mechanical Behavior of Unidirectional SiC/SiC Composites under Monotonic Tensile Loading

C. Brockman*[1]; A. S. Almansour[2]; R. K. Goldberg[2]; J. D. Kiser[2]; P. Sarin[1]

1. Oklahoma State University, Materials Science & Engineering, USA
2. NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA

11:10 AM

(ICACC-S1-017-2024) Evaluation of mechanical behaviour at high temperature and damage caused by thermal cycling of C_f/SiC with multilayered interphase and modified matrix

R. Krishna*[1]; P. Wilson[2]; M. A Williams[2]; P. Sreerangam[2]; U. Andi[3]; R. Mitra[1]

1. Indian Institute of Technology Kharagpur, Department of Metallurgical and Materials Engineering, India
2. University of Warwick, WMG, United Kingdom
3. Council of Scientific and Industrial Research - National Aerospace Laboratories, Materials Science Division, India

11:30 AM

(ICACC-S1-018-2024) High-Temperature Mechanical Behavior of Ceramic-Matrix Composites: Strength and Lifetime (Invited)

L. Li*[1]

1. Nanjing University of Aeronautics and Astronautics, College of Civil Aviation, China

S3 21th Intl Symp on Solid Oxide Cells Materials Science & Technology

SYMPOSIUM 3: Air electrode

Room: Ballroom 1-2

Session Chairs: Kevin Huang, University of South Carolina; Dimitrios Niakolas, FORTH/ICE-HT

8:30 AM

(ICACC-S3-009-2024) Enhancing Low-Temperature SOFC Performance and Durability via Surface Modification and Scaling High Power Cells (Invited)

E. D. Wachsman*[1]

1. University of Maryland, USA

9:00 AM

(ICACC-S3-010-2024) Optimization of LSCF Air Electrodes for Infiltration

J. Liu*[1]; T. Yang[2]; B. Guan[2]; Y. Picard[2]; R. Pineault[1]; T. Kalapos[2]; H. W. Abernathy[1]

1. National Energy Technology Laboratory, Thermal Sciences, USA
2. LRST-NETL, USA

9:20 AM

(ICACC-S3-012-2024) Synthesis, Performance analysis and Investigation of $NdBaCo_2O_{5+x}$ as an auspicious oxygen electrode material for reversible solid oxide fuel cells

A. Sreelakshmi*[1]; M. Rushabh[1]; S. Senthilkumar[1]; S. Aruna[1]

1. CSIR-National Aerospace Laboratories, Bengaluru, Surface Engineering Division, India

9:40 AM

(ICACC-S3-013-2024) Heterostructured Cr Resistant Oxygen Electrode for SOECs (Invited)

X. Liu*[2]; A. Kalu[3]; G. Liu[1]; C. Klemstine[2]; S. Yang[1]; W. Li[3]; E. M. Sabolsky[2]; Y. Zhong[1]

1. Worcester Polytechnic Institute, Mechanical and Materials Engineering, USA
2. West Virginia University, Mechanical & Aerospace Engineering, USA
3. West Virginia University, Department of Chemical and Biomedical Engineering, USA

10:10 AM

Break

10:30 AM

(ICACC-S3-014-2024) A novel high performance Cobalt-free air electrode for Solid Oxide Electrolysis Cell technology (Invited)

C. J. Ferchaud*[1]; F. F. van Berkel[1]; M. Stodolny[1]; L. Berkeveld[1]; M. Heijink- Smith[1]; M. Langerman[1]; J. Veldhuis[1]; X. Lu[1]; D. Montinaro[2]; C. Curzel[2]

1. TNO, Netherlands
2. SolydEra, Italy

11:00 AM

(ICACC-S3-015-2024) A High Performing Intermediate Temperature ZrO_2-Based Reversible Solid Oxide Cell Achieved by a New Barrier Layer Free Oxygen Electrode

J. Lu[1]; K. Huang*[1]

1. University of South Carolina, USA

11:20 AM

(ICACC-S3-016-2024) Improvement of air-side contacting in SOCs

Y. S. Ayhan*[1]; O. Guillon[1]; N. H. Menzler[2]

1. Forschungszentrum Juelich, IEK-1, Germany
2. Forschungszentrum Jülich GmbH, IEK-1, Germany

S5 Next-Generation Bioceramics and Biocomposites

SYMPOSIUM 5: Next Generation Bioceramics and Biocomposites

Room: Coquina B

Session Chair: Hui-suk Yun, Korea Institute of Materials Science

8:30 AM

(ICACC-S5-009-2024) Antimicrobial/virucidal composite coatings for different applications (Invited)

C. Balagna*[1]; A. Luceri[1]; F. Gattucci[1]; S. Perero[1]; M. Ferraris[1]

1. Politecnico di Torino, DISAT, Italy

9:00 AM

(ICACC-S5-010-2024) Development of nanostructured composite coatings containing silver nanoclusters for air filtration systems

A. Luceri*[1]; S. Perero[1]; M. Donalisio[2]; R. Francese[2]; D. Lembo[2]; M. Ferraris[1]; C. Balagna[1]

1. Politecnico di Torino, Department of Applied Science and Technology, Italy
2. Università di Torino, Department of Clinical and Biological Sciences, Italy

9:20 AM

(ICACC-S5-011-2024) The effect of surface ion-doping on the bioactive glass cytocompatibility and antibacterial performance

M. Lallukka*[1]; A. Houaoui[2]; M. Miola[1]; Z. Najmi[3]; A. Cochis[3]; J. Massera[2]; L. Rimondini[3]; E. Vernè[1]

1. Politecnico di Torino, Department of Applied Science and Technology, Italy
2. Tampere University, Faculty of Medical Sciences and Technology, Finland
3. Università degli Studi del Piemonte Orientale, Italy

9:40 AM

(ICACC-S5-012-2024) Control of Cell Recruitment by Surface Orientation of Hydroxyapatite/Collagen Bone-Like Nanocmposite

M. Kikuchi*[1]; T. Hasegawa[2]; N. Amizuka[2]

1. National Institute for Materials Science (NIMS), Bioceramics Group, Japan
2. Hokkaido University, Japan

10:00 AM

Break

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Solid electrolytes for batteries I

Room: Ballroom 5

Session Chairs: Chongmin Wang, Pacific Northwest National Lab; Naoaki Yabuuchi, Yokohama National University

8:30 AM

(ICACC-S6-009-2024) High-entropy solid electrolytes with garnet framework (Invited)

N. Zettsu*[1]

1. Shinshu University, Department of Materials Chemistry, Japan

9:00 AM

(ICACC-S6-010-2024) Operando Optical Imaging Platforms to Study Battery Reactions (Invited)

X. Shan*[1]; G. Feng[1]; G. Thomas[1]

1. University of Houston, Electrical and Computer Engineering, USA

9:30 AM

(ICACC-S6-011-2024) Polymer Electrolytes for Lithium Batteries (Invited)

H. Teng*[1]; H. Nguyen[1]

1. National Cheng Kung University, Chemical Engineering, Taiwan

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Microwave processing, SPS, flash sintering, high pressure assisted sintering III

Room: Coquina F

Session Chair: Michael Halbig, NASA Glenn Research Center

8:30 AM

(ICACC-S8-011-2024) Review of routes to sinter silicon nitride-based ceramics (Invited)

S. Hampshire*[1]

1. University of Limerick, The Bernal Institute, Ireland

S2 Advanced Ceramic Coatings for Structural/ Environmental & Functional Applications

SYMPOSIUM 2: Innovative Processing of Coatings

Room: Flagler C

Session Chair: Kuiying Chen, National Research Council Canada

8:40 AM

(ICACC-S2-019-2024) Microstructure and Scattering Coefficient Relationship in Thermal Barrier Coatings

Y. Wang*[1]; P. Hsu[1]

1. Florida Institute of Technology, Mechanical Engineering, USA

9:00 AM

(ICACC-S2-020-2024) An Novel Design for Nozzles for the Cold Spray and Micro-Cold Spray of Ceramic Coatings From Fine Particles

S. Bierschenk*[1]; D. Kovar[1]

1. University of Texas, Mechanical Engineering, USA

9:20 AM

(ICACC-S2-021-2024) Comparison of the blocking behavior of APS, SPS and PS-PVD TBC systems on substrates with cooling holes

M. Rüßmann*[1]; E. Bakan[1]; S. Schrüfer[2]; R. Vassen[1]

1. Forschungszentrum Juelich, IEK-1, Germany
2. Rolls-Royce Deutschland Ltd & Co KG, Germany

9:40 AM

(ICACC-S2-022-2024) Wear-resistant coatings for operation at 500 °C, obtained by vacuum-arc and magnetron sputtering of targets based on Ti(Nb, Cr,)-Al(Sn)-C MAX phases

T. Prikhna*[1]; O. Ostash[2]; O. Kuprin[3]; V. Podhurska[2]; B. Büchner[4]; D. Pohl[5]; P. Potapov[4]; T. Serbenyuk[1]; V. Sverdun[1]; V. Moshchil[1]; M. Karpets[6]; S. Ponomryov[7]

1. Institute for Superhard Materials of the National Academy of Sciences of Ukraine, Ukraine
2. Karpenko Physico-Mechanical Institute of the National Academy of Sciences of Ukraine, Ukraine
3. National Science Center Kharkov Institute of Physics and Technology, Ukraine
4. Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden e. V., Germany
5. Dresden Center for Nanoanalysis (DCN), Technische Universität Dresden, Germany
6. National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute", Ukraine
7. Institute of Semiconductor Physics of the National Academy of Sciences of Ukraine, Ukraine

S11 Advanced Materials and Innovative Processing Ideas for Production Root Technologies

SYMPOSIUM 11: Sustainable energy concepts and applications

Room: Ponce de Leon

Session Chair: Chisung Ahn, Korea Institute of Industrial Technology

9:00 AM

(ICACC-S11-001-2024) Mechanical properties and self-healing mechanism of SiC dispersed $Yb_2Si_2O_7$ composite (Invited)

A. Okawa*[1]; S. T. Nguyen[2]; T. Nakayama[3]; T. Do[3]; H. Suematsu[3]; T. Goto[3]; K. Niihara[3]

1. Tohoku University, Institute of Multidisciplinary Research for Advanced Materials, Japan
2. National Institute of Technology Kushiro College, Department of Creative Engineering, Japan
3. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

9:30 AM

(ICACC-S11-002-2024) Valid Design of Cathode and Anode Materials for Aqueous Zinc Ion Batteries (Invited)

S. Mhin*[1]

1. Kyonggi University, Advanced Materials Engineering, Republic of Korea

10:00 AM

Break

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Joining, integration, machining, repair, and refurbishment technologies

Room: Coquina F

Session Chair: Jerzy Lis, AGH University of Science and Technology

9:00 AM

(ICACC-S8-012-2024) Brazing of Ceramics and Ceramic Matrix Composites to Themselves and to Metals for High Temperature Structural Applications

M. C. Halbig*[1]; M. Singh[2]; R. Asthana[3]; A. S. Almansour[1]

1. NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA
3. University of Wisconsin-Stout, Engineering and Technology, USA

9:20 AM

(ICACC-S8-013-2024) Revisiting Wettability and Interfacial Phenomena in Processing and Joining of Ultra-High Temperature Ceramics

N. Sobczak[1]; R. Asthana*[2]

1. Institute of Metallurgy and Materials Science, Poland
2. University of Wisconsin-Stout, Engineering and Technology, USA

9:40 AM

(ICACC-S8-014-2024) Study of Metal Elements for Insert Materials in Liquid Phase Diffusion Bonding of SiC Ceramics

T. Ozaki*[1]; H. Tsuda[2]; S. Mori[2]

1. Osaka Research Institute of Industrial Science and Technology, Applied Material Chemistry, Japan
2. Osaka Metropolitan University, Japan

10:00 AM

Break

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Additive Manufacturing Processing, Characterization, and Applications II

Room: Coquina H

Session Chair: Giorgia Franchin, University of Padova

10:00 AM

Break

10:20 AM

(ICACC-S15-016-2024) Additive Manufacturing – versatile but challenging process (Invited)

D. B. Kata*[1]; P. Rutkowski[1]; J. Lis[1]

1. AGH University of Science and Technology, Faculty of Materials Science and Ceramics, Poland

10:50 AM

(ICACC-S15-017-2024) Highly transparent/translucent polycrystalline ceramics made by SLA 3D printing

R. Svintsitski*[1]; R. Gaignon[1]; A. Roux[1]; M. Bourjol[1]; E. Louradour[1]

1. 3DCERAM SINTO, France

11:10 AM

(ICACC-S15-018-2024) Stereolithography 3D Printing of Complex Al_2O_3 Heat Exchangers

C. Weatherstone*[1]; T. Shoulders[1]; M. Kauf[1]; R. Manglik[2]

1. Technology Assessment and Transfer, USA
2. University of Cincinnati, Mechanical & Materials Engineering, USA

11:30 AM

(ICACC-S15-019-2024) Additive Manufacturing of silicon carbide and boron carbide by means of CerAM technologies and possibilities of laser water jet cutting thereof

J. Abel*[1]; B. Matthey[2]; C. Berger[1]; U. Scheithauer[3]; T. Moritz[4]; M. Herrmann[5]

1. IKTS, Additive and Hybrid Manufacturing, Germany
2. Fraunhofer IKTS, Sintering and characterization, Germany
3. Fraunhofer IKTS, Shaping, Germany
4. Fraunhofer IKTS, Processes/Components, Germany
5. Fraunhofer IKTS, Germany

11:50 AM

(ICACC-S15-020-2024) W-Cu complex structures obtained by investment casting into SiO_2-based moulds produced by stereolithography

G. Bianchi*[1]

1. SUPSI, MEMTi, Switzerland

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Solid electrolytes for batteries II

Room: Ballroom 5

Session Chairs: Mahalingam Balasubramanian, Oak Ridge National Lab; Robert Dominko, National Institute of Chemistry

10:00 AM

Break

10:20 AM

(ICACC-S6-012-2024) Solid-state NMR spectroscopy as a direct tool to monitor fast ion dynamics in materials for new energy storage systems (Invited)

M. Wilkening*[1]

1. Graz University of Technology, Chemistry, Austria

10:50 AM

(ICACC-S6-013-2024) Design strategies in multifunctional structural battery electrolytes (Invited)

D. Fam*[1]; D. Safanama[1]; J. Lim[1]; S. Goh[1]; N. Ding[1]; M. Tan[1]; S. Chien[1]; J. Cheong[1]

1. Institute of Materials Research and Engineering, Singapore

11:20 AM

(ICACC-S6-014-2024) Enhanced Interfacial Stability of Sulfide Solid Electrolyte/ Li-metal Anode by N-GQD Coating

Y. Cho*[1]; D. Kim[1]; D. Kim[1]

1. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea

11:40 AM

(ICACC-S6-015-2024) 3D printing of $Li_{1.5}Al_{0.5}Ge_{1.5}P_3O_{12}$ electrolytes for All Solid Sate Lithium Batteries

A. Sabato*[1]; D. Ferreira[1]; A. Pesce[2]; M. Nuñez Eroles[1]; M. Casas-Cabanas[2]; P. Lopez-Aranguren[2]; M. Torrell[1]; A. Morata[3]; A. Tarancón[4]

1. IREC, Nanoionics and Fuel Cells, Spain
2. Center for Cooperative Research on Alternative Energies (CIC energiGUNE), Basque Research and Technology Alliance (BRTA), Electrochemical Energy Storage, Spain
3. Catalonia Institute for Energy Research (IREC), Nanoionics and Fuel Cells, Spain
4. IREC / ICREA, Spain

12:00 PM

(ICACC-S6-039-2024) Ceramic all-solid-state batteries based on garnet LLZO – manufacturing and optimization (Invited)

M. Finsterbusch*[1]; M. Mann[1]
; M. Rosen[1]; V. Kiyek[1]; C. Schwab[1]; D. Fattakhova-Rohlfing[1];
O. Guillon[1]

1. Forschungszentrum Juelich, IEK-1, Germany

13th Global Young Investigator Forum

13th Global Young Investigator Forum: Design and processing

Room: Coquina D

Session Chairs: Oriol Gavalda Diaz, Imperial College; Qiance Zhang, University of Bristol

10:20 AM

(ICACC-GYIF-013-2024) Inkjet printing of cobalt ferrite and sodium potassium niobate films for magnetic and piezoelectric applications in the microelectronics (Invited)

M. Mariani*[1]; R. Bernasconi[2]; F. Maspero[3]; C. Galassi[1]; L. Magagnin[2]; N. Lecis[1]

1. Politecnico di Milano, Mechanical Engineering, Italy
2. Politecnico di Milano, Chemistry, Materials and Chemical Engineering "Giulio Natta", Italy
3. Politecnico di Milano, Physics, Italy

10:50 AM

(ICACC-GYIF-014-2024) Thermal engineering using photonic structures (Invited)

S. Shin*[1]

1. National University of Singapore, Department of Mechanical Engineering, Singapore

11:40 AM

(ICACC-GYIF-016-2024) Scalable strategies for the recovery of ceramic materials from solid oxide cells (SOCs) and their re-manufacturing

S. Saffirio*[1]; S. Anelli[1]; D. Ferrero[2]; I. Schiavi[3]; M. Santarelli[2]; S. Pylypko[4]; F. Smeacetto[1]; S. Fiorilli[1]

11:20 AM

(ICACC-GYIF-015-2024) Phases, microstructures, and ionic conductivity of high-entropy Li-garnet

Z. Fu*[1]; S. Budur[1]

1. Penn State Harrisburg, USA

1. Politecnico di Torino, Department of Applied Science and Technology, Italy
2. Politecnico di Torino, DENERG, Department of Energy, Politecnico di Torino, Italy
3. Environment Park, Turin, Italy
4. Elcogen, Estonia

S2 Advanced Ceramic Coatings for Structural/ Environmental & Functional Applications

SYMPOSIUM 2: Environmental Barrier Coatings I

Room: Flagler C

Session Chair: Kang Lee, NASA Glenn Research Center

10:20 AM

(ICACC-S2-015-2024) Xenotime-based Minerals as Environmental Barrier Coatings

E. Opila*[1]; P. Stack[1]

1. University of Virginia, USA

10:40 AM

(ICACC-S2-016-2024) Quantitative microstructural analysis techniques in YbDS environmental barrier coatings

V. Mika*[1]; D. Smith[2]; G. Harrington[6]; R. A. Golden[3]; J. Shi[5]; M. Titus[1]; R. Trice[4]

1. Purdue University, Materials Science and Engineering, USA
2. Northwestern University, Materials Science and Engineering, USA
3. University of Virginia, Materials Science and Engineering, USA
4. Purdue University, Department of Materials Engineering, USA
5. Imperial College London, United Kingdom
6. Missouri University of Science & Technology, USA

11:00 AM

(ICACC-S2-017-2024) Exploring aspects related to the search for new T/EBCs

B. Kowalski*[1]; J. L. Stokes[1]

1. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA

11:20 AM

(ICACC-S2-018-2024) Performance of EB-PVD Y-based EBC system under high temperature water vapor environment

C. Y. Guijosa Garcia*[1]; U. Schulz[1]; R. Naraparaju[1]

1. DLR - German Aerospace Center, Institute of Materials Research, Germany

S11 Advanced Materials and Innovative Processing Ideas for Production Root Technologies

SYMPOSIUM 11: Coating, forming and shaping processes for industrial applications

Room: Ponce de Leon

Session Chair: Sungwook Mhin, Kyonggi University

10:20 AM

(ICACC-S11-003-2024) The Promising Progress of 2D Materials as a Sustainable Solid Lubricant (Invited)

A. Sumant*[1]

1. Argonne National Lab, Center for Nanoscale Materials, USA

10:50 AM

(ICACC-S11-004-2024) Design and Demonstration of Metal Wire DED Type Metal 3D Printer System Incorporating Robot and Metaverse (Invited)

T. Nakayama*[1]; W. Mita[1]; M. Iwama[1]; H. Hiraga[1]; Y. Miyashita[1]; M. Ito[2]; H. Suematsu[3]; K. Niihara[1]

1. Nagaoka University of Technology, Japan
2. IMI inc., Japan
3. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

11:20 AM

(ICACC-S11-005-2024) Experimental Study on Optimization of Plasma Process for High Density Ceramic Slurry Manufacturing

C. Ahn*[2]; B. Nah[1]

1. Hanyang University, Division of Materials Science & Engineering, Republic of Korea
2. Korea Institute of Industrial Technology, Heat & Surface Technology R&D Department, Republic of Korea

11:40 AM

(ICACC-S11-006-2024) Flexible Laser Processing of SiC-CMC by Hybrid ArF Excimer Laser

T. Onose*[1]; Y. Kamba[1]; O. Konda[1]; H. Motosugi[1]; T. Miura[1]

1. Gigaphoton Inc., Research & Development Div., Japan

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Advanced characterization techniques and methods

Room: Ballroom 4

Session Chair: David Sprouster, Brookhaven National Laboratory

10:20 AM

(ICACC-S13-013-2024) Neutron Scattering Analysis of Nuclear Materials (Invited)

E. O'Quinn*[1]

1. The University of Tennessee, Knoxville, Nuclear Engineering, USA

10:50 AM

(ICACC-S13-014-2024) Nondestructive Examination of AGR TRISO Particles and Compacts Using X-ray Computed Tomography (Invited)

W. Chuirazzi*[1]; R. Kancharla[1]; J. Stempien[1]

1. Idaho National Lab, USA

11:20 AM

(ICACC-S13-015-2024) Deformation of a SiC-based nuclear-fuel cladding under C-ring compression at 1200 °C with X-ray tomography imaging

G. Yuan*[1]; P. Forna-Kreutzer[2]; J. Ell[3]; H. Barnard[3]; S. Gonderman[4]; C. Deck[5]; E. J. Lahoda[6]; R. O. Ritchie[3]; D. Liu[2]

1. University of Bristol, Physics, United Kingdom
2. University of Bristol, United Kingdom
3. Lawrence Berkeley National Laboratory, USA
4. General Atomics, NTM, USA
5. General Atomics, USA
6. Westinghouse Electric Company, USA

11:40 AM

(ICACC-S13-016-2024) Multiscale, Multimodal Characterization and Safety Testing of Silicon Carbide Cladding

P. Xu*[1]

1. Idaho National Lab, USA

S18 Ultra-High Temperature Ceramics

SYMPOSIUM 18: Response in Extreme Environments

Room: Coquina A

Session Chairs: Yue Zhou, Missouri University of Science & Technology; Samuel Humphry-Baker, Imperial College London

10:20 AM

(ICACC-S18-013-2024) Tungsten diboride under thermal and irradiation damage (Invited)

S. A. Humphry-Baker*[1]; J. Davidson[1]; T. Zagyva[1]; M. Hasegawa[1]; X. Liu[1]

1. Imperial College London, Materials, United Kingdom

10:50 AM

(ICACC-S18-014-2024) Oxidation resistance of UHTCMCs up to 1700°C: Influence of Nb-coating (Invited)

A. Vinci*[1]; J. E. Förster[2]; D. Sciti[1]; R. Naraparaju[2]

1. CNR - ISSMC, Italy
2. DLR - German Aerospace Center, Institute of Materials Research, Germany

11:20 AM

(ICACC-S18-015-2024) Transforming UHTC Metal Ceramic Multilayer Composites for Hypersonics

J. C. Stotts*[1]; C. R. Weinberger[2]

1. Colorado State University, School of Advanced Materials Discovery, USA
2. Colorado State University, Department of Mechanical Engineering, USA

11:40 AM

(ICACC-S18-016-2024) The Response of ^{11}B Enriched ZrB_2 Ultra-high Temperature Ceramic to Neutron Irradiation at Elevated Temperatures

Y. Lin[1]; T. Koyanagi*[1]; D. Sprouster[2]; W. Fahrenholtz[3]; G. Hilmas[3]; Y. Katoh[1]

1. Oak Ridge National Laboratory, USA
2. Brookhaven National Laboratory, Nuclear Science and Technology, USA
3. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

S19 Molecular-level Processing and Chemical Engineering of Functional Materials

SYMPOSIUM 19: Energy-Related Matters I

Room: Ballroom 3

Session Chair: Christina Birkel, Arizona State University

10:20 AM

(ICACC-S19-012-2024) Actinide Oxide Nanomaterials Synthesized from Molecular Single-Source Precursors – Promising Materials for Energy Harvesting, Storage and Catalysis

A. Lichtenberg*[1]; S. Mathur[1]

1. University of Cologne, Institute of Inorganic Chemistry, Germany

10:40 AM

(ICACC-S19-013-2024) Porous Monolithic Perovskite Structures for High-Temperature Thermochemical Cycles (Invited)

M. Pein*[1]; A. Eltayeb[1]; C. C. Agrafiotis[1]; L. Klaas[1]; M. Roeb[1]; C. Sattler[1]

1. DLR - German Aerospace Center, Institute of Future Fuels, Germany

11:10 AM

(ICACC-S19-014-2024) Molecular-level processing of chalcogenide-based 2D materials by unique building block concepts (Invited)

V. Brune*[1]; S. Mathur[1]

1. University of Cologne, Institute of Inorganic Chemistry, Germany

S5 Next-Generation Bioceramics and Biocomposites

SYMPOSIUM 5: Next Generation Bioceramics and Biocomposites

Room: Coquina B

Session Chairs: Roger Narayan, North Carolina State University; Katalin Balazsi, Centre for Energy Research HAS

10:20 AM

(ICACC-S5-013-2024) Chitosan-derived hydroxyapatite hollow microspheres as drug-laden cell carriers (Invited)

S. Chen[2]; A. Osaka*[1]

1. Okayama University, Faculty of Engineering, Japan
2. Taiyuan University of Technology, College of Biomedical Engineering, China

10:50 AM

(ICACC-S5-015-2024) Porous, transparent model minerals for in-situ geobacterial imaging

L. Quinn*[1]; K. Sharma[2]; R. Wipfler[1]; S. Parra[1]; V. Orphan[1]; K. Faber[1]

1. California Institute of Technology, USA
2. University of California, Santa Cruz, USA

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Aqueous synthesis, colloidal processing, bio-inspired synthesis and processing

Room: Coquina F

Session Chair: Michael Halbig, NASA Glenn Research Center

10:20 AM

(ICACC-S8-015-2024) Hydrogen ceramic industry- breakthrough or alternative (Invited)

J. Lis*[1]; D. B. Kata[1]

1. AGH University of Science and Technology, Faculty of Materials Science and Ceramics, Poland

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSIUM 16: Conversion to ceramics

Room: Coquina C

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

10:40 AM

(ICACC-S16-005-2024) Ceramic synthesis using organic base geopolymers and base-catalyzed hydratable aluminate powders

D. Samuel*[1]; W. M. Kriven[1]

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

11:00 AM

(ICACC-S16-006-2024) Cold Sintered laterites based geopolymers: Densification, microstructure and micromechanic (Invited)

E. Kamseu*[1]; J. Nouping Fokoua[1]; M. Biesuz[2]; A. Akono[3]; S. Rossignol[4]; C. Leonelli[5]; V. M. Sglavo[6]

1. MIPROMALO, Research, Cameroon
2. University of Trento, Department of Industrial Engineering, Italy
3. Northwestern University, Civil and Environmental Engineering, USA
4. Laboratoire SPCTS, France
5. University of Modena and Reggio Emilia, Department of Engineering Enzo Ferrari, Italy
6. University of Trento, Italy

11:30 AM

(ICACC-S16-007-2024) Geopolymer route to the synthesis of ultra high temperature ceramic powders (Invited)

C. Bagci*[1]; W. M. Kriven[2]

1. Hitit University, Department of Metallurgical and Materials Engineering, Turkey
2. University of Illinois at Urbana-Champaign, USA

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Polymer-based processing

Room: Coquina F

Session Chair: Jerzy Lis, AGH University of Science and Technology

10:50 AM

(ICACC-S8-016-2024) Challenges using Polymer Derived Ceramics for Thermoplastic Material Extrusion based Additive Manufacturing (Invited)

F. Clemens*[1]; F. Sarraf[1]; S. Churakov[2]

1. Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland
2. University of Bern, Switzerland

11:20 AM

(ICACC-S8-017-2024) On the Design of High Performance Bioplastics by Using Advanced Blend Design and Solvent Casting (Invited)

E. Oloo[1]; S. Gupta*[1]

1. University of North Dakota, Mechanical Engineering, USA

11:50 AM

(ICACC-S8-018-2024) Compositionally Complex Ultra-High Temperature Ceramics via Metal Functionalized Preceramic Polymers

J. Ponder*[2]; H. Hackbarth[1]; N. D. Posey[2]; J. Delcamp[3]; N. Bedford[1]; M. B. Dickerson[3]; T. Pruyn[3]

1. University of New South Wales, Australia
2. Air Force Research Lab/UES Inc., Materials and Manufacturing Directorate, USA
3. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

13th Global Young Investigator Forum

13th Global Young Investigator Forum: Design and processing

Room: Coquina D

Session Chairs: Zhezhen Fu, Penn State Harrisburg; Marco Mariani, Politecnico di Milano

1:30 PM

(ICACC-GYIF-017-2024) Stability and CMAS Resistance Optimization of Rare Earth Disilicates for Environmental Barrier Coatings via High Entropy Design (Invited)

L. Sun*[1]; J. Wang[1]

1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Advanced Ceramics and Composites Division, China

2:00 PM

(ICACC-GYIF-018-2024) Compositional design of multicomponent rare-earth disilicates environmental barrier coating materials for SiC_f/SiC composite

Y. Luo*[1]; L. Sun[1]; J. Wang[1]

1. Institute of Metal Research, Chinese Academy of Sciences, China

2:20 PM

(ICACC-GYIF-019-2024) High-Char Preceramic Composite Resin for Infiltration-free Ceramic Matrix Composite Manufacturing

A. Thukral*[1]; K. Bhattacharyya[1]; R. Pandey[1]; G. Iftime[1]; B. Karki[1]; J. Wei[1]

1. Palo Alto Research Center, USA

2:40 PM

(ICACC-GYIF-020-2024) Development of regenerative spinel oxide catalysts for biomass utilization

S. Yamaguchi*[1]; T. Ozaki[1]; T. Suyama[1]; S. Ikawa[1]; T. Kobayashi[2]; T. Kobayashi[2]; M. Ootani[3]

1. Osaka Research Institute of Industrial Science and Technology, Applied Material Chemistry, Japan
2. Bigbang Co., Ltd., Japan
3. Kansai Catalyst Co., Ltd., Japan

3:00 PM

Break

S2 Advanced Ceramic Coatings for Structural/ Environmental & Functional Applications

SYMPOSIUM 2: Environmental Barrier Coatings III

Room: Flagler C

Session Chairs: Jie Zhang, Institute of Metal Research, Chinese Academy of Sciences; Bryan Harder, NASA Glenn Research Center

1:30 PM

(ICACC-S2-007-2024) Evolution of residual stresses during metastable crystalization of rare-earth (di) silicate environmental barrier coatings on SiC CMC substrates (Invited)

R. Sarrafi-Nour*[1]; D. Dunn[1]; Y. Gao[1]

1. GE Aerospace, Research Center, USA

2:00 PM

(ICACC-S2-008-2024) Thermal Properties of Plasma Spray-Physical Vapor Deposition and Suspension Plasma Sprayed HfO_2 Coatings

B. J. Harder*[1]; M. Slizik[1]; M. J. Presby[1]; J. L. Stokes[1]; L. C. Hoffman[1]; A. Vozar[2]; N. Antolino[2]; J. Wan[2]; A. Setlur[2]; R. Sarrafi-Nour[2]

1. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
2. GE Aerospace Research, USA

2:20 PM

(ICACC-S2-009-2024) Mechanical Testing of Suspension Plasma Spray and Plasma Spray-Physical Vapor Deposition HfO_2 Coatings

A. Vozar*[1]; B. J. Harder[2]; R. Sarrafi-Nour[1]; M. J. Presby[2]; J. Salem[3]; N. Antolino[1]; A. Setlur[1]; J. Wan[1]

1. GE Research, USA
2. NASA Glenn Research Center, Environmental Effects and Coatings, USA
3. NASA Glenn Research Center, Materials and Structures, USA

2:40 PM

(ICACC-S2-010-2024) Modeling oxidation kinetics of oxide-silicon composites

J. Wan*[1]; A. Setlur[1]; R. Sarrafi-Nour[1]; C. Henderson[1]; M. Barber[1]; K. Bryce[2]

1. GE Aerospace, Research Center, USA
2. Rensselaer Polytechnic Institute, USA

3:00 PM

Break

3:20 PM

(ICACC-S2-011-2024) Architectural development of Ytterbium Disilicate Environmental Barrier Coatings (Invited)

J. Zhang*[1]; H. Wang[1]; Z. Luo[1]; J. Wang[1]

1. Institute of Metal Research, Chinese Academy of Sciences, Shenyang National Laboratory for Materials Science, China

3:50 PM

(ICACC-S2-012-2024) High-Temperature Slurry Environmental Barrier Coating with Graded HfO_2-$HfSiO_4$ Topcoat

R. I. Webster*[1]; K. Lee[1]; B. J. Harder[1]; B. Puleo[1]

1. NASA Glenn Research Center, USA

4:10 PM

(ICACC-S2-013-2024) Foreign Object Damage and Oxidation in a Modified $Yb_2Si_2O_7$ Environmental Barrier Coating

L. C. Hoffman*[1]; M. J. Presby[1]; B. J. Harder[1]; J. L. Stokes[1]

1. NASA Glenn Research Center, Environmental Effects & Coatings, USA

4:30 PM

(ICACC-S2-014-2024) Solid State Reaction Kinetics of Yittria- Alumina Diffusion Couple Produced by Spark Plasma Sintering

C. S. Witharamage*[1]; E. J. Opila[1]

1. University of Virginia, Materials Science and Engineering, USA

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Ceramic fuel materials, technologies, and characterization

Room: Ballroom 4

Session Chair: Peng Xu, Idaho National Lab

1:30 PM

(ICACC-S13-017-2024) Beyond TRISO: Development of coated particle fuel (Invited)

E. Lopez Honorato*[1]; R. Heldt[1]; A. Diaz[1]; E. Dominguez[1]; F. Dal Forno Chuahy[1]; T. J. Gerczak[1]; J. Hunn[1]

1. Oak Ridge National Lab, USA

2:00 PM

(ICACC-S13-018-2024) Sintering and densification of gel-cast ceramic nuclear fuels

P. Makurunje*[1]; S. Middleburgh[1]

1. Nuclear Futures Institute, Bangor University, United Kingdom

2:20 PM

(ICACC-S13-019-2024) 3D porosity characterisation of TRISO coatings using plasma focused-ion-beam tomography

E. White*[3]; S. Waters[2]; M. Jiang[1]; Q. Zhang[3]; M. Davies[4]; D. Goddard[5]; N. Tzelepi[6]; D. Liu[3]

1. University of Bristol, United Kingdom
2. United Kingdom Atomic Energy Authority, Materials Research Facility, United Kingdom
3. University of Bristol, Physics, United Kingdom
4. Ultra Safe Nuclear Corporation, United Kingdom
5. National Nuclear Laboratory, Preston Laboratory, United Kingdom
6. National Nuclear Laboratory, Central Laboratory, United Kingdom

2:40 PM

(ICACC-S13-020-2024) Peridynamics Modelling of TRISO Coated Particle Fuel, a Comparison between 2D and 3D Models

A. Battistini*[1]; T. A. Haynes[2]; L. Jones[3]; M. Wenman[1]

1. Imperial College London, Materials, United Kingdom
2. University of East Anglia, United Kingdom
3. National Nuclear Laboratory, United Kingdom

3:00 PM

Break

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Binder Jetting and Powder Bed Fusion Processes I

Room: Coquina H

Session Chair: Soshu Kirihara, Osaka University

1:30 PM

(ICACC-S15-021-2024) Ceramics Binder Jetting by Granulated Particle and Nanoparticle Containing Ink; Particle Homogenizing Modeling (Invited)

K. Kamoda*[1]

1. Ricoh Company, Ltd., Advanced technology R&D Division, Japan

2:00 PM

(ICACC-S15-023-2024) Layerwise Slurry Deposition (LSD-Print) of silicon carbide

N. H. Schubert*[2]; A. Zocca[1]; J. Guenster[2]

1. BAM Federal Institute for Materials Research and Testing, Ceramic Processing and Biomaterials, Germany
2. BAM Federal Institute for Materials Research and Testing, Germany

2:20 PM

(ICACC-S15-024-2024) Depowdering of an Additively Manufactured Ceramic Heat Exchanger with Narrow and Turned Channels

M. Du*[1]; W. Yu[1]; D. France[2]; D. Singh[1]

1. Argonne National Lab, USA
2. Univeristy of Illinois Chicago, Department of Mechanical and Industrial Engineering, USA

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSIUM 16: Conversion to ceramics II

Room: Coquina C

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

1:30 PM

(ICACC-S16-008-2024) Investigations of CO_2-sorption and sequestration in zeolites and as produced lime-sand bricks (Invited)

C. Rüscher*[1]; B. Hagel[1]; N. Och[1]

1. Leibniz University Hannover, Mineralogy, Germany

S17 Advanced Ceramic Materials and Processing for Photonics and Energy

SYMPOSIUM 17: Multi-functional materials and Advanced and nanostructural materials for photo-voltaics and solar fuels

Room: Coquina G

Session Chairs: Farid Akhtar, Lulea University of Technology; Fiorenzo Vetrone, Institut National de la Recherche Scientifique, Université du Québec

1:30 PM

(ICACC-S17-016-2024) Advancements in Photoelectrochemical Hydrogen Production based CdS Photoanodes (Invited)

M. Siaj*[1]

1. University of Quebec, Montreal, Faculty of Science, Canada

2:00 PM

(ICACC-S17-017-2024) Advanced Ceramic Materials and Processing for Photonics and Energy (Invited)

R. Narayan*[1]

1. North Carolina State University, USA

2:30 PM

(ICACC-S17-019-2024) Silicon-based Thin Film Structures for Photonic and Photovolatic Applications (Invited)

P. Mascher*[1]; P. Bhattacharyya[1]; B. Ahammou[1]; F. Azmi[1]; R. Kleiman[1]

1. McMaster University, Engineering Physics, Canada

3:00 PM

Break

3:20 PM

(ICACC-S17-020-2024) Advances in the Development of Ceramics for Solar Fuel Generation (Invited)

O. K. Varghese*[2]; D. Waligo[2]; D. Rana[2]; J. Napagoda[2]; L. Schaffer[2]; M. Paulose[1]

1. University of Houston, Department of Physics, USA
2. University of Houston, Department of Physics & Texas Center for Superconductivity, USA

3:50 PM

(ICACC-S17-021-2024) Lead-sulfur interaction to induced water stability in formamidinium lead triiodide (Invited)

S. Ahmad*[1]; M. P. Usman[1]; E. Ruiz[2]; S. Kazim[1]

1. BCMaterials, Basque Center for Materials, Applicaiton and Nanostructures, Spain
2. Universitat de Barcelona, Spain

4:20 PM

(ICACC-S17-022-2024) A Photonics Framework for Thermophotovoltaics (Invited)

M. Leite*[1]

1. UC Davis, Materials Science and Engineering, USA

4:50 PM

(ICACC-S17-023-2024) Novel carbon-ceramic electrospun fibers combining a high oxidation stability with low thermal and high electrical conductivities

J. Denk*[3]; X. Liao[1]; T. Tran[2]; S. Agarwal[1]; S. Schafföner[3]; G. Motz[3]

1. University Bayreuth, Chair of Macromolecular Chemistry II, Germany
2. University Bayreuth, Physical Chemistry I, Germany
3. University of Bayreuth, Ceramic Materials Engineering, Germany

S18 Ultra-High Temperature Ceramics

SYMPOSIUM 18: Novel Processing Methods

Room: Coquina A

Session Chairs: Jon Binner, University of Birmingham; Adam Peters, Johns Hopkins University

1:30 PM

(ICACC-S18-017-2024) Reactive laser synthesis of ultra-high-temperature ceramics HfC, ZrC, TiC, HfN, ZrN, and TiN for additive manufacturing (Invited)

A. B. Peters*[1]; C. Wang[1]; D. Zhang[1]; A. Hernandez[1]; D. Nagle[1]; T. Mueller[1]; J. B. Spicer[1]

1. Johns Hopkins University, Materials Science and Engineering, USA

2:00 PM

(ICACC-S18-018-2024) Pressureless sintering of chopped carbon fiber reinforced zirconium diboride from additive manufacturing

J. Kaufman*[1]; L. M. Rueschhoff[2]; C. Wyckoff[1]

1. UES, Inc., USA
2. Air Force Research Lab, Materials and Manufacturing Directorate, USA

2:20 PM

(ICACC-S18-019-2024) Synthesis of monodispersed ZrC nanoparticles derived from MOF-801

WITHDRAWN

Y. Zou*[1]; H. Lee[1]; S. Lee[1]

1. Korea Institute of Materials Science, Republic of Korea

2:40 PM

(ICACC-S18-020-2024) Polymer-Derived High and Ultra-High Temperature Ceramic Matrix Composites (Invited)

J. Binner*[1]; M. Younas[2]; E. Zancan[2]

1. University of Birmingham, Ceramic Science & Engineering, United Kingdom
2. University of Birmingham, Metallurgy and Materials, United Kingdom

3:10 PM

Break

3:30 PM

(ICACC-S18-021-2024) Infiltration of Porous Ultra-High Temperature Ceramics for Active Cooling

A. J. Kaplan*[1]; C. Tallon[1]

1. Virginia Tech, Materials Science and Engineering, USA

3:50 PM

(ICACC-S18-022-2024) Processing of Nb-coatings on ZrB_2 and C-ZrB_2/SiC composites

J. E. Förster*[1]; A. Vinci[2]; D. Sciti[2]; R. Naraparaju[1]

1. DLR - German Aerospace Center, Institute of Materials Research, Germany
2. CNR - ISSMC, Italy

4:10 PM

(ICACC-S18-023-2024) Optimized reactive melt infiltration approaches for preparing multiphase ceramic composites

P. Makurunje*[1]; S. Middleburgh[1]

1. Nuclear Futures Institute, Bangor University, United Kingdom

S19 Molecular-level Processing and Chemical Engineering of Functional Materials

SYMPOSIUM 19: Additive Manufacturing

Room: Ballroom 3

Session Chair: Jijeesh Nair, Fraunhofer Gesellschaft

1:30 PM

(ICACC-S19-015-2024) Two-Photon Polymerization Enabled 3D Printing of Ceramics and Composites (Invited)

A. Gurlo*[1]; M. Bekheet[1]; H. Yang[1]; X. Wang[1]

1. Technical University of Belin, Germany

2:00 PM

(ICACC-S19-016-2024) Light as a processing tool for complex-structured polymer-derived ceramic materials (Invited)

T. Konegger*[1]; J. Eßmeister[1]; L. Schachtner[1]; K. Rauchenwald[1]

1. TU Wien, Institute of Chemical Technologies and Analytics, Austria

2:30 PM

(ICACC-S19-017-2024) Direct Ink Write Additive Manufacturing of Preceramic Polymers for Nano Ceramics (Invited)

J. J. Bowen[1]; C. Clarkson[1]; J. Ponder[1]; H. Koerner[1]; L. M. Rueschhoff[1]; C. Wyckoff[1]; J. Lewis[2]; M. B. Dickerson*[1]

1. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA
2. Harvard University, USA

3:00 PM

Break

S1 Mechanical Behavior and Performance of Ceramics & Composites

SYMPOSIUM 1: Fracture mechanics, failure analysis and fractography

Room: Coquina E

Session Chairs: Michael Jenkins, Bothell Engineering and Science Technologies; Jonathan Salem, NASA Glenn Research Center

1:30 PM

(ICACC-S1-019-2024) Reflections on the NIST Guidebook: Fractography of Ceramics and Glasses (Invited)

G. D. Quinn*[1]

1. National Institute of Standards and technology, Materials Measurement Sciences Division, USA

2:00 PM

(ICACC-S1-020-2024) Crack Propagation in Calcium Fluoride Single Crystals

J. Salem*[1]

1. NASA Glenn Research Center, Materials and Structures, USA

2:20 PM

(ICACC-S1-021-2024) Laminates of porous ceramic layers fabricated via SiC foaming and dense ceramic layers

T. Sawada*[1]; Y. Maki[2]; S. Ikari[2]; K. Yamamoto[1]; S. Kawai[1]; W. Nakao[2]

1. LIXIL Corporation, Japan
2. Yokohama National University, Graduate School of Science and Engineering, Japan

2:40 PM

(ICACC-S1-022-2024) Advanced ceramic composites reinforced with 2D nanomaterials: Unraveling interfacial shear resistance and toughening mechanisms

C. Lopez Pernia*[1]; X. Liu[2]; C. Athanasious[2]; J. Lou[3]; H. Gao[4]; N. P. Padture[1]; B. Sheldon[1]

1. Brown University, Engineering Department, USA
2. Georgia Institute of Technology, USA
3. Rice University, USA
4. Nanyang Technological University, Singapore

3:00 PM

Break

3:20 PM

(ICACC-S1-023-2024) Statistical strength characterization of metal/ceramic joints (Invited)

S. Grutzik*[1]; T. Diebold[2]; K. T. Strong[2]

1. Sandia National Laboratories, Materials and Failure Modeling, USA
2. Sandia National Laboratories, Materials Mechanics and Tribology, USA

3:50 PM

(ICACC-S1-024-2024) Delamination in CFRP: Experimental Approach

K. Jribi*[1]; B. Azizi[1]; A. Mello[1]

1. Embry-Riddle Aeronautical University, Aerospace Engineering, USA

4:10 PM

(ICACC-S1-025-2024) Effect of Lamellar Structure Alignment on the Compressive Behavior of Freeze-Casted Ceramics

S. Sattar*[1]; O. Kravchenko[2]

1. University of Minnesota Duluth, USA
2. Old Dominion University, USA

4:30 PM

(ICACC-S1-026-2024) Understanding fracture in tough alumina-based ceramic inspired by nacre

V. Vilchez[1]; S. Lightfoot[2]; P. Withers[2]; F. Bouville*[1]

1. Imperial College London, Department of Materials, United Kingdom
2. University of Manchester, Department of materials, United Kingdom

4:50 PM

(ICACC-S1-027-2024) The effect of oxidation on the flexural strength of AlN - A Weibull analysis

A. Klein*[1]; J. Zhu[2]; M. J. Whiting[1]; R. A. Dorey[1]

1. University of Surrey, School of Mechanical Engineering Sciences, United Kingdom
2. Dyson Technology Ltd, United Kingdom

S3 21th Intl Symp on Solid Oxide Cells Materials Science & Technology

SYMPOSIUM 3: Proton conducting ceramic cells

Room: Ballroom 1-2

Session Chairs: Eric Wachsman, University of Maryland; Xingbo Liu, West Virginia University

1:30 PM

(ICACC-S3-017-2024) Improving the faradaic efficiency in protonic ceramic electrolysis cells (Invited)

S. Ricote*[1]; H. Zhu[1]; R. J. Kee[1]

1. Colorado School of Mines, Mechanical Engineering, USA

2:00 PM

(ICACC-S3-018-2024) Recent advances in the development of proton-conducting ceramic cells for electrolysis and co-electrolysis (Invited)

M. E. Ivanova*[1]

1. Forschungszentrum Juelich, Solid Oxide Cells, Germany

2:30 PM

(ICACC-S3-019-2024) Intermediate Temperatures Solid State Energy Conversions by Protonic Ceramics: A Key for Cost-Effective Decarbonized Economy (Invited)

D. Ding*[1]

1. Idaho National Lab, Hydrogen and electrochemistry, USA

3:00 PM

Break

3:20 PM

(ICACC-S3-020-2024) Multiscale structuring for performance enhancement of protonic ceramic fuel cell (Invited)

K. Bae*[1]

1. KENTECH, Republic of Korea

3:50 PM

(ICACC-S3-021-2024) Advancements in Additive Manufacturing of Protonic Ceramic Fuel cells

M. Asghar*[1]

1. Tampere University, Renewable Energy Technologies Group, Faculty of Engineering and Natural Sciences, Finland

4:10 PM

(ICACC-S3-022-2024) Alternative production processes for proton conducting SOC

A. Bartoletti[1]; a. Sangiorgi[1]; E. Mercadelli[1]; A. Gondolini[1]; A. Sanson*[1]

1. CNR-ISSMC, Italy

4:30 PM

(ICACC-S3-023-2024) Joining and integration of protonic ceramic electrolysis cell

S. Anelli*[1]; D. Ferrero[2]; D. Schmider[3]; J. Dailly[3]; M. Santarelli[2]; F. Smeacetto[1]

1. Politecnico di Torino, DISAT, Italy
2. Politecnico di Torino, DENERG, Italy
3. European Institute for Energy Research (EIFER), Germany

4:50 PM

(ICACC-S3-024-2024) Shrinkage analysis of free-standing tapes used for BZCY-based proton-conducting electrolysis cells

L. Schäfer*[1]; R. Muecke[1]; Y. Zeng[1]; M. E. Ivanova[1]; N. H. Menzler[1]; O. Guillon[1]

1. Forschungszentrum Jülich GmbH, IEK-1, Germany

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: All-solid-state batteries III

Room: Ballroom 5

Session Chairs: Jelena Popovic-Neuber, University of Stavanger; Martin Finsterbusch, Forschungszentrum Juelich

1:30 PM

(ICACC-S6-016-2024) NASICON-based materials, the perfect match for the next generation of batteries? (Invited)

J. Chotard*[1]; P. Canepa[2]; V. Seznec[1]; E. Mahayoni[1]; A. Tieu Jue Kang[2]; K. Choudhari[1]; S. Park[1]; C. Masquelier[1]

1. University de Picardie Jules Verne, LRCS, France
2. National University of Singapore, Singapore

2:00 PM

(ICACC-S6-017-2024) Materials and microstructural parameters governing the mechanical stress and conductivity of all-solid-state lithium-ion-battery cathodes

O. Guillon*[1]; F. Al-Jaljouli[1]; R. Muecke[1]; P. Kaghazchi[1]

1. Forschungszentrum Juelich, IEK-1, Germany

2:20 PM

(ICACC-S6-018-2024) Controlled Engineering of Composite Electrode and Electrolyte for All-solid-state Na-ion Batteries

S. Dwivedi[1]; S. Vasudevan[1]; P. Balaya*[1]

1. National University of Singapore, Department of Mechanical Engineering, Singapore

2:40 PM

(ICACC-S6-019-2024) Proton H^+ self-diffusion in Li-H exchanged garnet-type $Li_6La_3ZrTaO_{12}$ as directly probed by solid-state ^1H NMR relaxation

F. Stainer*[1]; M. Gombotz[1]; C. Hiebl[1]; M. Wilkening[1]

1. Graz University of Technology, Institute for Chemistry and Technology of Materials, Austria

S7 18th Intl Symp on Functional Nanomaterials & Thin Films for Sustainable Energy Harvesting

SYMPOSIUM 7: Nanomaterials for energy conversion, storage and catalysis

Room: Coquina B

Session Chair: Muhammet Toprak, KTH Royal Institute of Technology

1:30 PM

(ICACC-S7-001-2024) Sodium-Sulfur Batteries with Unprecedented Performances Enabled by a $CoFe_2O_4$ Catalytic Additive under an External Magnetic Field (Invited)

A. Cabot*[1]

1. Catalonia Institute for Energy Research, Spain

2:00 PM

(ICACC-S7-002-2024) Towards ceramic thin-film solid-state lithium ion batteries (Invited)

A. Morata*[1]; J. Gonzalez-Rosillo[1]; F. Monteiro-Freitas[1]; B. Laurenti[1]; K. Castelló[1]; A. Tarancón[2]

1. Catalonia Institute for Energy Research (IREC), Nanoionics and Fuel Cells, Spain
2. IREC / ICREA, Spain

2:30 PM

(ICACC-S7-003-2024) High entropy alloys as electrocatalysts in zinc-air batteries (Invited)

A. Cabot*[1]

1. Catalonia Institute for Energy Research, Spain

3:00 PM

Break

3:20 PM

(ICACC-S7-004-2024) TiO_2 Brookite Nanorods-Based Nanocomposites for Energy Storage and Smart Windows (Invited)

C. Xing*[1]

1. Pennsylvania State University, Department of Materials Science and Engineering, USA

3:50 PM

(ICACC-S7-005-2024) Excellent performance of energy storage in $Ag(Nb_{0.8}Ta_{0.2})O_3$ ceramic via tailored relaxor-antiferroelectric state by Gd-doped

S. Tangsuwanjinda*[1]

1. Ming Chi University of Technology, International Ph.D. Program in Innovative Technology of Biomedical Engineering and medical Devices, Taiwan

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Novel forming/sintering technologies, near-net shaping I

Room: Coquina F

Session Chair: Anne Leriche, Université Polytechnique Hauts-de-France

1:30 PM

(ICACC-S8-019-2024) Pressureless sintering of SiC ceramics containing non-shrinking TRISO particles (Invited)

Y. Kim*[1]

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea

2:00 PM

(ICACC-S8-020-2024) Fabrication of high strength alumina with compressive residual stress on the surface by crystallographic orientation (Invited)

T. S. Suzuki*[1]; A. Nagase[2]; T. Uchikoshi[1]; H. Kiyono[2]

1. National Institute for Materials Science (NIMS), Japan
2. Shibaura Institute of Technology, Japan

2:30 PM

(ICACC-S8-021-2024) Synthesis of α-MoO_3 dendrites for producing ^{99m}Tc by hot atom mechanism

Y. Yang*[1]; T. Suzuki[1]; N. Chu[3]; T. Do[2]; T. Nakayama[1]; K. Niihara[1]; H. Suematsu[1]

1. Nagaoka University of Technology, Japan
2. Nagaoka University of Technology, Nuclear System Safety Engineering, Japan
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan

2:50 PM

Break

S11 Advanced Materials and Innovative Processing Ideas for Production Root Technologies

SYMPOSIUM 11: Starting materials: Mining, particles, bulk, and functional materials and precursors

Room: Ponce de Leon

Session Chair: Sungwook Mhin, Kyonggi University

1:50 PM

(ICACC-S11-007-2024) Spray freeze granulation drying of nonaqueous slurry to fabricate Si_3N_4 ceramics with highly homogenous internal structure (Invited)

J. Tatami*[1]; R. Yamazaki[1]; M. Iijima[1]; S. Kawaguchi[2]; N. Kondo[3]

1. Yokohama National University, Japan
2. PRECI Co., Ltd., Japan
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan

2:20 PM

(ICACC-S11-008-2024) Effect of Structural Differences in Polymeric Precursors on the Properties of B_4C Powders

O. Yucel*[1]; J. Binner[2]

1. University of Birmingham, United Kingdom
2. University of Birmingham, Ceramic Science & Engineering, United Kingdom

2:40 PM

(ICACC-S11-009-2024) Leveraging diatomaceous earth material for ceramic reef structure via slip casting method

L. I. Cabalo*[1]; R. Agbay[1]; F. Dagaas[1]

1. Mindanao State University-Iligan Institute of Technology, Department of Materials and Resources Engineering & Technology (DMRET), Philippines

3:00 PM

Break

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSIUM 16: Extrusion and 3D printing

Room: Coquina C

Session Chair: Ana Carolina Trindade, University of Illinois at Urbana-Champaign

2:00 PM

(ICACC-S16-009-2024) Extrudability geopolymer pastes from different metakaolin mixtures

W. Ncho*[1]

1. UNIVERSITE, IRCER, France

2:20 PM

(ICACC-S16-010-2024) Extruded metakaolin-based geopolymers for 3D printing application

G. Masi*[1]; A. Saccani[1]; M. C. Bignozzi[1]

1. University of Bologna, Department of Civil, Chemical, Environmental and Materials Engineering, Italy

2:40 PM

(ICACC-S16-011-2024) Direct ink writing of geopolymer-zeolite (in-situ) composite for CO_2 Capture

S. S. Hossain*[1]; F. Akhtar[2]

1. Luleå University of Technology, Materials Engineering, Sweden
2. Lulea University of Technology, Division of Materials Science, Sweden

3:00 PM

Break

3:20 PM

(ICACC-S16-012-2024) Rheological Insights and 3D-Printability Assessment of an Extruded Ceramic-like Geopolymer

A. Gasmi*[1]; C. Pelegris[1]; R. Davidovits[1]; M. Guessasma[1]; H. Tortajada[1]; F. Jean[2]

1. UPJV, MIM- Laboratoire des Technologies Innovantes, France
2. Université polytechnique Hauts de France, CERAMATHS, France

3:40 PM

(ICACC-S16-013-2024) Changes in Adhesion Strength Based on Processing and Reinforcement Variations in Geopolymer Composites

A. S. Brandvold*[1]; W. M. Kriven[2]

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, USA

4:00 PM

(ICACC-S16-014-2024) Additive manufacturing with geopolymers: Opportunities for recycling, sustainability and environmental protection (Invited)

G. Franchin*[1]; M. D'Agostini[1]; F. Gobbin[1]; H. Elsayed[1]; P. Colombo[1]

1. University of Padova, Industrial Engineering, Italy

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Binder Jetting and Powder Bed Fusion Processes II

Room: Coquina H

Session Chair: Michael Halbig, NASA Glenn Research Center

3:00 PM

Break

3:20 PM

(ICACC-S15-025-2024) Additive manufacturing of carbon TPMS structures by binder jetting and powder bed fusion followed by polymer infiltration and pyrolysis

M. Pelanconi*[1]; P. Blyweert[2]; G. Bianchi[1]; V. Nicolas[2]; V. Fierro[2]; A. Celzard[2]; A. Ortona[1]

1. SUPSI, Department of Innovative Technologies, Switzerland
2. Université de Lorraine, France

3:40 PM

(ICACC-S15-026-2024) Binder jetting of porous alumina preforms for pressureless melt infiltration of metals

M. Mariani*[1]; E. Mercadelli[2]; C. Galassi[1]; N. Lecis[1]

1. Politecnico di Milano, Mechanical Engineering, Italy
2. CNR-ISSMC, Istituto di Scienza, Tecnologia e Sostenibilità per lo Sviluppo dei Materiali Ceramici, Italy

4:00 PM

(ICACC-S15-027-2024) Binding Mechanism of SiC During Direct Selective Laser Sintering

B. W. Lamm*[1]; O. Karakoc[1]; K. Mao[1]; T. Koyanagi[2]; J. Liu[3]; Y. Katoh[2]

1. Oak Ridge National Laboratory, Materials Science & Technology Division, USA
2. Oak Ridge National Laboratory, USA
3. PolarOnyx Inc., USA

4:20 PM

(ICACC-S15-028-2024) Additive Manufacturing of High-Temperature Ceramic Components via Reaction Bonding

Z. Ahmad*[1]; T. Seager[2]; D. Cheikh[2]; B. Li[2]; B. McEnerney[2]; J. P. Borgonia[2]; S. Firdosy[2]; K. Faber[3]

1. California Institute of Technology, Applied Physics and Materials Science, USA
2. NASA Jet Propulsion Laboratory, USA
3. California Institute of Technology, USA

4:40 PM

(ICACC-S15-029-2024) Aqueous Slurry Development and Characterization for Multiple-Oxide Direct Ink Writing

P. Snarr*[1]; C. L. Cramer[2]; A. T. Nelson[2]

1. The University of Texas at Austin, USA
2. Oak Ridge National Lab, Manufacturing Science Division, USA

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: All-solid-state batteries IV

Room: Ballroom 5

Session Chairs: Yuki Orikasa, Ritsumeikan University; Hsisheng Teng, National Cheng Kung University

3:00 PM

Break

3:20 PM

(ICACC-S6-020-2024) (Ca, Sr)FeO_2 Cathodes with High Capacity using Anionic Redox for All-solid-state Fluoride-Ion Batteries (Invited)

K. Yamamoto*[1]

1. Nara Women's University, Japan

3:50 PM

(ICACC-S6-021-2024) In silico Design and Optimization of Abundant Energy Materials (Invited)

P. Canepa*[1]

1. University of Houston, Electrical and Computer Engineering, USA

4:20 PM

(ICACC-S6-022-2024) Thermodynamic and Elastic Properties of Glass-Ceramic Solid Electrolytes (Invited)

M. Rohde*[1]; C. Hausner[1]; H. J. Seifert[1]

1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

4:40 PM

(ICACC-S6-023-2024) Exploiting glass formability for low-temperature assembly of all-solid-state batteries

M. Bertrand*[1]; S. Rousselot[1]; M. Rioux[1]; D. Aymé-Perrot[2]; M. Dollé[1]

1. Université de Montréal, Chemistry, Canada
2. Total Énergies, France

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Novel forming/sintering technologies, near-net shaping II

Room: Coquina F

Session Chair: Tohru Suzuki, National Institute for Materials Science

3:10 PM

(ICACC-S8-022-2024) Cold Sintering Process: A new method to develop dense and nanometric hydroxyapatite ceramic and biocomposites (Invited)

M. Kumar[1]; M. Ben Achour[1]; M. Lasgorceix[1]; R. Mincheva[2]; J. Raquez[2]; A. L. Leriche*[1]

1. Polytechnical University Hauts de France, CERAMATHS DMP, France
2. University of Mons, Lab Polymeric and composite materials, Belgium

3:40 PM

(ICACC-S8-023-2024) Densification, microstructure and properties of advanced ceramics sintered under ultra-high pressure (Invited)

W. Ji*[1]; Z. Fu[2]

1. Wuhan University of Technology, China
2. Wuhan University of Technology, State Key Lab of Advanced Technology for Materials Synthesis and Processing, China

4:10 PM

(ICACC-S8-024-2024) Potential applications of selective laser sintering SLS for the preparation of oxide ceramics (Invited)

T. Graule*[1]; C. Aneziris[2]; S. Pfeiffer[1]

1. Empa, Laboratory for High Performance Ceramics, Switzerland
2. Technical University Freiberg, Germany

4:40 PM

(ICACC-S8-025-2024) A new perspective on the production of traditional ceramics: Touch-free flash sintering

Z. Çetinkaya*[2]; R. Raj[1]

1. University of Colorado, USA
2. Konya Technical University, Metallurgical and Materials Engineering, Turkey

13th Global Young Investigator Forum

13th Global Young Investigator Forum: Design and processing

Room: Coquina D

Session Chairs: Chunmei Ban, University of Colorado, Boulder; Bawane Kaustubh, College of Engineering

3:20 PM

(ICACC-GYIF-021-2024) Tailored sintering route, engineered microstructure-performance relationship and AI based property determinations in silicon nitride ceramics (Invited)

Y. Nakashima*[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

3:50 PM

(ICACC-GYIF-023-2024) Ultra-rapid debinding and sintering of additively manufactured ceramics by ultrafast high-temperature sintering

S. Bhandari*[2]; C. Manière[3]; F. Sedona[1]; E. Bona[1]; V. M. Sglavo[1]; P. Colombo[2]; L. Fambri[1]; M. Biesuz[1]; G. Franchin[2]

1. Department of Industrial Engineering, University of Trento, Via Sommarive 9, Italy
2. Department of Industrial Engineering, University of Padova, Via Marzolo 9, Italy
3. ENSICAEN, UNICAEN, CNRS, CRISMAT, Normandie Univ, France

4:10 PM

(ICACC-GYIF-024-2024) Deposition of antimicrobial and antiviral composite coatings by means co-sputtering technique

A. Luceri*[2]; S. Perero[2]; R. Francese[1]; A. Civra[1]; M. Donalisio[1]; D. Lembo[1]; M. Ferraris[2]; C. Balagna[2]

1. Laboratory of Molecular Virology and Antiviral Research, University of Turin, Department of Clinical and Biological Sciences, Italy
2. Politecnico di Torino, Department of Applied Science and Technology, Italy

4:30 PM

(ICACC-GYIF-025-2024) Oxidation protective ceramic coatings processed by electrophoretic deposition method

E. Zanchi*[1]; G. Cempura[4]; S. Molin[2]; A. R. Boccaccini[3]; F. Smeacetto[5]

1. Politecnico di Torino, Applied Science and Technology, Italy
2. Gdansk University of Technology, Laboratory of Functional Materials, Faculty of Electronics, Telecommunications and Informatics, Poland
3. University of Erlangen-Nuremberg, Institute of Biomaterials, Germany
4. AGH University of Science and Technology, Poland
5. Politecnico di Torino, Applied Science and Technology, Italy

S11 Advanced Materials and Innovative Processing Ideas for Production Root Technologies

SYMPOSIUM 11: New concepts and emerging technologies for enhanced product performance I

Room: Ponce de Leon

Session Chair: Chisung Ahn, Korea Institute of Industrial Technology

3:20 PM

(ICACC-S11-010-2024) Accelerating materials research by combining AI and computational materials science (Invited)

D. Lee*[1]

1. Pohang University of Science and Technology(POSTECH), Materials Science and Engineering, Republic of Korea

3:50 PM

(ICACC-S11-011-2024) Photocatalytic Overall Water Splitting by Heterogeneous Y^{3+}-doped CeO_2 with Characteristic Doping Structure

H. Furuno*[1]; T. Nakayama[1]

1. Nagaoka University of Technology, Japan

4:10 PM

(ICACC-S11-012-2024) Surface-Modified Carbon Nanotubes via pulsed laser ablation with Ultrathin Co_3O_4 Layer for Enhanced Oxygen Evolution Reaction

H. Jeon*[1]; J. Kim[2]; S. Mhin[1]

1. Kyonggi Univercity, Advanced materials engineering, Republic of Korea
2. Daegu Mechatronics & Materials Institute, Republic of Korea

4:30 PM

(ICACC-S11-013-2024) Fabrication of Self-assembled Dendritic Silicon Carbide Arrays by Nanosecond Pulsed Electric Field

Z. Shen*[1]; W. Mita[1]; H. Saito[1]; T. Fujihara[2]; H. Cho[3]; H. Furuno[1]; Y. Takimoto[1]; T. Nakayama[1]

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. National Institute of Technology, Anan College, Japan
3. Hanyang University, Department of Materials Science and Chemical Engineering, Republic of Korea

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Emerging and novel material technologies for nuclear systems

Room: Ballroom 4

Session Chair: Eddie Lopez Honorato, Oak Ridge National Lab

3:20 PM

(ICACC-S13-021-2024) Fabrication and Testing of Hybrid CMC-Metal Cladding Structures Made by Embedded Wire Chemical Vapor Deposition

S. Harrison*[1]; J. Pegna[1]; J. Vervlied[1]

1. Free Form Fibers, USA

3:40 PM

(ICACC-S13-022-2024) Response of ODS-FeCrAl alloys with different Cr contents studied using transmission electron microscopy with in-situ single/dual Fe and He ion beams

J. A. Hinks*[1]; H. Le[1]; Y. de Carlan[2]; D. Hoelzer[3]; K. Sakamoto[4]; P. Persson[5]; K. Lambrinou[6]

1. University of Huddersfield, School of Computing and Engineering, United Kingdom
2. CEA Saclay, DES/ISAS/DMN/SRMA/LA2M, France
3. Oak Ridge National Laboratory, USA
4. Nippon Nuclear Fuel Development, Co., Ltd., Fuel Materials Group, Research Department, Japan
5. Linköping University, Thin Film Physics, Department of Physics, Chemistry and Biology (IFM), Sweden
6. University of Huddersfield, School of Computing and Engineering, United Kingdom

4:00 PM

(ICACC-S13-023-2024) Post-irradiation examination of substoichiometric yttrium dihydrides for solid neutron moderator applications

M. N. Cinbiz*[1]; C. N. Taylor[1]; T. Johnson[1]; J. Charboneau[1]; I. Hobbs[1]; J. Burns[1]; G. C. Papaioannou[1]; E. P. Luther[2]; A. P. Shivprasad[2]

1. Idaho National Laboratory, USA
2. Los Alamos National Lab, USA

4:20 PM

(ICACC-S13-024-2024) Thermophysical and microstructural property changes in neutron-irradiated metal hydrides

D. Sprouster*[1]; M. Ouyang[1]; Y. Huang[2]; P. Neggi[1]; A. Sharma[1]; D. Bhardwaj[1]; N. Cetiner[2]; L. Snead[1]

1. Stony Brook University, USA
2. Massachusetts Institute of Technology, USA

4:40 PM

(ICACC-S13-025-2024) On the Hydrogen Stability in Ceramic Matrix Entrained Hydride Composite Shield

D. Sprouster[1]; N. Rani[1]; D. Bhardwaj*[1]; L. Snead[1]

1. Stony Brook University, USA

S19 Molecular-level Processing and Chemical Engineering of Functional Materials

SYMPOSIUM 19: Additive Manufacturing

Room: Ballroom 3

Session Chair: Aitana Tamayo, Institute of Ceramics and Glass, CSIC

3:20 PM

(ICACC-S19-018-2024) 3D-printed porous SiOC monoliths functionalized with Pd by Atomic Layer Deposition for promising heterogeneous catalysis (Invited)

C. Salameh*[1]

1. European Institute of Membranes, France

3:50 PM

(ICACC-S19-019-2024) In-situ development of nanostructured macroporous Silicon oxycarbide ceramics (Invited)

A. Choudhary*[1]; S. k. Behera[2]

1. Centre for Materials for Electronics Technology, India
2. National Institute of Technology Rourkela, Ceramic Engineering, India

4:20 PM

(ICACC-S19-020-2024) Next Generation Preceramic Polymer-grafted Nanoparticles for Fabrication of Ceramic Matrix Composites

N. D. Posey*[1]; M. B. Dickerson[2]

1. Air Force Research Laboratory/UES, an Eqlipse Technology Company, Materials and Manufacturing Directorate, USA
2. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

4:40 PM

(ICACC-S19-021-2024) Kinetic Analysis of Pyrolysis of a Polysiloxane

T. Holley*[1]; P. Kroll[1]

1. University of Texas, Arlington, USA

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSIUM 16: Use of waste materials

Room: Coquina C

Session Chair: Henry Colorado L., Universidad de Antioquia

4:30 PM

(ICACC-S16-015-2024) Prediction of chemical stability of volcanic ash-based AAMs using Artificial Neural Network (Invited)

C. Leonelli*[1]; C. Finocchiaro[2]; P. Mazzoleni[2]; I. Lancellotti[1]; M. Romagnoli[1]; G. Barone[2]

1. University of Modena and Reggio Emilia, Department of Engineering Enzo Ferrari, Italy
2. University of Catania, Department of Biological, Geological and Environmental Sciences, Italy

Poster Session I- Group A presenting

Room: Ocean Center

5:30 PM

(ICACC-P001-2024) Praseodymium(Pr) Doping Effect on Ni-substituted $BaZrO_3$ Catalyst for Hydrogen Production by Partial Oxidation of Methane

B. Koo*[1]

1. Sungshin Women's University, School of Chemistry and Energy, Republic of Korea

(ICACC-P002-2024) Investigation of Direct Recycling of Cathode Active Materials for Lithium Ion Batteries by Simple Grinding and Classification Processes

K. Izumi*[1]; Y. Takaya[2]; T. Hirai[3]; Y. Masuda[3]; Y. Kita[3]; H. Akashi[3]; C. Tokoro[1]

1. Waseda University, Japan
2. The University of Tokyo, Japan
3. AESC Group, Japan

(ICACC-P003-2024) 3D printed PLA-TCP-SiO_2 and PLA-TCP-MgO composite scaffolds for tissue engineering

E. Kolanthai*[1]; S. V. Harb[2]; S. Seal[3]; L. Pessan[2]

1. University of Central Florida, Material Science and Engineering, USA
2. Federal University of Sao Carlos, Department of Materials Engineering, USA
3. University of Central Florida, Mat. Sci. Eng, USA

(ICACC-P005-2024) Thermal and Mechanical Properties of Al-Modified Reaction Bonded Silicon Carbide Ceramic Composites

S. McAnany*[1]; S. Salamone[1]; J. Wang[1]; A. Marshall[1] ***WITHDRAWN***

1. Coherent, USA

(ICACC-P006-2024) ASTM International Standards for Properties & Performance of Advanced Ceramics – ASTM Has Been Helping Our World Work Better for 125 years

M. G. Jenkins*[1]; S. T. Gonczy[2]; J. Salem[3]; J. Westbrook[4]; G. D. Quinn[5]

1. Bothell Engineering and Science Technologies, USA
2. Gateway Materials Technology, USA
3. NASA Glenn Research Center, Materials and Structures, USA
4. Corning Interntional, USA
5. National Institute of Standards and technology, Materials Measuremenet Sciences Division, USA

(ICACC-P007-2024) Influence of sintering parameters on the structure of alumina tubular membranes obtained by freeze-casting

P. F. Alves*[1]; D. G. Silva[1]; D. C. Vasconcelos[1]; W. Vasconcelos[1]; J. F. Nascimento[2]; D. C. Melo[2]; L. d. Pereira[2]

1. Federal University of Minas Gerais, Department of Metallurgical and Materials Engineering, Brazil
2. Centro de Pesquisas Leopoldo Américo Miguez de Mello, Brazil

(ICACC-P008-2024) Life Cicle Assesment in the PIP process for manufacturing C/SiC and the consideration of Pareto efficient manufacturing methods

D. K. Schüppel*[1]; A. Schneller[1]; J. Rangarajan[1]; F. Halter[2]; L. Wietschel[2]; D. Koch[1]

1. University of Augsburg, Institute for Materials Resource Management MRM, Materials Engineering, Germany
2. University of Augsburg, Institute for Materials Resource Management, Germany

(ICACC-P009-2024) Fracture Toughness Measurement of Ceramics Having Fuel Pellet Geometry

K. V. Jones*[1]; A. Wereszczak[1]; O. M. Jadaan[2]; A. T. Nelson[1]

1. Oak Ridge National Lab, USA
2. University of North Florida, USA

(ICACC-P010-2024) Methodology for PE tube connection with heat shrinkage casing in the alignment of district heat pipe

S. Jang*[1]; K. Lee[2]; J. Kim[2]; J. Yoon[1]

1. Hanyang University, Mechanical Engineering, Republic of Korea
2. Korea district heating corperation, Heat Transportation Management, Republic of Korea

(ICACC-P011-2024) Advanced ceramics reinforced with carbon-based materials: A comparative study

C. R. Foschini*[1]; F. D. Faglioni[1]; C. P. Barbosa[1]; V. G. Neto[4]; F. R. Estrada[2]; C. Suchicital[3]

1. UNESP, Mechanical Engineering, Brazil
2. Laboratório Nacional de Luz Síncrotron, Centro de Pesquisa em Energia e Materiais, Brazil
3. Virginia Tech, Materials Science and Engineering, USA
4. Instituto Federal de Educação, Brazil

(ICACC-P012-2024) Understanding the Role of Gas Phase Reactions during Surface Siliconization of Carbon Composites

M. Prakasan[2]; T. Schneider[1]; D. Koch*[2]

1. Ariane Group, Germany
2. University of Augsburg, Institute for Materials Resource Management MRM, Materials Engineering, Germany

(ICACC-P013-2024) Novel colloidal production route for all-oxide CMC by combining 3D braiding and pressure slip casting

F. Jung*[1]; M. R. Welsh[1]; T. Gries[1]

1. RWTH Aachen University, Institut für Textiltechnik, Germany

(ICACC-P014-2024) Electrical discharge machinable SiC composites for high temperature sliding wear applications

S. Chodisetti*[1]; M. Kalin[2]; B. M. Kumar[1]

1. IIT Roorkee, MMED, India
2. University of Ljubljana, Mechanical Engineering, Slovenia

(ICACC-P015-2024) Comparison of the high-velocity impact performance of boron carbide ceramics

K. Muly*[1]; J. Moreno[1]; M. Shaeffer[1]; K. Ramesh[1]

1. Johns Hopkins University, Mechanical Engineering, USA

(ICACC-P016-2024) Fundamentals of Reaction-Bonded Ceramic Matrix Composites by Liquid Silicon Infiltration

C. Garcia*[1]; J. Rodriguez[1]; A. A. DiGiovanni[2]; J. LaSalvia[2]; T. W. Scharf[1]

1. University of North Texas, Department of Materials Science and Engineering, USA
2. DEVCOM Army Research Laboratory, USA

(ICACC-P018-2024) End-to-end multidisciplinary optimal design for improved personalized bioactive glass/ceramic bone substitute implants (ReBone): A new MSC PhD Network

R. Gabrieli*[1]; P. Vena[2]; F. Baino[1]; B. Obradovic[3]; L. Rimondini[4]; D. Ruffoni[5]; M. Schwentenwein[6]; B. Misof[7]; J. Dunlop[8]; M. Stanuch[9]

1. Politecnico di Torino, APPLIED SCIENCE AND TECHNOLOGY (DISAT), Italy
2. Politecnico di Milano, Department of Chemistry, Materials & Chemical Engineering, Laboratory of Biological Structure Mechanics – LaBS, Italy
3. University of Belgrade, Faculty of Technology and Metallurgy, Department of Health Sciences, Serbia
4. Università del Piemonte Orientale, Italy
5. University of Liège, Mechanics of Biological and Bioinspired Materials Laboratory, Department of Aerospace and Mechanical Engineering, Belgium
6. Lithoz GmbH, Austria
7. Ludwig Boltzmann Institute of Osteology, Ludwig Boltzmann Gesellschaft, Austria
8. Paris Lodron University of Salzburg, MorphoPhysics Group, Department of the Chemistry and Physics of Materials, Austria
9. MedApp S.A, Poland

(ICACC-P019-2024) Bioactive glass-glycerol pastes for potential use in bone tissue repair

R. Gabrieli*[1]; D. U. Tulyaganov[2]; F. Baino[1]

1. Politecnico di Torino, APPLIED SCIENCE AND TECHNOLOGY (DISAT), Italy
2. Department of Natural-Mathematical Sciences, Turin Polytechnic University in Tashkent, Uzbekistan

(ICACC-P020-2024) Formation of Fluorapatite-Hydrogel Composites in a Diffusion-Controlled System

J. Jung*[1]; S. Yang[2]

1. Korea National University of Education, Republic of Korea
2. Korea National University of Education, Chemistry Education, Republic of Korea

(ICACC-P021-2024) Improved energy-storage performance in AgNbO3-based relaxor antiferroelectric ceramics by co-doping with Gd3+ and Ta5+

C. Chen*[1]; S. Tangsuwanjinda[2]; P. Chen[3]; C. Tu[4]; R. Chien[2]

1. Hwa Hsia University of Technology, Mechanical Engineering, Taiwan
2. Ming Chi University of Technology, International Ph.D. Program in Innovative Technology of Biomedical Engineering and Medical Devices, Taiwan
3. Ming Chi University of Technology, Mechanical Engineering, Taiwan
4. Fu Jen Catholic University, Department of Physics, Taiwan

(ICACC-P022-2024) Engineering Relaxor Ferroelectric Ceramics by Configurational Entropy for Electric Energy Storage

C. Tu*[1]; R. Montecillo[2]; C. Chen[3]; R. Chien[2]; P. Chen[2]

1. Fu Jen Catholic University, Physics, Taiwan
2. Ming Chi University of Technology, International Ph.D. Program in Innovative Technology of Biomedical Engineering and Medical Devices, Taiwan
3. Hwa Hsia University of Technology, Mechanical Engineering, Taiwan

(ICACC-P025-2024) Sn-Substituted $Li_{6+x}P_{1-x}Sn_xS_5Cl_{0.5}Br_{0.5}$ Sulfide Solid Electrolyte for All Solid State Battery

Y. Cho*[1]; D. Kim[1]; D. Kim[1]

1. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea

(ICACC-P026-2024) NMR versus conductivity spectroscopy: A complementary approach to characterize ion dynamics in solid electrolytes

F. Stainer*[1]; M. Wilkening[2]; M. Gombotz[1]

1. Graz University of Technology, Institute for Chemistry and Technology of Materials, Austria
2. Graz University of Technology, Chemistry, Austria

(ICACC-P027-2024) Minimum Thermal Conductivity in Ceramic Solid Electrolytes

M. Rohde*[1]; C. Hausner[1]; H. J. Seifert[1]

1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

(ICACC-P028-2024) Preceramic polymer derived dual core shell porous Si/C composite as an anode material of Li-Ion battery

K. Sanket*[1]; S. S. Bishoyi[2]; S. K. Behera[1]

1. National institute of Technology, Rourkela, Odhisa, India, Ceramic Engineering, India
2. National Institute of Technology (NIT), CERAMIC ENGINEERING, India

(ICACC-P029-2024) Large-scale phase-field simulation for prediction of realistic sintered microstructures

A. Nakazawa*[1]; S. Sakane[2]; T. Takaki[2]

1. Kyoto Institute of Technology, Graduate School of Science and Technology, Japan
2. Kyoto Institute of Technology, Faculty of Mechanical Engineering, Japan

(ICACC-P030-2024) Finite element analysis of thermal cycling test for metallized ceramic substrate

R. Higashi*[1]; M. Ngo[2]; H. Miyazaki[3]; K. Hirao[3]; M. Fukushima[4]; S. Ozaki[5]

1. Yokohama National University, Mechanical Engineering, Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Multi-material Research Institute, Japan
3. National Institute of AIST, Advanced Manufacturing Research Institute, Japan
4. National Institute of Advanced Industrial Science and Technology (AIST), Japan
5. Yokohama National University, Japan

(ICACC-P031-2024) Enhanced Oxygen Evolution Reaction of Co_3O_4 anchored on Carbon Matrix for Alkaline Water Splitting

H. Jeon*[1]; S. Mhin[1]

1. Kyonggi Univercity, Advanced Materials Engineering, Republic of Korea

(ICACC-P032-2024) The Effect of Al_2O_3 Coating on Electrochemical Performance of Aqueous Zinc Ion Battery

Y. So*[2]; S. Mhin[1]

1. Kyonggi University, Advanced Materials Engineering, Republic of Korea
2. Kyonggi University, Republic of Korea

(ICACC-P033-2024) New route to synthesis nanomaterial of lead sulfide (galena) films from bis(alkylxanthato) lead(II) precursors

Y. Alharbi*[1]

1. The royal commission for Jubail and Yanbu-Yanbu Industrial College, Saudi Arabia

(ICACC-P034-2024) Investigation of the damage recovery in ion-irradiated $Nd_2Zr_2O_7$ pyrochlore using in-situ synchrotron X-ray diffraction

Y. Singh*[1]; V. Kumar[1]; S. Sharma[2]; P. K. Kulriya[1]

1. Jawaharlal Nehru University, School of Physical Sciences, India
2. Rensselaer Polytechnic Institute, USA

(ICACC-P035-2024) Thermal Characterisation of Ceramic Coated Nuclear Fuel Particles

E. White*[1]; D. Cogbill[1]; J. Pomeroy[1]; M. Davies[2]; D. Goddard[3]; N. Tzelepi[3]; M. Kuball[1]; D. Liu[1]

1. University of Bristol, United Kingdom
2. Ultra Safe Nuclear Corporation, United Kingdom
3. National Nuclear Laboratory, United Kingdom

(ICACC-P036-2024) Pseudo Plasticity Model for Silicon Carbide Cladding

G. Singh*[1]; A. M. Recuero[1]; G. Jacobsen[2]; J. Hales[1]; K. Gamble[1]; C. Ellis[2]

1. Idaho National Laboratory, USA
2. General Atomics, Nuclear Technologies and Materials, USA

(ICACC-P037-2024) Effect on the Compressive Strength of Lightweight Concrete Using a Blended Cementitious Matrix

D. Gonzalez-Betancur[1]; D. Gómez-Cano*[1]; A. Hoyos-Montilla[1]; J. Tobón[2]

1. Universidad Nacional de Colombia, Achitecture Faculty, Colombia
2. Universidad Nacional de Colombia, Department of Materials and Minerals, Colombia

(ICACC-P038-2024) Hydration Properties of Cement Composites using Ground Granulated Blast Furnace Slag and Electrolysis Alkaline Aqueous

S. Park*[1]; S. Jeong[1]

1. Mokwon Univ., Division of Architecture, Republic of Korea

(ICACC-P039-2024) The substitutional effect of hemp ash on the processing and physical properties of geopolymers

A. Ozer*[1]; P. Mokhtari[1]; N. Parsley[1]; B. Wadin[1]; M. Taylor[3]; W. M. Kriven[2]

1. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, USA
3. University of Illinois at Urbana-Champaign, Architecture, USA

(ICACC-P040-2024) Construction and Demolition Waste for Valuable Eco-sustainable Geopolymer Materials

V. Medri*[1]; A. Natali Murri[1]; E. Papa[1]; F. Miccio[1]; E. Landi[1]

1. National Research Council of Italy, ISSMC (former ISTEC), Italy

(ICACC-P041-2024) Production of Asphalt block (Nonfiring Fencing Slab} using Polyethylene Terephthalate (PET) as an Aggregate for Structural Porous Materials

E. Limbaga[1]; J. Catane[1]; J. Cahigao[1]; I. B. Arugay*[1]; R. V. Virtudazo[1]

1. Mindanao State University-Iligan Institute of Technology, Department of Materials and Resources Engineering and Technology, Philippines

(ICACC-P042-2024) Investigation of mechanical and dielectric propertieso f kaolin and halloysite-based textured ceramics

G. Lecomte-Nana*[1]; B. Giora[1]; I. Daou[1]; P. Marchet[1]; N. Tessier-Doyen[1]; C. Peyratout[1]

1. University of Limoges, IRCER (UMR CNRS 7315), ENSIL-ENSCI, Industrial Ceramics, France

(ICACC-P043-2024) Effect of formation rate on the chemical precipitation synthesis of calcium phosphate and magnesium phosphate apatites from natural sources

S. M. Restrepo Arcila*[1]; M. Márquez[1]; J. Hernández[1]

1. Universidad Nacional de Colombia, Materials and nanotecnology, Colombia

(ICACC-P045-2024) Comprehensive analysis of dielectric properties and AC conductivity in Sr_2TiO_4 Ruddlesdon popper oxide

A. Mittal*[1]

1. Indian Institute of Technology(BHU), PHYSICS, India

(ICACC-P046-2024) Chemical Vapor Deposition of Phase-Pure Thorium Dioxide Thin Films from Thorium(IV) Molecular Precursors

A. Lichtenberg*[1]; S. Mathur[2]

1. University of Cologne, Inorganic Chemistry, Germany
2. University of Cologne, Institute of Inorganic Chemistry, Germany

(ICACC-P047-2024) Thermally and mechanically stable superhydrophobic glass coatings containing hexagonal boron nitride particles

B. Witulski*[1]

1. University of Cologne, Institute of inorganic chemistry, Germany

(ICACC-P048-2024) HfC/HfO_2 nanocomposites with controlled properties from a commercial single source precursor

S. Mujib*[1]; A. Roy[1]; M. Rasheed[1]; B. Walke[1]; S. R. Arunachalam[2]; G. Singh[1]

1. Kansas State University, Mechanical and Nuclear Engineering, USA
2. Spirit AeroSystems Inc., USA

(ICACC-P050-2024) Tailoring the Structure and Composition of SiOC Electrodes for High Li Storage

S. Mujib*[1]; A. Roy[1]; P. Owiredu[1]; G. Singh[1]

1. Kansas State University, Mechanical and Nuclear Engineering Dept., USA

(ICACC-P052-2024) Evaluating Na+ ion storage in TMD nanotube embedded SiOC fibers

S. Dey*[1]; P. Owiredu[1]; A. Roy[1]; S. Mujib[2]; G. Singh[2]

1. Kansas State University, Mechanical Engineering, USA
2. Kansas State University, Mechanical and Nuclear Engineering Dept., USA

(ICACC-P053-2024) TMD nano sheet decorated SiOC fibers for beyond Li+ ion storage applications

S. Dey*[1]; P. Owiredu[1]; A. Roy[1]; S. Mujib[2]; G. Singh[2]

1. Kansas State University, Mechanical Engineering, USA
2. Kansas State University, Mechanical and Nuclear Engineering Dept., USA

(ICACC-P054-2024) Differentiating carbon allotropes via cost-effective Electrochemical Impedance Spectroscopy

S. Dey*[1]; P. Owiredu[1]; A. Roy[1]; S. Mujib[2]; G. Singh[2]

1. Kansas State University, Mechanical Engineering, USA
2. Kansas State University, Mechanical and Nuclear Engineering Dept., USA

(ICACC-P055-2024) Study of adsorption of ceria according to Ce^{3+}/Ce^{4+} concentration in Chemical Mechanical Planarization (CMP)

S. Kim*[1]; J. Nam[2]

1. Sungkyunkwan University, Department of Semiconductor and Display Engineering, Republic of Korea
2. SungKyunKwan University, Department of Polymer Science and Engineering, Republic of Korea

Wednesday, January 31, 2024

S2 Advanced Ceramic Coatings for Structural/ Environmental & Functional Applications

SYMPOSIUM 2: Environmental Barrier Coatings III

Room: Flagler C

Session Chair: Elizabeth Opila, University of Virginia

8:30 AM

(ICACC-S2-036-2024) Investigation of single-phase high-entropy zirconates and their thermophysical properties as future thermal barrier coatings (Invited)

P. Hutterer[2]; J. J. Pflug[1]; M. Schenker[1]; M. Lepple*[1]

1. Justus Liebig University Giessen, Department of Inorganic and Analytical Chemistry, Germany
2. DECHEMA Forschungsinstutut, Germany

9:00 AM

(ICACC-S2-037-2024) Calorimetric Measurements of the Thermodynamic Properties of Environmental Barrier Coatings

G. Costa*[1]; N. P. Bansal[1]; R. I. Webster[1]; B. Kowalski[1]; J. L. Stokes[2]

1. NASA Glenn Research Center, USA
2. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA

9:20 AM

(ICACC-S2-038-2024) Mullite processing in high temperature EBCs and performance impacts

K. Lee[2]; R. I. Webster[2]; A. Setlur*[1]; J. Wan[1]; R. Sarrafi-Nour[1]

1. GE Research, USA
2. NASA Glenn Research Center, USA

9:40 AM

(ICACC-S2-039-2024) Recent Advancements in High Temperature Slurry Environmental Barrier Coatings for SiC/SiC Ceramic Matrix Composites

K. Lee*[1]; R. I. Webster[1]; B. Puleo[1]; M. J. Presby[1]; B. J. Harder[1]; J. A. Setlock[2]; L. C. Hoffman[3]

1. NASA Glenn Research Center, USA
2. University of Toledo, USA
3. HX5, LLC, USA

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Chemical compatibility and corrosion

Room: Ballroom 4

Session Chair: Shuigen Huang, KU Leuven

8:30 AM

(ICACC-S13-026-2024) A Comprehensive Study on SiC/SiC Fiber Composites and Corrosion Kinetics in Light-Water Reactors (Invited)

K. Shirvan*[1]

1. Massachusetts Institute of Technology, USA

9:00 AM

(ICACC-S13-027-2024) Development of CVI/CVD-SiC/SiC Composite for Accident-Tolerant Fuels of LWR Plants

S. Suyama*[1]; M. Ukai[1]; T. Nishimura[1]; S. Kuboya[1]; T. Takada[1]

1. Toshiba Energy Systems & Solutions Corporation, Japan

9:20 AM

(ICACC-S13-028-2024) High-temperature Oxidation, Corrosion and Wear Resistance of Cr/Cr_2AlC Coatings on Zircaloy-4 Alloys for Accident Tolerant Fuel

Y. Lei*[1]; J. Zhang[1]; J. M. Schneider[3]; J. Wang[2]

1. Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics Division, China
2. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics Division, China
3. RWTH Aachen University, Materials Chemistry, Germany

9:40 AM

(ICACC-S13-029-2024) Be-bearing molten fluoride salt corrosion of SiC/SiC composites

B. W. Lamm*[1]; T. Koyanagi[2]; J. Keiser[1]; J. Lee[1]; Y. Katoh[2]

1. Oak Ridge National Laboratory, Materials Science & Technology Division, USA
2. Oak Ridge National Laboratory, USA

10:00 AM

Break

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Fused Filament Fabrication and Direct Ink Writing I

Room: Coquina H

Session Chair: Martin Schwentenwein, Lithoz GmbH

8:30 AM

(ICACC-S15-030-2024) Water soluble feedstocks for additive manufacturing of complex shapes and flexible interconnected ceramic parts (Invited)

D. Penner*[1]; R. Wick-Joliat[1]

1. ZHAW Zurich University of Applied Sciences, Switzerland

9:00 AM

(ICACC-S15-031-2024) Developing and comparing binder formulations for fused filament fabrication of ceramic matrix composites

O. Yucel*[1]; J. Binner[2]

1. University of Birmingham, School of Metallurgy and Materials, United Kingdom
2. University of Birmingham, Ceramic Science & Engineering, United Kingdom

9:20 AM

(ICACC-S15-032-2024) Fused filament fabrication of lead-free piezoceramics: From filament production to sintered components

S. Bhandari*[1]; P. Veteška[2]; G. Vajpayee[3]; L. Bača[2]; Z. Hajdúchová[2]; Z. Špitálsky[4]; M. Hinterstein[3]; G. Franchin[1]; M. Janek[2]

1. Department of Industrial Engineering, University of Padova, Via Marzolo 9, Italy
2. Department of Inorganic Materials, Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava, Radlinského 9, Slovakia
3. Fraunhofer IWM, Germany
4. Polymer Institute, Slovak Academy of Sciences, Dúbravská cesta 9, Slovakia

9:40 AM

(ICACC-S15-033-2024) Silicon carbide additive manufacturing for space mirrors

M. Gauthe*[1]; X. Tonnellier[1]; L. Chaffron[2]; J. Rodolfo[1]; Y. Sortais[3]; C. Lorrette[2]

1. Safran REOSC, France
2. Université Paris Saclay, CEA, France
3. Université Paris-Saclay, Institut d'Optique Graduate School, France

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSIUM 16: Use of waste materials

Room: Coquina C

Session Chair: Henry Colorado L., Universidad de Antioquia

8:30 AM

(ICACC-S16-016-2024) Geopolymers and alkali activated materials: Mix design and characterization in view of their safe use in different applications (Invited)

M. C. Bignozzi*[1]; G. Masi[1]; A. Zappi[2]; L. Tositti[2]

1. University of Bologna, Department of Civil, Chemical, Environmental and Materials Engineering, Italy
2. University of Bologna, Department of Chemistry "G. Ciamician", Italy

S17 Advanced Ceramic Materials and Processing for Photonics and Energy

SYMPOSIUM 17: Advanced and nanostructural materials for photo-voltaics and solar fuels

Room: Coquina G

Session Chairs: Mohamed Siaj, University of Quebec, Montreal; Marina Leite, UC Davis

8:30 AM

(ICACC-S17-024-2024) Rapid laser-induced low temperature crystallization of thermochromic VO_2 sol-gel thin films (Invited)

M. Basso[1]; E. Colusso[1]; E. Napolitani[2]; A. Martucci*[1]

1. University of Padova, Industrial Engineering, Italy
2. University of Padova, Physics and Astronomy, Italy

9:00 AM

(ICACC-S17-025-2024) Extraordinarily transparent compact metallic metamaterials (Invited)

V. Giannini*[1]

1. TII, Advanced Materials, United Arab Emirates

9:30 AM

(ICACC-S17-026-2024) Unlocking Water Splitting Potential: 2D Materials and Beyond (Invited)

T. A. Shifa*[1]

1. Ca' Foscari University of Venice, Department of Molecular Sciences and Nanosystems, Italy

10:00 AM

Break

10:20 AM

(ICACC-S17-027-2024) Europium-doped ZnO – How are the dopants distributed? (Invited)

G. Westin*[1]

1. Uppsala University, Sweden

10:50 AM

(ICACC-S17-028-2024) Organic magnetoresistance in conjugated polymers (Invited)

E. Orgiu*[1]

1. Institut National de la Recherche Scientifique (INRS), EMT Centre, Canada

11:20 AM

(ICACC-S17-029-2024) Nanoceramics-AI-based smart enernergy saving control for Agriculture 4.0 systems (Invited)

V. M. Castano*[1]

1. Universidad Nacional Autonoma de Mexico, Mexico

11:50 AM

(ICACC-S17-030-2024) Water-based 2D material inks: From printed electronics to biomedical applications (Invited)

C. Casiraghi*[1]

1. University of Manchester, United Kingdom

S18 Ultra-High Temperature Ceramics

SYMPOSIUM 18: Advanced Characterizations and Simulations

Room: Coquina A

Session Chairs: Scott McCormack, University of California, Davis; Theresa Davey, Bangor University

8:30 AM

(ICACC-S18-024-2024) High-fidelity 3D microstructural characterization of ZrB_2 during hot-pressing (Invited)

R. Swanson[4]; D. A. Kosanovic[3]; M. Chapman[5]; M. D. Uchic[2]; W. Fahrenholtz[3]; S. J. McCormack*[1]

1. University of California, Davis, Materials Science and Engineering, USA
2. Air Force Research Lab, USA
3. Missouri University of Science and Technology, Department of Materials Science and Engineering, USA
4. University of California, Davis, Chemical Engineering, USA
5. UES, Inc., USA

9:00 AM

(ICACC-S18-025-2024) Retained flexural strength of Cf-ZrB2 UHTCMCs after arc-jet tests at 2200°C

D. Sciti*[1]; P. Galizia[1]; S. Mungiguerra[2]; R. Savino[2]; A. Airoldi[3]; A. Caporale[3]; A. Vinci[4]; L. Zoli[1]; M. De Stefano Fumo[5]

1. National Research Council of Italy, ISSMC (former ISTEC), Italy
2. University of Naples Federico II, Department of Industrial Engineering, Italy
3. Politecnico di Milano, Department of Aerospace Science and Technology, Italy
4. CNR - ISSMC, Italy
5. CIRA - Italian Aerospace Research Centre, Italy

9:20 AM

(ICACC-S18-026-2024) Novel contactless measurement technique to determine the ultra-high temperature (>2000°C) thermal conductivity and spectral emissivity of UHTCs

H. B. Schonfeld*[1]; M. Milich[1]; D. Robba[2]; L. Vlahovic[2]; K. Boboridis[2]; R. Konings[2]; E. Opila[3]; P. E. Hopkins[1]

1. University of Virginia, Mechanical and Aerospace Engineering, USA
2. European Union Joint Research Centre, Germany
3. University of Virginia, Material Science and Engineering, USA

9:40 AM

(ICACC-S18-027-2024) Thermodynamic analysis of metal segregation in dual phase high entropy ceramics

S. M. Smith*[1]; W. Fahrenholtz[1]; G. Hilmas[1]; S. Curtarolo[2]

1. Missouri University of Science & Technology, Materials Science and Engineering, USA
2. Duke University, Materials Science, Electrical Engineering and Physics, USA

10:00 AM

Break

10:20 AM

(ICACC-S18-028-2024) Carbon vacancies in high-entropy UHTC carbides (Invited)

T. Davey*[1]; Y. Chen[2]

1. Bangor University, Nuclear Futures Institute, United Kingdom
2. Tohoku University, School of Engineering, Japan

10:50 AM

(ICACC-S18-029-2024) Accelerated discovery of high entropy ultra-high temperature ceramics by machine learning and high throughput experiments

K. Wang*[1]; S. T. Misture[2]

1. Alfred University, USA
2. Alfred University, MSE, USA

11:10 AM

(ICACC-S18-030-2024) Discovery of Novel High-Entropy Transition Metal Borides: Theoretical Insights and Experimental Confirmations

I. Zhukova*[1]; M. Tatarkova[2]; A. Kovalcíkova[3]; Z. Chlup[4]; T. Csanadi[3]; I. Dlouhy[5]; D. Zagorac[6]; B. Matovic[6]; P. Tatarko[2]

1. Slovak Academy of Science, Institute of Inorganic Chemistry, Slovakia
2. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Department of Ceramics, Slovakia
3. Institute of Materials Research, Inorganic Chemistry, Slovakia
4. Institute of Physics of Materials, Inorganic Chemistry, Czechia
5. Institute of Materials Science and Engineering, Mechanics and Design of Materials, Czechia
6. "Vinča" Institute of Nuclear Sciences, Department of Materials Science, Serbia

S19 Molecular-level Processing and Chemical Engineering of Functional Materials

SYMPOSIUM 19: Gas-Phase Synthesis Approaches

Room: Ballroom 3

Session Chair: Peter Kroll, University of Texas, Arlington

8:30 AM

(ICACC-S19-022-2024) Choice of molecular precursors in magnetic field assisted chemical vapor deposition (mfCVD) (Invited)

T. Fischer*[1]; S. Mathur[1]

1. University of Cologne, Institute of Inorganic Chemistry, Germany

9:00 AM

(ICACC-S19-023-2024) Synthesis of Manganese (II) complexes and Their Decomposition in Magnetic Field Assisted Chemical Vapor Deposition

M. A. Steiner*[1]; D. Patrun[3]; Z. Aytuna[4]; S. Mathur[2]

1. University of Cologne, Department of Chemistry, Germany
2. University of Cologne, Institute of Inorganic Chemistry, Germany
3. University of Cologne, Inorganic/Materials Chemistry, Germany
4. Institute of Inorganic Chemistry, Department of Chemistry, Germany

9:20 AM

Break

S1 Mechanical Behavior and Performance of Ceramics & Composites

SYMPOSIUM 1: Ceramics processing–microstructure–mechanical properties correlation

Room: Coquina E

Session Chairs: Monica Ferraris, Politecnico di Torino; Kaitlin Detwiler, Air Force Research Lab

8:30 AM

(ICACC-S1-028-2024) Andra's R&D program on ceramic materials as alternative and innovative solutions for the geological disposal of high-level radioactive waste (Invited)

A. Debelle*[1]; F. Bumbieler[1]; E. Perret[2]; M. Box[2]; S. Miot[3]; C. Besnard[4]; S. Couillaud[4]; P. Ganster[6]; R. De Cassia Costa Dias[6]; I. Cornu[5]; F. Rossignol[5]

1. Scientific and Technical Division, Andra, French National Agency for the Management of Radioactive Waste, France
2. Site Nouvelle Aquitaine, IRT St-Exupery, France
3. Site de Toulouse, IRT St-Exupery, France
4. Galtenco, France
5. Institute of Research for Ceramics (IRCER), UMR CNRS 7315, France
6. Université de Lyon, CNRS UMR 5307 LGF, Mines Saint Etienne, France

9:00 AM

(ICACC-S1-029-2024) Processing of C/C-SiC based on thermoplastic polymers – additive manufacturing and hybrid yarns (Invited)

S. Schafföner*[1]; N. Langhof[1]; W. Freudenberg[1]; M. Moos[1]; J. Best[1]

1. University of Bayreuth, Chair of Ceramic Materials Engineering, Germany

9:30 AM

(ICACC-S1-030-2024) Thermomechanical behaviour of ex-pitch YS-15 carbon fiber after high temperature treatment

J. Braun*[1]; C. Sauder[2]; S. Le Bras[2]

1. CEA, France
2. CEA, DRMP, France

(ICACC-S1-031-2024) Microstructure and Properties of Low Si Content Reaction Bonded SiC *MOVED TO POSTER*

J. Wang*[1]; M. Aghajanian[1]

1. Coherent Inc., USA

9:50 AM

(ICACC-S1-032-2024) Development of oxide-based ceramic matrix composite with high thermal stability fabricated by novel oxide fibers

Y. Nawata[1]; I. Ohta*[1]; Y. Hirataka[1]; I. Yamashita[1]

1. Tosoh Corporation, Japan

10:10 AM
BREAK

10:30 AM

(ICACC-S1-033-2024) Aligned Nanofiber Reinforced Ceramic Matrix Nanocomposites with Ultrahigh Nanofiber Packing Density

J. Dai*[1]; S. Jagani[1]; L. Acauan[1]; P. B. Patel[1]; C. Hilman[1]; B. L. Wardle[1]

1. Massachusetts Institute of Technology, Department of Aeronautics and Astronautics, USA

10:50 AM

(ICACC-S1-034-2024) Silicate interphases for SiC/SiC CMCs

O. Gavalda Diaz*[1]

1. Imperial College, Materials, United Kingdom

11:10 AM

(ICACC-S1-035-2024) Manufacture of green ceramic micro-parts using a micro-machining process

A. Aliouat*[1]; V. Pateloup[1]; P. Geffroy[1]

1. l'institut de recherche sur les céramiques (IRCER), Haute Vienne, France

11:30 AM

(ICACC-S1-036-2024) High-pressure synthesized HfB_2-based UHT ceramic for aerospace applications

T. Prikhna*[1]; A. Lokatkina[1]; P. Barvitskyi[1]; B. Büchner[2]; J. Werner[2]; R. Haber[3]; Z. Yasar[3]; S. Ponomryov[4]; M. Karpets[5]; R. Kluge[2]; A. Bondar[6]; V. Moshchil[1]; O. Borymskyi[1]; S. Rychev[1]

1. Institute for Superhard Materials of the National Academy of Sciences of Ukraine, Ukraine
2. Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden e. V., Germany
3. Department of Materials Science and Engineering, Rutgers, The State University of New Jersey, USA
4. Institute of Semiconductor Physics of the National Academy of Sciences of Ukraine, Ukraine
5. National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute", Ukraine
6. Frantsevich Institute for Problems of Material Sciences of the National Academy of Sciences of Ukraine, Ukraine

S3 21th Intl Symp on Solid Oxide Cells Materials Science & Technology

SYMPOSIUM 3: Novel Processing / System Design

Room: Ballroom 1-2

Session Chairs: Scott Barnett, Northwestern Univ; Sebastian Molin, Gdansk University of Technology

8:30 AM

(ICACC-S3-025-2024) Functional Oxide Thin Film Fabrication by Flash Light Irradiation for Solid State Energy Devices (Invited)

Y. Kim*[1]; J. Park[1]; H. Lee[1]; S. Kim[1]

1. Hanyang University, Mechanical Engineering, Republic of Korea

9:00 AM

(ICACC-S3-026-2024) 3D Printing of functional ceramics for Solid Oxide Cells at IREC (Invited)

A. Sabato*[1]; S. Marquez[1]; A. Martos[1]; N. Kostretsova[1]; M. Lira[1]; I. Babeli[1]; M. Nuñez Eroles[1]; M. Torrell[1]; A. Tarancón[2]

1. IREC, Nanoionics and Fuel Cells, Spain
2. IREC / ICREA, Spain

9:30 AM

(ICACC-S3-027-2024) How additive manufacturing is becoming a game changer for the production of clean hydrogen

C. Clark*[1]; S. Schweizer[1]

1. SAS 3DCERAM SINTO, France

9:50 AM

(ICACC-S3-028-2024) In-The-Loop-Recycling of Fuel-Electrode Supported Solid Oxide Cells

S. Sarner*[1]; N. H. Menzler[2]; J. Malzbender[3]; B. De Haart[4]; O. Guillon[1]

1. Forschungszentrum Juelich, IEK-1, Germany
2. Forschungszentrum Jülich GmbH, IEK-1, Germany
3. Forschungszentrum Juelich, IEK-2, Germany
4. Forschungszentrum Juelich, IEK-9, Germany

10:10 AM

Break

10:30 AM

(ICACC-S3-029-2024) Novel SOC stack design to enhance the uniformity of thermal conditions and thermo-electrochemical reaction zone in a commercial-scale stack (Invited)

W. Lee[1]; J. Lim[1]; M. Lang[2]; R. Costa[2]; I. Lee[3]; Y. Lee[3]; J. Hong*[1]

1. Yonsei University, Mechanical Engineering, Republic of Korea
2. DLR - German Aerospace Center, Germany
3. E&KOA, Republic of Korea

11:00 AM

(ICACC-S3-031-2024) Reversible SOEC/SOFC system for zero emission energy network: Presentation and progress within the 24/7_ZEN project

M. Torrell[1]; L. Bernadet[1]; D. Montinaro[5]; D. K. Niakolas[4]; A. Souvalioti[4]; F. Zaravelis[4]; S. Neophytides[4]; F. Smeacetto[3]; E. Zanchi[3]; A. Morata*[1]; A. Tarancón[2]

1. Catalonia Institute for Energy Research (IREC), Nanoionics and Fuel Cells, Spain
2. IREC / ICREA, Spain
3. Politecnico di Torino, Applied Science and Technology, Italy
4. FORTH/ICE-HT, Greece
5. SolydEra, SpA, Italy

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Sodium batteries, potassium batteries, magnesium batteries and calcium batteries

Room: Ballroom 5

Session Chairs: Takashi Nakamura, Tohoku University; Shih-kang Lin, National Cheng Kung University

8:30 AM

(ICACC-S6-024-2024) Atomistic understanding of ion conduction and interfacial processes in emerging sodium batteries (Invited)

B. Narayanan*[1]

1. University of Louisville, Mechanical Engineering, USA

9:00 AM

(ICACC-S6-025-2024) K_3MnO_4 as electrode material for K-ion Batteries

A. Sagot[1]; L. Stievano[2]; V. Pralong*[1]

1. CNRS ENSICAEN, France
2. Université de Montpellier, Institut Charles Gernardt Montpellier, France

9:20 AM

(ICACC-S6-026-2024) Synthesis of highly dispersed metallic bismuth nanoparticles in CuO-Bi_2O_3-SiO_2 glass-ceramics for sodium ion battery anode

M. Kuroiwa*[1]; T. Honma[1]; Y. Daiko[2]

1. Nagaoka Univeristy of Technology, Department of Materials Science and Bioengineering, Japan
2. Nagoya Institute of Technology, Japan

9:40 AM

(ICACC-S6-027-2024) Oxygen redox and delocalization of electrons in sodium-based layered cathode materials: A first principles DFT and GW study

K. Koester*[1]; P. Kaghazchi[2]

1. Forschungszentrum Juelich, Institute of Energy and Climate Research - Materials Synthesis and Processing (IEK1), Germany
2. Forschungszentrum Juelich, Germany

S7 18th Intl Symp on Functional Nanomaterials & Thin Films for Sustainable Energy Harvesting

SYMPOSIUM 7: 18th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy, Environmental and Health Applications

Room: Coquina B

Session Chair: Muhammet Toprak, KTH Royal Institute of Technology

8:30 AM

(ICACC-S7-006-2024) Valorization of glycerol using binary alloys as electrocatalysts (Invited)

A. Anil[1]; J. Wwhite[2]; E. C. dos Santos[3]; T. Kubart[4]; R. Brucas[1]; L. G. Pettersson[5]; A. Cornell[2]; G. Salazar Alvarez*[1]

1. Uppsala University, Materials Science and Engineering, Sweden
2. KTH Royal Institute of Technology, Division of Applied Electrochemistry, Sweden
3. Tohoku University, Advanced Institute for Materials Research, Japan
4. Uppsala University, Electrical Engineering, Sweden
5. Stockholm University, Physics, Sweden

9:00 AM

(ICACC-S7-007-2024) Electrodeposition of binary alloys on gas diffusion electrodes for CO2 electroreduction (Invited)

T. Andreu*[1]; M. Amazian[1]; M. Sarret[1]

1. Universitat de Barcelona, Spain

9:30 AM

(ICACC-S7-008-2024) Nitrogen Catalysis by an Induced Polarization through a Piezo-assisted Catalysis

B. Witulski*[1]

1. University of Cologne, Institute of inorganic chemistry, Germany

9:50 AM

(ICACC-S7-009-2024) Nanostructured catalysts for photo-, piezo- and electrochemical processes (Invited)

T. Fischer*[1]; S. Mathur[1]

1. University of Cologne, Institute of Inorganic Chemistry, Germany

10:20 AM

Break

10:40 AM

(ICACC-S7-010-2024) Advanced magneto-structural characterization of magnetic-based oxide nanocomposites (Invited)

M. Estrader*[1]; A. Roca[2]; A. López-Ortega[3]; R. U. Ichikawa[4]; I. Peral[5]; X. Turrillas[6]; D. del-Pozo-Bueno[7]; M. Varela[8]; S. Estradé[7]; F. Peiró[7]; J. Nogués[2]

1. Universitat de Barcelona, Spain
2. Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain
3. Universidad Pública de Navarra, Spain
4. Nuclear and Energy Research Institute (IPEN/CNEN-SP), Brazil
5. 5Department of Physics and Materials Science, University of Luxembourg, Luxembourg
6. Institut de Ciència de Materials de Barcelona- CSIC, UAB Campus, Spain
7. LENS-MIND, Departament Enginyeries Electrònica i Biomèdica and Institute of Nanoscience and Nanotechnology of the University of Barcelona (IN2UB), Spain
8. Departamento de Física de Materiales e Instituto Pluridisciplinar, Universidad Complutense de Madrid, Spain

11:10 AM

(ICACC-S7-011-2024) Methane Oxidation Reaction Pathway and Activity of CeO_2 Catalyst with a Variation of Surface Fermi Level: A Multi-scale Simulation Study

S. Ji*[1]; H. Ko[3]; H. Choi[1]; S. Cho[2]

1. University of Cologne, Department of Chemistry, Germany
2. Ajou University, Republic of Korea
3. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

11:30 AM

(ICACC-S7-012-2024) Selective placement of modifiers on hematite thin films for solar water splitting

F. L. de Souza*[1]

1. Brazilian Center for Research in Energy and Materials, Brazil

11:50 AM

(ICACC-S7-032-2024) Evaluation of Hydroxypropyl cellulose With Nano Silica, Nanocellulose, Nano calcium oxide, and Nano Primal for Consolidation of Wooden Samples

A. Mohammed*[1]

1. Fayoum University, Conservation and Restoration Department, Egypt

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Advanced composite manufacturing technologies, hybrid processes I

Room: Coquina F

Session Chair: Akihiko Ito, Yokohama National University

8:30 AM

(ICACC-S8-026-2024) Exsolution and Coarsening in Metal-Oxide Systems (Invited)

I. Reimanis*[1]

1. Colorado School of Mines, USA

9:00 AM

(ICACC-S8-027-2024) Fluidized Bed Chemical Vapor Deposition – a versatile technique for the preparation of ceramic composites

G. L. Vignoles*[1]; N. Bertrand[1]; A. Guette[1]; G. Chollon[1]; H. Plaisantin[1]; S. Couthures[1]; A. El Mansouri[1]; T. Da Calva[1]

1. University Bordeaux, LCTS - Lab for ThermStructural Composites, France

9:20 AM

(ICACC-S8-028-2024) Novel bioceramic/polymer composites from engineered photocurable emulsions

E. Bernardo*[1]; H. Elsayed[1]; B. Zavan[2]

1. University of Padova, Department of Industrial Engineering, Italy
2. University of Ferrara, Dept. of Translational Medicine, Italy

9:40 AM

(ICACC-S8-029-2024) Investigation of interfaces in Porous Silicon Nitride–Zirconia–Graphene Composite

K. Balazsi[2]; H. B. Rachid[1]; M. Furko[1]; C. Balazsi*[1]

1. Centre for Energy Research, Hungary
2. Centre for Energy Research HAS, Thin Film Physics, Hungary

10:00 AM

Break

S9 Porous Ceramics Novel Developments and Applications

SYMPOSIUM 9: Innovations in Processing Methods & Synthesis of Porous Ceramics

Room: Coquina D

Session Chairs: Tobias Fey, Friedrich-Alexander University Erlangen-Nürnberg; Wei Zhai, National University of Singapore

8:30 AM

(ICACC-S9-001-2024) Fabrication of Functional Porous Ceramics by Additive Manufacturing combined with Colloidal Assembly (Invited)

B. Winhard[1]; L. Grassi Maragno[1]; A. Gómez Gómez[1]; K. P. Furlan*[1]

1. Hamburg University of Technology, Integrated Materials Systems Group, Germany

9:00 AM

(ICACC-S9-002-2024) Geopolymer Granules for Environmental Applications

P. Colombo*[1]; M. Muracchioli[1]; G. Franchin[1]

1. University of Padova, Industrial Engineering, Italy

9:20 AM

(ICACC-S9-003-2024) Novel Strategies for Strength Enhancement of Reticulated Ceramic Foams: Chromia Doping and Gorilla Glass Coating

P. V. Zander[1]; D. Schrake[1]; U. Betke*[1]; M. Scheffler[1]

1. Otto-von-Guericke University, Institute for Materials and Joining Technology - Non-metallic Materials and Composites, Germany

9:40 AM

(ICACC-S9-004-2024) Sol-Gel production of BCZT for porous structures – applications, challenges and opportunities

M. Weichelt*[1]; E. Wolf[1]; S. Simon[1]; D. Köllner[1]; T. Fey[2]

1. Friedrich-Alexander-Universität Erlangen-Nürnberg, Materials Science, Germany
2. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany

10:00 AM

Break

10:20 AM

(ICACC-S9-005-2024) Design and Characterization of Lignocellulosic-based Foams for Functional Applications

J. Zhang*[1]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA

10:40 AM

(ICACC-S9-006-2024) Colloidal Processing Empowered by Emulsions: A Path to Hierarchical Porous Ceramics (Invited)

W. Zhai*[1]

1. National University of Singapore, Mechanical Engineering, Singapore

11:10 AM

(ICACC-S9-007-2024) Production of Carbon Foam Made from Coal at Atmospheric Pressure (Invited)

R. A. Olson*[1]; N. Smith[1]; T. Englebert[1]

1. CONSOL Innovations, R&D, USA

11:40 AM

(ICACC-S9-008-2024) Production of porous ceramics using electrostatic interaction control (Invited)

M. Cerbelaud*[1]; G. Michaud[1]; A. Aimable[1]; A. Videcoq[1]

1. IRCER, France

S11 Advanced Materials and Innovative Processing Ideas for Production Root Technologies

SYMPOSIUM 11: New concepts and emerging technologies for enhanced product performance II

Room: Ponce de Leon

Session Chair: Chisung Ahn, Korea Institute of Industrial Technology

8:50 AM

(ICACC-S11-014-2024) β-MoO_3 whisker as a neutron irradiation target material for radiopharmacy production (Invited)

H. Suematsu*[1]; N. Chu[1]; Y. Yang[1]; T. Do[1]; T. Nakayama[1]; K. Niihara[1]

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

9:20 AM

(ICACC-S11-015-2024) Electrochemical Performance and Degradation Mechanism if Rechargeable Zinc Ion Battery through Al_2O_3-Coated Zinc Anode and MnO_2 Cathode Configuration

Y. So*[1]; S. Lee[1]; S. Lee[3]; S. Lee[3]; J. Kim[2]; S. Mhin[1]

1. Kyonggi University, Republic of Korea
2. Daegu Mechatronics & Materials Institute, Republic of Korea
3. Advanced Institute of Convergence Technology, Republic of Korea

9:40 AM

(ICACC-S11-016-2024) Fabrication of MXenes-based films by in situ HF etching for electromagnetic interference shielding application

S. Nguyen*[1]; A. Okawa[2]; T. Nakayama[3]; T. Do[4]; H. Suematsu[5]

1. National Institute of Technology, Kushiro College, Department of Creative Engineering, Japan
2. Tohoku University, Institute of Multidisciplinary Research for Advanced Materials, Japan
3. Nagaoka University of Technology, Japan
4. Nagaoka University of Technology, Nuclear System Safety Engineering, Japan
5. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

10:00 AM

Break

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSIUM 16: Mechanical properties

Room: Coquina C

Session Chair: Henry Colorado L., Universidad de Antioquia

9:00 AM

(ICACC-S16-017-2024) Geopolymers for fire protection applications: Dense materials, foams and coatings (Invited)

A. Gharzouni*[1]; S. Rossignol[1]

1. IRCER, France

9:30 AM

(ICACC-S16-018-2024) Exploring the Influence of Curing Time and Temperature on the Mechanical Properties of K- and Na-based Geopolymers (Invited)

A. C. Trindade*[1]; G. Yik[1]; W. M. Kriven[2]

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, USA

10:00 AM

Break

S2 Advanced Ceramic Coatings for Structural/ Environmental & Functional Applications

SYMPOSIUM 2: CMAS-type corrosion and mitigation strategies I

Room: Flagler C

Session Chair: Ravisankar Naraparaju, DLR - German Aerospace Center

10:00 AM

Break

10:20 AM

(ICACC-S2-023-2024) Modified Melting and Crystallization Behavior in Mixtures of Calcia-Magnesia-Alumina-Silicate (CMAS) Glass and Sulfates/Seasalt

C. J. Louzon*[1]; R. Yi[1]; N. P. Padture[1]

1. Brown University, School of Engineering, USA

10:40 AM

(ICACC-S2-024-2024) Exploring the Effect of EBC Composition on CMAS Wetting Behavior

C. Luckhardt*[2]; J. L. Stokes[1]; E. J. Opila[2]

1. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
2. University of Virginia, Materials Science and Engineering, USA

11:00 AM

(ICACC-S2-025-2024) Modeling the structure of molten and glassy silicates from X-ray and Neutron Diffraction

C. J. Benmore[1]; R. Bogle*[1]; R. Weber[2]; S. K. Wilke[3]; J. Neuefeind[5]; G. Costa[4]

1. Argonne National Lab, X-ray Science Division, USA
2. MDI, USA
3. Materials Development, Inc., USA
4. NASA Glenn Research Center, USA
5. Oak Ridge National Lab, USA

11:20 AM

(ICACC-S2-026-2024) Spatially Resolved Thermal Conductivity Mapping of CMAS Reacted Environmental Barrier Coatings

E. Tiernan*[1]; M. Milich[1]; R. A. Golden[3]; G. Harrington[3]; A. L. Chamberlain[3]; P. E. Hopkins[2]

1. University of Virginia, Mechanical and Aerospace Engineering, USA
2. University of Virginia, USA
3. Rolls-Royce, USA

11:40 AM

(ICACC-S2-027-2024) Impact of CMAS heterogeneity and sparsity on melt progression

B. Jun*[1]; E. H. Jordan[2]

1. University of Connecticut, Materials Science, USA
2. University of Connecticut, Mechanical Engineering, USA

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Fused Filament Fabrication and Direct Ink Writing II

Room: Coquina H

Session Chair: Matthew Jones, Lightforce Ortho

10:00 AM

Break

10:20 AM

(ICACC-S15-034-2024) Fabrication of multi-material and multifunctional structures by extrusion additive manufacturing

L. Biasetto*[1]; V. Gastaldi[1]; G. Franchin[1]

1. University of Padova, Industrial Engineering, Italy

10:40 AM

(ICACC-S15-035-2024) Investigation of Carbon-Reinforced Acrylonitrile Butadiene Styrene 3D-Printed Honeycomb Composites

M. Ranaiefar*[1]; M. Singh[2]; J. Salem[3]; M. C. Halbig[1]

1. NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA
3. NASA Glenn Research Center, Materials and Structures, USA

11:00 AM

(ICACC-S15-036-2024) A Comparative Analysis of Ceramic Additive Manufacturing: Fused Filament Fabrication vs. Vat Photopolymerization

I. Camargo*[2]; J. Verza[1]; C. A. Fortulan[3]; A. Luz[4]

1. UFSCar, Brazil
2. IFSP, Brazil
3. USP, Brazil
4. Federal University of São Carlos, Materials Engineering Department, Brazil

11:20 AM

(ICACC-S15-037-2024) Robocasting of Glass-Ceramic Sealant: Rheological Characterization and Optimization of a Water-based Ink by Design of Experiment

A. Baggio*[1]; F. D'Isanto[1]; D. Dalmazzo[2]; E. Santagata[4]; D. Basso[3]; D. Gaia[3]; M. Salvo[1]; F. Smeacetto[1]

1. Politecnico di Torino, Department of Applied Science and Technology, Italy
2. Politecnico di Torino, Department of Environmental, Land and Infrastructure Engineering, Italy
3. FZSoNick, Switzerland
4. Qatar University, Civil & Environmental Engineering Department, Qatar

11:40 AM

(ICACC-S15-038-2024) Assessing Printability of Ceramic Suspensions for Direct Ink Writing by Rheology

L. O. Grant*[1]; R. Tao[1]; S. Romberg[1]; R. Maier[1]

1. National Institute of Standards and Technology, USA

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Advanced anode and cathode materials for lithium batteries

Room: Ballroom 5

Session Chairs: Maximilian Fichtner, Helmholtz-Institute Ulm (HIU); Jason Croy, Argonne National Laboratory

10:00 AM

Break

10:20 AM

(ICACC-S6-028-2024) Nanocomposite Engineering of Heterogeneous Mn-based Cation-Disordered Cathodes for High-Performance and Low-Cost Lithium-ion Batteries (Invited)

D. Seo*[1]; E. Lee[2]; H. Lee[2]; J. Lee[3]

1. Korea Advanced Institute of Science and Engineering (KAIST), Republic of Korea
2. Ulsan National Institute of Science and Technology, Republic of Korea
3. McGill University, Canada

10:50 AM

(ICACC-S6-029-2024) Reversible Electrochemical Lithium Cycling in a Vanadium (IV)-and Niobium (V)-Based Wadsley–Roth Phase (Invited)

H. Ji*[1]; E. Lawrence[1]; M. Davenport[2]; R. Devi[3]; Z. Cai[4]; M. Avdeev[5]; J. Belnap[1]; J. Liu[6]; H. Alnaser[1]; A. Ho[7]; T. D. Sparks[1]; G. Gautam[3]; J. Allred[2]

1. University of Utah, Materials Science and Engineering, USA
2. University of Alabama, Chemistry, USA
3. Indian Institute of Science, Department of Materials Engineering, India
4. University of California Berkeley, Department of Materials Science and Engineering, USA
5. Australian Nuclear Science and Technology Organisation, Bragg Institute, Australia
6. Oak Ridge National Lab, USA
7. Carnegie Mellon University, USA

11:20 AM

(ICACC-S6-030-2024) Activation and Stabilization of Solid-State Oxygen Redox in Antifluorite-Type Li_5FeO_4

H. Kobayashi*[1]; Y. Nakamura[3]; Y. Yokoyama[2]; I. Honma[3]; M. Nakayama[2]

1. Hokkaido University, Japan
2. Nagoya Institute of Technology, Dept. Materials Sci. & Eng., Japan
3. Tohoku University, Japan

11:40 AM

(ICACC-S6-031-2024) Electrochemical K intercalation into polyanionic materials tailored by systematic substitution

J. Kim*[1]

1. Stevens Institute of Technology, Chemical Engineering & Materials Science, USA

S11 Advanced Materials and Innovative Processing Ideas for Production Root Technologies

SYMPOSIUM 11: Recycling and reuse processes

Room: Ponce de Leon

Session Chair: Sungwook Mhin, Kyonggi University

10:20 AM

(ICACC-S11-017-2024) Preparation and characterization of Porous Silicate Particles Derived from Waste Rice Husks via Emulsion Approach (Invited)

R. V. Virtudazo*[1]; A. Arcasa[1]; S. Manlupig[1]; J. Cahigao[1]; E. d. Magdaluyo[2]; E. MIrasol[3]; M. Fuji[4]; I. B. Arugay[1]

1. Mindanao State University-Iligan Institute of Technology, Department of Materials and Resources Engineering and Technology, Research Center for Advanced Ceramics, Philippines
2. University of the Philippines, Philippines
3. Mariano Marcos State University, Department of Materials Science and Engineering, Philippines
4. Nagoya Institute of Technology, Japan

10:50 AM

(ICACC-S11-018-2024) Nanosecond Pulse powered Electrocoagulation process (NSP-EC) for wastewater treatment: Fundamentals and applications

A. I. Martinez Sanchez*[1]; Y. Takimoto[2]; H. Furuno[2]; T. Nakayama[2]

1. Nagaoka University of Technology, Science of Technology Innovation, Japan
2. Nagaoka University of Technology, Japan

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Joining and coating technologies for reactor components

Room: Ballroom 4

Session Chair: Takaaki Koyanagi, Oak Ridge National Laboratory

10:20 AM

(ICACC-S13-030-2024) Brazing of SiC/SiC composites for advanced nuclear energy systems (Invited)

V. Chaumat*[1]; O. Gillia[1]; C. Lorrette[2]

1. Univ. Grenoble Alpes, CEA, Liten, DTCH, France
2. Université Paris-Saclay, CEA, Service de Recherche en Matériaux et Procédés Avancés, France

10:50 AM

(ICACC-S13-031-2024) Interdiffusion barriers for improved stability of Accident Tolerant Coated Cladding in Pressurized Water Reactors (Invited)

M. Cabrioli[2]; M. K. Grosse[3]; F. Di Fonzo*[1]

1. X-nano, Italy
2. Istituto Italiano di Tecnologia, Center for Nano Science and Nano Technologies, Italy
3. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

11:20 AM

(ICACC-S13-032-2024) Laser assisted joining of SiC/SiC for nuclear applications

M. Ferraris*[1]; M. De Maddis[2]; D. Basile[2]

1. Politecnico di Torino, Department of Applied Science and Technology, Italy
2. Politecnico di Torino, Italy

11:40 AM

(ICACC-S13-033-2024) High temperature ductile amorphous oxide coatings on structural steels: A key technology for next generation fission and fusion power plants

A. Stinchelli[1]; G. Leonardis[1]; M. Beghi[2]; F. Di Fonzo*[1]

1. X-nano, Italy
2. Politecnico di Milano, Department of Energy, Italy

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSIUM 16: Sustainable materials and novel applications

Room: Coquina C

Session Chair: Cristina Leonelli, University of Modena and Reggio Emilia

10:20 AM

(ICACC-S16-019-2024) Heavy metal removal properties of porous geopolymers by reactive metal foaming

A. Ozer*[1]; A. Qadeer[1]; W. M. Kriven[2]

1. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, USA

10:40 AM

(ICACC-S16-020-2024) Controlling the phase development in the alkali activation of waste glass

G. Tameni*[1]; D. C. Lago[2]; J. Kraxner[2]; E. Bernardo[1]

1. University of Padova, Industrial Engineering, Italy
2. Centre for Functional and Surface Functionalized Glass, Italy

11:00 AM

(ICACC-S16-021-2024) Cold Sintering of Geopolymers: A Novel Approach for Dense Aluminosilicates (Invited)

L. Lattanzi*[1]; A. Conte[1]; P. Colombo[1]; A. X. Sin[2]

1. University of Padova, Industrial Engineering, Italy
2. ITT Italia s.r.l., Italy

11:30 AM

(ICACC-S16-022-2024) Understanding the molecular mechanism of cold consolidation of glass by 'weak' alkali activation (Invited)

G. Tameni[1]; D. C. Lago[3]; L. Daniel[2]; S. Ashbrook[2]; D. Galusek[4]; E. Bernardo*[1]

1. University of Padova, Department of Industrial Engineering, Italy
2. University of St Andrews, School of Chemistry and Centre of Magnetic Resonance, United Kingdom
3. Centre for Functional and Surface Functionalized Glass, Italy
4. IIC SAS, Joint Glass centre, Slovakia

S19 Molecular-level Processing and Chemical Engineering of Functional Materials

SYMPOSIUM 19: Energy-Related Matters II

Room: Ballroom 3

Session Chair: Thomas Konegger, TU Wien

10:20 AM

(ICACC-S19-024-2024) Waste to Product: Green production processes for a circular economy (Invited)

A. Weidenkaff*[1]

1. Fraunhofer IWKS, Germany

10:50 AM

(ICACC-S19-025-2024) In situ formation of non noble transition metal nanoparticles in a micro-/mesoporous Si-C-N-O(H) ceramic support for water oxidation

M. Ben Miled*[1]; S. Celerier[2]; A. Habrioux[2]; O. Masson[1]; S. Bernard[3]

1. IRCER - CNRS UMR 7315, France
2. Institut de Chimie des Milieux et Matériaux de Poitiers IC2MP UMR7285, France
3. CNRS, IRCER, France

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Advanced composite manufacturing technologies, hybrid processes II

Room: Coquina F

Session Chair: Ivar Reimanis, Colorado School of Mines

10:20 AM

(ICACC-S8-030-2024) Chemically vapor deposited YAG-alumina eutectic system with ordered structures (Invited)

A. Ito*[1]

1. Yokohama National University, Graduate School of Environment and Information Sciences, Japan

10:50 AM

(ICACC-S8-031-2024) New perspective on the texture evolution mechanism of Si_3N_4 ceramics:Effect of additive content

Y. Shi*[1]

1. Wuhan University of Technology, China

11:10 AM

(ICACC-S8-032-2024) Microstructures and mechanical properties of B_4C–SiC–rGO composites prepared using spark plasma sintering

L. Hu[1]; Q. He*[3]; W. Wang[2]

1. Wuhan Business University, China
2. Wuhan University of Technology, China
3. Wuhan University of Technology, The State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, China

FS1 Bioinspiration/Green Processing & Related Technologies of Advanced Materials

Focused Session 1: Bioinspiration, Green Processing, and Related Technologies of Advanced Materials

Room: Ponce de Leon

Session Chair: Zhaoyong Zou, Wuhan University of Technology

1:30 PM

(ICACC-FS-001-2024) Convergent Biological Designs for Advanced Materials (Invited)

D. Kisailus*[1]

1. University of California at Irvine, Materials Science and Engineering, USA

2:10 PM

(ICACC-FS-003-2024) Bioinspired synthesis of crystalline nanomaterials through peptoid-based approaches (Invited)

C. Chen*[1]

1. Pacific Northwest National Lab, USA

2:40 PM

Break

FS3 Nanostructures and Low-Dimensional Materials for Chemical Sensors

Focused Session 3: Nanostructures and Low-Dimensional Materials for Chemical Sensors

Room: Flagler A

Session Chairs: Ho Won Jang, Seoul National University; Ji-Wook Yoon, Jeonbuk National University

1:30 PM

(ICACC-FS3-001-2024) Real-time taste detection using rationally designed graphene channels for electronic tongue (Invited)

H. Jang*[1]

1. Seoul National University, Republic of Korea

2:00 PM

(ICACC-FS3-002-2024) Surface-Modification is Crucial in Resistive Type Gas Sensing (Invited)

H. Kim*[1]

1. Hanyang Univ, Republic of Korea

2:30 PM

(ICACC-FS3-003-2024) Heterogeneous Integration of Atomically Thin Wafer-Scale 2D Materials for Sensing Device Applications (Invited)

Y. Jung*[1]

1. University of Central Florida, Materials Science & Engineering, USA

3:00 PM

Break

3:20 PM

(ICACC-FS3-004-2024) Design of ferroelectric ε-WO_3 for selective detection of acetone (Invited)

J. Yoon*[1]

1. Jeonbuk National University, Republic of Korea

3:50 PM

(ICACC-FS3-005-2024) Atomic layer deposition to materials for gas sensing applications (Invited)

N. Pinna*[1]

1. Humboldt-Universität zu Berlin, Department of Chemistry, Germany

4:20 PM

(ICACC-FS3-006-2024) Low Dimensional Ceramic Chemiresistive Gas Sensors for Medical Diagnosis (Invited)

O. K. Varghese*[2]; D. Waligo[2]; B. Kandel[2]; M. Paulose[1]

1. University of Houston, Department of Physics, USA
2. University of Houston, Department of Physics & Texas Center for Superconductivity, USA

S2 Advanced Ceramic Coatings for Structural/ Environmental & Functional Applications

SYMPOSIUM 2: CMAS-type corrosion and mitigation strategies II

Room: Flagler C

Session Chairs: Seongwon Kim, Korea Institute of Ceramic Engineering and Technology (KICET); Gustavo Costa, NASA Glenn Research Center

1:30 PM

(ICACC-S2-028-2024) Development of EB-PVD (Gd,Y) Zirconate solid solution coatings as CMAS resistant TBCs (Invited)

R. Naraparaju*[1]; P. Mechnich[2]; U. Schulz[2]

1. DLR - German Aerospace Center, Materials Research, Germany
2. DLR - German Aerospace Center, Institute of Materials Research, Germany

2:00 PM

(ICACC-S2-029-2024) Reactive crystallization in multiple rare-earth zirconates and a model CMFAS melt

C. S. Holgate*[1]; S. Berens[1]; N. Basilyan[1]; C. G. Levi[1]

1. University of California, Santa Barbara, Materials, USA

2:20 PM

(ICACC-S2-030-2024) Mitigation of Slag Corrosion for Gasifier and Burner Components in IGCC(Integrated Gasification Combined Cycle) Power Plants

S. Kim*[1]; M. Nam[1]; Y. Oh[1]; S. Lee[1]

1. Korea Institute of Ceramic Engineering and Technology (KICET), Engineering Materials Center, Republic of Korea

2:40 PM

(ICACC-S2-031-2024) CMAS Resistance of Xenotime Mineral-inspired Rare Earth Phosphates for Environmental Barrier Coatings

P. Stack*[1]; E. Opila[1]

1. University of Virginia, USA

3:00 PM

Break

3:20 PM

(ICACC-S2-032-2024) Erosion Performance and CMAS Degradation of T/EBC Material Systems (Invited)

D. E. Wolfe[3]; C. DeSalle*[1]; J. A. Reiss[1]; M. Schmitt[2]; P. E. Albert[1]; A. K. Rai[4]

1. Penn State ARL, USA
2. HAMR Industries LLC, USA
3. Pennsylvania State University, USA
4. UES, USA

3:50 PM

(ICACC-S2-033-2024) Effectiveness of YFeSi oxide as a CMAS-resistant layer for EBCs

Z. Stein*[1]; J. E. Förster[2]; U. Schulz[2]; R. Naraparaju[2]; S. Raghavan[1]

1. Embry-Riddle Aeronautical University, Aerospace Engineering, USA
2. DLR - German Aerospace Center, Institute of Materials Research, Germany

4:10 PM

(ICACC-S2-034-2024) Molten silicate interactions with $La_2Hf_2O_7$ and two-phase $La_2Hf_2O_7/HfO_2$ environmental barrier coatings

S. Berens*[1]; A. R. Ericks[1]; C. S. Holgate[1]; F. W. Zok[1]; C. G. Levi[1]

1. University of California-Santa Barbara, Materials, USA

4:30 PM

(ICACC-S2-035-2024) CMAS-type corrosion of Yttrium-Aluminum-Garnet (YAG)

P. Mechnich*[1]

1. DLR - German Aerospace Center, Institute of Materials Research, Germany

S10 Modeling and Design of Ceramics and Composites

SYMPOSIUM 10: Modeling and design of ceramics and composites

Room: Coquina G

Session Chair: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences

1:30 PM

(ICACC-S10-001-2024) Compositional and microstructural design of environmental barrier coatings for SiC_f/SiC composite (Invited)

J. Wang*[1]

1. Institute of Metal Research, CAS, Advanced Ceramics and Composites Division, China

2:00 PM

(ICACC-S10-002-2024) Approximation and definition of state variables for a comprehensive description of damage for ceramic matrix composites (Invited)

E. Baranger*[1]

1. Université Paris-Saclay, CentraleSupélec, ENS Paris-Saclay, CNRS, LMPS, France

2:30 PM

(ICACC-S10-003-2024) Machine learning accelerated computational design of oxide catalysts using "Center-Environment" features: From spinel to perovskite (Invited)

Y. Liu*[1]

1. Shanghai University, Materials Genome Institute, China

3:00 PM

Break

3:20 PM

(ICACC-S10-004-2024) Machine learning approaches for property predictions of silicon nitride ceramics

R. Furushima*[1]; Y. Nakashima[1]; Y. Zhou[1]; Y. Maruyama[1]; K. Hirao[1]; T. Ohji[1]; M. Fukushima[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Multi-Material Research Institute, Japan

3:40 PM

(ICACC-S10-005-2024) Development of Deep Neural Network Interatomic Potentials for Advanced Ceramics

K. Ghaffari*[2]; S. Bavdekar[1]; D. Spearot[2]; G. Subhash[2]

1. University of Florida, Material Science and Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA

4:00 PM

(ICACC-S10-006-2024) Shock Simulations of B4C with Machine Learning and Empirical Force Fields

K. Ghaffari*[2]; S. Bavdekar[1]; D. Spearot[2]; G. Subhash[2]

1. University of Florida, Material Science and Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA

4:20 PM

(ICACC-S10-007-2024) Optimizing Deep learning Training for Scientific Imaging of Fiber-reinforced Composites

A. Badran*[1]; B. Provencher[2]; J. Kroll[3]; M. Marsh[2]

1. General Electric Aerospace Research, USA
2. Comet Technologies Canada, Canada
3. University of Texas Arlington, USA

S12 Design and Applications of Nanolaminated Ternary Transition Metal Carbides/Nitrides and Borides, Their solid solutions and 2D Counterparts

SYMPOSIUM 12: Design of novel compositions and manufacturing methods

Room: Ballroom 3

Session Chairs: Miladin Radovic, Texas A&M University; Konstantina Lambrinou, University of Huddersfield

1:30 PM

(ICACC-S12-001-2024) Twelve Years In: How are MXenes Doing? (Invited)

M. Barsoum*[1]

1. Drexel University, Materials Science and Engineering, USA

2:00 PM

(ICACC-S12-002-2024) High Quality MXenes for Electrocatalysis (Invited)

K. Liang*[1]

1. Ningbo Institute of Materials Technology and Engineering, China

2:30 PM

(ICACC-S12-003-2024) MNenes for Electrochemical Energy Storage and Conversion (Invited)

A. Djire*[1]

1. Texas A&M University, Artie McFerrin Department of Chemical Engineering, USA

3:00 PM

Break

3:20 PM

(ICACC-S12-004-2024) Termination Species and Chemical Bonding in the Energy Storage Materials MXenes (Invited)

M. Magnuson*[1]

1. Linköping University, Department of Physics, Chemistry and Biology (IFM), Sweden

3:50 PM

(ICACC-S12-005-2024) MXene Derived Carbides As Precursors For Ultra High Temperature Ceramics

S. Nemani*[1]; Y. Im[6]; N. Gilli[2]; B. Sapkota[4]; A. Kumar[3]; A. Vohrees[1]; L. Silvestroni[5]; R. Klie[4]; N. Chawla[3]; B. Anasori[6]

1. Indiana University--Purdue University, Mechanical Engineering, USA
2. CNR-IMM, Ceramics Engineering, Italy
3. Purdue University, Materials Science, USA
4. University of Illinois, Physics, USA
5. CNR, ISTEC, Italy
6. Indiana University – Purdue University, Mechanical and Energy Engineering, USA

4:10 PM

(ICACC-S12-006-2024) Non-conventional synthesis and characterization of carbonitride MAX phases

N. Kubitza*[1]; C. Birkel[2]

1. Technical University Darmstadt, Eduard-Zintl-Institute, Germany
2. Arizona State University, USA

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Fuel, cladding, assembly, and core evolutions and performance modeling

Room: Ballroom 4

Session Chair: Koroush Shirvan, Massachusetts Institute of Technology

1:30 PM

(ICACC-S13-034-2024) Nuclear fuel performance simulations of gas evolution, swelling and creep informed by lower length scale investigations (Invited)

A. D. Andersson*[1]

1. Los Alamos National Laboratory, USA

2:00 PM

(ICACC-S13-035-2024) Multiscale modeling of Silicon Carbide Cladding

G. Singh*[1]; P. Xu[1]

1. Idaho National Laboratory, USA

2:20 PM

(ICACC-S13-036-2024) Empirical and Constitutive Surrogate Damage Modeling Techniques Capturing Progressive Failure Mechanisms in Nuclear Grade Silicon Carbide Composites

J. Kosmata*[1]; H. Shatoff[1]; P. Mijatovic[1]; G. Jacobsen[1]; L. Capolungo[2]; R. Lebensohn[2]; K. Spilker[2]

1. General Atomics, Nuclear Technologies and Materials, USA
2. Los Alamos National Laboratory, USA

2:40 PM

(ICACC-S13-037-2024) Physics-Informed Artificial Intelligence for Guided Wave Non-Destructive Evaluation of Ceramic Cladding

J. Harley*[1]; G. Subhash[2]

1. University of Florida, Department of Electrical and Computer Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA

3:00 PM

Break

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Direct Writing and Multi-Materials I

Room: Coquina H

Session Chair: Alberto Ortona, SUPSI

1:30 PM

(ICACC-S15-039-2024) Ceramic Additive Manufacturing Technologies as Enabler for Multifunctional Components (Invited)

T. Moritz*[1]; U. Scheithauer[1]; E. Schwarzer-Fischer[1]; S. Weingarten[2]

1. Fraunhofer IKTS, Processes/Components, Germany
2. AMAREA Technologies GmbH, Germany

2:00 PM

(ICACC-S15-040-2024) Towards Additive Manufacturing of Thin-walled "Magnetocaloric Structures"

V. Sharma*[1]; R. Hadimani[1]; H. Zhao[1]; R. Barua[1] ***WITHDRAWN***

1. Virginia Commonwealth University, Department of Mechanical and Nuclear Engineering, USA

2:20 PM

(ICACC-S15-041-2024) Preparation and characterization of 3D printed ceramic electrolyte for batteries

M. Faral*[1]; A. Laventure[1]; M. Dollé[1]

1. University of Montreal, Chemistry, Canada

2:40 PM

(ICACC-S15-042-2024) Direct Write Additive Manufacturing (DWAM) and Testing of Batteries for Aerospace Applications

Z. J. Tuchfeld*[1]; A. S. Almansour[3]; R. M. Sullivan[3]; D. Dornbusch[3]; M. Singh[2]; M. C. Halbig[3]

1. USRA at NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA
3. NASA Glenn Research Center, USA

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSIUM 16: Sustainable materials and novel applications

Room: Coquina C

Session Chair: Claus Rüscher, Leibniz University Hannover

1:30 PM

(ICACC-S16-023-2024) Geopolymer based Adsorbents for effective adsorption and selective separation of CO_2 and pollutants (Invited)

V. Medri*[1]; E. Papa[1]; E. Landi[1]; D. Frascari[2]; D. Pinelli[2]; M. Minelli[2]

1. National Research Council of Italy, ISSMC (former ISTEC), Italy
2. University of Bologna, DICAM, Italy

2:00 PM

(ICACC-S16-024-2024) Environment Friendly Ceramics for Sustainable Building Construction (Invited)

S. Mittan*[1]

1. M\S Roop Chand Virender Pal, Field Operations, India

2:30 PM

(ICACC-S16-025-2024) New applications, advantages, and current limitations of Phosphate cements (Invited)

H. A. Colorado L.*[1]

1. Universidad de Antioquia, Colombia

3:00 PM

Break

S18 Ultra-High Temperature Ceramics

SYMPOSIUM 18: Processing-Microstructure-Property Relationship

Room: Coquina A

Session Chairs: Helmut Riedl, TU Wien; Lavina Backman, U.S. Naval Research Laboratory

1:30 PM

(ICACC-S18-031-2024) In-situ micro-mechanical evaluation of graded ultra-high temperature ceramic matrix composites (UHTCMCs) (Invited)

K. Detwiler*[4]; H. Gross[1]; E. E. Boakye[2]; T. Key[2]; A. Rossi[3]; C. P. Przybyla[4]; M. Cinibulk[4]; L. M. Rueschhoff[4]

1. Strategic Ohio Council of Higher Education, USA
2. UES Inc., Materials Science, USA
3. University of Dayton Research Institute, USA
4. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

2:00 PM

(ICACC-S18-032-2024) Microstructural and Mechanical Properties of Ultra-High Temperature Ceramics Produced through the Bound-Ceramic FFF Additive Manufacturing Process

E. Faierson*[1]; P. Collins[1]

1. Iowa State University, USA

2:20 PM

(ICACC-S18-033-2024) Densification, Thermal Properties, and Grain Boundary/B4C TEM Characterization of Zirconium Diboride (ZrB2) with Carbon Additions

Y. Zhou*[1]; W. Fahrenholtz[1]; G. Hilmas[1]

1. Missouri University of Science & Technology, Materials Science and Engineering, USA

2:40 PM

(ICACC-S18-034-2024) High-Temperature Kinetic Behavior of Boride Compounds When Exposed to CMAS

T. Y. Ansell*[1]; L. Raschke[1]; C. Vorbroker[1]

1. Naval Postgraduate School, Mechanical and Aerospace Engineering, USA

3:00 PM

Break

3:20 PM

(ICACC-S18-035-2024) Exploring the phase space of transition metal diborides: From binary to quaternary PVD coatings (Invited)

H. Riedl*[1]; L. Zauner[2]; A. Bahr[2]; T. Glechner[2]; A. Hirle[2]; S. Richter[2]; C. Fuger[2]; R. Hahn[2]; T. Wojcik[1]; J. Ramm[3]; O. Hunold[3]; S. Kolozsvári[4]; P. Polcik[4]

1. TU Wien, Institute of Materials Science and Technology, Austria
2. TU Wien, Christian Doppler Laboratory for Surface Engineering of high-performance Components, Austria
3. Oerlikon Surface Solutions AG, Liechtenstein
4. Plansee Composite Materials GmbH, Germany

3:50 PM

(ICACC-S18-036-2024) Interdiffusion in the WB2 – ZrB2 system

Y. Zhou*[1]; S. Filipovic[1]; W. Fahrenholtz[1]; G. Hilmas[1]

1. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

4:10 PM

(ICACC-S18-037-2024) Aligned Boron Nitride Nanotube Polysiloxane Ablative Nanocomposite Laminate for Thermal Protection Systems

P. B. Patel*[2]; S. Kim[4]; J. Dai[1]; L. Acauan[1]; J. Buffy[3]; J. Koo[4]; B. L. Wardle[1]

1. Massachusetts Institute of Technology, Aeronautics and Astronautics, USA
2. Massachusetts Institute of Technology, Mechanical Engineering, USA
3. Techneglas, USA
4. The University of Texas at Austin, Walker Department of Mechanical Engineering, USA

4:30 PM

(ICACC-S18-038-2024) Investigating Thermal and Optical Properties in Rare Earth Zirconates for Radiative Barrier Coatings

W. Riffe*[1]; H. B. Schonfeld[3]; V. Champagne[4]; S. Zare[3]; P. E. Hopkins[2]; D. Clarke[4]

1. University of Virginia, Department of Materials Science and Engineering, USA
2. University of Virginia, USA
3. University of Virginia, Mechanical and Aerospace Engineering, USA
4. Harvard University, Materials Science, USA

S1 Mechanical Behavior and Performance of Ceramics & Composites

SYMPOSIUM 1: Sustainable manufacturing, joining, and repair approaches of ceramics

Room: Coquina E

Session Chairs: Dietmar Koch, University of Augsburg; Aurélien Debelle, Andra

1:30 PM

(ICACC-S1-037-2024) Sustainable ceramic matrix composites (SCMC) by combining life cycle assessment (LCA), multicriteria analysis and digitalization (Invited)

A. Schneller*[1]; D. Koch[1]; D. Schüppel[1]; T. Schneider[1]; L. Wietschel[1]; J. Riesner[1]; A. Thorenz[1]; A. Tuma[2]

1. University of Augsburg, Institute for Materials Resource Management, Germany
2. University of Augsburg, Institute of Business Administration, Germany

2:00 PM

(ICACC-S1-038-2024) Pareto Efficient manufacturing of C/C-SiC via LSI: An overview of energy saving potentials and the associated performance loss

D. K. Schüppel*[3]; A. Schneller[2]; O. M. Avci[2]; F. Halter[1]; L. Wietschel[1]; D. Koch[2]

1. University of Augsburg, Institute for Materials Resource Management, Germany
2. University of Augsburg, Institute for Materials Resource Management MRM, Materials Engineering, Germany
3. Composites United e. V., Ceramic Composites, Germany

2:20 PM

(ICACC-S1-039-2024) Yttrium aluminosilicate glass-ceramic used to join SiC/SiC composites

C. Malinverni*[1]; M. Salvo[1]; M. Zietara[2]; J. Maier[3]; C. Prentice[4]; M. Farnham[4]; V. Casalegno[1]

1. Politecnico di Torino, DISAT, Italy
2. International Centre of Electron Microscopy for Materials Science, AGH University of Science and Technology, Poland
3. Fraunhofer Institute for Silicate Research ISC, Center for High Temperature Materials and Design HTL, Germany
4. Archer Technicoat Ltd, ATL, United Kingdom

2:40 PM

(ICACC-S1-040-2024) Improving brazed CMC joints via surface texturing using atmospheric-pressure plasma jet and reactive ion etching

V. Casalegno*[1]; A. De Zanet[1]; M. Salvo[1]; F. Valenza[2]; S. Gambaro[2]; E. Vassallo[3]; M. Pedroni[3]

1. Politecnico di Torino, DISAT, Italy
2. National Research Council – Institute of Condensed Matter Chemistry and Technologies for Energy (CNR-ICMATE), Italy
3. Institute for Plasma Science and Technology, National Research Council of Italy, Italy

3:00 PM

Break

3:20 PM

(ICACC-S1-041-2024) Repair Concepts for Reduced Reject Rates of CMC Structures -Machining of Damaged Volumes and Repair Inlays (Invited)

R. Goller*[1]; S. Unseld[1]; T. Bratzdrum[3]; J. Moosburger-Will[3]; A. Rösiger[2]; D. Koch[3]

1. Technical University of Applied Sciences, Mechanical Engineering, Germany
2. University of Applied Sciences, Mechanical Engineering, Germany
3. University of Augsburg, Institute for Materials Resource Management MRM, Materials Engineering, Germany

3:50 PM

(ICACC-S1-042-2024) Repair concepts for reduced reject rates of CMC structures – development of inlays and compounds

D. Koch*[1]; T. Bratzdrum[1]; J. Moosburger-Will[1]; S. Unseld[2]; A. Rösiger[2]; R. Goller[2]

1. University of Augsburg, Institute for Materials Resource Management MRM, Materials Engineering, Germany
2. Technical University of Applied Sciences Augsburg, Mechanical Engineering, Germany

4:10 PM

(ICACC-S1-043-2024) Multimaterial and functionally graded structures through ceramic additive manufacturing (Invited)

S. M. Allan*[1]; M. Schwentenwein[2]; S. Nohut[2]

1. Lithoz America, LLC, USA
2. Lithoz GmbH, Austria

4:40 PM

(ICACC-S1-044-2024) Optimized microstructure for enhanced properties of novel ecofriendly green plants wastes hybridized ultrafine grained Al7Si2Cu0.5Ni eco-composites

K. C. Nnakwo*[1]

1. Nnamdi Azikiwe University Awka Nigeria, Metallurgical and Materials Engineering, Nigeria

5:00 PM

(ICACC-S1-045-2024) Evaluation of Microstructure Evolution and Mechanical Properties of Al-10wt%Zn-1.63Si Irvingia gabonensis Particulates Alloy Composites

J. L. Chukwuneke*[2]; K. C. Nnakwo[1]

1. Nnamdi Azikiwe University Awka Nigeria, Metallurgical and Materials Engineering, Nigeria
2. Nnamdi Azikiwe University, Mechanical Engineering, Nigeria

S3 21th Intl Symp on Solid Oxide Cells Materials Science & Technology

SYMPOSIUM 3: Simulation, testing and degradation / Progress in SOC development

Room: Ballroom 1-2

Session Chairs: Tae Ho Shin, Korea Institute of Ceramic Engineering & Technology; Alex Morata, Catalonia Institute for Energy Research (IREC)

1:30 PM

(ICACC-S3-032-2024) Investigating Durability of Solid Oxide Electrolysis Cells (Invited)

O. A. Marina*[1]; L. Le[1]; R. Springer[1]; C. Coyle[1]; S. Belko[1]; J. Bao[1]

1. Pacific Northwest National Lab, USA

2:00 PM

(ICACC-S3-033-2024) Developing higher performing solid oxide cells through simulation (Invited)

H. W. Abernathy*[1]; W. K. Epting[1]; T. Yang[1]; Y. Lei[1]; F. Xue[1]

1. US DOE National Energy Technology, USA

2:30 PM

(ICACC-S3-034-2024) Stable operation of Metal-Supported Electrolysis Cells for 7000 hours

J. Zamudio Garcia*[1]; M. P. Klitkou[2]; Å. H. Persson[1]; B. Sudireddy[1]; A. Hagen[2]; P. Hendriksen[1]

1. Technical University of Denmark, DTU Energy, Denmark
2. Technical University of Denmark, Department of Energy, Denmark

2:50 PM

(ICACC-S3-035-2024) Degradation behavior of CFY based SOC stacks with different types of interconnect protection coatings

V. Sauchuk*[1]; S. Rothe[1]; S. Megel[1]; N. Trofimenko[1]; M. Andritschky[2]; D. Heitzinger[3]; M. Kusnezoff[4]

1. Fraunhofer IKTS, Germany
2. Minho University, Portugal
3. Miba Group company, Austria
4. Fraunhofer IKTS, Germany

3:10 PM

Break

3:30 PM

(ICACC-S3-036-2024) Recent Highlights on Solid Oxide Cell (SOC) developement, modelling and characterization (Invited)

J. Mougin*[1]

1. CEA, Liten, France

4:00 PM

(ICACC-S3-037-2024) Elcogen SOC technology: Status and perspectives (Invited)

M. Rath*[1]; S. Pylypko[1]; M. Noponen[1]; M. Skjøth-Rasmussen[1]; E. Ounpuu[1]

1. Elcogen, Estonia

4:30 PM

(ICACC-S3-038-2024) Progress and Challenges on Solid Oxide Fuel Cell and Stack development for Mobility Use (Invited)

T. Shiomi*[1]; M. Sugino[1]; M. Abdul Jabbar[2]; Y. Furuya[2]; N. Dale[2]; P. Singh[3]

1. Nissan Motor Co., Ltd., EV System Laboratory, Japan
2. Nissan, USA
3. University of Connecticut, Materials Science and Engineering, USA

5:00 PM

Break

5:20 PM

(ICACC-S3-039-2024) SOEC for Highly Efficient Hydrogen and E-Fuel Production (Invited)

B. Reiter*[1]

1. AVL List GmbH, SOFC/SOEC Systems, Austria

5:50 PM

(ICACC-S3-040-2024) Co-SOEC system development for optimized SNG production

R. Schauperl*[1]

1. AVL List GmbH, Research & Innovation, Austria

6:10 PM

(ICACC-S3-041-2024) Viability of CO_2-Neutral Vehicles Utilizing Carbon-Based Fuels

S. Barnett*[1]; T. Schmauss[1]

1. Northwestern Univ, USA

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Advanced anode and cathode materials for lithium and multivalent batteries

Room: Ballroom 5

Session Chairs: Badri Narayanan, University of Louisville; Derrick Fam, Institute of Materials Research and Engineering

1:30 PM

(ICACC-S6-032-2024) Research and Development of Mn-Rich Cathodes at Argonne National Laboratory (Invited)

J. R. Croy*[1]

1. Argonne National Laboratory, USA

2:00 PM

(ICACC-S6-033-2024) Oxygen defect engineering for advanced battery materials (Invited)

T. Nakamura*[1]; X. Hou[1]; Y. Kimura[1]; K. Amezawa[1]

1. Tohoku University, IMRAM, Japan

2:30 PM

(ICACC-S6-034-2024) Recent Results and Progress with Multivalent Batteries (Invited)

M. Fichtner*[1]

1. Helmholtz-Institute Ulm (HIU), Solid State Chemistry, Germany

S7 18th Intl Symp on Functional Nanomaterials & Thin Films for Sustainable Energy Harvesting

SYMPOSIUM 7: 18th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy, Environmental and Health Applications

Room: Coquina B

Session Chair: Germán Salazar Alvarez, Uppsala University

1:30 PM

(ICACC-S7-013-2024) Topochemical fluorination of indate-based Ruddlesden-Popper-type oxide, structural-optical characterizations, and photocatalytic hydrogen evolution

S. Perween*[1]; K. Wissel[1]; Z. Dallos[7]; M. Weiss[2]; Y. Ikeda[1]; S. Vasala[3]; S. Strobel[4]; P. Schützendübe[5]; P. M. Jeschenko[6]; U. Kolb[7]; R. Marschall[2]; B. Grabowski[1]; P. Glatzel[3]; O. Clemens[1]

1. University of Stuttgart, Institute for Materials Science, Germany
2. University of Bayreuth, Department of Chemistry, Germany
3. ESRF - The European Synchrotron, 71 Avenue des Martyrs, 3800, France
4. University of Stuttgart, Institute of Inorganic Chemistry, Germany
5. Max Planck Institute for Intelligent Systems, Stuttgart, Germany
6. Max Planck Institute for Medical Research, Heidelberg, Germany
7. Technical University of Darmstadt, Institute for Applied Geosciences, Germany

1:50 PM

(ICACC-S7-014-2024) Enhancing Photocatalytic Performance of Silicon Photocathode Using MoS_2-Based Cocatalysts

Y. Sung*[1]; J. Ting[2]

1. National Cheng Kung University, Taiwan
2. National Cheng Kung University, Materials Science and Engineering, Taiwan

2:10 PM

(ICACC-S7-015-2024) Polymer-derived SiOC ceramics: A potential catalyst support controlled by the sintering temperature and carbon content

J. Liu*[1]; D. Giuntini[1]; R. Riedel[2]

1. Eindhoven University of Technology, Mechanical Engineering, Netherlands
2. TU Darmstadt, Materials Science, Germany

2:30 PM

(ICACC-S7-016-2024) Multi-Element MOF for Photo-Fenton Process

J. P. Budianto*[1]; J. Ting[1]

1. National Cheng Kung University, Material Science and Engineering, Taiwan

2:50 PM

Break

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Design-oriented manufacturing and processing

Room: Coquina F

Session Chair: Motoyuki Iijima, Yokohama National University

1:30 PM

(ICACC-S8-034-2024) Control of orientation direction in colloidal forming in high magnetic field (Invited)

S. Tanaka*[1]

1. Nagaoka University of Technology, Materials Science and Technology, Japan

2:00 PM

(ICACC-S8-035-2024) Designing novel dielectric composites with high thermal conductivity via cold sintering

J. Mena Garcia*[1]; A. Ndayishimiye[1]; Z. Fan[1]; M. Mervosh[1]; S. Perini[1]; W. Li[1]; B. Poudel[1]; S. Priya[1]; B. Foley[2]; J. Gaskins[2]; C. Randall[1]

1. The Pennsylvania State University, USA
2. Laser Thermal, USA

S9 Porous Ceramics Novel Developments and Applications

SYMPOSIUM 9: Engineered Porous Architectures Enabled by Additive Manufacturing Technologies

Room: Coquina D

Session Chairs: Kaline Furlan, Hamburg University of Technology; Paolo Colombo, University of Padova

1:30 PM

(ICACC-S9-009-2024) Highly porous 70S30C bioglass scaffolds from additive manufacturing of novel silicone-based emulsions

V. Diamanti[1]; H. Elsayed[1]; F. M. Stabile[2]; E. Bernardo*[1]

1. University of Padova, Department of Industrial Engineering, Italy
2. Univesidad Nacional de La Plata, Department of Chemical Engineering, Argentina

1:50 PM

(ICACC-S9-010-2024) Tailored macroscopic periodic cellular structures with optimized microstructure for tissue engineering

S. Simon*[1]; E. Wolf[1]; M. Weichelt[1]; T. Fey[1]

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany

2:10 PM

(ICACC-S9-011-2024) Digital light processing of MOFs functionalized mullite complex architectures for CO_2 capturing systems

A. Bertero*[2]; B. Coppola[2]; J. Schmitt[3]; N. Tanchoux[3]; P. Trens[3]; H. Kaper[1]; P. Palmero[2]; T. Jean Marc[2]

1. UMR 3080 CNRS/Saint-Gobain Research Provence, Laboratoire de Synthèse et Fonctionnalisation des Céramiques, France
2. Politecnico di Torino, Applied Science and Technology, Italy
3. UMR 5253 Pôle Chimie Balard Recherche, Institut Charles Gerhardt, France

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Green manufacturing, global environmental issues and standards

Room: Coquina F

Session Chair: Surojit Gupta, University of North Dakota

2:20 PM

(ICACC-S8-036-2024) Bubble formation in ice crystals by pulsed electron beam irradiation for remote sensing on Europa

H. Suematsu*[1]; H. Ito[1]; T. Kikuchi[1]; G. Imada[2]; T. Do[1]; T. Nakayama[1]

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. Niigata Institute of Technology, Department of Engineering, Japan

2:40 PM

(ICACC-S8-037-2024) The oxidation of Zircaloy-4 in cesium compounds and steam at 800-1100°C

T. Do*[1]; T. Nakayama[2]; H. Suematsu[2]

1. Nagaoka University of Technology, Nuclear System Safety Engineering, Japan
2. Nagaoka University of Technology, Japan

3:00 PM

Break

S9 Porous Ceramics Novel Developments and Applications

SYMPOSIUM 9: Computational Techniques in Porous ceramics

Room: Coquina D

Session Chairs: Swantje Simon, Friedrich-Alexander-Universität Erlangen-Nürnberg; Ulf Betke, Otto-von-Guericke-University Magdeburg

2:30 PM

(ICACC-S9-012-2024) Using machine learning to classify pore types in ceramic replica foams

J. Dreyer[1]; T. Fey*[1]

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany

2:50 PM

(ICACC-S9-013-2024) Examining porosity distribution in hydroxyapatite-zirconia fiber bioceramic composite via a multimodal nanoscale-to-microscale 3D tomography analysis

M. Slama*[1]; M. Krols[1]; D. Drdlik[2]; J. Cihlar[2]

1. TESCAN Group, Czechia
2. Ceitec, Czechia

3:10 PM

Break

3:30 PM

(ICACC-S9-014-2024) Artificial microstructure reconstruction algorithm and stiffness property estimation of ceramic foam

V. Deshpande*[1]; R. Piat[1]

1. University of Applied Sciences, Darmstadt, Mathematics and Natural Sciences, Germany

S15 8th International Symposium on Additive Manufacturing and 3-D Printing Technologies

SYMPOSIUM 15: Direct Writing and Multi-Materials II

Room: Coquina H

Session Chair: Tassilo Moritz, Fraunhofer IKTS

3:00 PM

Break

3:20 PM

(ICACC-S15-043-2024) Matrix First: Additive manufacturing for complex 3D ceramic matrix composite structures (Invited)

S. Bottacin[1]; M. Pelanconi[1]; G. Bianchi[1]; A. Rosa[1]; A. Ortona*[1]

1. SUPSI, Department of Innovative Technologies, Switzerland

3:50 PM

(ICACC-S15-044-2024) Direct ink write and weatherability of Lunar highlands regolith simulants inks

A. Marnot*[1]; B. Brettmann[1]

1. Georgia Institute of Technology, Chemical and Biomolecular Engineering, USA

4:10 PM

(ICACC-S15-045-2024) Hybrid additive manufacturing for the fabrication of freeform ceramics

A. De Marzi*[1]; K. Huang[1]; P. Colombo[1]; G. Franchin[1]

1. Università degli Studi di Padova, Department of Industrial Engineering, Italy

4:30 PM

(ICACC-S15-046-2024) Water-based additive manufacturing of ceramics by Laser-Induced Slip Casting (LIS)

A. Zocca*[1]; H. Schubert[1]; T. Mühler[2]; J. Guenster[1]

1. BAM Bundesanstalt für Materialforschung und -prüfung, Advanced Multi-materials Processing, Germany
2. QEP3D GmbH, Germany

4:50 PM

(ICACC-S15-047-2024) Exploring the Potential: Wireless Embedded Ceramic Sensors using Additive Manufacturing

N. Reed*[1]; J. B. Shivakumar[2]; S. C. Perry[3]; K. Coote[1]; E. Rojas-Nastrucci[2]; D. Kim[1]

1. Embry-Riddle Aeronautical University, Aerospace Engineering, USA
2. Embry-Riddle Aeronautical University, Electrical Engineering and Computer Science, USA
3. Embry Riddle Aeronautical University, Mechanical Engineering, USA

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: All-solid-state batteries VI

Room: Ballroom 5

Session Chairs: Valerie Pralong, CNRS ENSICAEN; Rick Laine, University of Michigan

3:00 PM

Break

3:20 PM

(ICACC-S6-035-2024) Operando X-ray CT Analysis on All-solid-state Batteries (Invited)

Y. Orikasa*[1]; M. Matsumoto[1]; Y. Sakka[1]; C. Zhong[1]; H. Yamashige[2]

1. Ritsumeikan University, Department of Applied Chemistry, Japan
2. Toyota Motor Corporation, Japan

3:50 PM

(ICACC-S6-036-2024) Low-temperature sintering and in situ formed protective layer for oxide-based composite cathode in all-solid-state Li batteries (Invited)

C. Lin[1]; M. Ihrig[2]; K. Kung[1]; H. Chen[1]; O. Guillon[2]; S. Lin*[1]

1. National Cheng Kung University, Materials Science and Engineering, Taiwan
2. Forschungszentrum Juelich, IEK-1, Germany

4:20 PM

(ICACC-S6-037-2024) Laser-induced melting of tin-iron-soda-silicate glass on solid electrolyte

F. Sato*[2]; T. Honma[1]

1. Nagaoka Univeristy of Technology, Department of Materials Science and Bioengineering, Japan
2. Nagaoka University of Technology, Doctoral Program in Engineering, Japan

4:40 PM

(ICACC-S6-038-2024) A New, Energy-Saving Precursor Route for Synthesizing $Li_7La_3Zr_2O_{12}$ & $LiCoO_2$ Mixed Cathode for Solid State Batteries

V. Kiyek*[1]; C. Schwab[1]; M. Finsterbusch[1]; D. Fattakhova-Rohlfing[1]; O. Guillon[1]

1. Forschungszentrum Juelich, IEK-1, Germany

S13 Development & Applications of Adv Ceramics & Composites for Nuclear Fission/ Fusion Energy Sys

SYMPOSIUM 13: Material technologies for accident tolerant fuel cladding and core structures for light water reactors

Room: Ballroom 4

Session Chair: Gyanender Singh, Idaho National Laboratory

3:20 PM

(ICACC-S13-038-2024) Improving the coolant compatibility of SiC/SiC composites for light water reactors via the design of multilayered protective coatings (Invited)

S. Huang*[1]; N. Goossens[1]; S. Mráz[2]; J. M. Schneider[2]; C. Sauder[3]; M. K. Grosse[4]; M. Steinbrück[4]; G. Greaves[5]; J. A. Hinks[5]; J. Vleugels[1]; K. Lambrinou[5]

1. KU Leuven, Materials engineering, Belgium
2. RWTH Aachen University, Materials Chemistry, Germany
3. CEA, DRMP, France
4. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany
5. University of Huddersfield, School of Computing and Engineering, United Kingdom

3:50 PM

(ICACC-S13-039-2024) Nuclear Uses of SiC-SiC CMCs and Graphite: Design & Construction Rules in ASME BPV Code Sec, III, Div. 5 for Nonmetallics - Revisons of 2023 Edition

M. G. Jenkins*[1]; S. T. Gonczy[2]; J. W. Geringer[3]; Y. Katoh[4]

1. Bothell Engineering and Science Technologies, USA
2. Gateway Materials Technology, USA
3. Oak Ridge National Lab, Materials Science and Technology, USA
4. Oak Ridge National Laboratory, USA

4:10 PM

(ICACC-S13-040-2024) Development strategy for SiC/SiC composite accident tolerant fuel cladding

T. Koyanagi*[1]; Y. Katoh[1]

1. Oak Ridge National Laboratory, USA

4:30 PM

(ICACC-S13-041-2024) Neutron induced deformation evolution of SiC/SiC composites using X-ray computed tomography testing and digital volume correlation

J. D. Arregui-Mena*[1]; T. Koyanagi[2]; Y. Katoh[2]

1. Oak Ridge National Lab, Nuclear Materials Science & Technology Group, USA
2. Oak Ridge National Laboratory, USA

S7 18th Intl Symp on Functional Nanomaterials & Thin Films for Sustainable Energy Harvesting

SYMPOSIUM 7: Nanotoxicity, bio-imaging, drug-delivery and tissue engineering with tailored nano-bio conjuguates

Room: Coquina B

Session Chair: Sedat Ballikaya, Istanbul University

3:20 PM

(ICACC-S7-017-2024) Flame-made Calcium Phosphate nanoaggregates with fractal-like morphology as drug nanocarriers for biologics (Invited)

G. Sotiriou*[1]

1. Karolinska Institutet, Sweden

3:50 PM

(ICACC-S7-018-2024) Recent Developments on Inorganic Nanoparticles for In-vivo X-Ray Fluorescence Bioimaging (Invited)

M. S. Toprak*[1]

1. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Rapid prototyping, 3D printing, patterning, templates and self-assembly

Room: Coquina F

Session Chair: Surojit Gupta, University of North Dakota

3:20 PM

(ICACC-S8-038-2024) Design of Interparticle Photo-cross-linkable Suspension: Toward Efficient Processing of 3D Structured Ceramic Components (Invited)

M. Iijima*[1]; Y. Yamanoi[1]; J. Tatami[1]

1. Yokohama National University, Japan

3:50 PM

(ICACC-S8-039-2024) Hierarchical structuring of ceramic and ceramic-metal hybrid materials via vat photopolymerization of preceramic polymer resins (Invited)

T. Konegger*[1]; J. Eßmeister[1]; A. Fuchsberger[1]; D. Steiner[2]; S. Schwarz[3]; T. Schachinger[3]; A. Lale[4]; M. Schwentenwein[4]; K. Föttinger[2]

1. TU Wien, Institute of Chemical Technologies and Analytics, Austria
2. TU Wien, Institute of Materials Chemistry, Austria
3. TU Wien, University Service Centre for Transmission Electron Microscopy, Austria
4. Lithoz GmbH, Austria

4:20 PM

(ICACC-S8-040-2024) Laser Ablative Patterning of B_4C and MoAlB Ceramics for Hydrophobic Surfaces

B. Cui*[1]; S. Ruiz[1]; Y. Yoo[1]; L. Wadle[1]; X. Chen[1]; N. Li[1]; Y. Lu[1]; C. Wohl[2]; V. L. Wiesner[2]

1. University of Nebraska–Lincoln, USA
2. NASA Langley Research Center, USA

S16 Geopolymers Inorganic Polymers and Sustainable Construction Materials

SYMPOSOIUM 16: Sustainable materials and novel applications

Room: Coquina C

Session Chair: Ange Therese Akono, North Carolina State University

3:20 PM

(ICACC-S16-026-2024) Investigation of the Effect of Basalt Microspheres on the Wear Resistance of Metakaolin Based Geopolymer Composites

Y. Zubko*[1]; E. Zubko[2]; W. M. Kriven[1]

1. University of Illinois at Urbana-Champaign, USA
2. Micro Basalt Innovations - Canada Corp, Canada

3:40 PM

(ICACC-S16-027-2024) Carbon Nano-particles in Concrete; Challenges and Outcome

J. Paul*[1]; A. Kumar[1]

1. University of South Florida, Mechanical Engineering, USA

4:00 PM

(ICACC-S16-028-2024) Gamma Radiation Attenuating Geopolymer Composites: A Heavyweight Concrete Alternative

A. Fields*[1]; J. Zhou[2]; A. Di Fulvio[2]; W. M. Kriven[1]

1. University of Illinois at Urbana-Champaign, Materials Science & Engineering, USA
2. University of Illinois at Urbana-Champaign, Nuclear, Plasma & Radiological Engineering, USA

4:20 PM

(ICACC-S16-029-2024) Polyethylene-Geopolymer Composite for Neutron Radiation Shielding

A. Fields*[1]; J. Zhou[2]; A. Di Fulvio[2]; W. M. Kriven[1]

1. University of Illinois at Urbana-Champaign, Materials Science & Engineering, USA
2. University of Illinois at Urbana-Champaign, Nuclear, Plasma & Radiological Engineering, USA

4:40 PM

(ICACC-S16-030-2024) Definition of geopolymer in terms of alkali activated material terminology

W. M. Kriven*[1]

1. University of Illinois at Urbana-Champaign, USA

FS1 Bioinspiration/Green Processing & Related Technologies of Advanced Materials

Focused Session 1: Bioinspiration, Green Processing, and Related Technologies of Advanced Materials

Room: Ponce de Leon

Session Chair: Jinhui Tao, Pacific Northwest National Lab

3:30 PM

(ICACC-FS-004-2024) Design of Bamboo-Skin Inspired Composites by Machine Learning for Tunable Strength and Toughness (Invited)

Z. Qin*[1]

1. Syracuse University, Civil and Environmental Engineering, USA

4:00 PM

(ICACC-FS-005-2024) Bioinspired Ceramics Inspired by Biological Structural Design Elements (Invited)

S. E. Naleway*[1]; M. Schmitz[1]; I. Elnunu[1]; J. Gallagher[1]

1. University of Utah, Department of Mechanical Engineering, USA

4:30 PM

(ICACC-FS-006-2024) Bioinspired process for making microstructured ceramic-reinforced composites (Invited)

H. Le Ferrand*[1]

1. Nanyang Technological University, Singapore

S9 Porous Ceramics Novel Developments and Applications

SYMPOSIUM 9: Structure and Properties of Porous Ceramics

Room: Coquina D

Session Chairs: Rudolph Olson, CONSOL Innovations; Manuella Cerbelaud, IRCER

3:50 PM

(ICACC-S9-015-2024) Quantitative Evaluation for the Effect of Microstructure in Porous Ceramics Properties (Invited)

S. Honda*[1]; S. Hashimoto[1]; B. Nait-Ali[2]; D. S. Smith[2]; Y. Daiko[1]; Y. Iwamoto[1]

1. Nagoya Institute of Technology, Japan
2. University of Limoges, France

4:20 PM

(ICACC-S9-016-2024) Macro-porous ceramics for the Sustainable Development Goals (SDGs) and the efficiency of reduction of CO_2 emissions

M. Fukushima*[1]; T. Ohji[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

4:40 PM

(ICACC-S9-025-2024) Factors affecting high-temperature interaction of ceramic aerogels with molten metals

N. Sobczak*[1]; J. Morgiel[1]; J. Sobczak[3]; S. Seal[2]; S. Terlicka[1]; K. Trembecka-Wójciga[1]; A. Kmita[3]; D. Lachowicz[3]; A. Jeyaranjan[2]; G. Rasua[2]

1. Polish Academy of Sciences, Institute of Metallurgy and Materials Science, Poland
2. University of Central Florida, Mat. Sci. Eng, USA
3. AGH University of Science and Technology, Poland

S8 18th Intl Symp on APMT for Structural & Multifunctional Materials & Systems

SYMPOSIUM 8: Advanced powder synthesis and processing

Room: Coquina F

Session Chair: Motoyuki Iijima, Yokohama National University

4:40 PM

(ICACC-S8-041-2024) Aion powder via dynamic thermochemical method

H. Boussebha*[1]; A. Kurt[1]

1. Sakarya University, Turkey

5:00 PM

(ICACC-S8-042-2024) Sliding wear behaviour of plasma sprayed 8YSZ/$Nd_2Zr_2O_7$ double layer thermal barrier coatings at elevated temperatures

M. V. Sudandaradoss*[1]; S. Kalasala[1]

1. Anna University, Ceramic Technology, India

Poster Session II- Group B presenting

Room: Ocean Center

5:00 PM

(ICACC-P056-2024) Multilayer interface for garnet solid electrolyte in Study on the Characteristics of Lithium Metal Batteries

H. Chen*[1]

1. National Cheng Kung University, AISSM, Taiwan

(ICACC-P057-2024) Optimizing Secondary Phase Dispersion within High Entropy Rare Earth Oxides for Environmental Barrier Coatings

R. Rosner*[1]; K. D. Ardrey[1]; E. J. Opila[1]

1. University of Virginia, Materials Science and Engineering, USA

(ICACC-P058-2024) Co-free protective coatings by electrophoretic deposition technique for reversible solid oxide cells

E. Zanchi*[1]; M. Torrell[2]; L. Bernadet[2]; M. Salvo[1]; D. Montinaro[3]; F. Smeacetto[1]

1. Politecnico di Torino, Applied Science and Technology, Italy
2. Catalonia Institute for Energy Research, Advanced Materials for Energy Applications, Spain
3. SolydEra Spa, Italy

(ICACC-P059-2024) Protonic ceramic electrolysis cells: Sealants development for cell assembly

S. Anelli*[2]; D. Ferrero[1]; D. Schmider[3]; J. Dailly[3]; M. Santarelli[1]; F. Smeacetto[2]

1. Politecnico di Torino, Energy, Italy
2. Politecnico di Torino, Applied Science and Technology, Italy
3. EIFER – European Institute for Energy Research, Germany

(ICACC-P060-2024) Unlocking stability: High entropy oxides as resilient oxygen electrode materials

A. Maria Asensio[1]; K. Kreka[1]; M. Botros[2]; S. Schweidler[2]; A. Sabato*[4]; M. Torrell[1]; A. Tarancón[3]

1. IREC, Nanoionics and Fuel Cells, Spain
2. KIT, Karlsruhe Institue of Technology Institute of Nanotechnology, Germany
3. IREC / ICREA, Spain
4. IREC, Nanoionics and Fuel Cells, Spain

(ICACC-P061-2024) Recovery and re-use of ceramic materials from end-of-life solid oxide cells (SOCs)

S. Saffirio*[1]; S. Anelli[1]; D. Ferrero[2]; I. Schiavi[3]; M. Santarelli[2]; S. Pylypko[4]; F. Smeacetto[1]; S. Fiorilli[1]

1. Politecnico di Torino, Department of Applied Science and Technology, Italy
2. Politecnico di Torino, DENERG, Department of Energy, Politecnico di Torino, Italy
3. Environmental Park, Turin, Italy
4. Elcogen, Estonia

(ICACC-P062-2024) Enhanced performance of reversible solid oxide cells by densification of $Gd_{0.1}Ce_{0.9}O_{2-\delta}$ (GDC) barrier layer/ oxygen-electrode interface- ***WITHDRAWN***

J. Park[3]; B. Singh*[1]; S. Song[3]; S. Mathur[2]

1. University of Cologne, Germany
2. University of Cologne, Institute of Inorganic Chemistry, Germany
3. Chonnam National University, Materials Science and Engineering, Republic of Korea

(ICACC-P063-2024) Protective Ceramic Coatings on SOFC Metallic Interconnects with Ni Buffer Layer

J. Choi*[1]; S. Lee[1]; H. Kim[2]; J. Hong[2]

1. University of Science and Technology, Korea, Energy Engineering, Republic of Korea
2. Korea Institute of Energy Research, Republic of Korea

(ICACC-P065-2024) Influence of Magnetic Fields during Metal Organic Chemical Vapor Deposition

M. A. Steiner*[1]; D. Stadler[1]; M. Frank[1]; D. Patrun[1]; A. Rauuf[1]; S. Mathur[1]

1. University of Cologne, Institute of Inorganic Chemistry, Germany

(ICACC-P066-2024) Micro and Nano Scale Applications of Nanocrystalline Diamond Films

H. Lawrence*[1]; A. Kumar[1]

1. University of South Florida, Mechanical Engineering, USA

(ICACC-P067-2024) Development of Direct Z-Scheme g-C3N4/ TiO2/CdS Heterojunction for Photocatalytic Water Splitting

I. Yigiter*[1]; F. Piskin[1]

1. Mugla Sitki Kocman University, Metallurgical and Materials Engineering, Turkey

(ICACC-P068-2024) Is it possible to achieve ultra-rapid debinding and sintering of samples fabricated using direct ink writing in a single step?

S. Bhandari*[1]; O. Hanzel[2]; P. Veteška[3]; M. Janek[3]; M. Biesuz[4]; G. Franchin[1]

1. Department of Industrial Engineering, University of Padova, Via Marzolo 9, Italy
2. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Dúbravska cesta 9, Slovakia
3. Department of Inorganic Materials, Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava, Radlinského 9, Slovakia
4. Department of Industrial Engineering, University of Trento, Via Sommarive 9, Italy

(ICACC-P069-2024) Characterization of nano apatite powders synthesized via microwave heating and wet chemical precipitation method

L. Jabile*[1]; R. Vequizo[1]; R. Unabia[1]; M. Odarve-Vequizo[1]; J. Lincuna[1]; S. Miñoza[1]

1. Mindanao State University-Iligan Institute of Technology, Philippines

(ICACC-P070-2024) Effect of carbon content on electrical, thermal, and mechanical properties of pressureless sintered SiC ceramics

Y. Oh*[1]; Y. Kim[1]

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea

(ICACC-P072-2024) A Study of Tribological Behavior of Non-Oxide Ceramics

H. Hendrickson*[1]; S. Chegwidden[1]; J. Sturm[2]; T. Y. Ansell[2]; P. Effati[2]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA
2. Naval Postgraduate School, Mechanical and Aerospace Engineering, USA

(ICACC-P073-2024) Current Status on the Design and Development of Ice-Phobic Materials

D. Seubert*[1]; M. Islam[1]; H. Chelmo[1]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA

(ICACC-P074-2024) Electrical, Thermal, and Mechanical Properties of Pressureless Sintered SiC-TiB_2 Composites

H. Kim*[1]; Y. Kim[1]; W. Jung[2]

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea
2. Agency for Defence Development (ADD), Republic of Korea

(ICACC-P075-2024) Progress in Multiferroic Composites: Broadening the Frontiers of Ferroelectric and magnetic Substances

P. Mondal*[1]; S. Paliwal[1]; D. Singh[1]

1. IIT (BHU)VARANASI, School of Materials Science And Technology, India

(ICACC-P076-2024) New antipathogenic metal-ceramic composites coatings

J. Wojewoda-Budka*[1]; I. Kwiecien[3]; A. Bigos[1]; M. Bugajska[1]; M. Janusz-Skuza[1]; R. Major[1]; M. Szczerba[1]; A. Wierzbicka-Miernik[1]; J. Wiecek[1]; M. Dyner[2]; A. Misztela[2]; D. Veselinov[3]; H. Skulev[3]

1. Polish Academy of Sciences, Institute of Metallurgy and Materials Science, Poland
2. CHIRMED-Manufacturer of Surgical and Medical Instruments, Poland
3. Bulgarian Academy of Sciences, Institute of Metal Science, Bulgaria

(ICACC-P077-2024) Ceramic to metal joining for high temperature oxygen separation membrane applications

S. De La Pierre[1]; P. Fedeli[2]; A. Cavaliere[2]; A. Cammi[2]; F. Da Prato[1]; S. Anelli[1]; F. Smeacetto[1]; F. Drago[2]; M. Ferraris*[1]

1. Politecnico di Torino, DISAT, Italy
2. Ricerca sul Sistema Energetico S.p.A. – RSE, Materials and Generation Technologies Department (TGM), Italy

(ICACC-P078-2024) Development and Cost Assessment of Ceramic Membranes for CO_2 Separation from Natural Gas

D. G. Silva*[1]; P. F. Alves[1]; D. C. Vasconcelos[1]; W. L. Vasconcelos[1]; J. F. Nascimento[2]; D. C. Melo[2]; L. d. Pereira[2]

1. Federal University of Minas Gerais, Department of Metallurgical and Materials Engineering, Brazil
2. Petrobras, Brazil

(ICACC-P079-2024) Microplastic transformation and retention mechanism in ceramic membranes for wastewater treatment

Y. Hyeon[1]; S. Kim[1]; C. Park*[1]

1. Ewha Womans University, Environmental Science and Engineering, Republic of Korea

(ICACC-P080-2024) Fabrication and characterization of nanofibrous porous ceramic materials in B_2O_3-Al_2O_3-SiO_2 system

R. M. Nick*[1]; T. Berry[1]; A. Stanishevsky[1]

1. University of Alabama at Birmingham, Physics, USA

(ICACC-P081-2024) Macroporous Alumina Foams Fabricated by Gel-casting Using Pre-expanded Microspheres

S. S. Hossain*[1]; F. Akhtar[1]

1. Lulea University of Technology, Division of Materials Science, Sweden

(ICACC-P082-2024) Zirconia-yttria/lithium-sodium-potassium carbonates ceramic membranes with sodium-potassium carbonate anti-fouling layer for carbon dioxide permeation

T. C. Porfirio[1]; E. N. Muccillo[1]; R. Muccillo*[1]

1. IPEN, Brazil

(ICACC-P083-2024) Application and characterization of a kerosine-fuelled High Velocity Oxy-Fuel (HVOF) Ti_2AlC coating on thermally stable P91 steel

M. Dujovic*[1]; A. Maslarevic[2]; G. Bakic[2]; A. Srivastava[1]; M. Radovic[1]

1. Texas A&M University, Materials Science and Engineering (MSEN), USA
2. Faculty of Mechanical Engineering, University of Belgrade, Department of Materials Technology, Bahamas

(ICACC-P084-2024) Continuous fiber-reinforced MAX-Phases: Investigation of a Pressure Slip Casting Route for the Production of $Al_2O_{3(f)}$/Ti_2AlC-CMCs

F. Jung*[1]; L. Aretz[2]; T. Gries[1]; J. Gonzalez-Julian[2]

1. RWTH Aachen University, Institut für Textiltechnik, Germany
2. Institute of Mineral Engineering of RWTH Aachen University, Germany

(ICACC-P085-2024) MXene Derived Carbides As Precursors For Ultra High Temperature Ceramics

S. Nemani*[1]; Y. Im[1]; N. Gilli[2]; B. Sapkota[5]; A. Kumar[4]; A. Vohrees[3]; L. Silvestroni[2]; R. Klie[5]; N. Chawla[4]; B. Anasori[3]

1. Indiana University--Purdue University, Mechanical Engineering, USA
2. CNR, ISTEC, Italy
3. Indiana University – Purdue University, Mechanical and Energy Engineering, USA
4. Purdue University, Materials Science, USA
5. University of Illinois, Physics, USA

(ICACC-P086-2024) Thermodynamically Consistent Model of Electrocaloric Effect

M. N. Grinfeld*[1]

1. U.S. Army Research Laboratory, WMRD, USA

(ICACC-P087-2024) Modulating self-biased near-UV photodetection of Gd-doped bismuth ferrite ceramics by introducing zinc oxide as electron transport layer

P. Chen*[1]

1. Ming Chi University of Technology, PhD Program in Biomedical Engineering and Medical Devices, Taiwan

(ICACC-P088-2024) Development of Bi_2O_3 Nanoparticle-loaded Plastic Scintillators Based on Poly(9-vinylcarbazole)

M. Koshimizu*[1]; S. Komatsuzaki[3]; A. Watanabe[3]; A. Sato[3]; A. Yoko[2]; G. Seong[4]; T. Tomai[5]; T. Adschiri[2]; Y. Fujimoto[3]; K. Asai[3]

1. Shizuoka Daigaku, Research Institute of Electronics, Japan
2. AIMR Tohoku University, Japan
3. Tohoku University, Department of Applied Chemistry, Japan
4. Tohoku University, Frontier Research Institute for Interdisciplinary Sciences, Japan
5. Tohoku University, Institute of Multidisciplinary Research for Advanced Materials, Japan

(ICACC-P089-2024) Identification of numerical model based on rheological behavior of the 3D printed geopolymer paste

A. Gasmi*[1]; M. Ben Mbarek[1]; H. Haddad[1]; C. Pelegris[1]; M. Guessasma[1]; R. Davidovits[1]

1. UPJV, MIM- Laboratoire des Technologies Innovantes, France

(ICACC-P090-2024) Property Tuning of Piezoelectric Ceramic Sensors

A. M. Kim*[1]; H. Zhao[1]; Y. Li[1]

1. Dartmouth College, Thayer School of Engineering, USA

(ICACC-P091-2024) Thermal Properties of HfB_2 Produced by Boro/carbothermal Reduction

J. P. King*[1]; S. M. Smith[2]; W. Fahrenholtz[3]; G. Hilmas[3]; S. Curtarolo[4]

1. Missouri University of Science & Technology, Material Science Department, USA
2. Missouri University of Science & Technology, Materials Science and Engineering, USA
3. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
4. Duke University, Materials Science, Electrical Engineering and Physics, USA

(ICACC-P092-2024) Direct ink write additive manufacturing of carbon fiber reinforced ZrB_2

C. Wyckoff*[1]; J. Kaufman[1]; L. M. Rueschhoff[2]

1. UES, Inc., USA
2. Air Force Research Lab, Materials and Manufacturing Directorate, USA

(ICACC-P093-2024) High entropy thin films ceramics for high hardness materials

N. O. Marquez Rios*[1]; N. S. McIlwaine[1]; J. Maria[1]

1. The Pennsylvania State University, Materials Science and Engineering, USA

(ICACC-P094-2024) Validation of Thermal Conductivity Technique for Low k/Insulating Oxides

S. Bender*[1]; H. B. Schonfeld[1]; G. Koutsakis[4]; T. Pfeifer[1]; V. Octavian[3]; L. Vlahovic[3]; D. Robba[3]; K. Boboridis[3]; P. E. Hopkins[2]

1. University of Virginia, Mechanical and Aerospace Engineering, USA
2. University of Virginia, USA
3. Joint Research Centre, Germany
4. Harvard University, Harvard Material Science and Engineering, USA

(ICACC-P095-2024) Low-Temperature Fabrication of Si_3N_4 and AlN via the Salt Encapsulation Method

T. Y. Ansell*[1]; P. Effati[1]; S. Gupta[2]

1. Naval Postgraduate School, Mechanical and Aerospace Engineering, USA
2. University of North Dakota, Mechanical Engineering, USA

(ICACC-P096-2024) Effect of hot forging condition on mechanical properties of modified tricalcium phosphate / poly(lactic acid) composite screw with stearic acid

M. Sakaguchi*[1]; R. Arakawa[2]; K. Saiki[2]

1. Salesian polytechnic, Mechanical and Electronic Engineering, Japan
2. Salesian Polytechnic, Advanced Course of Production System Engineering, Japan

(ICACC-P097-2024) Analytical model for viscoplasticity behavior in CFRP angle-ply laminates

S. Ogihara*[1]; M. Fikry[2]

1. Tokyo University of Science, Japan
2. Tokyo University of Science, Mechanical Engineering, Japan

(ICACC-P098-2024) Splitting Progress in Unidirectional Carbon Fiber Reinforced Plastics under Fatigue Loading

S. Kobayashi*[1]

1. Tokyo Metropolitan University, Mechanical Systems Engineering, Japan

(ICACC-P099-2024) Effect of Preheating Conditions and Laminate Configuration on Dome-Shaped Deep Drawability of Carbon Fiber Reinforced Thermoplastics

S. Kobayashi*[1]

1. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-P100-2024) Cemamic phase addition in inorganic polymer matrices for carbor fiber rinforced composites: The FENICE project

V. Medri*[1]; A. Natali Murri[1]; F. Miccio[1]; E. Papa[1]; E. Landi[1]; M. Scafe[2]; C. Mingazzini[2]

1. National Research Council of Italy, ISSMC (former ISTEC), Italy
2. ENEA, TEMAF, Italy

(ICACC-P101-2024) Improvement of powder injection molding process with cellulose nanofibers

T. Osada*[1]; S. Kobayashi[2]

1. Tokyo Metropolitan University, Japan
2. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-P102-2024) Injection molding of Cu/CF composites

T. Osada*[1]; S. Kobayashi[2]

1. Tokyo Metropolitan University, Japan
2. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-P103-2024) Improvement of thermal conductivity and mechanical properties in composites of PA11 using Sn and Al_2O_3

M. Ijiri*[1]; T. Osada[1]; S. Kobayashi[2]

1. Tokyo Metropolitan University, Japan
2. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-P104-2024) Effect of plasma treatment condition in the atmosphere on mechanical properties of plain weave carbon fiber reinforced polypropylene

M. Sakaguchi*[1]; Y. Nishi[1]

1. Salesian polytechnic, Mechanical and Electronic Engineering, Japan

(ICACC-P105-2024) Effect of Aluminum Content on Microstructure of Magnesium Alloys treated with Cavitation Treatment Containing Phosphoric Acid

M. Ijiri*[1]; S. Matsuoka[2]; S. Kikuchi[2]; T. Yoshimura[3]

1. Tokyo Metropolitan University, Japan
2. Shizuoka University, Japan
3. Sanyo-Onoda City University, Japan

(ICACC-P106-2024) Experimental characterization of R curve during transverse crack growth in unidirectional CFRP laminates using size-effect law

S. Oshima*[1]; T. Noma[2]; K. Fukayama[2]; H. Hirai[2]; C. Gao[2]; T. Kusaka[2]

1. Tokyo Metropolitan University, Department of Aeronautics and Astronautics, Japan
2. Ritsumeikan Univrsity, Department of Mechanical Engineering, Japan

(ICACC-P107-2024) Aerosol Deposition of Alumina Ceramic Coatings for High-Voltage Insulation

B. Xie*[1]

1. The University of Manchester, Department of Materials, United Kingdom

(ICACC-P108-2024) Exploring the Dielectric and Conduction Characteristics of $Sr_7Mn_4O_{15}$

R. Baranwal*[1]

1. Indian Institute of Technology(BHU), PHYSICS, India

(ICACC-P109-2024) Processing and Testing of Lightweight Composite Conductors

C. Hernandez*[1]; A. S. Almansour[2]; M. Lizcano[2]; D. Santiago[2]

1. University of Puerto Rico-Mayaguez, Engineering Sciences and Materials, Puerto Rico
2. NASA Glenn Research Center, USA

Thursday, February 1, 2024

FS1 Bioinspiration/Green Processing & Related Technologies of Advanced Materials

Focused Session 1: Bioinspiration, Green Processing, and Related Technologies of Advanced Materials

Room: Ponce de Leon

Session Chair: Zhao Qin, Syracuse University

8:30 AM

(ICACC-FS-007-2024) On Nano- and Mesoscale Structure and Composition of Dental Enamel (Invited)

D. Joester*[1]

1. Northwestern University, Materials Science and Engineering, USA

9:00 AM

(ICACC-FS-008-2024) The role of additives on the thermodynamics and kinetics of nucleation, crystal growth and dissolution (Invited)

J. Tao*[1]

1. Pacific Northwest National Lab, USA

9:30 AM

(ICACC-FS-009-2024) From nanoscale assembly processes to toughening textures in biomimetic and biogenic hybrid ceramics (Invited)

S. E. Wolf*[1]

1. Friedrich-Alexander-University Erlangen-Neurnberg, Department of Materials Science and Engineering, Chair of Glass and Ceramics, Germany

FS2 Advanced Materials for Thermoelectric and Thermionic Energy Conversion

Focused Session 2: Advanced Materials for Thermoelectric and Thermionic Energy Conversion

Room: Coquina C

Session Chair: Michitaka Ohtaki, Kyushu Daigaku

8:30 AM

(ICACC-FS2-001-2024) Interface and Grain Boundary Effects on Thermal and Electrical Transport (Invited)

J. Snyder*[1]

1. Northwestern University, Department of Materials Science and Engineering, USA

9:00 AM

(ICACC-FS2-002-2024) Reconsidering the Physics of High-temperature Energy Conversion (Invited)

A. Nojeh*[1]

1. University of British Columbia, Electrical and Computer Engineering, Canada

9:30 AM

(ICACC-FS2-003-2024) Weighted Mobility Ratio Engineering for High-Performance Bi-Te-based Thermoelectric Materials (Invited)

S. Kim[1]; S. Kim[3]; H. Kim*[1]; K. Lee[2]

1. University of Seoul, Republic of Korea
2. Yonsei University, Republic of Korea
3. SungKyunKwan University, Republic of Korea

10:00 AM

Break

10:20 AM

(ICACC-FS2-004-2024) First Principles Assessment of Materials for Direct Energy Conversion (Invited)

J. C. Goldsby*[1]

1. NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA

10:50 AM

(ICACC-FS2-005-2024) The thermoelectric properties and the chemical bonding of cubic-GeTe material from first principles

M. Zebarjadi*[1]; S. Das[1]

1. University of Virginia, Electrical and Computer Eng., USA

11:10 AM

(ICACC-FS2-006-2024) Interfacial Engineering Using Additive Manufacturing to Decouple Electrical and Thermal Conductivity for Next-Generation Thermoelectrics (Invited)

D. Madan*[1]; J. Huang[1]; J. Lombardo[1]; R. Ambade[2]; P. Banerjee[1]; S. Kulkarni[1]; B. Brooks[1]

1. University of Maryland Baltimore County, Mechanical Engineering, USA
2. Hanyang University, Seoul, Republic of Korea, Republic of Korea

11:40 AM

(ICACC-FS2-007-2024) Design and Synthesis of Multi-anion Chalcogenides for Thermoelectric Applications (Invited)

J. Hodges*[1]

1. Pennsylvania State University, Chemistry, USA

FS3 Nanostructures and Low-Dimensional Materials for Chemical Sensors

Focused Session 3: Chemical sensors using na

Room: Flagler A

Session Chairs: Vincenzo Guidi, University of Ferrara; Kengo Shimanoe, Kyushu University

8:30 AM

(ICACC-FS3-007-2024) VOC-Sensing Properties of YSZ-Based Gas Sensors Attached with Au-Based Electrodes (Invited)

T. Ueda*[1]; T. Hyodo[1]

1. Nagasaki University, Graduate School of Engineering, Japan

9:00 AM

(ICACC-FS3-008-2024) New Developments in Microfabrication of Solid Electrolyte Gas Sensors (Invited)

K. Shimanoe*[1]; S. Ide[2]; K. Watanabe[1]; K. Suematsu[1]

1. Kyushu University, Faculty of Engineering Sciences, Japan
2. Mitsui-Mining & Smelting Co., Ltd., Japan

9:30 AM

(ICACC-FS3-009-2024) Chip-less wireless wearable chemical sensor using epitaxial freestanding piezoelectric nanomembrane (Invited)

Y. Kim*[1]

1. University of Cincinnati, Department of Electrical and Computer Engineering, USA

10:00 AM

Break

10:20 AM

(ICACC-FS3-010-2024) Wide Dynamic Range CO_2 Sensor through Chemoresistive Semiconductors (Invited)

A. Rossi[1]; B. Fabbri[1]; E. Spagnoli[1]; A. Gaiardo[2]; M. Valt[2]; V. Guidi*[1]

1. University of Ferrara, Physics and Earth Sciences, Italy
2. Bruno Kessler Foundation, Italy

10:50 AM

(ICACC-FS3-011-2024) Molybdenum Disulfide-Conducting Polymer Composite Structures for Electrochemical Biosensor Applications

A. Kumar*[1]

1. University of South Florida, Mechanical Engineering, USA

11:10 AM

(ICACC-FS3-014-2024) Synthetic receptors in (bio-)sensing architectures: The dusk of antibodies? (Invited)

F. Polo*[1]; G. Moro[1]; L. Masutti[1]; E. Sossich[1]; S. Tartaggia[2]; Y. Mazzocato[1]; A. Angelini[1]

1. Ca' Foscari University of Venice, Molecular Sciences and Nanosystems, Italy
2. National Research Council of Italy, Istitute of Biomolecular Chemistry, Italy

FS5 High Voltage Materials for Advanced Electrical Applications

Focused Session 5: High Voltage Materials for Advanced High Power Electrical Applications

Room: Ballroom 4

Session Chairs: Marina Gandini, Prysmian Group; Maricela Lizcano, NASA Glenn Research Center

8:30 AM

(ICACC-FS5-001-2024) Electric Field Neutralization: Rethinking Insulation for WBG Power Electronics (Invited)

C. Park*[1]

1. University of Wisconsin-Milwaukee, USA

9:00 AM

(ICACC-FS5-002-2024) Research in High Voltage Power Transmission Materials for Aerospace Systems (Invited)

M. Lizcano*[1]

1. NASA Glenn Research Center, USA

9:30 AM

(ICACC-FS5-003-2024) Electrical Endurance to Extrinsic Aging of Polyphenylsulfone-Boron Nitride Composite Insulation for Aeronautical Power Systems (Invited)

M. Shafiq*[1]; S. Myneni[1]; G. Montanari[1]; M. Lizcano[2]; T. Williams[2]

1. Florida State University, USA
2. NASA Glenn Research Center, USA

10:00 AM

Break

10:20 AM

(ICACC-FS5-004-2024) Electric Field Tailoring in Power Modules By Field Grading Materials

O. Faruqe*[1]; P. C. Saha[1]; A. Juberi[1]; C. Park[1]

1. University of Wisconsin-Milwaukee, USA

10:40 AM

(ICACC-FS5-015-2024) Lightweight, Multifunctional Nanocomposites for High-Voltage Insulation on the Moon

L. Alexis[1]; J. Lee[1]; G. Alvarez[1]; D. Santiago[2]; Z. Tian*[1]

1. Cornell University, USA
2. NASA Glenn Research Center, Materials and Structure Division, USA

11:00 AM

(ICACC-FS5-006-2024) Mitigating Space Charge Induced Breakdown With Electrets Under Square Voltage Pulse

P. C. Saha*[1]; O. Faruqe[2]; A. Juberi[2]; C. Park[1]

1. University of Wisconsin-Milwaukee, USA
2. University of Wisconsin-Milwaukee, Electrical Engineering, USA

11:20 AM

(ICACC-FS5-007-2024) Boron Nitride Fibers as a Potential Solution for High Voltage Insulation

K. Vailonis*[1]; D. Santiago[1]; M. Lizcano[1]; T. Sabo[2]

1. NASA Glenn Research Center, USA
2. Case Western Reserve University, USA

11:40 AM

(ICACC-FS5-008-2024) Engineered Hexagonal Boron Nitride:Titanium Dioxide Composites for High Voltage Insulation

S. P. McDarby*[1]; D. Santiago[1]; M. Lizcano[1]

1. NASA Glenn Research Center, USA

S10 Modeling and Design of Ceramics and Composites

SYMPOSIUM 10: Modeling and design of ceramics and composites

Room: Coquina G

Session Chair: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences

8:30 AM

(ICACC-S10-008-2024) Correlation between the shape of the particles and elastic properties of the particle reinforced composite (Invited)

P. Happ[1]; R. Piat*[1]

1. Darmstadt University of Applied Science, Germany

9:00 AM

(ICACC-S10-009-2024) Transition-Metal Diboride Thin Films Investigated by X-ray Spectroscopy and Ab-Initio Electronic-Structure Calculations (Invited)

M. Magnuson*[1]

1. Linköping University, Department of Physics, Chemistry and Biology (IFM), Sweden

9:30 AM

(ICACC-S10-010-2024) Hierarchical thermal transport and dual-phonon theory in complex-structure ceramics (Invited)

Y. Luo*[1]

1. Institute of Metal Research, Chinese Academy of Sciences, China

10:00 AM

Break

10:20 AM

(ICACC-S10-011-2024) A DIC-Based Study of Thermal Stress-Strain Behavior of Cu on Metallized Si_3N_4 Substrate under Thermal Cycling

M. Ngo*[1]; H. Miyazaki[1]; K. Hirao[1]; T. Ohji[1]; S. Ozaki[2]; M. Fukushima[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Yokohama National University, Japan

10:40 AM

(ICACC-S10-013-2024) Numerical prediction of strength scatter of ceramics: Forward analysis of strength distribution based on microstructural information

S. Ozaki*[1]; T. Maeda[2]; R. Higashi[2]; T. Osada[3]

1. Yokohama National University, Faculty of Engineering, Japan
2. Yokohama National University, Graduate School of Engineering Science, Japan
3. National Institute for Materials Science (NIMS), Research Center for Structural Materials, Japan

11:00 AM

(ICACC-S10-012-2024) Numerical prediction of strength scatter of ceramics: Inverse estimation of microstructural distribution based on strength test data

T. Maeda*[1]; T. Osada[2]; S. Ozaki[3]

1. Yokohama National University, Graduate School of Engineering Science, Japan
2. National Institute for Materials Science (NIMS), Research Center for Structural Materials, Japan
3. Yokohama National University, Faculty of Engineering, Japan

11:20 AM

(ICACC-S10-014-2024) Disordered Solids by Design: A global optimization method in materials physics

M. Belhadj Larbi*[1]

1. University of Missouri, Kansas City, Physics and Astronomy, USA

S12 Design and Applications of Nanolaminated Ternary Transition Metal Carbides/Nitrides and Borides, Their solid solutions and 2D Counterparts

SYMPOSIUM 12: Design and Applications of Nanolaminated Ternary Transition Metal Carbides/Nitrides (MAX Phases) and Borides (MAB Phases), their Solid Solutions and 2D Counterparts (MXenes, MBenes)

Room: Ballroom 3

Session Chair: Sylvain Dubois, PPRIME Institute

8:30 AM

(ICACC-S12-007-2024) Expanding the family of MAX phases: Synthesis of exotic layered solids (Invited)

C. Birkel*[1]

1. Arizona State University, USA

9:00 AM

(ICACC-S12-008-2024) Extending the concept of crystal structure nanolamination beyond the early transition metal carbides/nitrides known as the MAX phases – the ZIA phases (Invited)

K. Lambrinou*[1]; M. A. Tunes[4]; N. Goossens[2]; S. Huang[2]; J. Vleugels[2]; S. A. Maloy[3]

1. University of Huddersfield, School of Computing and Engineering, United Kingdom
2. KULeuven, Materials Engineering, Belgium
3. Pacific Northwest National Lab, Reactor Materials and Mechanical Design Group, USA
4. Los Alamos National Lab, Materials Science and Technology Division, USA

9:30 AM

(ICACC-S12-009-2024) Chemical Expanding of Chalcogenide MAX phase at X site (Invited)

K. Chen*[1]

1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Engineering Laboratory of Advanced Energy Materials, China

10:00 AM

Break

10:20 AM

(ICACC-S12-010-2024) Influence of Al_2O_3 continuous fiber-reinforcement on Ti_2AlC MAX-Phases (Invited)

F. Jung*[1]; L. Aretz[2]; T. Gries[1]; J. Gonzalez-Julian[2]

1. RWTH Aachen University, Institut für Textiltechnik, Germany
2. Institute of Mineral Engineering of RWTH Aachen University, Germany

10:50 AM

(ICACC-S12-011-2024) A-site alloying-guided universal design of noble metal-based MAX phases (Invited)

Y. Li*[1]

1. Soochow University, China

11:20 AM

(ICACC-S12-013-2024) Radiation response of ultra-pure chemically complex MAX phase ceramics in the (Ti,Zr,Hf,V,Nb)-(Al,Sn)-C & (Zr,Ti)-(Al,Sn,Pb,Bi)-C systems

K. Lambrinou*[1]; N. Goossens[2]; S. Huang[2]; J. A. Hinks[1]; J. Vleugels[2]

1. University of Huddersfield, School of Computing and Engineering, United Kingdom
2. KULeuven, Materials Engineering, Belgium

S14 Crystalline Materials for Electrical Optical and Medical Applications

SYMPOSIUM 14: Optical transparent ceramics

Room: Coquina H

Session Chairs: Luisa Bausa, Universidad Autonoma de Madrid; Hiroaki Furuse, National Institute for Materials Science (NIMS)

8:30 AM

(ICACC-S14-001-2024) Fabrication of transparent polycrystalline ceramics by colloidal processing and SPS (Invited)

T. S. Suzuki*[1]

1. National Institute for Materials Science (NIMS), Optical Ceramics Group, Japan

9:00 AM

(ICACC-S14-002-2024) Carbon Contamination in Yttria Sintered via SPS

J. Gild*[1]; A. R. Floyd[1]; B. Sadowski[3]; T. Zhou[2]; W. Kim[1]; S. Bayya[1]; J. Sanghera[1]

1. US Naval Research Laboratory, USA
2. University Research Foundation, USA
3. Jacobs, USA

9:20 AM

(ICACC-S14-003-2024) Ternary Zn-Sb Oxide Secondary Phases in Zinc Oxide Ceramics: Phase Formation and Stability as a Function of Reaction Control and Dopant Concentration

D. Schrake[1]; U. Betke*[1]

1. Otto-von-Guericke-University, Institute for Materials and Joining Technology - Non-metallic Materials and Composites, Germany

9:40 AM

(ICACC-S14-004-2024) Tuning the properties of Cobalt Ferrite: Magnetoelectric material engineering for user-defined control of neural stimulation

A. Milojkovic*[1]; K. Kozielski[1]

1. Technical University of Munich, Germany

10:00 AM

Break

10:20 AM

(ICACC-S14-006-2024) Mechanical, Thermal and Optical Properties of Pyrochlores: Modeling and Experiment

L. Kotrbova*[1]; V. Nečina[1]; S. Hribalova[1]; T. Unger Uhlirova[1]; W. Pabst[1]

1. University of Chemistry and Technology, Prague, Department of Glass and Ceramics, Czechia

10:40 AM

(ICACC-S14-007-2024) Experimental evidence of cubic γ- calcium lanthanum oxysulfide crystalline phase

A. Kostogiannes*[1]; B. Butkus[1]; A. Howe[3]; P. Banerjee[1]; C. R. Baleine[2]; K. Richardson[3]; R. M. Gaume[3]

1. University of Central Florida, Materials Science and Engineering, USA
2. Lockheed Martin, USA
3. University of Central Florida, CREOL, USA

11:00 AM

(ICACC-S14-008-2024) Prism Coupling Refractometry: Characterizing Novel Optical Ceramics during Development

A. Howe*[1]; K. Richardson[2]; R. M. Gaume[2]; A. Kostogiannes[3]; M. Kang[4]

1. University of Central Florida, USA
2. University of Central Florida, CREOL, USA
3. University of Central Florida, Materials Science and Engineering, USA
4. University of Central Florida, CREOL, College of Optics & Photonics, USA

11:20 AM

(ICACC-S14-005-2024) The Optically Stimulated Luminescence Dosimetry of $MgAl_2O_4$ (Invited)

L. Pan[1]; S. Sholom[2]; S. McKeever[2]; L. G. Jacobsohn*[1]

1. Clemson University, Materials Science and Engineering, USA
2. Oklahoma State University, USA

S1 Mechanical Behavior and Performance of Ceramics & Composites

SYMPOSIUM 1: Ceramics for concentrated solar–thermal power and industrial process heat I

Room: Coquina E

Session Chairs: Dileep Singh, Argonne National Lab; Kamala Raghavan, Department of Energy; Anteneh Kebbede, GE Aerospace Research

8:30 AM

(ICACC-S1-051-2024) Ceramic Materials for High Temperature Concentrating Solar-Thermal Technologies (Invited)

K. C. Raghavan*[1]

1. Department of Energy, USA

9:00 AM

(ICACC-S1-052-2024) Scalable, Infiltration-Free Ceramic Matrix Composite Manufacturing

A. Thukral[1]; C. Cordeiro[1]; R. Pandey[1]; K. Bhattacharyya[1]; B. Karki[1]; G. Iftime[1]; J. Wei*[1]

1. PARC, USA

9:20 AM

(ICACC-S1-053-2024) Performance of Multilayer Silicon Carbide Fiber Composites for Concentrated Solar Power

F. Mohammadi*[1]; J. Halfinger[1]; A. Sherburt[1]; K. Armijo[2]; N. Schroeder[2]; T. Daspit[3]; M. Anderson[4]

1. Ceramic Tubular Products, LLC, USA
2. Sandia National Laboratories, USA
3. University of Virginia, USA
4. University of Wisconsin, USA

9:40 AM

(ICACC-S1-054-2024) Current Activated Reactive Ultrafast Joining (CARUJ): An approach for rapid fabrication and evaluation of ceramic-ceramic joint assemblies

S. Shivakumar*[2]; B. Barua[1]; M. C. Messner[1]; P. S. Chaugule[1]; D. Singh[1]; J. Luo[2]

1. Argonne National Lab, USA
2. University of California, San Diego, USA

10:00 AM

Break

10:20 AM

(ICACC-S1-055-2024) Robust Ceramic/Metal Composites for High-Temperature Heat Exchangers for Concentrated Solar Power (Invited)

C. McCormack[1]; Y. Wang[1]; M. Bidabadi[1]; S. Hwang[1]; A. Lapotin[2]; M. Adams[3]; S. Yee[3]; A. Henry[2]; S. Kakooei[1]; K. Trumble[1]; K. Sandhage*[1]

1. Purdue University, Materials Engineering, USA
2. Massachusetts Institute of Technology, Mechanical Engineering, USA
3. Georgia Institute of Technology, Mechanical Engineering, USA

10:50 AM

(ICACC-S1-056-2024) Role of Ceramics and Composites in Gen3 Concentrated Solar Power Applications* (Invited)

D. Singh*[1]

1. Argonne National Lab, USA

11:20 AM

(ICACC-S1-057-2024) Joining of Ceramic/Ceramic and Ceramic/Metal Using Induction Heating

T. H. Lee*[1]; M. Du[1]; S. Sivakumar[2]; J. Luo[2]; D. Singh[1]

1. Argonne National Laboratory, Applied Materials Division, USA
2. University of California, San Diego, USA

11:40 AM

(ICACC-S1-058-2024) UHTC-TPMS Heat Exchangers for Concentrated Solar Power Applications with Thermal Energy Storage in Molten Chlorides

J. Kelly*[1]; B. Pint[2]; S. S. Raiman[3]; J. Haslam[1]

1. Lawrence Livermore National Laboratory, USA
2. Oak Ridge National Lab, USA
3. University of Michigan, USA

S3 21th Intl Symp on Solid Oxide Cells Materials Science & Technology

SYMPOSIUM 3: Fuel Electrode & Electrolytes / System modelling and validation

Room: Ballroom 1-2

Session Chairs: Julie Mougin, CEA; Mihails Kusnezoff, Fraunhofer IKTS

8:30 AM

(ICACC-S3-042-2024) Enhancement of the intrinsic Ni/GDC activity under rSOC operation by means of Fe-Au doping: An electro-kinetic study (Invited)

F. Zaravelis[1]; D. K. Niakolas*[1]

1. FORTH/ICE-HT, Greece

9:00 AM

(ICACC-S3-043-2024) Fused zirconia powders for use in advanced ceramics applications (SOFC/EC)

T. Rey Wójcik[2]; J. Szymanska[2]; A. Villalba Weinberg[2]; S. Griesser[2]; A. Börger[2]; A. Priese*[1]

1. Imerys Murg GmbH, Science & Technology, Germany
2. Imerys Villach GmbH, ITC Center, Austria

9:20 AM

(ICACC-S3-044-2024) Bending strength and yielding behavior of 8YSZ single crystals and ceramics measured using microcantilever beam specimens

J. Tatami*[1]; M. Muramoto[1]; M. Iijima[1]; K. Matsui[1]; T. Yahagi[4]; T. Takahashi[4]; H. Nakano[2]; T. Ohji[3]

1. Yokohama National University, Japan
2. Toyohashi University of Technology, Japan
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan
4. Kanagawa Institute of Industrial Science and Technology, Japan

9:40 AM

(ICACC-S3-045-2024) High temperature tensile strength of ultra-thin 3YSZ ceramic foils for SOEC

I. Bombarda[1]; C. Sitzmann[1]; N. Langhof[1]; S. Schafföner*[1]

1. University of Bayreuth, Chair of Ceramic Materials Engineering, Germany

10:00 AM

Break

10:20 AM

(ICACC-S3-046-2024) 3000-hour High-temperature Test of an Anode Recycle Blower for a 5 kW SOFC Power System (Invited)

M. Choi*[1]; C. Song[1]

1. InGineers Inc., Republic of Korea

10:50 AM

(ICACC-S3-047-2024) Measurements and Modeling of Pressure Effects on Solid Oxide Cell Performance (Invited)

S. Barnett*[1]; J. Grimes[1]

1. Northwestern Univ, USA

11:20 AM

(ICACC-S3-048-2024) System-level integration of solid oxide electrolysis for reduced degradation in ironmaking plants (Invited)

L. Mastropasqua*[1]

1. University of Wisconsin-Madison, Mechanical Engineering, USA

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: All-solid-state batteries VII

Room: Ballroom 5

Session Chairs: Pieremanuele Canepa, University of Houston; Marm Dixit, Oak Ridge National Laboratory

8:30 AM

(ICACC-S6-039-2024) Ceramic all-solid-state batteries based on garnet LLZO – manufacturing and optimization (Invited)

M. Finsterbusch*[1]; M. Mann[1]; M. Rosen[1]; V. Kiyek[1]; C. Schwab[1]; D. Fattakhova-Rohlfing[1]; O. Guillon[1]

1. Forschungszentrum Juelich, IEK-1, Germany

9:00 AM

(ICACC-S6-040-2024) Materials Design and Integration for High Energy and Long Cycle Life Solid-State Batteries (Invited)

H. Kim*[1]

1. Lawrence Berkeley National Laboratory, Materials Sciences Division, USA

9:30 AM

(ICACC-S6-041-2024) Next Generation Batteries for Electric Aviation and Space (Invited)

D. Dornbusch*[1]; Y. Lin[2]; W. H. Huddleston[1]; V. Yamakov[3]; R. P. Viggiano[1]

1. NASA Glenn Research Center, USA
2. NASA Langley Research Center, USA
3. Analytical Mechanics Associates, USA

S7 18th Intl Symp on Functional Nanomaterials & Thin Films for Sustainable Energy Harvesting

SYMPOSIUM 7: Nanomaterials for energy conversion, storage and catalysis

Room: Coquina B

Session Chair: Andreu Cabot, Catalonia Institute for Energy Research

8:30 AM

(ICACC-S7-020-2024) Towards sustainable and scalable synthetic methods for high-performance thermoelectric materials (Invited)

M. Ibáñez*[1]

1. Institute of Science and Technology Austria (ISTA), Austria

9:00 AM

(ICACC-S7-021-2024) Green Chemical Syntheses, Electrophoretic Deposition and Characterization of Nanostructured Bi_2Te_3 (Invited)

H. Batili[1]; B. Hamawandi[1]; A. B. Ergül[1]; M. S. Toprak*[1]

1. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden

9:30 AM

(ICACC-S7-023-2024) Low-cost nontoxic scalable paint thermoelectric generator for energy harvesting (Invited)

S. Ballikaya*[1]

1. Istanbul University-Cerrahpasa, Engineering Science, Turkey

10:00 AM

Break

10:20 AM

(ICACC-S7-024-2024) Efficient and Stable Pb-free Tin Perovskite Solar Cells with Graphene-Based Functional Composites (Invited)

Y. Hahn*[1]

1. Jeonbuk National University, School of Chemical Engineering, Republic of Korea

10:50 AM

(ICACC-S7-025-2024) Super Stable Quadruple-cation Bromide Perovskite Solar Cells- From Fundamental Research to Final Application

N. Heshmati*[1]; A. Kulkarni[3]; T. Kirchartz[3]; S. Mathur[2]

1. University of Cologne, Department of Chemistry, Institute of Inorganic Chemistry, Germany
2. University of Cologne, Institute of Inorganic Chemistry, Germany
3. Iek5-Photovoltaics, Forschungszentrum Julich, Germany

11:10 AM

(ICACC-S7-026-2024) Green Solvent Perovskites- One Step Closer To Commercialization Of Perovskite Solar Cells

N. Heshmati*[1]; f. ünlü[2]; S. Mathur[3]

1. University of Cologne, Department of Chemistry, Institute of Inorganic Chemistry, Germany
2. Department Of Solution-Processed Materials And Devices, Hysprint Innovation Lab, Helmholtz-Zentrum Berlin For Materialen Und Energie Gmbh, Germany
3. University of Cologne, Institute of Inorganic Chemistry, Germany

S9 Porous Ceramics Novel Developments and Applications

SYMPOSIUM 9: Structure and Properties of Porous Ceramics

Room: Coquina D

Session Chairs: Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST); Sawao Honda, Nagoya Institute of Technology

8:30 AM

(ICACC-S9-019-2024) Crystallization of nanofibrous $Zr_xTi_{1-x}O_2$(x = 0.9–0.2) ceramic materials from electrospun precursors

R. A. Yager*[1]; S. Nealy[1]; A. Stanishevsky[1]

1. University of Alabama at Birmingham, Physics, USA

8:50 AM

(ICACC-S9-020-2024) The role of microstructural defects in grain growth behavior

D. P. DeLellis*[1]; A. Krause[1]

1. Carnegie Mellon University, Materials Science and Engineering, USA

9:10 AM

(ICACC-S9-021-2024) Superhigh porosity ultra-high temperature ceramics with high strength and low thermal conductivity

Z. Wu*[1]; J. Wang[1]

1. Institute of Metal Research, Chinese Academy of Sciences, Shenyang National Laboratory for Materials Science, China

9:30 AM

(ICACC-S9-022-2024) Structure and properties of freeze-tape cast phyllosilicate ceramics

P. Letang[1]; G. Lecomte-Nana*[1]; S. Abdelouhab[3]; B. Nait-Ali[1]; M. Gonon[2]; L. Jouego Doho[1]; E. Juste[3]; C. Peyratout[1]

1. University of Limoges, IRCER (UMR CNRS 7315), ENSIL-ENSCI, Industrial Ceramics, France
2. University of Mons, Belgium
3. BCRC, Research & Technological Support Department, Belgium

9:50 AM

Break

10:10 AM

(ICACC-S9-023-2024) Exploring Shape Memory and Superelastic Transformations in Bulk-Scale, Porous Zirconia

L. Quinn*[1]; R. Esteves[3]; P. C. Latorre-Suarez[2]; G. R. Rossman[1]; S. Raghavan[2]; K. Faber[1]

1. California Institute of Technology, USA
2. Emby-Riddle Aeronautical University, Aerospace Engineering, USA
3. University of Central Florida, USA

S2 Advanced Ceramic Coatings for Structural/ Environmental & Functional Applications

SYMPOSIUM 2: Coatings for wear, corrosion protection

Room: Flagler C

Session Chair: Peter Mechnich, DLR - German Aerospace Center

8:40 AM

(ICACC-S2-040-2024) Polymer-Derived Ceramic Coatings for Corrosion Protection

R. Bura*[1]; B. Kumar[1]; R. Prasad[1]

1. Indian Institute of Technology Ropar, Metallurgical and Materials Engineering, India

9:00 AM

(ICACC-S2-041-2024) Microstructural Analysis of High entropy alloy coating

J. Menghani*[1]; C. Paul[2]; V. Tiwari[1]; A. Vyas[3]

1. SVNIT, Mechanical Engineering Department, India
2. RRCAT, India
3. SVNIT, India

9:20 AM

(ICACC-S2-042-2024) Microstructural evolution and in-situ stress recording in enamel coating for automotive applications

A. Lejeune*[1]; J. Chevalier[1]; L. Gremillard[2]; S. Meille[2]; P. Steyer[2]; J. Jamart[3]

1. INSA Lyon, Materials Science, France
2. INSA, Materials, Engineering and Science, France
3. Saint-Gobain, France

9:40 AM

(ICACC-S2-043-2024) Thermochemical interactions of yttria-stabilized zirconia and molten lunar regolith simulants

K. Yu*[1]; J. L. Stokes[3]; B. J. Harder[3]; L. P. Reidy[4]; K. Faber[2]

1. Caltech, Materials Science, USA
2. California Institute of Technology, USA
3. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
4. NASA Marshall Space Flight Center, USA

10:00 AM

Break

FS1 Bioinspiration/Green Processing & Related Technologies of Advanced Materials

Focused Session 1: Bioinspiration, Green Processing, and Related Technologies of Advanced Materials

Room: Ponce de Leon

Session Chair: Derk Joester, Northwestern University

10:00 AM

Break

10:20 AM

(ICACC-FS-010-2024) Bioprocess inspired fabrication: From biominerals formation to materials fabrication (Invited)

Z. Zou*[1]

1. Wuhan University of Technology, China

10:50 AM

(ICACC-FS-011-2024) Bioinspired Tendon-like Strong and Tough Conductive Organo-Hydrogels via Freeze-Casting Assisted Solution Substitution

W. Zhai*[1]; X. Dong[1]; X. Guo[1]; G. Zou[2]; H. Gao[3]

1. National University of Singapore, Mechanical Engineering, Singapore
2. A*STAR, Institute of High Performance Computing, Singapore
3. Nanyang Technological University, School of Mechanical and Aerospace Engineering, Singapore

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Solid electrolytes for batteries VIII

Room: Ballroom 5

Session Chairs: Chunmei Ban, University of Colorado, Boulder; Huiwen Ji, University of Utah

10:00 AM

Break

10:20 AM

(ICACC-S6-042-2024) Moving Beyond Seeing is Believing: Advanced Synchrotron Characterization Studies for Solid-State Batteries (Invited)

M. Dixit*[1]

1. Oak Ridge National Laboratory, USA

10:50 AM

(ICACC-S6-043-2024) Disorder but more Ionic Conductive – Data Driven Design of Materials for High-Rate Solid-State Batteries with Disordered Metal Oxides (Invited)

B. Ouyang*[1]

1. Florida State University, Chemistry and Biochemistry, USA

11:20 AM

(ICACC-S6-044-2024) Characterization of Electrochemical Performance of Reaction-Sintered LATP ($Li_{1.3}Al_{0.3}Ti_{1.7}(PO_4)_3$) Solid Electrolytes

D. Kim*[1]; Y. Cho[1]; D. Kim[1]

1. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea

11:40 AM

(ICACC-S6-045-2024) A comparative study on the oxide doping of promising NASICON-structured glass-ceramic electrolytes for solid-state lithium batteries

S. Saffirio*[1]; F. Smeacetto[1]; S. Fiorilli[1]; A. Tarancón[3]; A. Sabato[2]; C. Gerbaldi[1]

1. Politecnico di Torino, Applied Science and Technology, Italy
2. IREC, Nanoionics and Fuel Cells, Spain
3. IREC / ICREA, Spain

S2 Advanced Ceramic Coatings for Structural/ Environmental & Functional Applications

SYMPOSIUM 2: High- and ultrahigh temperature coatings

Room: Flagler C

Session Chair: Ravisankar Naraparaju, DLR - German Aerospace Center

10:20 AM

(ICACC-S2-044-2024) Experimental and Analytical Studies on Stand-off Thermal Protection System for Reentry Space Vehicles Applying Low Thermal Emissivity Ceramics

Y. Sudo*[1]; T. Ogasawara[2]; S. Akamine[4]; T. Aoki[3]

1. Tokyo University of Agriculture and Technology, Graduate School of Engineering, Japan
2. Tokyo University of Agriculture and Technology, Japan
3. Japan Aerospace Exploration Agency, Advanced Composite Research Center, Institute of Aeronautical Technology, Japan
4. Okinawa College, National Institute of Technology, Japan

10:40 AM

(ICACC-S2-045-2024) Combinatorial and high throughput screening on $Ta_xHf_{1-x}C$ ceramic: Exploration of composition with optimized hardness and oxidation resistance

X. Lv*[1]; Y. Lei[1]; J. Zhang[1]; J. Wang[1]

1. Institute of Metal Research, Chinese Academy of Sciences, Advanced Ceramics and Composites Division, China

11:00 AM

(ICACC-S2-046-2024) Enhancing the oxidation resistance of transition metal carbide thin films through Al and Si alloying

S. Richter*[1]; E. Ntemou[2]; D. Primetzhofer[2]; T. Wojcik[1]; O. Hunold[4]; S. Kolozsvári[3]; P. Polcik[3]; J. Ramm[4]; H. Riedl[5]

1. Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria, Austria
2. Uppsala University, Department of Physics and Astronomy, Sweden
3. Plansee Composite Materials GmbH, Germany
4. Oerlikon Surface Solutions AG, Oerlikon Balzers, Liechtenstein
5. TU Wien, Institute of Materials Science and Technology, Austria

11:20 AM

(ICACC-S2-047-2024) Revisiting the structure-property relationship of superhard TiB_{2+z} coatings

A. Hirle*[1]; C. Fuger[1]; R. Hahn[1]; T. Wojcik[1]; P. Kutrowatz[1]; M. Podsednik[2]; O. Hunold[3]; P. Polcik[4]; S. Kolozsvári[4]; H. Riedl[5]

1. Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria, Austria
2. Institute of Chemical Technologies and Analytics, TU Wien, Austria
3. Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein
4. Plansee Composite Materials GmbH, Germany
5. TU Wien, Institute of Materials Science and Technology, Austria

11:40 AM

(ICACC-S2-048-2024) Synthesis of Ultrahigh Temperature Ceramic Coatings on Carbon-Carbon Composites using Selective Laser Reaction Synthesis

J. B. Spicer*[1]; A. J. Yuan[2]; D. Zhang[2]; A. B. Peters[1]; E. Berry[1]; Y. Rhim[2]

1. Johns Hopkins University, Materials Science and Engineering, USA
2. Johns Hopkins University Applied Physics Laboratory, USA

S9 Porous Ceramics Novel Developments and Applications

SYMPOSIUM 9: Porous Ceramics for Environmental, Energy, Biological and Functional Applications I

Room: Coquina D

Session Chairs: Gisele Laure Lecomte-Nana, ENSCI; Arianna Bertero, Politecnico di Torino

10:30 AM

(ICACC-S9-024-2024) HT characterization of the oxygen transport in CeO_2 ceramics for the radiative design of 3D porous architectures for H_2 production high solar flux

L. Gaillard*[1]; B. Rousseau[2]; P. Geffroy[3]

1. LTEN, France
2. LTN UMR CNRS 6607, France
3. Laboratoire SPCTS, France

10:50 AM

(ICACC-S9-026-2024) A polymeric aerogel for oil-water separation

H. Hayes*[1]; P. Kroll[1]

1. University of Texas, Arlington, USA

11:10 AM

(ICACC-S9-017-2024) Application of the Japanese wood joining technique for ceramic interlocking structures

WITHDRAWN

P. Hoffmann*[1]; T. Fey[1]

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany

FS1 Bioinspiration/Green Processing & Related Technologies of Advanced Materials

Focused Session 1: Bioinspiration, Green Processing, and Related Technologies of Advanced Materials

Room: Ponce de Leon

Session Chair: Stephan Wolf, Friedrich-Alexander-University Erlangen-Neurnberg

1:30 PM

(ICACC-FS-012-2024) Matrix proteins in biomineralization of molluscan shells (Invited)

M. Suzuki*[1]

1. The University of Tokyo, Department of Applied Biological Chemistry, Japan

2:00 PM

(ICACC-FS-013-2024) Self-assembled silica colloids as lightweight and tough bioinspired composites (Invited)

F. Bouville*[1]; V. Vilchez[1]; S. Zhou[1]

1. Imperial College London, Department of Materials, United Kingdom

2:30 PM

(ICACC-FS-014-2024) Architected Composites: From Bioinspired Design to Multi-functionalities (Invited)

T. Magrini*[4]; A. Studart[1]; F. Bouville[3]; C. Daraio[2]

1. ETH Zurich, Switzerland
2. California Institute of Technology, USA
3. Imperial College, United Kingdom
4. Eindhoven Institute of Technology, Netherlands

3:00 PM

Break

FS2 Advanced Materials for Thermoelectric and Thermionic Energy Conversion

Focused Session 2: Advanced Materials for Thermoelectric and Thermionic Energy Conversion

Room: Coquina C

Session Chairs: Jeff Snyder, Northwestern University; Sunmi Shin, National University of Singapore

1:30 PM

(ICACC-FS2-008-2024) Tuning and exploring Thermoelectric materials (Invited)

N. Pryds*[1]

1. Technical University of Denmark, Denmark

2:00 PM

(ICACC-FS2-009-2024) Superior thermoelectric performance of textured calcium cobaltate ceramics via electrospun nanoribbons

A. Feldhoff*[1]; K. Kruppa[1]; I. Maor[2]; F. Steinbach[1]; M. Mann-Lahav[2]; G. Grader[2]

1. Leibniz University Hannover, Institute of Physical Chemistry and Electrochemistry, Germany
2. Technion - Israel Institute of Technology, Chemical Engineering, Israel

2:20 PM

(ICACC-FS2-010-2024) Thermoelectric Properties of $SrTiO_3$/TiN Nanocomposites Consolidated by Spark Plasma Sintering

M. Ohtaki*[1]; S. Umeno[1]; S. Nagasaki[1]; K. Suekuni[1]

1. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan

2:40 PM

(ICACC-FS2-011-2024) Tuning Thermal Conductivity of $SrTiO_3$ through Ruthenium Doping

S. Akhbarifar*[1]

1. The Catholic University of America, Physics, USA

3:00 PM

Break

3:20 PM

(ICACC-FS2-012-2024) Solution-Processed Inorganic Thermoelectric Materials: New avenues for material control (Invited)

M. Ibáñez*[1]

1. Institute of Science and Technology Austria (ISTA), Austria

3:50 PM

(ICACC-FS2-013-2024) Benchtop room-temperature synthesis of high performance thermoelectrics (Invited)

K. Kovnir*[1]

1. Iowa State University, Chemistry, USA

4:20 PM

(ICACC-FS2-014-2024) Long-term stable n-type organic thermoelectrics with improved power factor (Invited)

S. Chang[1]; P. Biswas[1]; Z. Tian*[1]

1. Cornell University, USA

4:50 PM

(ICACC-FS2-015-2024) Electronic structure of thermoelectric materials SnSe and $SnSe_2$ (Invited)

S. Mo*[1]

1. Lawrence Berkeley National Laboratory, USA

FS3 Nanostructures and Low-Dimensional Materials for Chemical Sensors

Focused Session 3: Nanostructures and Low-Dimensional Materials for Chemical Sensors

Room: Flagler A

Session Chair: Hyung Gi Byun, Kangwon National University

1:30 PM

(ICACC-FS3-012-2024) Multifaceted MOF-based Catalysts with Broad Applicability (Invited)

S. Kim*[1]

1. Korea University, Republic of Korea

2:00 PM

(ICACC-FS3-013-2024) Effect of noble metal nanoparticles on the gasochromism of WO_3 sol-gel thin film (Invited)

A. Longato[1]; E. Colusso[1]; M. Vanzan[2]; S. Corni[2]; A. Martucci*[1]

1. University of Padova, Industrial Engineering, Italy
2. University of Padova, Chemistry, Italy

2:30 PM

(ICACC-FS3-015-2024) Biocompatible, wearable, and customizable chemical sensor system for real-time health monitoring (Invited)

T. Kim*[1]; S. NajafiKhoshnoo[2]; J. A. Tavares-Negrete[2]; X. Pei[2]; P. Das[3]; S. Lee[4]; J. Rajendran[2]; R. Esfandyarpour[2]

1. Baylor University, Mechanical Engineering, USA
2. University of California, Irvine, USA
3. Siksha O Anusandhan University Institute of Technical Education and Research, India
4. Terasaki Institute for Biomedical Innovation (TIBI), USA

3:00 PM

Break

3:20 PM

(ICACC-FS3-016-2024) Ethylene and Putrid Odor Measurement System based on Gas Sensors Arrays (Invited)

H. Byun*[1]; J. YU[1]

1. Kangwon National University, Electronics, Information & Communication Eng., Republic of Korea

FS4 Ceramic/Carbon Reinforced Polymers

Focused Session 4: Characterization

Room: Flagler C

Session Chair: Shinji Ogihara, Tokyo University of Science

1:30 PM

(ICACC-FS4-001-2024) Voids in Type IV high-pressure hydrogen tank of carbon fiber reinforced plastic (Invited)

M. Ueda*[1]; T. Hidaka[1]; H. Yang[1]; N. Ichihara[1]; T. Yokozeki[2]; R. Aoki[2]; T. Matsuda[3]; N. Morita[3]; W. Iwase[4]

1. Nihon University, Japan
2. The University of Tokyo, Japan
3. University of Tsukuba, Japan
4. Yachiyo Industry Co., Ltd., Japan

2:00 PM

(ICACC-FS4-002-2024) Damage mode analysis of CFRP by peak frequency considering the response function of AE sensor (Invited)

T. Sakai*[1]

1. Saitama University, Japan

2:30 PM

(ICACC-FS4-003-2024) Micromechanisms of defect induced cracking in cross-ply CFRP laminates (Invited)

S. Oshima*[1]; R. Higuchi[3]; S. Kobayashi[2]

1. Tokyo Metropolitan University, Department of Aeronautics and Astronautics, Japan
2. Tokyo Metropolitan University, Mechanical Engineering, Japan
3. University of Tokyo, Department of Aeronautics and Astronautics, Japan

3:00 PM

Break

FS5 High Voltage Materials for Advanced Electrical Applications

Focused Session 5: High Voltage Materials for Advanced High Power Electrical Applications

Room: Ballroom 4

Session Chairs: Muhammad Shafiq, Florida State University; Kristina Vailonis, NASA Glenn Research Center; Sean McDarby, NASA Glenn Research Center

1:30 PM

(ICACC-FS5-009-2024) Development of Lightweight Durable Conductors with Metals and Carbon Inclusions (Invited)

V. Shanov[1]; Q. Fang*[1]; K. Joseph[2]; K. Brittingham[2]; V. Kondapalli[2]; M. Khosravifar[2]; A. Raut[2]; H. Tran[1]; M. Lizcano[3]; D. Santiago[3]; A. S. Almansour[3]; D. Mast[4]

1. University of Cincinnati, Chemical and Environmental Engineering, USA
2. University of Cincinnati, Mechanical and Materials Engineering, USA
3. NASA Glenn Research Center, USA
4. University of Cincinnati, Physics, USA

2:00 PM

(ICACC-FS5-010-2024) Research and innovation to shape the future of power transmission (Invited)

M. Gandini*[1]; S. Siripurapu[1]

1. Prysmian Group, Italy

2:30 PM

(ICACC-FS5-011-2024) Fabrication of copper/carbon nanotube (Cu/CNT) yarn composite conductor

A. S. Almansour*[1]; M. Lizcano[1]; D. Santiago[1]

1. NASA Glenn Research Center, USA

2:50 PM

(ICACC-FS5-012-2024) Creation and Characterization of Multilayer Graphene – Copper Wires

R. A. Paddock*[2]; M. Tehrani[1]; M. Cullinan[2]

1. University of California San Diego, Structural and Materials Engineering, USA
2. The University of Texas at Austin, Walker Department of Mechanical Engineering, USA

3:10 PM

Break

3:30 PM

(ICACC-FS5-013-2024) A Study in the Effect of High-Graphene-Content Loading on Copper Composite Conductors

Y. Bekele*[1]; M. Cullinan[1]; M. Tehrani[2]

1. University of Texas, Walker Department of Mechanical Engineering, The University of Texas at Austin, Austin, Texas, USA
2. University of California, San Diego, Structural and Materials Engineering, USA

3:50 PM

(ICACC-FS5-014-2024) Boron Nitride Materials Development for High Voltage Power Transmission (Invited)

D. Santiago*[1]; M. Lizcano[1]

1. NASA Glenn Research Center, USA

4:20 PM

(ICACC-FS5-005-2024) Thermal analysis of diamond-like carbon incorporated power substrates

A. Juberi*[1]; O. Faruqe[1]; P. C. Saha[2]; C. Park[2]

1. University of Wisconsin Milwaukee, Electrical Engineering, USA
2. University of Wisconsin-Milwaukee, USA

4:40 PM

(ICACC-FS5-016-2024) Highly Engineered Inorganic Coating to Unlock Overhead High Voltage Transmission Capacity and Reduce Carbon Emission

S. Ranganathan*[1]; T. Ochmann[1]; V. Garcia[1]

1. Prysmian Group, R&D, USA

S10 Modeling and Design of Ceramics and Composites

SYMPOSIUM 10: Modeling and design of ceramics and composites

Room: Coquina G

Session Chair: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences

1:30 PM

(ICACC-S10-015-2024) Interfacial Superstructure of Segregation in Tungsten Carbide (Invited)

C. Hu*[1]; Z. Yu[3]; J. Luo[2]

1. University of Alabama, Aerospace Engineering and Mechanics, USA
2. University of California, San Diego, USA
3. Fuzhou University, College of Chemistry, China

2:00 PM

(ICACC-S10-016-2024) From Computing Grain Boundary Diagrams to Controlling Grain Boundary Transitions with Applied Electric Fields (Invited)

J. Luo*[1]

1. University of California, San Diego, USA

2:30 PM

(ICACC-S10-017-2024) Computer-aided analyses for structural reliabilities of ceramic materials (Invited)

T. Ohji*[1]; M. Fukushima[1]; K. Hirao[1]; Y. Nakashima[1]; K. Aoki[2]; S. Ozaki[3]; W. Nakao[3]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Chukyo University, Japan
3. Yokohama National University, Japan

3:00 PM

Break

3:20 PM

(ICACC-S10-018-2024) Modelisation and simulation of the dynamic behavior of alumina ceramics

J. Meynard*[1]; A. Cosculluela[1]; P. Pradel[1]

1. CEA, France

3:40 PM

(ICACC-S10-019-2024) Numerical evaluation of relative density-compression strength relation in brittle foams with 3D microstructures

V. Deshpande*[1]; R. Piat[1]

1. University of Applied Sciences, Darmstadt, Mathematics and Natural Sciences, Germany

4:00 PM

(ICACC-S10-020-2024) Machine Learning Interatomic Potentials (MLIPs) for Preceramic Precursors and Polymer-Derived Ceramics

M. Falgoust*[1]; P. Kroll[1]

1. University of Texas, Arlington, USA

4:20 PM

(ICACC-S10-021-2024) Ab-initio Molecular Dynamic Simulations of the Pyrolysis of Pre-Ceramic Polymers

P. Kroll*[1]

1. University of Texas, Arlington, USA

S12 Design and Applications of Nanolaminated Ternary Transition Metal Carbides/Nitrides and Borides, Their solid solutions and 2D Counterparts

SYMPOSIUM 12: Design and Applications of Nanolaminated Ternary Transition Metal Carbides/Nitrides (MAX Phases) and Borides (MAB Phases), their Solid Solutions and 2D Counterparts (MXenes, MBenes)

Room: Ballroom 3

Session Chairs: Surojit Gupta, University of North Dakota; Ankit Srivastava, Texas A&M University; Deniz Cakir, University of North Dakota

1:30 PM

(ICACC-S12-014-2024) Instability-induced deformation in MAX phases (Invited)

M. Dujovic[1]; M. Chouksey[1]; M. Radovic[1]; A. Srivastava*[1]

1. Texas A&M University, USA

2:00 PM

(ICACC-S12-015-2024) Microstructural defects in MAX phases

A. Guitton*[1]; A. Heinzelmeier[1]; T. Weidner[2]; T. Grosdidier[1]; A. Mussi[2]; J. Guénolé[1]; V. Taupin[1]

1. Université de Lorraine – CNRS – Arts et Métiers ParisTech – LEM3, France
2. Université de Lille, CNRS, INRAE, Centrale Lille, UMET, France

2:20 PM

(ICACC-S12-016-2024) First-principles study on the oxidation of MoAlB and Cr_2AlB_2 (Invited)

B. Samanta[1]; S. Omotayo[1]; D. Cakir*[1]

1. University of North Dakota, Physics and Astrophysics, USA

2:50 PM

(ICACC-S12-017-2024) Anomalous crack growth resistance in atomically layered ternary carbides

M. Dujovic*[1]; S. Celik[1]; M. Radovic[1]; A. Srivastava[1]

1. Texas A&M University, USA

3:10 PM

Break

3:30 PM

(ICACC-S12-018-2024) Alumina scale buckling during high temperature oxidation of Cr_2AlC MAX Phase

S. Dubois*[1]; A. Zuber[2]; C. Coupeau[1]; V. Gauthier[1]; G. Parry[3]

1. PPRIME Institute, France
2. Institut PPRIME, Physics and Mechanics of Materials, France
3. Grenoble INP, SIMAP, France

3:50 PM

(ICACC-S12-020-2024) Synthesis and Tribological Study of PEEK and PEEK-based Composites

M. Malusky*[1]; M. Almarzoogi[1]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA

4:10 PM

(ICACC-S12-021-2024) Magnetocaloric properties of bulk Fe_2AlB_2 synthesized by reactive hot isostatic pressing

H. R. Da Igreja[1]; S. Tencé[2]; P. Chartier[1]; S. Dubois*[1]

1. PPRIME Institute, France
2. Institut de Chimie de la Matière Condensée de Bordeaux, France

4:30 PM

(ICACC-S12-022-2024) Design Paradigm for Manufacturing MAX and MAB Phases

G. Ngige*[1]; M. Dey[1]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA

4:50 PM

(ICACC-S12-023-2024) Synthesis Processes of Superconducting (?) MAX phase Ti_2InN

T. Prikhna*[1]; M. Eisterer[2]; A. Bodenseher[2]; B. Büchner[3]; O. Kvitnitskaya[4]; R. Kluge[3]; R. He[3]; L. Kielak[2]; M. Karpets[5]; V. Moshchil[1]; S. Gass[3]; O. Borymskyi[1]; D. Efremov[3]; T. Puig[6]; X. Obradors[6]

1. V. Bakul Institute for Superhard Materials of the National Academy of Sciences of Ukraine, 2, Avtozavodska Str., Kyiv 07074, Ukraine, Ukraine
2. Atominstitut, TU Wien, Austria
3. Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden e. V., Germany
4. B.Verkin Institute for Low Temperature Physics & Engineering of the National Academy of Sciences of Ukraine, Ukraine
5. National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute", Ukraine
6. Institut de Ciencia de Materials de Barcelona, CSIC, Universitat Autònoma de Barcelona, Spain

S14 Crystalline Materials for Electrical Optical and Medical Applications

SYMPOSIUM 14: Phoosphor, Laser, Isolator, NLO materials

Room: Coquina H

Session Chairs: Luiz Jacobsohn, Clemson University; Takayuki Yanagida, Nara Institute of Science and Technology

1:30 PM

(ICACC-S14-009-2024) Low temperature synthesis of inorganic materials using novel water-assisted solid-state reaction method (Invited)

K. Toda*[1]

1. Niigata University, Japan

2:00 PM

(ICACC-S14-010-2024) Effect of metallic chains of nanoparticles on the photoluminescence of MoS_2 monolayer (Invited)

J. Fernandez Martinez[1]; D. Hernández-Pinilla[1]; D. Gallego[2]; H. Van der Meulen[1]; G. Lopez-Polin[1]; P. Ares[2]; J. Gomez-Herrero[2]; M. Ramirez[1]; L. E. Bausa*[1]

1. Universidad Autonoma de Madrid, Fisica de Materiales, Spain
2. Universidad Autonoma Madrid, Física de la Materia Condensada, Spain

2:30 PM

(ICACC-S14-011-2024) Laser optical elements fabricated by pulsed electric current sintering (PECS) (Invited)

H. Furuse*[1]

1. National Institute for Materials Science (NIMS), Japan

3:00 PM

Break

3:20 PM

(ICACC-S14-012-2024) DUV optical isolator materials (Invited)

R. Yasuhara*[1]

1. National Institute for Fusion Science, Japan

3:50 PM

(ICACC-S14-013-2024) Subwavelength spatial confinement of a self-Q-switched solid-state laser (Invited)

M. Ramirez*[1]; P. Molina[1]; D. Hernández-Pinilla[1]; G. Lopez-Polin[1]; F. Leardini[1]; M. Chhowalla[3]; P. Ares[2]; J. Gomez-Herrero[2]; L. E. Bausa[1]

1. Universidad Autonoma de Madrid, Fisica de Materiales, Spain
2. Universidad Autonoma de Madrid, Fisica de la Materia Condensada, Spain
3. University of Cambridge, Materials Science & Metallurgy, United Kingdom

4:20 PM

(ICACC-S14-014-2024) Composite Phosphor Ceramics for Warm White LED Lighting

R. Osborne*[1]; N. Cherepy[2]; R. M. Gaume[3]; S. A. Payne[1]

1. Lawrence Livermore National Laboratory, USA
2. Lawrence Livermore National Lab, Chemistry and Materials Science, USA
3. University of Central Florida, CREOL, USA

4:40 PM

(ICACC-S14-015-2024) Development of a Nd:SrF_2 ceramic laser gain medium for high energy applications

T. Rudzik*[1]; N. Cherepy[1]; Z. M. Seeley[2]; S. A. Payne[1]

1. Lawrence Livermore National Lab, Chemistry and Materials Science, USA
2. Lawrence Livermore National Lab, Chemical Sciences Division, USA

5:00 PM

(ICACC-S14-016-2024) Transparent Ceramic Laser Media Fabricated via Additive Manufacturing

R. Osborne*[1]; A. Drobshoff[1]; W. Rubink[1]; N. Cherepy[2]; I. Phillips[1]; R. Beach[1]; Z. M. Seeley[3]; S. A. Payne[1]

1. Lawrence Livermore National Laboratory, USA
2. Lawrence Livermore National Lab, Chemistry and Materials Science, USA
3. Lawrence Livermore National Lab, Chemical Sciences Division, USA

5:20 PM

(ICACC-S14-017-2024) Leveraging the Preferences in Transition Metal-P/Si Bonding to Design Novel Non-linear Optical Materials

K. Kovnir*[1]

1. Iowa State University, Chemistry, USA

S1 Mechanical Behavior and Performance of Ceramics & Composites

SYMPOSIUM 1: Ceramics for concentrated solar–thermal power and industrial process heat II

Room: Coquina E

Session Chair: Kenneth Sandhage, Purdue University

1:30 PM

(ICACC-S1-046-2024) Fabrication and Testing of Receiver Design Feature Specimens in a Simulating Lab Test via Laser Heating

J. Shiang*[2]; D. Dunn[1]; D. Erno[2]; T. DeValk[2]; D. Decesare[2]; H. McGuigan[2]; W. Navojosky[2]; H. Yeong[2]; R. Sarrafi-Nour[2]

1. GE Aerospace, USA
2. GE Aerospace, Research Center, USA

1:50 PM

(ICACC-S1-047-2024) Development of Ti_3AlC_2 MAX phase composites using reactive melt infiltration for CSP receiver applications

B. Ma*[1]; M. Du[1]; P. S. Chaugule[1]; D. Singh[1]

1. Argonne National Laboratory, USA

2:10 PM

(ICACC-S1-048-2024) Lifetime reliability prediction tool of ceramic receivers for Concentrated Solar Power

P. S. Chaugule*[1]; B. Barua[1]; M. C. Messner[1]; D. Singh[2]

1. Argonne National Lab, Applied Materials Division, USA
2. Argonne National Lab, USA

2:30 PM

(ICACC-S1-049-2024) Evaluation of Thermal & Mechanical Properties of Additively Manufactured Monolithic SiC for Solar Receiver Applications

A. Kebbede*[1]

1. GE Aerospace Research, USA

2:50 PM

(ICACC-S1-050-2024) Thermo-Mechanical Modeling and Evaluation of Cracking Response of Additively Manufactured Monolithic SiC Lattice Structures Subjected to Laser Heating

A. Kebbede*[1]

1. GE Aerospace Research, USA

3:10 PM

Break

S3 21th Intl Symp on Solid Oxide Cells Materials Science & Technology

SYMPOSIUM 3: Metal supported cells, interconnect coating and interfaces

Room: Ballroom 1-2

Session Chairs: Federico Smeacetto, Politecnico di Torino; John Hardy, Pacific Northwest National Laboratory

1:30 PM

(ICACC-S3-049-2024) Interconnect and Balance of Plant Component Coatings for Solid Oxide Electrolysis Stacks and Systems (Invited)

S. Ibanez[1]; K. Adepalli*[1]; G. Merchant[1]; S. Swartz[1]

1. Nexceris, LLC, USA

2:00 PM

(ICACC-S3-050-2024) Plasma-sprayed low temperature metal-supported solid oxide fuel cells

C. Chang*[1]; C. Tsai[1]; C. Yang[1]; C. Yang[1]

1. Institute of Nuclear Energy Research, Physics Division, Taiwan

2:20 PM

(ICACC-S3-051-2024) High-temperature oxidation of porous stainless steels and its mitigation strategies

D. Koszelow[1]; S. Molin*[1]

1. Gdansk University of Technology, Department of Functional Materials Engineering, Poland

2:40 PM

(ICACC-S3-052-2024) Improved interfaces and innovative joining strategies for high-pressure solid oxide electrolyzer integration

F. Smeacetto*[1]; E. Zanchi[1]; M. Ferraris[1]; M. Salvo[2]; D. Menon[1]; D. Janner[1]; A. Sabato[3]; A. Tarancón[4]

1. Politecnico di Torino, Applied Science and Technology, Italy
2. Politecnico di Torino, Italy
3. IREC, Nanoionics and Fuel Cells, Spain
4. IREC / ICREA, Spain

3:00 PM

break

3:20 PM

(ICACC-S3-053-2024) Development of Metal-Supported SOFCs for Non-Hydrogen Fuels (Invited)

M. Abdul Jabbar*[1]; D. Thompson[1]; C. Gumeci[1]; J. Parrondo[1]; Y. Furuya[1]; N. Dale[1]

1. Nissan, USA

3:50 PM

(ICACC-S3-054-2024) Metal-supported solid oxide cells for hydrogen production and direct utilization of methanol, ethanol and methane (Invited)

B. Hu*[1]; Z. Zhu[1]; M. Welander[1]; F. Shen[2]; G. Lau[1]; M. Tucker[2]

1. Lawrence Berkeley National Laboratory, Energy Storage and Distributed Resources, USA
2. Lawrence Berkeley National Laboratory, USA

4:20 PM

(ICACC-S3-055-2024) Optimisation of the electrophoretic deposition technique to process ceramic protective coatings for reversible solid oxide cells

E. Zanchi*[1]; M. Torrell[3]; L. Bernadet[3]; M. Salvo[1]; D. Montinaro[2]; F. Smeacetto[1]

1. Politecnico di Torino, Department of Applied Science and Technology, Italy
2. SolydEra Spa, Italy
3. IREC - Catalonia Institute for Energy Research, Department of Advanced Materials for Energy Applications, Spain

4:40 PM

(ICACC-S3-056-2024) Long-term oxidation (10000h at 750°C) of steel interconnect coated with Fe-stabilized MnCu-oxide spinel

J. Ignaczak*[1]; P. Jasinski[1]; S. Molin[1]

1. Gdansk University of Technology, Department of Functional Materials Engineering, Poland

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Lithium-ion, Lithium-sulphur and all-solid-state batteries

Room: Ballroom 5

Session Chair: William Chuirazzi, Idaho National Lab

1:30 PM

(ICACC-S6-046-2024) Creating efficient Li-ion conducting pathways in composite electrodes for all-solid-state batteries using a liquid-phase process (Invited)

M. Calpa*[1]

1. National Institute for Materials Science (NIMS), Japan

2:00 PM

(ICACC-S6-047-2024) Improvement of peeling efficiency of cathode active materials from lithium-ion batteries by the direct electric pulse discharging disassembly method

A. Narita*[1]; T. Kurihara[1]; T. Koita[1]; K. Oyama[1]; S. Higuchi[1]; C. Tokoro[1]

1. Waseda University, Japan

2:20 PM

(ICACC-S6-048-2024) Silica Depleted Rice Hull Ash (SDRHA) Stabilizes Cycling in Li-S Batteries

R. M. Laine*[1]; P. Y. Kim[2]

1. University of Michigan, Materials Science and Engineering, USA
2. University of Michigan, Macromolecular Science and Eng., USA

2:40 PM

(ICACC-S6-049-2024) New Technology of Electrolyte Development for Extreme Fast Charging

Z. Du*[1]

1. Oak Ridge National Laboratory, USA

S7 18th Intl Symp on Functional Nanomaterials & Thin Films for Sustainable Energy Harvesting

SYMPOSIUM 7: Nanomaterials for energy conversion, storage and catalysis

Room: Coquina B

Session Chair: Sedat Ballikaya, Istanbul University

1:30 PM

(ICACC-S7-027-2024) Tailor-Made White Photothermal Fabrics: A Bridge between Pragmatism and Aesthetic (Invited)

J. Yuan*[1]

1. Stockholm University, MMK, Sweden

2:00 PM

(ICACC-S7-028-2024) MXene/cellulose composite cloth for integrated functions in personal heating and steam generation

J. Chang*[1]; B. Pang[1]; H. Zhang[1]; K. Pang[1]; M. Zhang[1]; J. Yuan[2]

1. Stockholm University, Department of Materials and Environmental Chemistry, Sweden
2. Stockholm University, MMK, Sweden

2:20 PM

(ICACC-S7-029-2024) Nanocomposites for Mechanical Energy Harvesters and Sensors Towards Building Flexible and Wearable Electronics

V. Aepuru*[1]; D. Vennu[2]

1. Universidad de Chile, Mechanical Engineering, Chile
2. Universidad de Concepcion, Electrical Engineering, Chile

2:40 PM

(ICACC-S7-030-2024) Exploring novel chalcogenide and phosphide catalyst for water splitting and thermoelectric applications (Invited)

D. Chua*[1]

1. National University of Singapore, Materials Science & Engineering, Singapore

3:10 PM

Break

S9 Porous Ceramics Novel Developments and Applications

SYMPOSIUM 9: Porous Ceramics for Environmental, Energy, Biological and Functional Applications II

Room: Coquina D

Session Chairs: Gisele Laure Lecomte-Nana, ENSCI; Enrico Bernardo, University of Padova

1:30 PM

(ICACC-S9-027-2024) A new high-performance lightweight composites made of hollow ceramic particles by spark plasma sintering method: preparation and characterization

J. Ozolins[1]; V. Abramovskis[1]; I. Zalite[1]; I. Steins[2]; V. Lapkovsis[2]; A. Shiskin*[2]

1. Institute of General Chemical Engineering, Latvia
2. Institute of Materials and Surface Technologies of the Riga Technical University, Latvia

1:50 PM

(ICACC-S9-028-2024) Production of periodic open cellular structures (POCS) by additive manufacturing for catalytic applications (Invited)

R. Balzarotti*[2]; S. Bottacin[2]; M. Pelanconi[2]; G. Bianchi[2]; A. Ortona[1]

1. SUPSI, MEMTi, Switzerland
2. SUPSI, Department of Innovative Technologies, Switzerland

2:20 PM

(ICACC-S9-029-2024) The Effect of Slurry Parameters on the Properties of Spray Dryed FCC Catalyst Granules

E. S. Bukcu*[1]; I. Okten[2]; C. Aciksari[2]; S. Celebi[2]; U. Savaci[1]; S. Turan[1]; E. Ayas[1]

1. Eskisehir Technical University, Materials Science and Engineering, Turkey
2. Tupras R&D, R&D, Turkey

2:40 PM

(ICACC-S9-030-2024) Biomass-metakaolin based porous matrices for insulation and thermal comfort in buildings

E. Kamseu*[1]

1. MIPROMALO, Research, Cameroon

S6 Advanced Materials and Technologies for Rechargeable Energy Storage

SYMPOSIUM 6: Advanced anode and cathode materials for sodium battery and capacitors

Room: Ballroom 5

Session Chairs: Huiwen Ji, University of Utah; Marcela Calpa, National Institute for Materials Science (NIMS)

3:00 PM

Break

3:20 PM

(ICACC-S6-050-2024) Development of Nanosized Na_5FeO_4 for Cost-effective Sodium-Ion Battery Cathode Using Anionic Redox

S. Kodaki*[1]; H. Kobayashi[2]; I. Honma[1]

1. Tohoku University, Institute of Multidisciplinary Research for Advanced Materials, Japan
2. Hokkaido University, Department of Chemistry, Faculty of Science, Japan

3:40 PM

(ICACC-S6-051-2024) Li_2CO_3 coated hematite Fe_2O_3 nanocomposite for Li-ion rechargeable batteries

A. Midouni*[1]; A. Hamzaoui[1]

1. CNRSM, Tunisia

4:00 PM

(ICACC-S6-052-2024) Electrically Conductive Ultrasmall $CuMn_2O_4$ Cathodes: A Novel Approach to Room-Temperature Magnesium Rechargeable Batteries

R. Iimura*[1]; H. Kobayashi[4]; H. Watanabe[2]; T. Mandai[3]; H. Imai[2]; I. Honma[1]

1. Tohoku University, Japan
2. Keio University, Japan
3. National Institute for Materials Science (NIMS), Japan
4. Hokkaido University, Japan

4:20 PM

(ICACC-S6-053-2024) Gadolinium tailored energy storage in $BiFeO_3$–$BaTiO_3$ based relaxor ferroelectric ceramics

R. Chien*[1]; J. Lin[5]; R. H. Montecillo[2]; C. Chen[3]; P. Chen[4]; C. Tu[5]

1. Ming Chi University of Technology, International Ph.D. Program in Innovative Technology of Biomedical Engineering and Medical Devices, Taiwan
2. Ming Chi University of Technology, Innovative Technology of Biomedical Engineering and Medical Devices, Taiwan
3. Hwa Hsia University of Technology, Mechanical Engineering, Taiwan
4. Ming Chi University of Technology, PhD Program in Biomedical Engineering and Medical Devices, Taiwan
5. Fu Jen Catholic University, Physics, Taiwan

4:40 PM

(ICACC-S6-099-2024) Superb electric energy storage achieved in relaxor ferroelectric $BiFeO_3$-$BaTiO_3$-$NaNbO_3$ ceramics via O_2 atmosphere

R. H. Montecillo*[1]; C. Chen[3]; R. Chien[1]; P. Chen[4]; C. Tu[2]

1. Ming Chi University of Technology, Innovative Technology of Biomedical Engineering and Medical Devices, Taiwan
2. Fu Jen Catholic University, Physics, Taiwan
3. Hwa Hsia University of Technology, Mechanical Engineering, Taiwan
4. Ming Chi University of Technology, PhD Program in Biomedical Engineering and Medical Devices, Taiwan

FS1 Bioinspiration/Green Processing & Related Technologies of Advanced Materials

Focused Session 1: Bioinspiration, Green Processing, and Related Technologies of Advanced Materials

Room: Ponce de Leon

Session Chair: Florian Bouville, ETH Zürich

3:20 PM

(ICACC-FS-015-2024) Monitoring cation-vacancy interactions to describe electrochemical properties of energy storage materials (Invited)

J. Kim*[1]

1. Stevens Institute of Technology, Chemical Engineering & Materials Science, USA

3:50 PM

(ICACC-FS-016-2024) Unveiling Novel Semiconductors: Bioinspired Approaches and Advanced Characterization (Invited)

P. Gharavi*[1]

1. UCF, MSE, USA

4:20 PM

(ICACC-FS-017-2024) Fly Ash Bricks: An Ecofriendly Construction Material, its Properties and Uses in different Environmental Areas

M. Kaur*[1]

1. Maharishi Markandeshwar University, Mullana, Ambala, Haryana, India, Agriculture, India

FS4 Ceramic/Carbon Reinforced Polymers

Focused Session 4: Processing and Stress Analysis

Room: Flagler C

Session Chair: Masahito Ueda, Nihon University

3:20 PM

(ICACC-FS4-004-2024) Burst Behavior and Damage Progress Evaluation in Burst Test of CFRP Hydrogen Tank with Bonded Dome and Cylinder Structure for Fuel Cell Vehicles

S. Katsumata*[1]; M. Lee[2]; T. Ogasawara[2]; N. Hirayama[3]; K. Sakata[3]; U. Kiyoshi[4]

1. Tokyo University of Agriculture and Technology, Graduate School of Engineering, Japan
2. Tokyo University of Agriculture and Technology, Japan
3. Nihon University, Japan
4. Kanazawa Institute of Technology, Japan

3:40 PM

(ICACC-FS4-005-2024) CFRP etching process to enhance the joint strength

A. Benelli*[1]; S. De La Pierre[1]; M. Ferraris[2]

1. Politecnico di Torino, DISAT, Italy
2. Politecnico di Torino, Department of Applied Science and Technology, Italy

4:00 PM

(ICACC-FS4-006-2024) Preparation of polystyrene coated silica particle by ball milling process

Y. Nakashima*[1]; M. Fukushima[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

4:20 PM

(ICACC-FS4-007-2024) Reactivity, pyrolysis, mass-loss kinetics and carbon residue of phenol-formaldehyde resins with different hexa-contents and derived CFRPs

N. Langhof*[1]; F. Wich[1]; W. Krenkel[1]; S. Schafföner[2]

1. University of Bayreuth, Ceramic Materials Engineering, Germany
2. University of Bayreuth, Chair of Ceramic Materials Engineering, Germany

4:40 PM

(ICACC-FS4-008-2024) Application of ply refinement technique to the variational stress analysis of composite laminates with ply discontinuities (Invited)

M. Fikry[2]; V. Vinogradov[3]; S. Ogihara*[1]

1. Tokyo University of Science, Japan
2. Tokyo University of Science, Mechanical Engineering, Japan
3. Newcastle University, United Kingdom

5:10 PM

(ICACC-FS4-009-2024) An innovative contactless Method for the Control of CFRP panels using Ultrasonic Lamb Waves (Invited)

L. A. Lecointre*[1]

1. The University of Tokyo, Japan

S1 Mechanical Behavior and Performance of Ceramics & Composites

SYMPOSIUM 1: Mechanical testing and characterization of ceramics

Room: Coquina E

Session Chairs: Meelad Ranaiefar, NASA Glenn Research Center; Zachary Tuchfeld, NASA

3:30 PM

(ICACC-S1-059-2024) Multi analytical techniques of anthropoid wooden coffin from late period Egypt (Invited)

A. Mohammed*[1]

1. Fayoum University, Conservation and Restoration Department, Egypt

4:00 PM

(ICACC-S1-060-2024) Transformation-Induced Plasticity of ceria-doped zirconia: In-situ testing of micro-pillars with Laue-Diffraction and Scanning Electron Microscopy (Invited)

M. Magalhaes[1]; t. Douillard[1]; S. Dassonneville[2]; H. Reveron[3]; T. Cornellius[2]; o. Thomas[2]; J. Chevalier*[1]

1. INSA Lyon, Materials Science, France
2. Aix-Marseille Université, France
3. Univ Lyon, MATEIS UMR5510, Insa de Lyon, Ceramics and Composites Group, France

4:30 PM

(ICACC-S1-062-2024) Characterization of Ceramic Materials using Air-coupled Ultrasound

A. Bodi*[1]; R. Steinhausen[2]; G. Urbanek[3]

1. SONOTEC GmbH, Non Destructive Testing, Germany
2. Non Destructive Testing, Forschungszentrum-Ultraschall, Germany
3. RHI MAGNESITA, R&D Material Testing, Austria

4:50 PM

(ICACC-S1-063-2024) Mechanical Characterization of Boron Nitride Nanotube - Polyvinylidene Fluoride Composite Films

J. J. Yonkauske*[1]; A. Hatfield[3]; R. Srinivasaraghavan Govindarajan[2]; C. Park[5]; S. Chu[5]; T. Xu[4]; D. Kim[1]

1. Embry-Riddle Aeronautical University, Aerospace Engineering, USA
2. Embry-Riddle Aeronautical University, USA
3. Old Dominion University, USA
4. Old Dominion University, Mechanical and Aerospace Engineering, USA
5. NASA Langley Research Center, Advanced Materials and Processing Branch, USA

5:10 PM

(ICACC-S1-064-2024) The tribological performance of a novel metal-ceramic-hybrid-brake disc – A development for electric vehicles (EVs)

N. Langhof*[1]; T. Opel[1]; W. Krenkel[2]; S. Schafföner[1]

1. University of Bayreuth, Ceramic Materials Engineering, Germany
2. University of Bayreuth, Germany

S7 18th Intl Symp on Functional Nanomaterials & Thin Films for Sustainable Energy Harvesting

SYMPOSIUM 7: Synthesis, functionalization and assembly of inorganic and hybrid nanostructures

Room: Coquina B

Session Chair: Andreu Cabot, Catalonia Institute for Energy Research

3:30 PM

(ICACC-S7-031-2024) DFT study on the strain and electronic effect on the catalysts for ORR (Invited)

X. Qi*[1]; Q. Xue[1]

1. Chongqing University of Technology, China

Friday, February 2, 2024

FS2 Advanced Materials for Thermoelectric and Thermionic Energy Conversion

Focused Session 2: Advanced Materials for Thermoelectric and Thermionic Energy Conversion

Room: Coquina C

Session Chairs: Armin Feldhoff, Leibniz University Hannover; James Hodges, Pennsylvania State University

8:30 AM

(ICACC-FS2-016-2024) Topological Thermoelectric Materials (Invited)

Q. Li*[1]

1. Brookhaven National Laboratory, USA

9:00 AM

(ICACC-FS2-017-2024) Novel ion substitution approach for high performance thermoelectric materials (Invited)

T. Katase*[1]

1. Tokyo Institute of Technology, Japan

9:30 AM

(ICACC-FS2-018-2024) Thermoelectric property of hexagonal $BaTiO_3$ (Invited)

S. Yasui*[1]

1. Tokyo Institute of Technology, Japan

10:00 AM

Break

10:20 AM

(ICACC-FS2-019-2024) Relationship between durability and mechanical properties of high temperature-resistant thermoelectric modules (Invited)

R. Funahashi*[1]; T. Urata[1]; Y. Matsumura[1]; H. Murakami[1]; H. Ikenishi[1]; T. Sekine[2]

1. National Institute of Advanced Industrial Science & Technology, Japan
2. Akita Industrial Technology, Japan

10:50 AM

(ICACC-FS2-020-2024) Body heat harvesting for Type 1 diabetes (Invited)

W. Kim*[1]

1. Yonsei University, School of Mechanical Engineering, Republic of Korea

11:20 AM

(ICACC-FS2-021-2024) Thermoelectric Materials for High Power Density Cooling Applications (Invited)

A. Nozariasbmarz*[1]

1. Pennsylvania State University, Materials Science and Engineering, USA

11:50 AM

(ICACC-FS2-022-2024) High performance thermoelectric devices towards compact and local cooling applications

S. Shin*[1]

1. National University of Singapore, Department of Mechanical Engineering, Singapore

S10 Modeling and Design of Ceramics and Composites

SYMPOSIUM 10: Modeling and design of ceramics and composites

Room: Coquina G

Session Chair: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences

8:30 AM

(ICACC-S10-022-2024) Understanding the role of grain boundaries in polycrystalline ceramics (Invited)

K. K. Ghuman*[1]

1. Institut National de la Recherche Scientifique, Énergie Matériaux Télécommunications, Canada

9:00 AM

(ICACC-S10-023-2024) Continuous phase-field simulation of powder compaction and subsequent sintering

T. Takaki*[1]; A. Nakazawa[2]; S. Sakane[1]

1. Kyoto Institute of Technology, Faculty of Mechanical Engineering, Japan
2. Kyoto Institute of Technology, Graduate School of Science and Technology, Japan

9:20 AM

(ICACC-S10-024-2024) First-principles study on the surface stability and water adsorption behavior of X_2-RE_2SiO_5 (RE=Lu, Yb, Tm, Er, Ho, Dy, Tb)

J. Wang*[1]; M. Liu[1]; J. Wang[1]

1. Institute of Metal Research, Chinese Academy and Sciences, Advanced Ceramics and Composites Division, China

9:40 AM

(ICACC-S10-025-2024) Revisiting the SOVS model and Parameterization to Alumina (Invited)

E. Hernandez*[1]; M. C. Guziewski[1]; M. C. Golt[1]; Z. Wilson[1]

1. DEVCOM Army Research Laboratory, Sciences of Extreme Materials, USA

10:10 AM

Break

10:30 AM

(ICACC-S10-026-2024) Direct computation of effective composite properties from non-periodic images (Invited)

G. L. Vignoles*[1]; B. Dubroca[1]; G. Mangeon[1]

1. University Bordeaux, LCTS - Lab for ThermStructural Composites, France

11:00 AM

(ICACC-S10-027-2024) Functionalized 3D fiber reinforcements for all-oxide CMC: Modelling of mechanical characteristics using the NASA Multiscale Analysis Tool

F. Jung*[1]; B. A. Bednarcyk[2]; T. Markus[1]; M. R. Welsh[1]; T. Gries[1]

1. RWTH Aachen University, Institut für Textiltechnik, Germany
2. NASA Glenn Research Center, USA

S14 Crystalline Materials for Electrical Optical and Medical Applications

SYMPOSIUM 14: Scintillator materials

Room: Coquina H

Session Chairs: Kenji Toda, Niigata University; Mariola Ramirez, Universidad Autonoma de Madrid

8:30 AM

(ICACC-S14-018-2024) Synthesis of Scintillation Glasses and Glass Ceramics with Hf by Using Floating Zone Furnace (Invited)

D. Shiratori*[1]; A. Nishikawa[2]; D. Nakauchi[2]; Y. Fukuchi[1]; T. Yanagida[2]

1. Tokyo University of Science, Fuculty of Engineering, Japan
2. Nara Institute of Science and Technology, Japan

9:00 AM

(ICACC-S14-019-2024) Rare-earth-ions-doped LiF/CaF_2 eutectic composites for radiation dosimetry and thermal neutron detection (Invited)

N. Kawaguchi*[1]; H. Kimura[2]; T. Kato[1]; D. Nakauchi[1]; T. Yanagida[1]

1. Nara Institute of Science and Technology, Japan
2. National Institute of Advanced Industrial Science and Technology, Japan

9:30 AM

(ICACC-S14-020-2024) Development of heavy crystal scintillators for X- and gamma-ray detectors (Invited)

T. Yanagida*[1]; T. Kato[1]; D. Nakauchi[1]; N. Kawaguchi[2]

1. Nara Institute of Science and Technology, Japan
2. Nara Institute of Science and Technology, Graduate School of Materials Science, Japan

10:00 AM

Break

10:20 AM

(ICACC-S14-021-2024) Material design of fast scintillators using CsCl-based compounds exhibiting Auger-free luminescence (Invited)

M. Koshimizu*[1]

1. Shizuoka Daigaku, Research Institute of Electronics, Japan

10:50 AM

(ICACC-S14-022-2024) Scintillation Mechanisms in a $(Lu_{1/4}Y_{1/4}Tb_{1/4}Gd_{1/4})_3Al_5O_{12}$:$Ce^{3+}$ Single Crystal

R. Lalk*[1]; Y. Tratsiak[1]; L. Stand[1]; C. Melcher[1]; M. Zhuravleva[1]

1. University of Tennessee, Scintillation Materials Research Center, USA

11:10 AM

(ICACC-S14-023-2024) Scale-up of high-aspect-ratio pixelated transparent ceramic scintillator via additive manufacturing for x-ray imaging

J. Smith*[1]; R. Osborne[2]; T. Yee[2]; C. J. Mcnamee[2]; P. Kerr[1]; N. Cherepy[2]; Z. M. Seeley[2]; S. A. Payne[1]

1. Lawrence Livermore National Laboratory, USA
2. Lawrence Livermore National Laboratory, Materials Science Division, USA

Breaking News Poster Session

For the first time at an American Ceramic Society-hosted meeting, presenters who missed the initial abstract deadline had the opportunity to submit a poster abstract by December 31, 2023, to be included in the ICACC Poster Session. The following eight selections will comprise the ICACC Breaking News Poster Session and these researchers will present their posters in Session A on Tuesday evening.

As a reminder, ALL posters will remain up for both days of the poster session and exhibition.

(ICACC-P112-2024) Microstructure and Properties of Low Si Content Reaction Bonded SiC

J. Wang[1]*; M. Aghajanian[1]
1. Coherent Inc., Monroe, CT, United States.

(ICACC-P113-2024) A Novel NDT Method for On-line Evaluation of Manufacturing Defects Using Physics Informed Machine Learning

M. MacIsaac[1]*; M. Stormant[2], G. Subhash[3], J. Harley[2]

1. Coherent Inc., Monroe, CT, United States.

1. Mechanical & Aerospace Engineering, University of Florida, Tampa, FL, United States.
2. Department of Electrical and Computer Engineering, University of Florida, Gainesville, FL, United States.
3. Mechanical and Aerospace Engineering, University of Florida, Gainesville, FL, United States.

(ICACC-P114-2024) AI-Determination of Multiple Properties in Silicon Nitride Ceramics: Harnessing Convolutional Neural Networks and Image Visualization Techniques

R.Furushima[1]; Y. Nakashima[2]; Y.Maruyama[2]; K. Hirao[2]; T.Ohji[2]; Y. Zhou[2]; M. Fukushima[2]

1. Structural Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Japan.
2. National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Aichi, Japan.

(ICACC-P115-2024) Barium titanate perovskite ceramics synthesized by solid-state combustion for energy storage application

B. Ezealigo[1]

1. Kenan-Flagler Business School, University of North Carolina, Chapel Hill, NC, United States.

(ICACC-P116-2024) Antimicrobial/virucidal composite coatings for different applications

C. Balagna[1]; F. Gattucci[1]

1. Dept. Applied Science and Technology, Politecnico di Torino, Turin, Italy, Italy.

(ICACC-P117-2024) Antiviral and antimicrobial composite coatings via co-sputtering technique

A. Luceri[1]; S.Perero[1]; M. Ferraris[1]; C.Balagna[1]

1 Politecnico di Torino, Turin, Italy

(ICACC-P118-2024) Solution based feedstock preparation for fused filament fabrication

O.Yucel[1]; J. Binner[2].

1. School of Metallurgy and Materials, University of Birmingham, Birmingham, West Midlands, United Kingdom.
2. Ceramic Science & Engineering, University of Birmingham, Birmingham, United Kingdom.

(ICACC-P119-2024) Effect of Structural Differences in Polymeric Precursors on the Properties of B_4C Powders

O. Yucel[1]; J. Binner[2]; N. Middletonl[3]; C. Roberson[4]

1. University of Birmingham, Birmingham, West midlands, United Kingdom.
2. Ceramic Science & Engineering, University of Birmingham, Birmingham, United Kingdom.
3. DSTL, United Kingdom, Salisbury, Wiltshire, United Kingdom.
4. Novamat, Rugby, United Kingdom.

See you next year!

January 26–January 31, 2025

49th International Conference and Expo on Advanced Ceramics and Composites (ICACC2025)

The American Ceramic Society
ceramics.org

ANTI HARASSMENT POLICY

Statement of Policy:

The American Ceramic Society (ACerS) is committed to ensuring that all ACerS activities are free from discrimination, harassment, and/or retaliation of any form. ACerS seeks to foster an environment promoting the free expression and exchange of scientific ideas. ACerS is committed to ensuring equality of treatment and opportunity and freedom from harassment for all members and participants regardless of race, gender, nationality, religious beliefs, gender identity, color, age, marital status, sexual orientation, disabilities, ancestry, personal appearance, or any other basis not relevant to scientific merit. Violators of this policy will be subject to discipline by the Society.

Definition of Harassment:

Harassment includes, but is not limited to, offensive verbal comments related to gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, race, national origin, religion, age, marital status, military status, or any other status protected by law; deliberate intimidation; stalking; following; harassing photography or recording; sustained disruption of talks or other events; and inappropriate physical contact. Attendees asked to stop any harassing behavior are expected to comply immediately.

Definition of Sexual Harassment:

Sexual harassment does not refer to occasional compliments or other generally acceptable social behavior. Sexual harassment refers to verbal, physical, and visual conduct of a sexual nature that is unwelcome and offensive to the recipient. By way of example, sexual harassment may include such conduct as sexual flirtations, advances, or propositions; verbal comments or physical actions of a sexual nature; sexually degrading words used to describe an individual; an unwelcome display of sexually suggestive objects or pictures; sexually explicit jokes; and offensive, unwanted physical contact such as patting, pinching, grabbing, groping, or constant brushing against another's body. Attendees asked to stop any sexually harassing behavior are expected to comply immediately.

Scope of Policy:

This policy applies to all attendees of ACerS meetings, events, and activities, including members, non-members, partnering organizations, volunteers, students, guests, staff, contractors, exhibitors, and all other participants related to ACerS events and activities.

Reporting an Incident:

If you are being harassed, notice that someone else is being harassed, or have any other concerns, please contact an ACerS staff member immediately. ACerS staff can be identified by the official staff badge, their name and title. All complaints will be treated seriously and will be investigated promptly.

Names(s) and Contact Information Onsite to Report an Incident:

1. ACerS Executive Director, **Mark Mecklenborg**, ph 614-794-5829 / email: ExecDirector@ceramics.org
2. ACerS President, **Rajendra Bordia** / email: ACerSPresident@ceramics.org

Disciplinary Action:

All reports of harassment will be directed immediately to the ACerS leadership team who may consult with and engage other ACerS staff, leaders and legal counsel as appropriate. Conference security and/or local law enforcement may be involved, as appropriate based on the specific circumstances. In response to a report of harassment, the ACerS leadership team or ACerS staff will take appropriate action. Such actions range from a verbal warning to ejection from the event without a refund. Repeat offenders may be subject to further disciplinary action, such as being banned from participating in future ACerS conferences or events and/or permanently expelled from ACerS membership.

The full policy can be viewed at: https://ceramics.org/wp-content/uploads/2018/12/Anti-Harassment-Policy.pdf