CONFERENCE GUIDE

47TH INTERNATIONAL CONFERENCE AND EXPOSITION ON ADVANCED CERAMICS AND COMPOSITES

JAN. 22–27, 2023

HILTON DAYTONA BEACH RESORT AND OCEAN CENTER | DAYTONA BEACH, FLA., USA

ceramics.org/icacc2023

The American Ceramic Society
www.ceramics.org

Engineering Ceramics Division
The American Ceramic Society

Organized by the Engineering Ceramics Division of The American Ceramic Society

Apple Store

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WELCOME

We would like to warmly welcome you to 47th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2023) 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 47th 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 2023 consists of nineteen Symposia, four Focused Sessions, one Special Focused Session, the 5th Pacific Rim Engineered Ceramics Summit, the 12th Global Young Investigator Forum, and one Honorary Symposium.

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 four Focused Sessions on emerging technologies: Bioinspiration and Green Processing, Thermoelectric and Thermionic Energy Conversion, Chemical Sensors, and Ceramic/Carbon Reinforced Polymers.

The 12th 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 5th Pacific Rim Engineered Ceramics Summit brings together experts from the Pacific Rim countries to foster information exchange on current status and emerging trends in research and development, engineering, manufacturing, and application of ceramics. In addition, an International Symposium entitled, Emergent Materials and Sustainable Manufacturing Technologies in a Global Landscape, will be held in Honor of Dr. Tatsuki Ohji to recognize his long term and outstanding contributions to ECD, ACerS, and global ceramics community.

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. See page iii for sponsor acknowledgement.

The COVID-19 pandemic had forced ICACC as a virtual conference for the last two years. But I really missed the opportunity to meet people and to interact with friends and colleagues. It is a geat pleasure to see you all in Daytona Beach, Florida, in January 2023.

2023 Program Chair

Young-Wook Kim
University of Seoul

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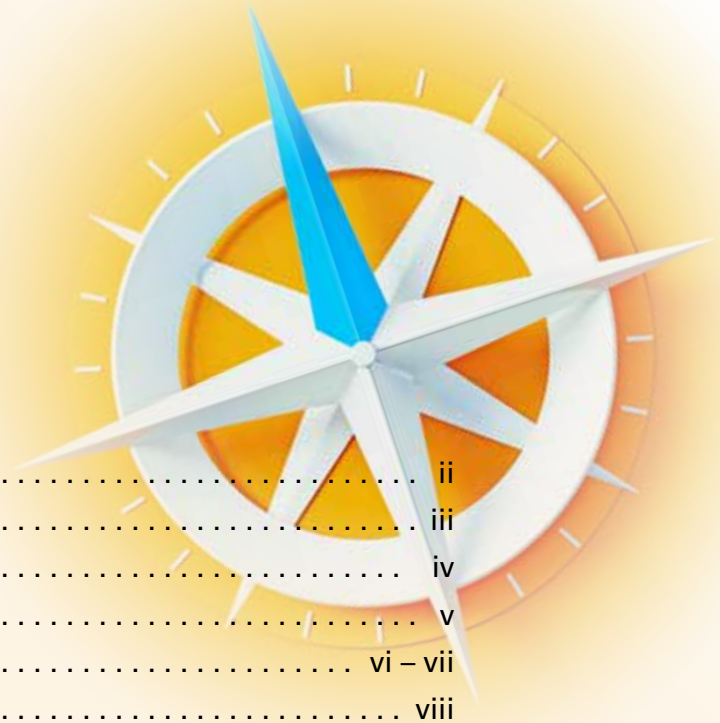

Final Program

2022-2023 Engineering Ceramics Division Officers

Chair: **Palani Balaya**, National University of Singapore
Chair-elect: **Young-Wook Kim**, University of Seoul
Vice chair/Treasurer: **Jie Zhang**, Institute of Metal Research
Secretary: **Amjad Almansour**, NASA Glenn Research Center
Trustee: **Michael C. Halbig**, NASA Glenn Research Center

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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Special thanks to our sponsors for their generosity

Event Sponsors:

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JFCA Japan Fine Ceramics Association

RDWEBB Aircooled Vacuum Furnaces

INOCERA

WILEY

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Media Sponsors:

American Ceramic Society bulletin emerging ceramics & glass technology

International Journal of Applied Ceramic Technology

International Journal of Ceramic Engineering & Science

AWARD AND PLENARY SPEAKERS

MONDAY, JANUARY 23 | 8:30 A.M. – 12:00 P.M.

Opening Remarks and Awards 8:30 A.M. | HILTON COQUINA D & E

JAMES L. MUELLER AWARD | 8:50 A.M.

Salem

Jonathan Salem, Materials Research Engineer in the Ceramic and Polymer Composites Branch, NASA-Glenn Research Center, USA

Title: *Testing and design of ceramic structural materials and components at NASA*

Abstract: Ceramic and glass components are used in manned and unmanned NASA missions. Hardware examples include specialty windows, mirrors, spectrometer components, laser oscillators and amplifiers, and bearing balls. Requirements for missions can include resistance to thermal shock, impact, mechanical loads and chemical attack, while maintaining functions such as excellent optical transmission. Requirements, failure mechanisms, scale effects, design approaches, and test methods will be discussed along with examples of testing difficulties and design challenges.

BRIDGE BUILDING AWARD | 9:30 A.M.

Colombo

Paolo Colombo, Professor of Materials Science and Technology, Department of Industrial Engineering, University of Padova, Italy

Title: *Additive manufacturing of ceramics from liquid feedstocks*

Abstract: Additive manufacturing of polymeric materials has reached a far greater maturity with respect to ceramics, the latter being somewhat limited by their high melting temperatures and the processing issues related to handling of feedstocks containing a large volume of particles. Processing slurry-based feedstocks, in fact, poses several challenges: a high amount of powder is required to promote densification and results in high viscosity, scattering and sedimentation phenomena in vat photopolymerization processes, as well as clogging problems at the nozzle for extrusion-based processes. Some of these issues can be solved or mitigated when using all liquid feedstocks. Our research activities have therefore focused on additive manufacturing of ceramics from liquid feedstocks. In particular, we investigated the use of preceramic polymers as well as geopolymers and sol-gel solutions. Despite the many advantages related to their liquid nature, there are also some challenges related to the reactivity of sol-gel systems and to the high amount of solvent usually present. Here, our strategies for producing high quality ceramic components using a variety of liquid feedstocks and different additive manufacturing techniques, from direct ink writing, digital light processing and two photon polymerization to robotic and volumetric additive manufacturing will be presented.

2023 PLENARY SPEAKERS | 10:40 A.M.

Baranwal

Rita Baranwal, Chief Technology Officer, Westinghouse Electric Company LLC, USA

Title: *Westinghouse fuel innovation leveraging advanced ceramics*

Abstract: Energy is central to nearly every major challenge and opportunity the world faces today. Over the next 20 years, the world population is expected to grow 25% and, by 2030, demand for electricity will nearly double. To meet the world population's growing energy demands, Westinghouse is investing in advanced materials and reactors technologies that provide a carbon-free power grid that's always on – here on earth and beyond. Westinghouse has established key reactor and fuel initiatives to support a clean energy future, many of which rely upon advanced ceramic materials. From nuclear fuel to moderators and instrumentation components, many of the technologies within our fuel innovation portfolio are ceramic-based materials.

The Westinghouse Encore Accident Tolerant Fuel Program™ is developing fuel technologies that provide enhanced safety margins in the event of a severe accident compared to conventional fuels. The program is comprised of both cladding and nuclear fuel pellet technologies. ADOPTTM fuel is a doped large grained UO2 based ceramic pellet, capable of delivering increased economic benefit and safety margin to customers through its higher density and reduced fission gas release. The ATF program also includes a revolutionary cladding design using a Siam SiC-SiC composite that provides improved safety margins during beyond design basis accidents. This technology has been developed through collaboration with General Atomics.

Uranium Nitride (UN) is a revolutionary ceramic fuel pellet within the Encore Fuel Program but also has recognized benefits in advanced reactor and space power markets. In current Light Water Reactors (LWRs), the high density and enhanced thermophysical properties of UN support improved fuel cycle economics and safety margins. UN is also a fuel of choice for advanced reactor applications and is the primary fuel for the Westinghouse Lead Fast Reactor. In non-terrestrial applications like nuclear space power, UN possesses a necessary advantage over other fuel materials due to high power density, high melting temperature, and high thermal conductivity.

Westinghouse's eVinci™ microreactor design is being leveraged to support commercial, defense, research, marine, and space applications and ceramic materials are integral to its operation. This autonomous microreactor's solid-state design takes passive safety to a new level, leveraging heat pipe technology as the ideal solution to remove all moving parts responsible for cooling the reactor. Beryllium Oxide and Yttrium Hydride are both advanced ceramics employed in the Westinghouse eVinciTM microreactor as moderating and reflecting components, as well as providing structural support in high-temperature environments.

2023 PLENARY SPEAKERS | 11:20 A.M.

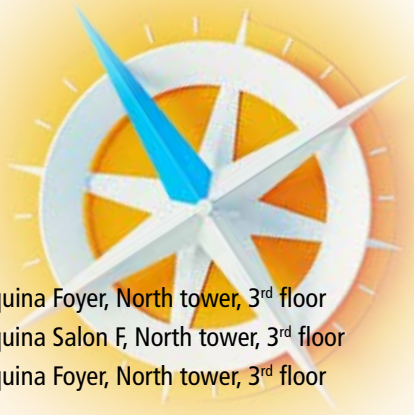
Yun

Huisuk Yun, Korea Institute of Materials Science (KIMS) Department Head of Advanced Biomaterials Research, and Professor of Materials Science, University of Science & Technology (UST), Korea

Title: *New challenges for ceramic additive manufacturing*

Abstract: Additive manufacturing (AM) is a fabrication process that uses digital information from a computer-aided design file to stack 2D layers of various materials to produce a 3D object, without requiring any part-specific tooling. AM technologies have attracted significant attention in various fields such as medicine, automotive, aerospace, electronics, and other industrial applications. However, the market for ceramic AM is still significantly smaller compared with metals or polymers because there are still technological barriers that limit its adoption. Despite this, ceramic AM is expected to see dramatic market growth, with an expected market value of $4.8 billion by 2030 (SmarTech Analysis) because ceramic AM may eliminate many of the disadvantages associated with traditional ceramic forming techniques. Since 2006, our research group has developed two unique technologies: a multi-ceramic AM technology based on stereolithography including a unique AM system and ceramic AM process without sintering, based on material extrusion. Furthermore, our group has tried to identify the need for ceramic AM based on our new technologies through collaboration with various industrial companies. We believe that these new technologies may provide big turning point not only to overcome limitation of traditional ceramic form process but also to enlarge the market for ceramic AM.

SCHEDULE AT A GLANCE



SUNDAY, JANUARY 22

Conference registration	2:00 – 7:00 p.m.	Hilton Coquina Foyer, North tower, 3rd floor
Journal publishing workshop sponsored by Wiley	4:00 – 5:00 p.m.	Hilton Coquina Salon F, North tower, 3rd floor
Welcome reception	5:30 – 7:00 p.m.	Hilton Coquina Foyer, North tower, 3rd floor

MONDAY, JANUARY 23

Conference registration	7:00 a.m. – 6:00 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. – 12 Noon	Hilton Coquina Salon D/E, North tower, 3rd floor
Lunch break	Noon – 1:30 p.m.	On own
Concurrent technical sessions	1:30 – 5:40 p.m.	Hilton Coquina Salons, North tower; South tower ballrooms
Student and young professionals networking mixer	7:30. – 9:00 p.m.	Oceanview room and terrace, North tower, main floor

TUESDAY, JANUARY 24

Conference registration	7:30 a.m. – 6:00 p.m.	Hilton Coquina Foyer, North tower, 3rd floor
Concurrent technical sessions	8:30 a.m. – 12 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 25

Conference registration	7:30 a.m. – 5:30 p.m.	Hilton Coquina Foyer, North tower, 3rd floor
Concurrent technical sessions	8:30 a.m. – 12 Noon	Hilton Coquina Salons, North tower; South tower ballrooms
Lunch break	Noon – 1:30 p.m.	On own
Concurrent technical sessions	1:30 – 5:20 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, JANUARY 26

Conference registration	7:30 a.m. – 5:30 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
Women in ceramics luncheon	12 Noon	Oceanview room, North tower, main floor
Lunch break	12:30 – 1:30 p.m.	On own
Concurrent technical sessions	1:30 – 6:20 p.m.	Hilton Coquina Salons, North tower; South tower ballrooms
Last night reception and trivia contest	5:30 – 6:30 p.m.	Hilton Coquina Foyer, North tower, 3rd floor

FRIDAY, JANUARY 27

Conference registration	8:00 a.m. – 12 Noon	Hilton Coquina Foyer, North tower, 3rd floor
Concurrent technical sessions	8:30 a.m. – 12 Noon	Hilton Coquina Salons, North tower; South tower ballrooms

SPECIAL EVENTS

ACerS Journal Workshop: Expand your Impact

SUNDAY, JANUARY 22 | 4:00 – 5:00 P.M.
HILTON COQUINA SALON F

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.

Welcome Reception

SUNDAY, JANUARY 22 | 5:30 – 7:00 P.M.
HILTON – COQUINA FOYER

Network with colleagues at this reception.

The ECD Global Young Investigator Award

MONDAY, JANUARY 23 | 1:30 PM | HILTON COQUINA SALON C

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


Wang

Chenxu Wang, Assistant Professor in the School of Physics at the Peking University, China

Title: *MAX phases in extreme environments*

Engineering Ceramics Division (ECD) Jubilee Global Diversity Award

MONDAY, JANUARY 23 | 1:30 – 3:20 P.M.
HILTON COQUINA SALON H

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.


Kim

1:40 PM

Miso Kim, Sungkyunkwan University, Korea

Title: *Design and manufacturing of smart materials and structures*


Liu

2:20 PM

Dong (Lilly) Liu, University of Bristol, United Kingdom

Title: *Understanding failure mechanisms in advanced ceramic materials at elevated temperatures: From nuclear graphite, TRISO to ceramic-matrix composites*


Wiesner

3:00 PM

Valerie Wiesner, NASA Langley Research Center, USA

Title: *Materials discovery for lunar dust tolerant applications*

ACerS Global Graduate Researcher Network

MONDAY, JANUARY 23 | 7:30 – 9:00 P.M.
HILTON – OCEANVIEW

Student and Young Professional Networking Mixer

Shot Glass Contest

SCHOTT

TUESDAY, JANUARY 24 | 6:45 – 7:45 P.M.

THE OCEAN CENTER, EXHIBIT SHOW FLOOR

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

Test your skills with this design contest! Competitors get 15 drinking straws to build a protective device for their shot glass donated by SCHOTT. Then, the glasses are 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 24 | 5:00 – 8:00 P.M.
WEDNESDAY, JANUARY 25 | 5:00 – 7:30 P.M.
OCEAN CENTER CONFERENCE CENTER / ARENA

Visit with vendors from the ceramic and glass industry.

Women in Ceramics Luncheon

THURSDAY, JANUARY 30 | 12 – 1:45 PM
OCEANVIEW ROOM

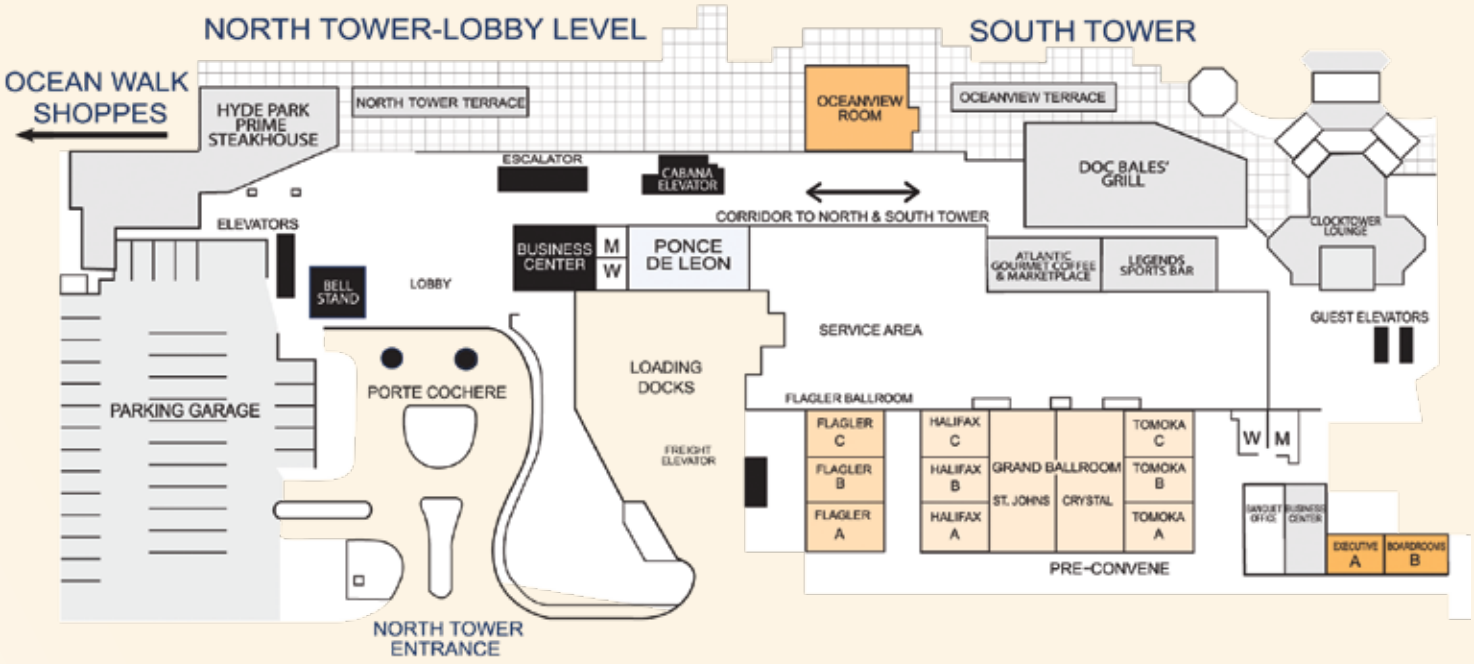
Network with colleagues at this reception.

Last Night Reception

THURSDAY, JANUARY 30 | 5:30 – 6:30 P.M.
HILTON – COQUINA FOYER

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

HILTON MEETING ROOM FLOOR PLAN



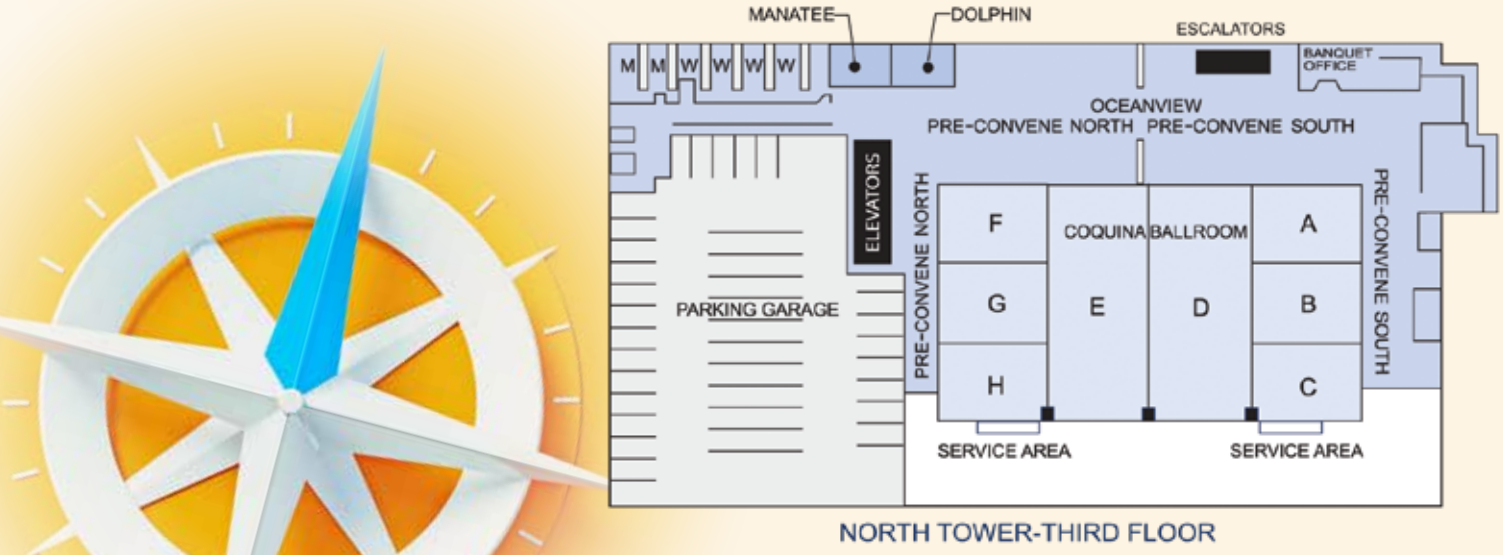
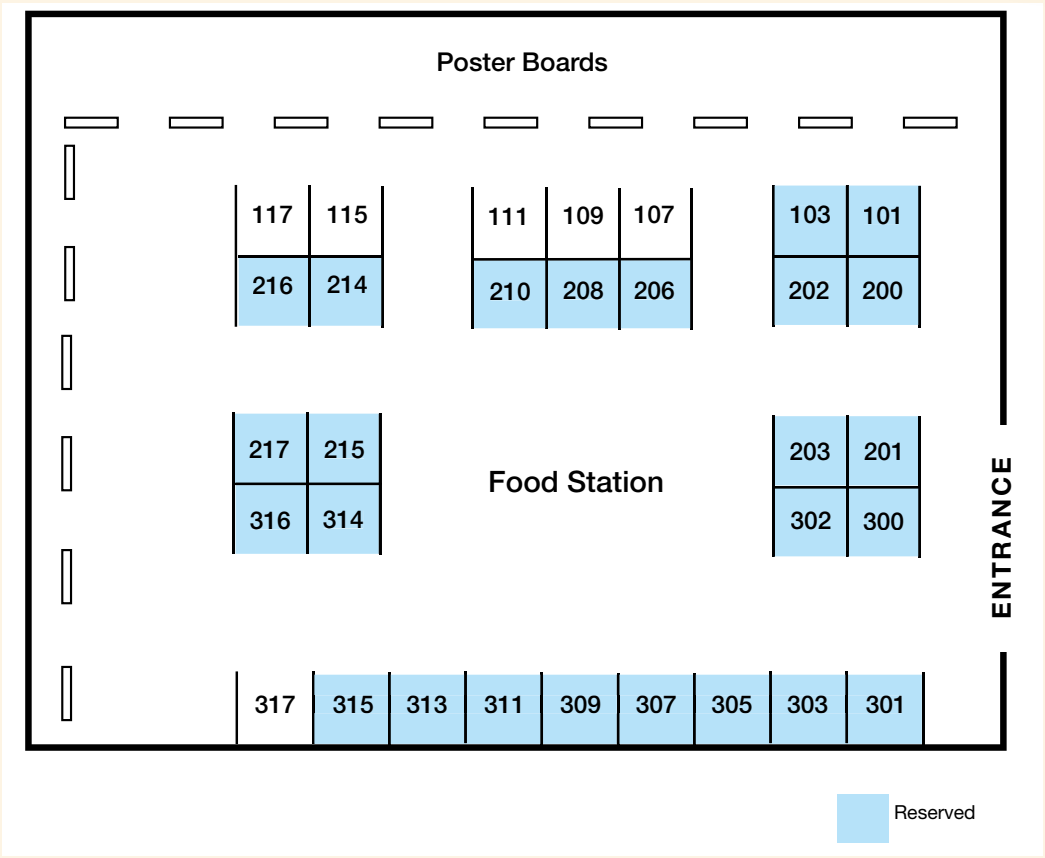


EXHIBIT FLOOR PLAN AND BOOTH INFORMATION

TUESDAY, JANUARY 24 | 5:00 – 8:00 PM
WEDNESDAY, JANUARY 25 | 5:00 – 7:30 PM

OCEAN CENTER (across the street from the Hilton)



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AVS, Inc.	217
Centorr Vacuum Industries	203
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ZEISS Microscopy	201

ICACC EXPO PREVIEW

Exhibit dates:

Tuesday, January 24 | 5:00 – 8:00 p.m. | Wednesday, January 25 | 5:00 – 7:30 p.m.

3D Ceram Sinto
Booth No. 307
3DCERAM-SINTO regroups an un-parallel expertise in the technology of 3D printing, offering a complete package by accompanying their clients on their chosen projects, choice of ceramic, production specification, R&D, modification of 3D parts just to industrialization, on demand production, the selling of the CERAMAKER 900 printers and the associated consumables.
sales@sintoamerica.com
https://3dceram.com

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AdValue Technology, LLC
Booth No. 301
AdValue Technology is a leading supplier of products made of Alumina, Fused Quartz, Sapphire and Boron Nitride. We provide large stock of standard products such as crucibles, tubes & rods, plates & discs, etc. We also offer custom-made components, as well as high purity powders, laser machining service and laser marking machine.
sales@advaluetech.com
https://www.advaluetech.com

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American Ceramic Society (The)
Booth No. 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.
ceramics.org

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Archer Technicoat Ltd.
Booth No.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 No. 217
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, run-time parameter displays, recipe screens, user-configurable recipes, status screens, statistics screen and trend screens, including a split-screen feature, allowing direct trend screen comparisons.
sales@avsinc.com
https://www.avsinc.com

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Centorr Vacuum Industries
Booth No. 203
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.
srobinson@centorr.com
https://www.centorr.com

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CM Furnaces Inc.
Booth No. 214
CM Furnaces offers units of standard design and construction, as well as specialized custom units. We manufacture a complete line of Laboratory Furnaces in all configurations, including box and tube furnaces, ranging from 1000°C to 2000°C. These are available in air, inert and reducing atmospheres. CM also offers Production furnaces and our 1700°C Batch, Hydrogen and Box furnaces.
info@cmfurnaces.com

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Dr. Fritsch
Booth No. 311
As the oldest and largest manufacturer in this sector, Dr. Fritsch leads the development and production of SPS / FAST machinery. Metal powders, mixers, granulating machines, dosing machines and cold presses are just as much a part of the product portfolio as complete automated production lines for the industry.
Dr. Fritsch is represented by MSE Supplies LLC in the U.S
pst@dr-fritsch.de
https://direktheisspressen.de/en/home/

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FIVEN North America, Inc.
Booth No. 309
Fiven is the worldwide leader in the production of Silicon Carbide (SiC). Pioneer in development of SiC grains & powders not only for the technical ceramics industry, but also for semiconductor and electronic applications. Fiven also serves the refractory, metallurgical and abrasive industry.
laura.zak@fiven.com
http://www.fiven.com

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Fraunhofer Institute for Ceramic Technologies and Systems - IKTS
Booth No. 305
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.
info@ikts.fraunhofer.de
http://www.ikts.fraunhofer.de/en.html

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Gasbarre
Booth No. 202
Gasbarre is a full-service OEM offering equipment and services for powder materials, thermal processing, and automation solutions. Products include mechanical, CNC hydraulic, electric, high-speed, and dry-bag isostatic presses, and vacuum and atmosphere furnaces in continuous and batch designs up to 3000ºF. Gasbarre also offers precision tooling for all its products.
press-sales@gasbarre.com
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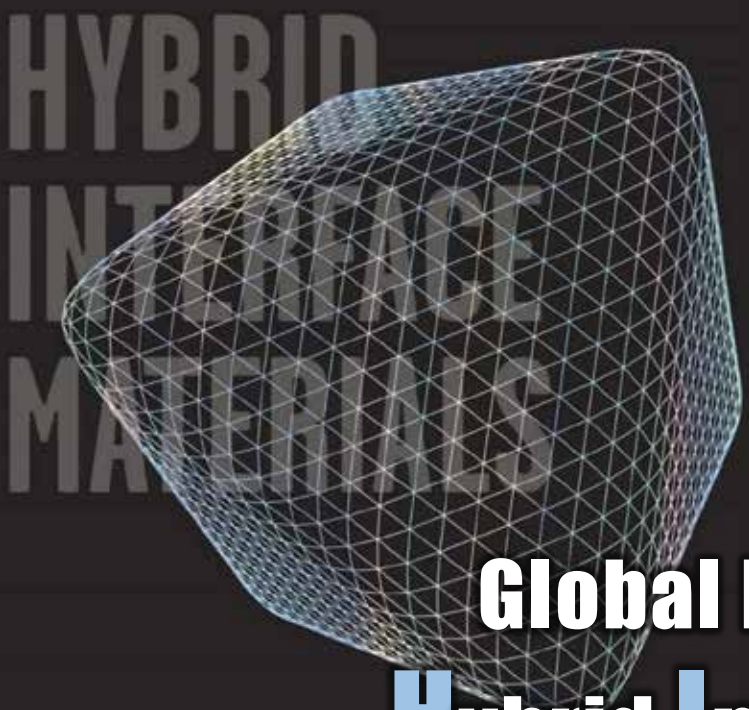


과학기술정보통신부
Ministry of Science and ICT
Global Frontier Project

Global Frontier Center for Hybrid Interface Materials

About "HIM"

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

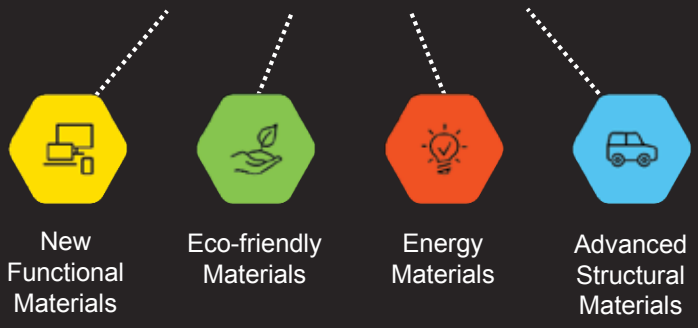
Research Goal

- 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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2023 PROGRAM CHAIR: **Young-Wook Kim**, University of Seoul

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; Raul Bermejo, Montanuniversitaet Leoben, Austria; Craig Przybyla, Air Force Research Laboratory, USA; Dietmar Koch, University of Augsburg, Germany; Emmanuel Maillet, GE Research, USA; Andrew Wereszczak, Oak Ridge National Laboratory, 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; Uwe Schulz, German Aerospace Center (DLR), Germany; Kaylan Wessels, Pratt and Whitney, USA

S3: 20TH 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: ARMOR CERAMICS – CHALLENGES AND NEW DEVELOPMENTS

Jerry LaSalvia, DEVCOM ARL, USA' Jeffrey Swab, DEVCOM ARL, USA; Michael Bakas, DEVCOM ARO, USA; Kristopher Behler, DEVCOM ARL, USA; Anthony DiGiovanni, DEVCOM ARL, USA; Richard Haber, Rutgers University, USA; Neil Middleton, DSTL, UK; Ghatu Subhash, University of Florida, USA; Andrew Wereszczak, ORNL, 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; Do Kyung Kim, Korea Advanced Institute of Science and Technology, Korea; Yasutoshi Iriyama, Nagoya University, Japan; Prabeer Barpanda, Indian Institute of Science, India; Richard M Laine, University of Michigan, USA; Ruhul Amin, Oak Ridge National Laboratory, USA; Yu Yau Wai Denis, City University of Hong Kong, Hong Kong; Shih-Kang Lin, National Cheng Kung University, Taiwan

S7: 17TH 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; Miso Kim, Sungkyunkwan University, Republic of Korea; Gang Liu, Institute of Metal Research, CAS, China; 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; Abdulhadi Baykal, Imam Abdulrahman Bin Faisal University, Saudi Arabia

S8: 17TH INTERNATIONAL SYMPOSIUM ON ADVANCED PROCESSING AND MANUFACTURING TECHNOLOGIES FOR STRUCTURAL AND MULTIFUNCTIONAL MATERIALS AND SYSTEMS (APMT17)

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; Samuel Bernard, Institut de Recherche sur les Céramiques de Limoges, France; Miki Inada, Kyushu University, Japan; Oleksandr Kravchenko, Old Dominion University, USA; 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; Hyung-Tae Kim, Korean Institute of Ceramic Engineering and Technology, Korea; 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; Jun Akedo, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Byungkoog Jang, Kyushu University, Japan; Kouichi Yasuda, Tokyo Institute of Technology, Japan; Hyuksu Han, Konkuk University, Korea

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; Konstantza Lambrinou, SCK CEN, Belgium; Jochen M. Schneider, Uppsala University, Sweden; 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

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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; Caen Ang, USNC-Technologies, USA; Kelsa Palomares, Analytical Mechanics Associates, USA; Samuel Humphry-Baker, Imperial College London, UK; David Sprouster, Stony Brook University, USA

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; Tetsuo Tsuchiya, National Institute of Advanced Industrial Science and Technology; Yiquan Wu, Alfred University; Takayuki Yanagida, Nara Institute of Science and Technology; Mariya Zhuravleva, University of Tennessee

S15: 7TH INTERNATIONAL SYMPOSIUM ON ADDITIVE MANUFACTURING AND 3D PRINTING TECHNOLOGIES

Soshu Kirihara, Osaka University, Japan; Mrityunjay Singh, Ohio Aerospace Institute, USA; Michael Halbig, NASA Glenn Research Center, USA; Andrew Allan, NIST, 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; Majid Minary, Arizona State University, 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; Ghassan Al Chaar, US Army Corps of Engineers, ERDC, CERL, USA; Don Seo, Arizona State University, USA; Henry A. Colorado, Universidad de Antioquia, Medellin, Colombia

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; Daniele Benetti, INRS, Canada

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; Luc J Vandeperre, Imperial College London, UK; 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

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

FOCUSED SESSION 1: BIOINSPIRATION, GREEN PROCESSING, AND RELATED TECHNOLOGIES OF ADVANCED MATERIALS

Thomas Speck, Universität Freiburg, Germany; Bastian Rapp, University of Freiburg, Germany; Manoj K Mahapatra, University of Alabama at Birmingham, USA; Cordt Zollfranck, Technical, Univeristy Munich, Germany; André Studdart, ETH Zürich, Switzerland; Ada-Ioana Bunea, DTU, Denmark; Ina Yadroitsava, CUT, South Africa (now Moscow)

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

FOCUSED SESSION 3: NANOSTRUCTURES AND LOW-DIMENSIONAL MATERIALS FOR CHEMICAL SENSORS

Ho Won Jang, Seoul National University, Republic of Korea; 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

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SPECIAL FOCUSED SESSION ON DIVERSITY, ENTREPRENEURSHIP, AND COMMERCIALIZATION

Surojit Gupta, University of North Dakota, USA; Valerie L Wiesner, NASA Langley Research Center, USA; Jie Zhang, Institute of Metal Research, CAS, China; Miso Kim, Sungkyunkwan University, Republic of Korea; Kristin Breder, Saint Gobain Research, USA; Katalin Balázsi, Institute for Technical Physics and Materials Science, MTA EK, Budapest, Hungary; Phylis Makurunje, Nuclear Futures Institute, Bangor University, Wales, UK; Scott McCormack, University of California Davis, USA; Lavina Backman, Naval Research Laboratory, USA

5TH PACIFIC RIM ENGINEERED CERAMICS SUMMIT

Nobuhito Imanaka, Osaka University, Japan; Young-Wook Kim, University of Seoul, Republic of Korea; Jingyang Wang, Institute of Metal Research, China; Amjad Almansour, NASA Glenn Research Center, USA; Lalit Kumar Sharma, Mahamana Ceramic Development Organizational Soc, India; Wei-Hsing Tuan, National Taipei University, Taiwan; Jakrapong Kaewkhao, Nakhon Pathom Rajabhat University (NPRU), Thailand; Manabu Fukushima, AIST, Japan; Kiyoshi Shimamura, National Institute for Materials Science, Japan; Miso Kim, Sungkyunkwan University, Republic of Korea; Ziqi Sun, Queensland University of Technology, Australia; Palani Balaya, National University of Singapore, Singapore; Andrew L. Gyekenyesi, Ohio Aerospace Institute, USA

EMERGENT MATERIALS AND SUSTAINABLE MANUFACTURING TECHNOLOGIES IN A GLOBAL LANDSCAPE: INTERNATIONAL SYMPOSIUM IN HONOR OF DR. TATSUKI OHJI

Nobuhito Imanaka, Osaka University, Japan; Young-Wook Kim, University of Seoul, Republic of Korea; Jingyang Wang, Institute of Metal Research, China; Amjad Almansour, NASA Glenn Research Center, USA; Lalit Kumar Sharma, Mahamana Ceramic Development Organizational Soc, India; Wei-Hsing Tuan, National Taipei University, Taiwan; Jakrapong Kaewkhao, Nakhon Pathom Rajabhat University (NPRU), Thailand; Manabu Fukushima, AIST, Japan; Kiyoshi Shimamura, National Institute for Materials Science, Japan; Miso Kim, Sungkyunkwan University, Republic of Korea; Ziqi Sun, Queensland University of Technology, Australia; Palani Balaya, National University of Singapore, Singapore; Andrew L. Gyekenyesi, Ohio Aerospace Institute, USA

TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
PLENARY SESSION	23-Jan	8:30 AM - NOON	Coquina Salon D
EMERGENT MATERIALS AND SUSTAINABLE MANUFACTURING TECHNOLOGIES IN A GLOBAL LANDSCAPE: INTERNATIONAL SYMPOSIUM IN HONOR OF DR. TATSUKI OHJI			
Tatsuki Ohji Honorary Session I	24-Jan	8:30 AM - 12:10 PM	Coquina Salon D
Tatsuki Ohji Honorary Session II	24-Jan	1:30 - 5:10 PM	Coquina Salon D
Tatsuki Ohji Honorary Session III	25-Jan	8:30 - 11:40 AM	Coquina Salon D
Tatsuki Ohji Honorary Session IV	25-Jan	1:30 - 4:40 PM	Coquina Salon D
Tatsuki Ohji Honorary Session V	26-Jan	8:30 AM - NOON	Coquina Salon D
Tatsuki Ohji Honorary Session VI	26-Jan	1:30 - 3:40 PM	Coquina Salon D
5TH PACIFIC RIM ENGINEERED CERAMICS SUMMIT			
5th Pacific Rim Engineered Ceramics Summit I	24-Jan	9:00 - 10:20 AM	Coquina Salon B
5th Pacific Rim Engineered Ceramics Summit II	24-Jan	10:20 - 11:40 AM	Coquina Salon B
5th Pacific Rim Engineered Ceramics Summit III	24-Jan	1:30 - 3:20 PM	Coquina Salon B
5th Pacific Rim Engineered Ceramics Summit IV	24-Jan	3:20 - 5:00 PM	Coquina Salon B
5th Pacific Rim Engineered Ceramics Summit V	25-Jan	8:30 - 10:20 AM	Coquina Salon B
5th Pacific Rim Engineered Ceramics Summit VI	25-Jan	10:20 AM - NOON	Coquina Salon B
12TH GLOBAL YOUNG INVESTIGATOR FORUM			
Global Young Investigator Forum	23-Jan	1:30 - 5:40 PM	Coquina Salon C
SPECIAL FOCUSED SESSION ON DIVERSITY, ENTREPRENEURSHIP, AND COMMERCIALIZATION			
Jubilee Golden Diversity Awards	23-Jan	1:30 - 3:40 PM	Coquina Salon H
FOCUSED SESSION 1: BIOINSPIRATION, GREEN PROCESSING, AND RELATED TECHNOLOGIES OF ADVANCED MATERIALS			
Bioinspiration, Green Processing, and Related Technologies of Advanced Materials I	23-Jan	1:30 - 3:20 PM	Coquina Salon B
Bioinspiration, Green Processing, and Related Technologies of Advanced Materials II	23-Jan	3:20 - 5:20 PM	Coquina Salon B
FOCUSED SESSION 2: MATERIALS FOR THERMOELECTRIC AND THERMIONIC ENERGY CONVERSION			
Bulk Thermoelectric Materials I	23-Jan	1:30 - 3:20 PM	Flagler A
Bulk Thermoelectric Materials II	23-Jan	3:20 - 4:40 PM	Flagler A
Thermionic Energy Conversion	24-Jan	9:00 - 10:30 AM	Flagler A
Atomistic Control of Material Structures	24-Jan	10:30 - 11:50 AM	Flagler A
Thermoelectric Generators I	24-Jan	1:30 - 3:20 PM	Flagler A
Thermoelectric Generators II	24-Jan	3:20 - 4:20 PM	Flagler A
Topological Thermoelectric Materials	25-Jan	9:00 - 10:20 AM	Flagler A
Theories and Computations	25-Jan	10:20 - 11:40 AM	Flagler A
FOCUSED SESSION 3: NANOSTRUCTURES AND LOW-DIMENSIONAL MATERIALS FOR CHEMICAL SENSORS			
FS3: Nanostructures and Low-Dimensional Materials for Chemical Sensors	23-Jan	1:30 - 4:50 PM	Coquina Salon D
FOCUSED SESSION 4: CERAMIC/CARBON REINFORCED POLYMERS			
Mechanical Behavior of Composite Materials	25-Jan	1:30 - 3:30 PM	Flagler A
Composites for SDGs	25-Jan	3:30 - 4:40 PM	Flagler A

TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
SYMPOSIUM 1: MECHANICAL BEHAVIOR AND PERFORMANCE OF ADVANCED CERAMICS & COMPOSITES			
Thermo-mechanical Performance of Ceramic Matrix Composites (CMCs) in Various Environments	23-Jan	1:30 - 5:30 PM	Ballroom 5
Computational Approaches for Analyzing, and Predicting the Mechanical Behavior and Durability of Ceramic Matrix Composites (CMCs)	24-Jan	8:30 AM - NOON	Ballroom 5
Processing, Testing, and Characterization of Ceramic Fibers and Ceramic Matrix Composites (CMCs)	24-Jan	1:30 - 4:40 PM	Ballroom 5
Mechanical Testing, and Characterization of Ceramics and Composites	25-Jan	8:30 - 11:50 AM	Ballroom 5
Processing-Microstructure-Mechanical Properties Correlation I	25-Jan	1:30 - 4:10 PM	Ballroom 5
Fracture Mechanics, Failure Analysis, and Fractography	26-Jan	8:30 AM - 12:10 PM	Ballroom 5
Processing-Microstructure-Mechanical Properties Correlation II	26-Jan	1:30 - 4:10 PM	Ballroom 5
SYMPOSIUM 2: ADVANCED CERAMIC COATINGS FOR STRUCTURAL, ENVIRONMENTAL, AND FUNCTIONAL APPLICATIONS			
Thermal Barrier Coatings	23-Jan	1:30 - 5:30 PM	Flagler C
Advanced Ceramic Coatings for Extreme Environments I	24-Jan	8:40 - 11:40 AM	Flagler C
Advanced Ceramic Coatings for Extreme Environments II	24-Jan	1:30 - 3:10 PM	Flagler C
CMAS-related Degradation and Mitigation Strategies I	24-Jan	3:20 - 5:10 PM	Flagler C
CMAS-related Degradation and Mitigation Strategies II	25-Jan	8:30 - 12:10 PM	Flagler C
Environmental Barrier Coatings I	25-Jan	1:30 - 4:40 PM	Flagler C
Environmental Barrier Coatings II	26-Jan	8:40 - 11:40 AM	Flagler C
SYMPOSIUM 3: 20TH INTERNATIONAL SYMPOSIUM ON SOLID OXIDE CELLS (SOC): MATERIALS, SCIENCE AND TECHNOLOGY			
System Design and Demonstration	23-Jan	1:30 - 3:20 PM	Ponce de Leon
Electrolysis and Applications	23-Jan	3:20 - 6:00 PM	Ponce de Leon
Air Electrode	24-Jan	8:30 AM - 12:20 PM	Ponce de Leon
Proton Conducting Ceramic Cells	24-Jan	1:30 - 5:00 PM	Ponce de Leon
Novel Processing	25-Jan	8:30 AM - 12:10 PM	Ponce de Leon
Simulation and Testing	25-Jan	1:30 - 5:00 PM	Ponce de Leon
Electrolytes	26-Jan	8:30 - 10:20 AM	Ponce de Leon
Fuel Electrode	26-Jan	10:20 AM - 12:20 PM	Ponce de Leon
Degradation	26-Jan	1:30 - 5:30 PM	Ponce de Leon
Interconnects and Coatings	27-Jan	8:30 AM - NOON	Ponce de Leon
SYMPOSIUM 4: ARMOR CERAMICS - CHALLENGES AND NEW DEVELOPMENTS			
Recent Progress in Diamond-Ceramic Composites	25-Jan	1:30 - 3:20 PM	Coquina Salon B
Advances in the Role of Interfaces on Sintering, Microstructure, and Mechanical Properties	25-Jan	3:20 - 5:20 PM	Coquina Salon B
Current Developments in Boron Carbide and Advanced Ceramics I	26-Jan	8:30 - 10:20 AM	Coquina Salon B
Current Developments in Boron Carbide and Advanced Ceramics II	26-Jan	10:20 AM - NOON	Coquina Salon B
Army Outreach: Funding Opportunities at the Army Research Office	26-Jan	1:30 - 2:00 PM	Coquina Salon B
Dynamic Response and Failure of Ceramics and Glasses I	26-Jan	2:00 - 3:20 PM	Coquina Salon B
Dynamic Response and Failure of Ceramics and Glasses II	26-Jan	3:20 - 4:10 PM	Coquina Salon B

Sessions	Date	Time	Location
SYMPOSIUM 5: NEXT GENERATION BIOCERAMICS AND BIOCOMPOSITES			
Biomimetic and Bioactive Ceramics	23-Jan	1:30 - 3:10 PM	Ballroom 1-2
Biomimetic and Bio-inspired Ceramics	23-Jan	3:20 - 5:20 PM	Ballroom 1-2
Bioactive and Resorbable Ceramics	24-Jan	8:30 - 10:10 AM	Ballroom 1-2
Nanostructured Bioceramics	24-Jan	10:20 - 11:40 AM	Ballroom 1-2
Bioceramic Scaffolds	24-Jan	1:30 - 3:20 PM	Ballroom 1-2
Bioceramic Coatings, Implants	24-Jan	3:20 - 4:40 PM	Ballroom 1-2
SYMPOSIUM 6: ADVANCED MATERIALS AND TECHNOLOGIES FOR RECHARGEABLE ENERGY STORAGE			
All-solid-state Batteries I	23-Jan	1:30 - 3:10 PM	Coquina Salon E
All-solid-state Batteries II	23-Jan	3:10 - 5:20 PM	Coquina Salon E
All-solid-state Batteries III	24-Jan	8:30 - 10:20 AM	Coquina Salon E
All-solid-state Batteries IV	24-Jan	10:20 AM - NOON	Coquina Salon E
Advanced Cathode Materials for Lithium Batteries I	24-Jan	1:30 - 3:20 PM	Coquina Salon E
Advanced Cathode Materials for Lithium Batteries II	24-Jan	3:20 - 5:00 PM	Coquina Salon E
Advanced Anode Materials for Lithium Batteries I	25-Jan	8:30 - 10:20 AM	Coquina Salon E
Advanced Anode Materials for Lithium Batteries II	25-Jan	10:20 AM - NOON	Coquina Salon E
Materials Design, Screening, and Electrode Architectures for Lithium Batteries I	25-Jan	1:30 - 3:20 PM	Coquina Salon E
Materials Design, Screening, and Electrode Architectures for Lithium Batteries II	25-Jan	3:20 - 4:20 PM	Coquina Salon E
Diagnostics and Materials Characterization for Lithium Batteries I	26-Jan	8:30 - 10:20 AM	Coquina Salon E
Diagnostics and Materials Characterization for Lithium Batteries II	26-Jan	10:20 - 11:50 AM	Coquina Salon E
Sodium Batteries, Potassium Batteries, Magnesium Batteries and Calcium Batteries I	26-Jan	1:30 - 3:20 PM	Coquina Salon E
Sodium Batteries, Potassium Batteries, Magnesium Batteries and Calcium Batteries II	26-Jan	3:20 - 4:30 PM	Coquina Salon E

TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
SYMPOSIUM 7: 17TH INTERNATIONAL SYMPOSIUM ON FUNCTIONAL NANOMATERIALS AND THIN FILMS FOR SUSTAINABLE ENERGY HARVESTING, ENVIRONMENTAL AND HEALTH APPLICATIONS			
Metal Oxide Nanostructures and Chalcogenides for Energy, Environmental and Water-splitting Applications I	26-Jan	8:30 - 10:20 AM	Coquina Salon G
Metal Oxide Nanostructures and Chalcogenides for Energy, Environmental and Water-splitting Applications II	26-Jan	10:20 AM - NOON	Coquina Salon G
Nanomaterials for Thermoelectrics, Photocatalysis, Electrocatalysis	26-Jan	1:30 - 3:00 PM	Coquina Salon G
Nanomaterials for Energy Conversion and Storage and Catalysis	26-Jan	3:00 - 4:50 PM	Coquina Salon G
Nanotoxicity, Bio-imaging, Drug-delivery and Tissue Engineering with Tailored Nano-bioconjugates	27-Jan	9:00 - 10:20 AM	Coquina Salon G
Functional Coatings and Innovative Thin Film Techniques	27-Jan	10:20 - 11:50 AM	Coquina Salon G
SYMPOSIUM 8: 17TH INTERNATIONAL SYMPOSIUM ON ADVANCED PROCESSING AND MANUFACTURING TECHNOLOGIES FOR STRUCTURAL AND MULTIFUNCTIONAL MATERIALS AND SYSTEMS (APMT17)			
Design-oriented Manufacturing and Processing	23-Jan	1:30 - 3:20 PM	Coquina Salon F
Green Manufacturing, Global Environmental Issues and Standards	23-Jan	3:20 - 4:20 PM	Coquina Salon F
Advanced Composite Manufacturing Technologies, Hybrid Processes I	24-Jan	8:30 - 10:20 AM	Coquina Salon F
Advanced Powder Synthesis and Processing	24-Jan	10:20 - 11:20 AM	Coquina Salon F
Advanced Composite Manufacturing Technologies, Hybrid Processes II	24-Jan	1:30 - 3:00 PM	Coquina Salon F
Joining, Integration, Machining, Repair, and Refurbishment Technologies	24-Jan	3:00 - 4:10 PM	Coquina Salon F
Novel Forming/Sintering Technologies, Near-net Shaping	24-Jan	4:30 - 5:10 PM	Coquina Salon F
Microwave Processing, SPS, Flash Sintering, High Pressure Assisted Sintering	25-Jan	9:00 - 11:20 AM	Coquina Salon F
Polymer-based Processing	25-Jan	1:30 - 3:00 PM	Coquina Salon F
Rapid Prototyping, 3D Printing, Patterning, Templates and Self-assembly	25-Jan	3:00 - 4:50 PM	Coquina Salon F
SYMPOSIUM 9: POROUS CERAMICS: NOVEL DEVELOPMENTS AND APPLICATIONS			
Structure and Properties of Porous Ceramics	26-Jan	8:30 AM - NOON	Coquina Salon H
Innovative Processing of Porous Ceramics	26-Jan	1:30 - 4:30 PM	Coquina Salon H
Porous Ceramics for Functional Applications	27-Jan	8:30 - 11:50 AM	Coquina Salon H
SYMPOSIUM 10: MODELING AND DESIGN OF CERAMICS AND COMPOSITES			
Modeling of Ceramics and Composites I	26-Jan	8:30 - 10:20 AM	Coquina Salon A
Modeling of Ceramics and Composites II	26-Jan	10:20 AM - 12:30 PM	Coquina Salon A
Modeling of Ceramics and Composites III	26-Jan	1:30 - 3:20 PM	Coquina Foyer
Modeling of Ceramics and Composites IV	26-Jan	3:30 - 6:20 PM	Coquina Foyer
SYMPOSIUM 11: ADVANCED MATERIALS AND INNOVATIVE PROCESSING IDEAS FOR PRODUCTION ROOT TECHNOLOGIES			
New Concepts and Emerging Technologies for Enhanced Product Performance I	25-Jan	9:00 - 10:20 AM	Ballroom 1-2
New Concepts and Emerging Technologies for Enhanced Product Performance II	25-Jan	10:20 AM - NOON	Ballroom 1-2
Forming and Shaping Processes for Advanced Materials	25-Jan	1:50 - 3:10 PM	Ballroom 1-2
Starting Materials: Mining, Particles, Bulk, and Functional Materials and Precursors	25-Jan	3:20 - 4:40 PM	Ballroom 1-2
Recycling and Reuse Processes	26-Jan	9:00 - 10:20 AM	Ballroom 1-2
Sustainable Energy Concepts and Applications	26-Jan	10:20 - 11:40 AM	Ballroom 1-2

Sessions	Date	Time	Location
SYMPOSIUM 12: ON THE DESIGN OF NANOLAMINATED TERNARY TRANSITION METAL CARBIDES/NITRIDES (MAX PHASES) AND BORIDES (MAB PHASES), SOLID SOLUTIONS THEREOF, AND 2D COUNTERPARTS (MXENES, MBENES)			
Methods for Improving Damage Tolerance and Performance I	25-Jan	1:30 - 3:20 PM	Ballroom 3
Design of Novel Compositions and Manufacturing Methods I	25-Jan	3:20 - 5:10 PM	Ballroom 3
Design of Novel Compositions and Manufacturing Methods II	26-Jan	8:30 - 10:20 AM	Ballroom 3
Design of Novel Compositions and Manufacturing Methods III	26-Jan	10:20 - 11:50 AM	Ballroom 3
Design of Novel Compositions and Manufacturing Methods IV	26-Jan	1:30 - 3:20 PM	Ballroom 3
SYMPOSIUM 13: DEVELOPMENT AND APPLICATIONS OF ADVANCED CERAMICS AND COMPOSITES FOR NUCLEAR FISSION AND FUSION ENERGY SYSTEMS			
Novel Ceramics and Composites for Nuclear Systems I	23-Jan	1:30 - 3:30 PM	Ballroom 4
Radiation Effects and Advanced Characterization	23-Jan	3:30 - 5:00 PM	Ballroom 4
Material Technologies for Enhanced Accident Tolerance LWR Fuels and Core I	24-Jan	8:30 - 10:20 AM	Ballroom 4
Material Technologies for Enhanced Accident Tolerance LWR Fuels and Core II	24-Jan	10:20 - NOON	Ballroom 4
High Temperature Ceramics for Space Reactor and Advanced Reactor Applications	24-Jan	1:30 - 3:10 PM	Ballroom 4
New Materials and Containment for Neutron Moderators, Reflectors, and Shielding	24-Jan	3:20 - 5:00 PM	Ballroom 4
Test Methods, Codes and Standards, Design Methodology, and Material Qualification	25-Jan	8:30 - 10:10 AM	Ballroom 4
Novel Ceramics and Composites for Nuclear Systems II	25-Jan	10:20 AM - NOON	Ballroom 4
Radiation Damage, Defect Production, Evolutions, and Interactions	25-Jan	1:30 - 3:20 PM	Ballroom 4
Material Technologies for Enhanced Accident Tolerance LWR Fuels and Core III	25-Jan	3:20 - 4:20 PM	Ballroom 4
SYMPOSIUM 14: CRYSTALLINE MATERIALS FOR ELECTRICAL, OPTICAL AND MEDICAL APPLICATIONS			
Battery / Piezoelectric Material	26-Jan	10:10 AM - NOON	Flagler A
Scintillator	26-Jan	1:30 - 3:20 PM	Flagler A
Optical Material	26-Jan	3:20 PM - 5:20 PM	Flagler A
SYMPOSIUM 15: 7TH INTERNATIONAL SYMPOSIUM ON ADDITIVE MANUFACTURING AND 3D PRINTING TECHNOLOGIES			
Materials and Process Characterization Tools	24-Jan	8:30 - 10:20 AM	Coquina Salon H
Vat Photopolymerization / Substrate Stereolithography I	24-Jan	10:20 AM - 12:10 PM	Coquina Salon H
Vat Photopolymerization / Substrate Stereolithography II	24-Jan	1:30 - 3:20 PM	Coquina Salon H
Vat Photopolymerization / Substrate Stereolithography III	24-Jan	3:20 - 4:40 PM	Coquina Salon H
Applications of Materials and Components	25-Jan	8:30 - 10:20 AM	Coquina Salon H
Multi-Material and Hybrid Printing Techniques	25-Jan	10:20 AM - NOON	Coquina Salon H
Material Extrusion / Fused Deposition Modeling	25-Jan	1:30 - 3:10 PM	Coquina Salon H
Direct Writing / Ink Jet Printing Technologies	25-Jan	3:20 - 4:20 PM	Coquina Salon H
Binder Jetting Processes	25-Jan	4:20 - 5:00 PM	Coquina Salon H
SYMPOSIUM 16: GEOPOLYMERS, INORGANIC POLYMERS AND SUSTAINABLE CONSTRUCTION MATERIALS			
Geopolymers made from or with Waste Materials I	24-Jan	8:30 - 9:50 AM	Coquina Salon C
Geopolymers made from or with Waste Materials II	24-Jan	10:20 - 11:40 AM	Coquina Salon C
Geopolymers made from or with Biological Materials	24-Jan	1:30 - 4:00 PM	Coquina Salon C
Synthesis, Processing, Microstructure	24-Jan	4:00 - 5:00 PM	Coquina Salon C
Mechanical Properties of Geopolymer Composites I	25-Jan	8:30 - 10:20 AM	Coquina Salon C
Mechanical Properties of Geopolymer Composites II	25-Jan	10:20 AM - NOON	Coquina Salon C
Novel Applications of Geopolymers I	25-Jan	1:30 - 3:20 PM	Coquina Salon C
Novel Applications of Geopolymers II	25-Jan	3:20 - 4:40 PM	Coquina Salon C
3D Printing of Geopolymers I	26-Jan	8:30 - 10:20 AM	Coquina Salon C
3D Printing of Geopolymers II	26-Jan	10:20 - 11:30 AM	Coquina Salon C
Porous Geopolymers I	26-Jan	11:30 - NOON	Coquina Salon C
Porous Geopolymers II	26-Jan	1:30 - 3:00 PM	Coquina Salon C

TECHNICAL SESSIONS BY SYMPOSIUM

Sessions	Date	Time	Location
SYMPOSIUM 17: ADVANCED CERAMIC MATERIALS AND PROCESSING FOR PHOTONICS AND ENERGY			
Advanced and Nanostructured Materials for Photonics, Electronics and Sensing I	23-Jan	1:30 - 5:40 PM	Coquina Salon G
Advanced and Nanostructured Materials for Photonics, Electronics and Sensing II	24-Jan	8:30 - 10:10 AM	Coquina Salon G
Multi-functional Materials I	24-Jan	10:10 - 11:40 AM	Coquina Salon G
Multi-functional Materials II	24-Jan	1:30 - 5:00 PM	Coquina Salon G
Multi-functional Materials III	25-Jan	8:30 - 11:20 AM	Coquina Salon G
Advanced and Nanostructured Materials for Photo-voltaics and Solar Fuels	25-Jan	1:30 - 4:40 PM	Coquina Salon G
SYMPOSIUM 18: ULTRA-HIGH TEMPERATURE CERAMICS			
Compositionally Complex UHTCs I	23-Jan	1:30 - 3:20 PM	Coquina Salon A
Novel Processing Methods I	23-Jan	3:20 - 5:20 PM	Coquina Salon A
Compositionally complex UHTCs II	24-Jan	8:30 - 10:20 AM	Coquina Salon A
Novel Processing Methods II	24-Jan	10:20 - 11:50 AM	Coquina Salon A
Processing-Microstructure-Property Relationship I	24-Jan	1:30 - 3:10 PM	Coquina Salon A
Response in Extreme Environments I	24-Jan	3:20 - 4:50 PM	Coquina Salon A
Processing-Microstructure-Property Relationship II	25-Jan	8:30 - 10:20 AM	Coquina Salon A
Response in Extreme Environments II	25-Jan	10:20 AM - NOON	Coquina Salon A
Simulations and Characterizations	25-Jan	1:30 - 3:20 PM	Coquina Salon A
Compositionally Complex UHTC III	25-Jan	3:20 - 4:20 PM	Coquina Salon A
SYMPOSIUM 19: MOLECULAR-LEVEL PROCESSING AND CHEMICAL ENGINEERING OF FUNCTIONAL MATERIALS			
Chemical Approaches to Energy-related Functional Materials	23-Jan	1:30 - 3:20 PM	Ballroom 3
Solution-processing of Functional Oxides	23-Jan	3:20 - 5:40 PM	Ballroom 3
Polymer-Derived Ceramics I	24-Jan	8:20 - 10:20 AM	Ballroom 3
Polymer-Derived Ceramics II	24-Jan	10:20 AM - NOON	Ballroom 3
Polymer-Derived Ceramics III	24-Jan	1:30 - 3:20 PM	Ballroom 3
Polymer-Derived Ceramics IV	24-Jan	3:20 - 5:00 PM	Ballroom 3
Polymer-Derived Ceramics V	25-Jan	8:30 - 10:20 AM	Ballroom 3
Innovative Chemical Approaches & Processing Methods	25-Jan	10:20 AM - 12:10 PM	Ballroom 3
POSTERS			
Poster Session A	24-Jan	5:00 - 8:00 PM	Ocean Center Arena
Poster Session B	25-Jan	5:00 - 7:30 PM	Ocean Center Arena

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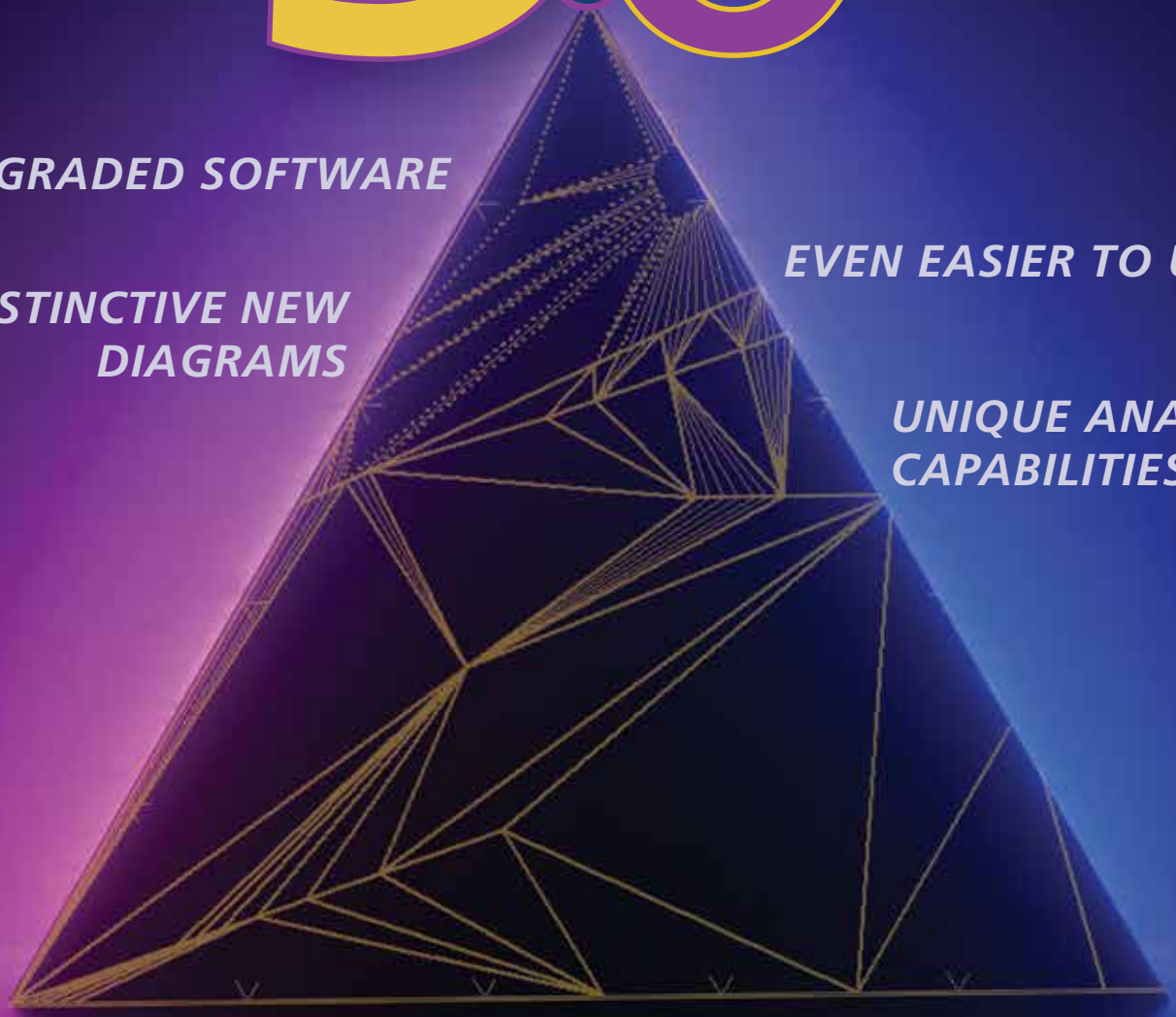

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Oral Presenters

Name	Date	Time	Room	Page Number
A				
Abernathy, H.W.	25-Jan	2:20PM	Ponce de Leon (North Tower)	42
Abernathy, H.W.	25-Jan	3:20PM	Ponce de Leon (North Tower)	42
Abufarsakh, R.	24-Jan	10:20AM	Coquina Salon C (North Tower)	21
Abufarsakh, R.	24-Jan	4:40PM	Coquina Salon C (North Tower)	29
Acord, K.	23-Jan	3:20PM	Coquina Salon C (North Tower)	8
Ahn, C.	25-Jan	10:50AM	Ballroom 1-2 (South Tower)	36
Ajitha Haridasan, H.	27-Jan	11:30AM	Coquina Salon G (North Tower)	62
Akedo, J.	26-Jan	10:30AM	Coquina Salon D (North Tower)	50
Akhtar, F.	25-Jan	8:30AM	Coquina Salon G (North Tower)	38
Akhtar, F.	27-Jan	10:40AM	Coquina Salon H (North Tower)	63
Akono, A.	25-Jan	8:30AM	Coquina Salon C (North Tower)	38
Akono, A.	25-Jan	11:30AM	Coquina Salon C (North Tower)	38
Allen, A.J.	24-Jan	9:00AM	Coquina Salon H (North Tower)	20
Almansour, A.S.	23-Jan	4:00PM	Ballroom 5 (South Tower)	10
Amoroso, J.	23-Jan	1:30PM	Ballroom 4 (South Tower)	13
Anasori, B.	26-Jan	10:50AM	Ballroom 3 (South Tower)	55
Aoki, R.	26-Jan	4:30PM	Coquina Foyer (North Tower)	60
Apblett, A.	25-Jan	9:30AM	Coquina Salon D (North Tower)	33
Apblett, A.	27-Jan	9:10AM	Coquina Salon H (North Tower)	63
Arai, N.	24-Jan	4:10PM	Flagler C (South Tower)	25
Ardrey, K.D.	23-Jan	3:50PM	Flagler C (South Tower)	11
Arregui-Mena, J.D.	25-Jan	9:30AM	Ballroom 4 (South Tower)	37
Asghar, M.	25-Jan	11:10AM	Ponce de Leon (North Tower)	35
Ayguzer Yasar, Z.	26-Jan	9:20AM	Coquina Salon B (North Tower)	52
Aytuna, Z.	26-Jan	11:00AM	Coquina Salon G (North Tower)	53
Azina, C.	25-Jan	3:50PM	Ballroom 3 (South Tower)	45
B				
Babaie Rizvandi, O.	25-Jan	1:30PM	Ponce de Leon (North Tower)	42
Badie, S.	23-Jan	2:50PM	Flagler C (South Tower)	11
Badran, A.	24-Jan	9:30AM	Ballroom 5 (South Tower)	17
Bae, C.	24-Jan	8:30AM	Coquina Salon H (North Tower)	20
Bagci, C.	24-Jan	2:30PM	Coquina Salon C (North Tower)	28
Bailey, A.B.	25-Jan	4:20PM	Coquina Salon H (North Tower)	46
Bajpai, S.	23-Jan	5:00PM	Coquina Salon A (North Tower)	15
Bakas, M.P.	26-Jan	1:30PM	Coquina Salon B (North Tower)	58
Baker, J.D.	26-Jan	8:30AM	Ballroom 5 (South Tower)	50
Balagna, C.	24-Jan	3:20PM	Ballroom 1-2 (South Tower)	26
Balasubramanian, M.	26-Jan	8:30AM	Coquina Salon E (North Tower)	52
Balaya, P.	25-Jan	9:00AM	Coquina Salon B (North Tower)	33
Balaya, P.	25-Jan	3:20PM	Coquina Salon D (North Tower)	40
Balazsi, C.	24-Jan	8:30AM	Coquina Salon F (North Tower)	19
Balazsi, C.	24-Jan	11:20AM	Coquina Salon D (North Tower)	16
Balazsi, K.	26-Jan	2:00PM	Coquina Salon D (North Tower)	56
Balderson, L.L.	25-Jan	3:20PM	Coquina Salon H (North Tower)	46
Bale, H.	26-Jan	8:40AM	Flagler C (South Tower)	50
Ballikaya, S.	26-Jan	2:00PM	Coquina Salon G (North Tower)	59
Ban, D.	23-Jan	3:40PM	Coquina Salon G (North Tower)	14
Bao, J.	23-Jan	3:10PM	Coquina Salon G (North Tower)	14
Baranwal, R.	23-Jan	10:40AM	Coquina Salon D (North Tower)	8
Bargatin, I.	24-Jan	9:30AM	Flagler A (South Tower)	16
Barnett, S.	26-Jan	1:30PM	Ponce de Leon (North Tower)	57
Barth, S.	23-Jan	4:30PM	Coquina Salon G (North Tower)	14
Barth, S.	25-Jan	10:40AM	Ballroom 3 (South Tower)	40
Bavdekar, S.	26-Jan	11:30AM	Coquina Salon A (North Tower)	54
Beaupain, J.P.	23-Jan	4:40PM	Coquina Salon E (North Tower)	13
Bellafatto, A.J.	26-Jan	10:30AM	Ballroom 5 (South Tower)	50
Belmonte, M.	26-Jan	2:00PM	Coquina Salon H (North Tower)	59
Belrhiti, Y.	25-Jan	9:20AM	Coquina Salon A (North Tower)	39
Berkebile, S.	25-Jan	2:00PM	Ballroom 3 (South Tower)	44
Bernard, S.	24-Jan	1:30PM	Ballroom 3 (South Tower)	30
Bernardo, E.	24-Jan	10:40AM	Coquina Salon C (North Tower)	21
Bernardo, E.	24-Jan	4:10PM	Ballroom 3 (South Tower)	30
Bernardo, E.	25-Jan	1:30PM	Coquina Salon F (North Tower)	43
Bhandari, S.	25-Jan	2:30PM	Coquina Salon H (North Tower)	45
Bhardwaj, A.	24-Jan	3:50PM	Coquina Salon G (North Tower)	29
Bhardwaj, A.	25-Jan	2:40PM	Coquina Salon E (North Tower)	43
Bhardwaj, D.	23-Jan	2:30PM	Ballroom 4 (South Tower)	13
Bhuyan, M.A.	26-Jan	2:30PM	Coquina Salon C (North Tower)	61
Bian, W.	24-Jan	3:50PM	Ponce de Leon (North Tower)	25
Birss, V.	26-Jan	10:20AM	Ponce de Leon (North Tower)	51
Bishop, S.	25-Jan	8:50AM	Ballroom 5 (South Tower)	34
Böcherer, D.	23-Jan	2:00PM	Coquina Salon B (North Tower)	9
Bohanon, R.	24-Jan	4:20PM	Ballroom 4 (South Tower)	28
Bonnal, J.	24-Jan	3:50PM	Flagler C (South Tower)	25
Boussebha, H.	24-Jan	11:00AM	Coquina Salon F (North Tower)	20
Bowen, M.S.	25-Jan	2:20PM	Coquina Salon A (North Tower)	47
Brandt, O.	25-Jan	2:20PM	Coquina Salon F (North Tower)	43
Brandvold, A.S.	26-Jan	9:30AM	Coquina Salon C (North Tower)	56
Breder, K.	25-Jan	10:10AM	Ballroom 5 (South Tower)	34
Bresser, D.	25-Jan	10:20AM	Coquina Salon E (North Tower)	36
Brockman, C.	23-Jan	4:50PM	Ballroom 5 (South Tower)	10
Brune, P.	24-Jan	9:20AM	Coquina Salon A (North Tower)	22
Brune, V.	25-Jan	2:20PM	Coquina Salon E (North Tower)	43
Brune, V.	26-Jan	10:20AM	Coquina Salon G (North Tower)	53
Brutti, S.	24-Jan	2:30PM	Coquina Salon E (North Tower)	26
Brylewski, T.	27-Jan	8:30AM	Ponce de Leon (North Tower)	62
Buchovecky, E.	25-Jan	10:30AM	Ballroom 5 (South Tower)	34
Buddhika Amila Kumara, S.	26-Jan	11:20AM	Ballroom 1-2 (South Tower)	55
Bullock, S.	24-Jan	10:50AM	Ballroom 3 (South Tower)	22
Bunea, A.	23-Jan	2:20PM	Coquina Salon B (North Tower)	9
Burke, P.	23-Jan	1:30PM	Ponce de Leon (North Tower)	11
Burr, P.A.	25-Jan	1:30PM	Ballroom 4 (South Tower)	45
Byun, H.	23-Jan	1:30PM	Coquina Salon D (North Tower)	9
C				
Cabot, A.	26-Jan	3:30PM	Coquina Salon G (North Tower)	59
Cabot, A.	27-Jan	10:20AM	Coquina Salon G (North Tower)	62
Cakir, D.	26-Jan	8:30AM	Ballroom 3 (South Tower)	55
Carlier, D.	26-Jan	3:20PM	Coquina Salon E (North Tower)	58
Carpanese, M.	25-Jan	11:50AM	Ponce de Leon (North Tower)	35
Casem, D.T.	26-Jan	2:20PM	Coquina Salon B (North Tower)	58
Castano, V.M.	25-Jan	9:00AM	Coquina Salon G (North Tower)	38
Castro, R.	24-Jan	4:10PM	Coquina Salon E (North Tower)	27
Celeste, A.	24-Jan	3:50PM	Coquina Salon E (North Tower)	26
Chaker, M.	24-Jan	3:20PM	Coquina Salon G (North Tower)	29
Chattopadhyay, A.	24-Jan	8:30AM	Ballroom 5 (South Tower)	17
Chen, K.	23-Jan	2:10PM	Flagler C (South Tower)	11
Chen, Z.	23-Jan	4:10PM	Coquina Salon E (North Tower)	13
Cheng, B.	24-Jan	4:40PM	Ballroom 4 (South Tower)	28
Cheng, Z.	24-Jan	11:40AM	Ponce de Leon (North Tower)	18
Cherepy, N.	26-Jan	2:00PM	Flagler A (South Tower)	61
Chiba, A.	25-Jan	2:00PM	Coquina Salon F (North Tower)	43
Cho, J.	24-Jan	3:50PM	Flagler A (South Tower)	24
Chu, N.M.	24-Jan	9:20AM	Coquina Salon F (North Tower)	19
Chua, D.	24-Jan	11:10AM	Coquina Salon G (North Tower)	22
Chua, D.	26-Jan	9:30AM	Coquina Salon G (North Tower)	53
Ciurans Oset, M.	25-Jan	2:10PM	Ballroom 5 (South Tower)	41
Cligny, Q.	24-Jan	4:20PM	Coquina Salon C (North Tower)	29
Colombo, P.	23-Jan	9:30AM	Coquina Salon D (North Tower)	8
Colombo, P.	25-Jan	8:30AM	Coquina Salon D (North Tower)	33
Colorado L., H.A.	26-Jan	11:00AM	Coquina Salon C (North Tower)	56
Conry, B.	23-Jan	4:20PM	Coquina Salon C (North Tower)	8
Cook, C.A.	24-Jan	11:20AM	Ballroom 3 (South Tower)	23
Costa, G.	24-Jan	3:20PM	Flagler C (South Tower)	25
Costa, I.	25-Jan	4:40PM	Coquina Salon B (North Tower)	43
Cottrino, S.	25-Jan	9:00AM	Coquina Salon F (North Tower)	36
Croy, J.R.	24-Jan	1:30PM	Coquina Salon E (North Tower)	26
Csanádi, T.	24-Jan	2:00PM	Coquina Salon A (North Tower)	29
Cui, B.	24-Jan	9:40AM	Coquina Salon A (North Tower)	22
Cui, B.	24-Jan	3:30PM	Coquina Salon F (North Tower)	27
Curtarolo, S.	24-Jan	8:30AM	Coquina Salon A (North Tower)	22
D				
Da Rin Betta, F.	25-Jan	3:40PM	Coquina Salon H (North Tower)	46
Dal Poggetto, G.	24-Jan	8:30AM	Coquina Salon C (North Tower)	21
Daldosso, N.	23-Jan	2:30PM	Coquina Salon D (North Tower)	10
Daldosso, N.	24-Jan	9:30AM	Coquina Salon G (North Tower)	21
Daldosso, N.	27-Jan	9:30AM	Coquina Salon G (North Tower)	62
Dandeneau, C.S.	25-Jan	10:50AM	Ballroom 4 (South Tower)	37
Das, S.	24-Jan	10:50AM	Coquina Salon A (North Tower)	22

Presenting Author List

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Das, S.	25-Jan	9:50AM	Coquina Salon F (North Tower)	36
Davey, T.	25-Jan	2:00PM	Coquina Salon A (North Tower)	47
Davidson, J.	25-Jan	11:40AM	Ballroom 4 (South Tower)	37
de Souza, F.L.	24-Jan	8:30AM	Ballroom 3 (South Tower)	22
Deck, C.	24-Jan	9:00AM	Ballroom 4 (South Tower)	20
Delaunay, F.	23-Jan	4:10PM	Coquina Salon G (North Tower)	14
Desai, D.T.	26-Jan	4:10PM	Coquina Salon H (North Tower)	59
Dey, M.	25-Jan	4:50PM	Ballroom 3 (South Tower)	45
Dickerson, M.B.	25-Jan	8:30AM	Ballroom 3 (South Tower)	39
Ding, D.	24-Jan	3:20PM	Ponce de Leon (North Tower)	25
Do, T.	23-Jan	3:20PM	Coquina Salon F (North Tower)	13
Dominko, R.	25-Jan	8:30AM	Coquina Salon E (North Tower)	35
Du, M.	25-Jan	4:40PM	Coquina Salon H (North Tower)	46
Du, Y.	23-Jan	5:40PM	Ponce de Leon (North Tower)	12
Du, Y.	24-Jan	2:00PM	Ponce de Leon (North Tower)	25
Duffy, J.H.	24-Jan	11:00AM	Ponce de Leon (North Tower)	18
Dujovic, M.	26-Jan	9:20AM	Ballroom 3 (South Tower)	55
E				
Ebbesen, S.D.	23-Jan	3:20PM	Ponce de Leon (North Tower)	11
Elahi, P.	26-Jan	4:10PM	Ponce de Leon (North Tower)	57
Elangovan, S.	23-Jan	3:50PM	Ponce de Leon (North Tower)	12
Elmeligy, T.A.	26-Jan	2:00PM	Ballroom 3 (South Tower)	60
Eßmeister, J.	24-Jan	11:10AM	Coquina Salon H (North Tower)	21
F				
Faber, K.	26-Jan	10:40AM	Flagler C (South Tower)	51
Fahrenholtz, W.	23-Jan	1:50PM	Coquina Salon A (North Tower)	14
Fahrenholtz, W.	25-Jan	3:20PM	Coquina Salon A (North Tower)	47
Fan, Y.	24-Jan	12:00PM	Ponce de Leon (North Tower)	18
Fanchini, G.	24-Jan	1:30PM	Coquina Salon G (North Tower)	29
Fanchini, G.	27-Jan	10:50AM	Coquina Salon G (North Tower)	62
Feltrin, A.C.	23-Jan	2:20PM	Coquina Salon A (North Tower)	14
Feng, T.	25-Jan	1:30PM	Coquina Salon A (North Tower)	47
Ferguson, C.A.	23-Jan	5:10PM	Ballroom 5 (South Tower)	10
Ferraris, M.	24-Jan	3:00PM	Coquina Salon F (North Tower)	27
Fey, T.	27-Jan	8:30AM	Coquina Salon H (North Tower)	63
Fichtner, M.	26-Jan	1:30PM	Coquina Salon E (North Tower)	58
Fiorilli, S.	24-Jan	8:30AM	Ballroom 1-2 (South Tower)	18
Fischer, T.	23-Jan	3:50PM	Ballroom 3 (South Tower)	15
Fischer, T.	26-Jan	4:00PM	Coquina Salon G (North Tower)	59
Fontaine, M.	24-Jan	1:30PM	Ponce de Leon (North Tower)	25
Forna-Kreutzer, P.	23-Jan	2:30PM	Ballroom 5 (South Tower)	10
Förster, J.E.	25-Jan	11:40AM	Coquina Salon A (North Tower)	39
Fradin, M.	26-Jan	2:40PM	Coquina Foyer (North Tower)	60
Franchin, G.	24-Jan	11:30AM	Coquina Salon H (North Tower)	21
Franchin, G.	26-Jan	8:30AM	Coquina Salon C (North Tower)	56
Frandsen, H.L.	26-Jan	3:50PM	Ponce de Leon (North Tower)	57
Fu, Z.	25-Jan	3:20PM	Coquina Salon E (North Tower)	43
Fujisawa, Y.	25-Jan	2:30PM	Flagler A (South Tower)	40
Fukushima, M.	26-Jan	10:20AM	Coquina Salon H (North Tower)	53
Furlan, K.P.	26-Jan	3:10PM	Coquina Salon H (North Tower)	59
G				
Gal, C.	24-Jan	11:50AM	Coquina Salon H (North Tower)	21
Galusek, D.	23-Jan	1:30PM	Ballroom 1-2 (South Tower)	12
Galusek, D.	25-Jan	9:30AM	Coquina Salon B (North Tower)	33
Garcia Granados, E.	26-Jan	9:20AM	Flagler C (South Tower)	51
Garcia, J.O.	24-Jan	2:20PM	Ballroom 3 (South Tower)	30
Gauzere, L.	24-Jan	4:50PM	Coquina Salon F (North Tower)	27
Geigle, M.	26-Jan	8:30AM	Coquina Salon H (North Tower)	53
Geringer, J.W.	25-Jan	9:10AM	Ballroom 4 (South Tower)	37
Ghaffari, K.	26-Jan	9:00AM	Coquina Salon B (North Tower)	52
Ghoshal, A.	25-Jan	10:20AM	Flagler C (South Tower)	34
Ghulamullah, N.	26-Jan	5:10PM	Ponce de Leon (North Tower)	58
Gil, L.	24-Jan	2:00PM	Coquina Salon H (North Tower)	28
Gild, J.	26-Jan	4:40PM	Flagler A (South Tower)	61
Goldberg, R.K.	24-Jan	10:20AM	Ballroom 5 (South Tower)	17
Goldsby, J.C.	25-Jan	9:50AM	Flagler A (South Tower)	34
Goller, R.	25-Jan	1:50PM	Ballroom 1-2 (South Tower)	44
Goossens, N.	26-Jan	1:30PM	Ballroom 3 (South Tower)	60
Gorske, S.F.	26-Jan	11:10AM	Ballroom 5 (South Tower)	50
Grader, G.	25-Jan	11:10AM	Coquina Salon B (North Tower)	33
Grant, L.O.	25-Jan	4:30PM	Coquina Salon F (North Tower)	44
Gremillard, L.	23-Jan	4:40PM	Ballroom 1-2 (South Tower)	12
Gremillard, L.	26-Jan	3:50PM	Coquina Salon H (North Tower)	59
Gruber, J.	25-Jan	4:20PM	Coquina Salon C (North Tower)	46
Gruber, P.H.	25-Jan	1:30PM	Ballroom 5 (South Tower)	41
Grutzik, S.	26-Jan	9:00AM	Ballroom 5 (South Tower)	50
Guijosa Garcia, C.Y.	25-Jan	11:30AM	Flagler C (South Tower)	35
Guillon, O.	24-Jan	9:30AM	Coquina Salon E (North Tower)	19
Guilmeau, E.	23-Jan	3:20PM	Flagler A (South Tower)	9
Gupta, A.	24-Jan	2:00PM	Ballroom 5 (South Tower)	24
Gupta, I.	25-Jan	3:40PM	Flagler C (South Tower)	42
Gupta, S.	25-Jan	9:00AM	Coquina Salon D (North Tower)	33
Guziewski, M.C.	26-Jan	4:00PM	Coquina Foyer (North Tower)	60
H				
Hadagalli, K.	24-Jan	4:00PM	Ballroom 1-2 (South Tower)	26
Hahn, R.	24-Jan	9:00AM	Flagler C (South Tower)	17
Halankar, K.K.	23-Jan	2:30PM	Coquina Salon E (North Tower)	12
Halankar, K.K.	25-Jan	4:00PM	Coquina Salon E (North Tower)	43
Halbig, M.C.	24-Jan	2:30PM	Coquina Salon D (North Tower)	23
Hamadouche, I.	25-Jan	4:00PM	Flagler C (South Tower)	42
Hampshire, S.	24-Jan	9:00AM	Coquina Salon D (North Tower)	15
Hao, D.	23-Jan	2:00PM	Coquina Salon F (North Tower)	13
Harb, S.V.	24-Jan	9:30AM	Ballroom 1-2 (South Tower)	19
Harder, B.J.	26-Jan	9:00AM	Flagler C (South Tower)	51
Hayashi, Y.	25-Jan	10:40AM	Coquina Salon B (North Tower)	33
He, P.	26-Jan	9:00AM	Coquina Salon C (North Tower)	56
Heintz, J.	25-Jan	3:30PM	Coquina Salon F (North Tower)	44
Hemmer, E.	23-Jan	5:10PM	Ballroom 3 (South Tower)	15
Hemmer, E.	24-Jan	8:30AM	Coquina Salon G (North Tower)	21
Herrmann, M.	25-Jan	1:30PM	Coquina Salon B (North Tower)	42
Heyl, H.	23-Jan	1:50PM	Flagler C (South Tower)	11
Hinoki, T.	25-Jan	3:40PM	Ballroom 4 (South Tower)	45
Hoffman, L.C.	26-Jan	11:20AM	Flagler C (South Tower)	51
Hoffmann, M.J.	25-Jan	2:30PM	Coquina Salon D (North Tower)	40
Hopkins, P.E.	24-Jan	4:30PM	Coquina Salon A (North Tower)	30
Hoque, M.	24-Jan	11:00AM	Flagler C (South Tower)	18
Horcher, A.	24-Jan	1:50PM	Flagler C (South Tower)	25
Horprathum, M.	24-Jan	3:20PM	Coquina Salon B (North Tower)	23
Hoshino, T.	26-Jan	9:00AM	Ballroom 1-2 (South Tower)	54
Hosoya, N.	25-Jan	8:30AM	Flagler C (South Tower)	34
Hossain, Z.	26-Jan	9:40AM	Coquina Salon H (North Tower)	53
Hossain, Z.	26-Jan	11:40AM	Coquina Salon B (North Tower)	52
Hossain, Z.	26-Jan	5:20PM	Coquina Foyer (North Tower)	60
Hribalova, S.	26-Jan	9:00AM	Coquina Salon A (North Tower)	54
Hu, B.	26-Jan	12:00PM	Ponce de Leon (North Tower)	51
Hu, G.	27-Jan	9:40AM	Ponce de Leon (North Tower)	62
Huang, O.D.	25-Jan	4:00PM	Coquina Salon C (North Tower)	46
Huber, J.W.	25-Jan	9:30AM	Coquina Salon F (North Tower)	36
Hudak, O.	24-Jan	9:20AM	Flagler C (South Tower)	17
Hutterer, P.	23-Jan	4:30PM	Flagler C (South Tower)	11
Hvizdoš, P.	25-Jan	9:10AM	Ballroom 5 (South Tower)	34
I				
Iacopi, F.	25-Jan	10:50AM	Coquina Salon G (North Tower)	38
Ibanez, S.	27-Jan	10:50AM	Ponce de Leon (North Tower)	62
Ihrig, M.	24-Jan	11:40AM	Coquina Salon E (North Tower)	19
Ijiri, M.	26-Jan	3:10PM	Ballroom 5 (South Tower)	57
Ikarashi, Y.	24-Jan	11:40AM	Ballroom 5 (South Tower)	17
Ilyas, S.	25-Jan	11:10AM	Ballroom 3 (South Tower)	40
Imanaka, N.	24-Jan	1:30PM	Coquina Salon F (North Tower)	27
Imanaka, N.	24-Jan	2:40PM	Coquina Salon B (North Tower)	23
Imanaka, N.	26-Jan	10:50AM	Coquina Salon D (North Tower)	50
Ionescu, E.	25-Jan	11:50AM	Ballroom 3 (South Tower)	40
Ionescu, E.	25-Jan	3:30PM	Flagler A (South Tower)	40
Ishiguro, N.	26-Jan	9:00AM	Coquina Salon E (North Tower)	52
Ishikawa, T.	25-Jan	4:40PM	Ponce de Leon (North Tower)	42
Issa, M.A.	25-Jan	11:00AM	Coquina Salon C (North Tower)	38
Iuchi, R.	24-Jan	2:40PM	Ballroom 5 (South Tower)	24

Oral Presenters

Name	Date	Time	Room	Page Number
J				
Jabr, A.	24-Jan	4:30PM	Coquina Salon F (North Tower)	27
Jabr, A.	25-Jan	11:10AM	Ballroom 5 (South Tower)	34
Jang, B.	25-Jan	10:50AM	Flagler C (South Tower)	35
Jang, S.	25-Jan	4:10PM	Coquina Salon F (North Tower)	44
Jarrold, G.	24-Jan	3:40PM	Coquina Salon C (North Tower)	29
Jenkins, M.G.	25-Jan	8:30AM	Ballroom 4 (South Tower)	37
Jenkins, M.G.	25-Jan	8:50AM	Ballroom 4 (South Tower)	37
Jenkins, M.G.	26-Jan	9:30AM	Ballroom 5 (South Tower)	50
Jerred, N.D.	24-Jan	2:10PM	Ballroom 4 (South Tower)	27
Jimba, Y.	24-Jan	11:10AM	Coquina Salon A (North Tower)	22
Jordan, E.H.	23-Jan	1:30PM	Flagler C (South Tower)	11
Joshi, K.	25-Jan	4:20PM	Coquina Salon B (North Tower)	43
Joulain, A.	25-Jan	2:30PM	Ballroom 3 (South Tower)	44
Jribi, K.	26-Jan	11:30AM	Ballroom 5 (South Tower)	50
Juckel, M.	24-Jan	10:20AM	Ponce de Leon (North Tower)	18
Jung, W.	26-Jan	2:30PM	Ponce de Leon (North Tower)	57
K				
Kaewkhao, J.	24-Jan	1:30PM	Coquina Salon B (North Tower)	23
Kaghazchi, P.	24-Jan	3:20PM	Coquina Salon E (North Tower)	26
Kajihara, S.	26-Jan	2:20PM	Coquina Foyer (North Tower)	60
Kamseu, E.	24-Jan	4:00PM	Coquina Salon C (North Tower)	29
Kamseu, E.	26-Jan	11:00AM	Coquina Salon H (North Tower)	54
Kanazawa, S.	24-Jan	11:20AM	Ballroom 5 (South Tower)	17
Kang, S.	26-Jan	11:20AM	Coquina Salon G (North Tower)	53
Kano, R.	26-Jan	9:40AM	Coquina Salon A (North Tower)	54
Kaplan, W.D.	25-Jan	3:20PM	Coquina Salon B (North Tower)	43
Kartuzov, E.	26-Jan	11:50AM	Coquina Salon A (North Tower)	54
Kartuzov, E.	26-Jan	3:50PM	Coquina Salon B (North Tower)	58
Kartuzov, V.	26-Jan	12:10PM	Coquina Salon A (North Tower)	54
Kasamatsu, S.	24-Jan	10:50AM	Coquina Salon E (North Tower)	19
Kata, D.B.	26-Jan	10:00AM	Coquina Salon D (North Tower)	50
Katagiri, T.	25-Jan	2:20PM	Ballroom 1-2 (South Tower)	44
Katayama, Y.	26-Jan	10:50AM	Coquina Salon E (North Tower)	52
Katoh, Y.	24-Jan	8:30AM	Ballroom 4 (South Tower)	20
Katsui, H.	24-Jan	9:30AM	Ballroom 4 (South Tower)	20
Katsui, H.	25-Jan	11:30AM	Ballroom 3 (South Tower)	40
Kawai, K.	24-Jan	2:00PM	Coquina Salon E (North Tower)	26
Kawano, N.	26-Jan	1:30PM	Flagler A (South Tower)	61
Keane, P.F.	25-Jan	2:00PM	Coquina Salon C (North Tower)	46
Kiebach, R.	23-Jan	4:50PM	Ponce de Leon (North Tower)	12
Kikuchi, M.	24-Jan	9:00AM	Ballroom 1-2 (South Tower)	18
Kim, H.	23-Jan	2:00PM	Flagler A (South Tower)	9
Kim, H.	23-Jan	4:10PM	Coquina Salon D (North Tower)	10
Kim, H.	26-Jan	4:20PM	Flagler A (South Tower)	61
Kim, J.	23-Jan	4:20PM	Ballroom 1-2 (South Tower)	12
Kim, J.	24-Jan	2:40PM	Ballroom 1-2 (South Tower)	26
Kim, J.	24-Jan	4:10PM	Coquina Salon B (North Tower)	23
Kim, J.	26-Jan	10:50AM	Ballroom 1-2 (South Tower)	55
Kim, M.	23-Jan	1:40PM	Coquina Salon H (North Tower)	8
Kim, S.	23-Jan	3:50PM	Coquina Salon D (North Tower)	10
Kim, S.	23-Jan	4:40PM	Coquina Salon A (North Tower)	15
Kim, Y.	24-Jan	10:20AM	Coquina Salon D (North Tower)	16
Kim, Y.	25-Jan	9:00AM	Ballroom 1-2 (South Tower)	36
Kimery, A.	26-Jan	9:20AM	Coquina Salon H (North Tower)	53
Kirihara, S.	24-Jan	2:40PM	Coquina Salon H (North Tower)	28
Kisailus, D.	23-Jan	4:10PM	Coquina Salon B (North Tower)	9
Klauke, L.	23-Jan	2:30PM	Coquina Salon C (North Tower)	8
Kluczowski, R.	24-Jan	9:20AM	Ponce de Leon (North Tower)	18
Kobayashi, H.	26-Jan	2:00PM	Coquina Salon E (North Tower)	58
Konegger, T.	24-Jan	9:30AM	Ballroom 3 (South Tower)	22
Kotz-Helmer, F.	24-Jan	1:30PM	Coquina Salon H (North Tower)	28
Koyanagi, T.	25-Jan	4:00PM	Ballroom 4 (South Tower)	45
Krenkel, W.	24-Jan	2:00PM	Coquina Salon D (North Tower)	23
Kroll, P.	25-Jan	9:00AM	Ballroom 3 (South Tower)	39
Kudo, R.	24-Jan	9:40AM	Flagler C (South Tower)	17
Kumar, A.	26-Jan	10:30AM	Flagler A (South Tower)	55
Kumari, M.	24-Jan	2:40PM	Ballroom 3 (South Tower)	30
Kumta, P.N.	25-Jan	10:50AM	Coquina Salon E (North Tower)	36
Kuo, L.	26-Jan	11:10AM	Coquina Salon A (North Tower)	54
Kupecki, J.	23-Jan	4:20PM	Ponce de Leon (North Tower)	12
Kusnezoff, M.	23-Jan	3:40PM	Coquina Salon E (North Tower)	13
Kusnezoff, M.	25-Jan	2:40PM	Ponce de Leon (North Tower)	42
Kusnezoff, M.	26-Jan	9:40AM	Ponce de Leon (North Tower)	51
Kuzmic, N.	26-Jan	2:10PM	Ballroom 5 (South Tower)	57
Kwon, S.	23-Jan	1:30PM	Ballroom 3 (South Tower)	15
L				
Lago, D.C.	27-Jan	9:40AM	Coquina Salon H (North Tower)	63
Laine, R.M.	24-Jan	10:20AM	Coquina Salon E (North Tower)	19
Lam, B.	24-Jan	3:40PM	Coquina Salon H (North Tower)	28
Lambrinou, K.	25-Jan	2:20PM	Ballroom 4 (South Tower)	45
Lambrinou, K.	26-Jan	11:20AM	Ballroom 3 (South Tower)	55
LaSalvia, J.	25-Jan	2:40PM	Coquina Salon B (North Tower)	42
le Febvrier, A.	27-Jan	11:10AM	Coquina Salon G (North Tower)	62
Lecomte-Nana, G.	24-Jan	1:30PM	Coquina Salon C (North Tower)	28
Lecomte-Nana, G.	26-Jan	11:20AM	Coquina Salon H (North Tower)	54
Lee, C.	23-Jan	4:30PM	Coquina Salon D (North Tower)	10
Lee, D.	25-Jan	9:30AM	Ballroom 1-2 (South Tower)	36
Lee, J.	23-Jan	5:00PM	Ballroom 1-2 (South Tower)	12
Lee, J.	24-Jan	2:30PM	Ponce de Leon (North Tower)	25
Lee, K.	23-Jan	1:30PM	Flagler A (South Tower)	9
Lee, K.	25-Jan	10:20AM	Ponce de Leon (North Tower)	35
Lee, K.	25-Jan	2:00PM	Flagler C (South Tower)	41
Lee, S.	24-Jan	10:20AM	Coquina Salon A (North Tower)	22
Lee, S.	24-Jan	2:10PM	Flagler C (South Tower)	25
Lee, S.	24-Jan	3:20PM	Ballroom 3 (South Tower)	30
Lee, S.	24-Jan	3:50PM	Coquina Salon D (North Tower)	23
Lee, S.	26-Jan	11:40AM	Ponce de Leon (North Tower)	51
Lee, Y.	26-Jan	9:00AM	Ponce de Leon (North Tower)	51
Lei, Y.	25-Jan	4:20PM	Ponce de Leon (North Tower)	42
Leite, M.	24-Jan	10:40AM	Coquina Salon G (North Tower)	22
Lepple, M.	23-Jan	2:30PM	Flagler C (South Tower)	11
Leriche, A.L.	25-Jan	3:00PM	Coquina Salon F (North Tower)	44
Li, J.	24-Jan	10:20AM	Coquina Salon F (North Tower)	20
Li, Q.	25-Jan	4:20PM	Flagler A (South Tower)	24
Li, W.	24-Jan	11:20AM	Ponce de Leon (North Tower)	18
Li, X.	23-Jan	1:30PM	Coquina Salon E (North Tower)	12
Li, Z.	24-Jan	9:00AM	Coquina Salon F (North Tower)	19
Lichtenberg, A.	24-Jan	4:40PM	Ballroom 3 (South Tower)	30
Lin, S.	23-Jan	2:00PM	Coquina Salon E (North Tower)	12
Lis, J.	26-Jan	9:10AM	Coquina Salon D (North Tower)	50
Liu, D.	23-Jan	2:20PM	Coquina Salon H (North Tower)	8
Liu, D.	23-Jan	4:00PM	Ballroom 4 (South Tower)	14
Liu, J.	24-Jan	9:40AM	Ponce de Leon (North Tower)	18
Liu, M.	26-Jan	6:00PM	Coquina Foyer (North Tower)	60
Liu, X.	24-Jan	10:40AM	Ponce de Leon (North Tower)	18
Long, J.T.	26-Jan	3:40PM	Flagler A (South Tower)	61
Lopez Honorato, E.	24-Jan	1:30PM	Ballroom 4 (South Tower)	27
Lopez Honorato, E.	24-Jan	1:50PM	Ballroom 4 (South Tower)	27
Louh, N.	25-Jan	3:50PM	Ballroom 5 (South Tower)	41
Lourenco Alves, C.	26-Jan	10:50AM	Coquina Salon A (North Tower)	54
Lowry, D.R.	25-Jan	3:40PM	Coquina Salon A (North Tower)	47
Luceri, A.	24-Jan	3:40PM	Ballroom 1-2 (South Tower)	26
Luckhardt, C.	25-Jan	8:50AM	Flagler C (South Tower)	34
Lv, X.	25-Jan	2:20PM	Flagler C (South Tower)	41
M				
Ma, B.	25-Jan	8:30AM	Ballroom 5 (South Tower)	34
Ma, H.	25-Jan	11:00AM	Coquina Salon F (North Tower)	36
Madan, D.	23-Jan	4:40PM	Ballroom 3 (South Tower)	15
Majdoubi, H.	24-Jan	8:50AM	Coquina Salon C (North Tower)	21
Makurunje, P.	23-Jan	2:50PM	Ballroom 4 (South Tower)	14
Mallick, M.	24-Jan	3:20PM	Flagler A (South Tower)	24
Manaud, J.	24-Jan	3:50PM	Coquina Salon A (North Tower)	29
Martucci, A.	23-Jan	11:50PM	Coquina Salon G (North Tower)	63
Marvel, C.	25-Jan	3:50PM	Coquina Salon B (North Tower)	43
Marvel, C.	26-Jan	2:00PM	Coquina Foyer (North Tower)	60
Massera, J.	23-Jan	3:50PM	Ballroom 1-2 (South Tower)	12
Mathur, S.	26-Jan	8:30AM	Coquina Salon G (North Tower)	53
Matsunaga, K.	26-Jan	8:30AM	Coquina Salon A (North Tower)	54
Matzke, C.	24-Jan	2:20PM	Ballroom 1-2 (South Tower)	26
Mazo, I.	25-Jan	1:50PM	Ballroom 5 (South Tower)	41

Presenting Author List

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Name	Date	Time	Room	Page Number
McAnany, S.	25-Jan	3:30PM	Ballroom 5 (South Tower)	41
McCormack, S.J.	25-Jan	8:30AM	Coquina Salon A (North Tower)	39
Mechnich, P.	25-Jan	4:20PM	Flagler C (South Tower)	42
Medvedovski, E.	23-Jan	1:30PM	Coquina Salon F (North Tower)	13
Medvedovski, E.	25-Jan	10:20AM	Coquina Salon D (North Tower)	33
Mhin, S.	26-Jan	10:20AM	Ballroom 1-2 (South Tower)	55
Michaelis, A.	25-Jan	1:30PM	Coquina Salon D (North Tower)	40
Middleburgh, S.C.	25-Jan	10:20AM	Ballroom 4 (South Tower)	37
Milcarek, R.	26-Jan	10:50AM	Ponce de Leon (North Tower)	51
Milich, M.	24-Jan	4:10PM	Coquina Salon A (North Tower)	30
Miller, C.	24-Jan	4:50PM	Flagler C (South Tower)	25
Minary, M.	24-Jan	3:20PM	Coquina Salon H (North Tower)	28
Mineshige, A.	25-Jan	8:30AM	Coquina Salon B (North Tower)	33
Mirza, F.	24-Jan	4:20PM	Ballroom 5 (South Tower)	25
Mita, W.	25-Jan	4:20PM	Ballroom 1-2 (South Tower)	44
Mitra, R.	26-Jan	10:10AM	Flagler A (South Tower)	55
Molin, S.	25-Jan	9:40AM	Ponce de Leon (North Tower)	35
Montecillo, R.H.	26-Jan	4:10PM	Coquina Salon E (North Tower)	58
Montinaro, D.	23-Jan	2:00PM	Ponce de Leon (North Tower)	11
Moon, K.	25-Jan	3:20PM	Ballroom 1-2 (South Tower)	44
Moore, T.W.	25-Jan	2:20PM	Coquina Salon B (North Tower)	42
Moretti, E.	25-Jan	9:30AM	Coquina Salon G (North Tower)	38
Motz, G.	24-Jan	10:20AM	Ballroom 3 (South Tower)	22
Mungiguerra, S.	25-Jan	10:50AM	Coquina Salon A (North Tower)	39
Muñoz Ferreiro, C.	25-Jan	2:30PM	Ballroom 5 (South Tower)	41
Muracchioli, M.	25-Jan	9:00AM	Coquina Salon C (North Tower)	38
Myung, J.	26-Jan	3:20PM	Ponce de Leon (North Tower)	57
N				
Naccache, R.	24-Jan	2:30PM	Coquina Salon G (North Tower)	29
Naguib, M.	26-Jan	10:20AM	Ballroom 3 (South Tower)	55
Naito, R.	24-Jan	2:20PM	Ballroom 5 (South Tower)	24
Nakai, A.	25-Jan	4:00PM	Flagler A (South Tower)	41
Nakamura, Y.	24-Jan	11:20AM	Flagler A (South Tower)	16
Nakashima, Y.	23-Jan	4:50PM	Coquina Salon C (North Tower)	8
Nakashima, Y.	24-Jan	10:20AM	Coquina Salon B (North Tower)	16
Nakayama, T.	24-Jan	2:20PM	Coquina Salon B (North Tower)	23
Nakayama, T.	25-Jan	4:20PM	Coquina Salon D (North Tower)	40
Nam, G.	23-Jan	2:50PM	Coquina Salon D (North Tower)	10
Nance, J.	24-Jan	10:40AM	Ballroom 5 (South Tower)	17
Naraparaju, R.	25-Jan	9:30AM	Flagler C (South Tower)	34
Narayan, R.	24-Jan	4:20PM	Coquina Salon D (North Tower)	23
Nelson, T.	24-Jan	3:20PM	Ballroom 5 (South Tower)	24
Nelson, W.	24-Jan	4:40PM	Coquina Salon B (North Tower)	24
Nemani, S.	23-Jan	4:20PM	Coquina Salon A (North Tower)	15
Ngo, N.	25-Jan	4:00PM	Ballroom 1-2 (South Tower)	44
Nguyen, N.	25-Jan	3:50PM	Coquina Salon G (North Tower)	47
Nguyen, S.T.	25-Jan	11:10AM	Ballroom 1-2 (South Tower)	37
Nguyen, T.L.	26-Jan	11:40AM	Coquina Salon G (North Tower)	53
Nicholas, J.D.	26-Jan	2:00PM	Ponce de Leon (North Tower)	57
Nielsch, K.	24-Jan	2:00PM	Flagler A (South Tower)	24
Niemczyk, A.	24-Jan	9:00AM	Ponce de Leon (North Tower)	18
Nishioka, T.	25-Jan	2:50PM	Flagler A (South Tower)	40
Nogueira Nakashima, R.	26-Jan	5:30PM	Ponce de Leon (North Tower)	58
Nojeh, A.	24-Jan	9:00AM	Flagler A (South Tower)	16
O				
O'Masta, M.	23-Jan	5:10PM	Coquina Salon C (North Tower)	8
O'Shea, N.M.	26-Jan	5:00PM	Flagler A (South Tower)	61
Obradovic, N.	25-Jan	9:00AM	Coquina Salon A (North Tower)	39
Ogasawara, K.	24-Jan	11:10AM	Coquina Salon B (North Tower)	16
Ogihara, S.	25-Jan	1:30PM	Flagler A (South Tower)	40
Ogundiran, M.B.	25-Jan	1:30PM	Coquina Salon C (North Tower)	46
Ohji, T.	24-Jan	8:40AM	Coquina Salon D (North Tower)	15
Ohtaki, M.	23-Jan	3:50PM	Flagler A (South Tower)	9
Oliveira, O.N.	25-Jan	9:30AM	Ballroom 3 (South Tower)	39
Olson, N.	26-Jan	10:40AM	Coquina Salon H (North Tower)	54
Opila, E.J.	25-Jan	10:20AM	Coquina Salon A (North Tower)	39
Orta Guerra, R.	24-Jan	3:50PM	Coquina Salon F (North Tower)	27
Osaka, A.	23-Jan	2:00PM	Ballroom 1-2 (South Tower)	12
Osborne, R.	26-Jan	4:00PM	Flagler A (South Tower)	61
Oshima, S.	25-Jan	2:00PM	Flagler A (South Tower)	40
Ostdiek, G.C.	23-Jan	3:40PM	Ballroom 5 (South Tower)	10
Ozcan, H.	26-Jan	1:50PM	Ballroom 5 (South Tower)	57
P				
Panda, D.K.	25-Jan	11:20AM	Coquina Salon E (North Tower)	36
Park, J.	24-Jan	1:30PM	Ballroom 5 (South Tower)	24
Park, M.	25-Jan	10:20AM	Ballroom 1-2 (South Tower)	36
Patrun, D.	25-Jan	11:40AM	Coquina Salon E (North Tower)	36
Patrun, D.	26-Jan	10:40AM	Coquina Salon G (North Tower)	53
Payne, H.	26-Jan	10:40AM	Coquina Salon B (North Tower)	52
Pedzich, Z.	26-Jan	10:10AM	Ballroom 5 (South Tower)	50
Pelanconi, M.	25-Jan	11:20AM	Coquina Salon H (North Tower)	38
Pérez Román, B.	26-Jan	11:00AM	Coquina Salon B (North Tower)	52
Petrie, C.	24-Jan	11:40AM	Ballroom 4 (South Tower)	20
Petry, N.	25-Jan	11:20AM	Coquina Salon A (North Tower)	39
Pinna, N.	24-Jan	10:10AM	Coquina Salon G (North Tower)	21
Pinna, N.	26-Jan	9:00AM	Coquina Salon G (North Tower)	53
Pirzada, T.J.	23-Jan	2:00PM	Ballroom 5 (South Tower)	10
Plain, J.	23-Jan	1:30PM	Coquina Salon G (North Tower)	14
Poerschke, D.L.	25-Jan	2:40PM	Flagler C (South Tower)	41
Pollard, J.P.	25-Jan	11:20AM	Ballroom 4 (South Tower)	37
Polo, F.	23-Jan	2:00PM	Coquina Salon G (North Tower)	14
Porter, K.	24-Jan	10:20AM	Coquina Salon H (North Tower)	21
Posey, N.D.	24-Jan	11:40AM	Ballroom 3 (South Tower)	23
Pralong, V.	26-Jan	11:20AM	Coquina Salon E (North Tower)	53
Prikhna, T.	24-Jan	8:40AM	Flagler C (South Tower)	17
Prikhna, T.	25-Jan	9:30AM	Ballroom 5 (South Tower)	34
Prud'homme, É.	24-Jan	11:10AM	Coquina Salon C (North Tower)	21
Przybyla, C.P.	26-Jan	1:30PM	Coquina Foyer (North Tower)	60
Puchas, G.	24-Jan	3:40PM	Ballroom 5 (South Tower)	24
Punongbayan, A.M.	26-Jan	5:40PM	Coquina Foyer (North Tower)	60
Pylypko, S.	23-Jan	2:30PM	Ponce de Leon (North Tower)	11
Q				
Qadeer, A.	26-Jan	2:00PM	Coquina Salon C (North Tower)	61
Quinn, G.D.	25-Jan	5:00PM	Coquina Salon B (North Tower)	43
Quinn, L.	24-Jan	11:20AM	Ballroom 1-2 (South Tower)	19
Quinn, L.	27-Jan	8:50AM	Coquina Salon H (North Tower)	63
Qureshi, K.	26-Jan	1:30PM	Coquina Salon C (North Tower)	61
R				
Raja, N.	24-Jan	2:00PM	Ballroom 1-2 (South Tower)	26
Ranaiefar, M.	26-Jan	2:30PM	Ballroom 5 (South Tower)	57
Rapp, B.E.	23-Jan	1:30PM	Coquina Salon B (North Tower)	9
Ren, Z.	24-Jan	1:30PM	Flagler A (South Tower)	24
Ressler, A.	23-Jan	3:20PM	Ballroom 1-2 (South Tower)	12
Rettenwander, D.	23-Jan	3:10PM	Coquina Salon E (North Tower)	13
Richards, R.M.	23-Jan	3:20PM	Ballroom 3 (South Tower)	15
Ridley, M.	26-Jan	10:20AM	Flagler C (South Tower)	51
Riedel, R.	25-Jan	9:30AM	Coquina Salon E (North Tower)	35
Riedel, R.	25-Jan	2:00PM	Coquina Salon D (North Tower)	40
Riedl, H.	26-Jan	9:00AM	Ballroom 3 (South Tower)	55
Riffe, W.	23-Jan	4:10PM	Flagler C (South Tower)	11
Rogers, T.J.	26-Jan	11:50AM	Ballroom 5 (South Tower)	50
Rohde, M.	25-Jan	3:40PM	Coquina Salon E (North Tower)	43
Romeo, A.	25-Jan	1:30PM	Coquina Salon G (North Tower)	46
Romero, E.	25-Jan	2:10PM	Coquina Salon H (North Tower)	45
Rossignol, S.	25-Jan	2:30PM	Coquina Salon C (North Tower)	46
Rudzik, T.	26-Jan	3:20PM	Flagler A (South Tower)	61
Rueschhoff, L.M.	23-Jan	3:20PM	Coquina Salon A (North Tower)	14
Ruggles-Wrenn, M.	23-Jan	1:30PM	Ballroom 5 (South Tower)	10
Ryan, K.M.	26-Jan	3:00PM	Coquina Salon G (North Tower)	59
S				
S.	24-Jan	2:00PM	Coquina Salon C (North Tower)	28
Sá Ribeiro, M.G.	24-Jan	3:20PM	Coquina Salon C (North Tower)	29
Sa Ribeiro, R.A.	25-Jan	10:40AM	Coquina Salon C (North Tower)	38
Saad, A.A.	24-Jan	10:40AM	Flagler C (South Tower)	18
Sahu, S.K.	25-Jan	9:20AM	Ponce de Leon (North Tower)	35
Saito, H.	25-Jan	3:40PM	Ballroom 1-2 (South Tower)	44

Oral Presenters

Name	Date	Time	Room	Page Number
Sajgalik, P.	24-Jan	10:50AM	Coquina Salon D (North Tower)	16
Salanova, A.	26-Jan	11:00AM	Flagler C (South Tower)	51
Salem, J.	23-Jan	8:50AM	Coquina Salon D (North Tower)	8
Samuel, D.	26-Jan	10:40AM	Coquina Salon C (North Tower)	56
Sarraf, F.	25-Jan	1:50PM	Coquina Salon H (North Tower)	45
Scanferla, P.	26-Jan	10:20AM	Coquina Salon C (North Tower)	56
Schaefer, M.C.	25-Jan	11:40AM	Coquina Salon H (North Tower)	38
Schaefer, M.C.	25-Jan	3:20PM	Ballroom 4 (South Tower)	45
Schauperl, R.	23-Jan	5:20PM	Ponce de Leon (North Tower)	12
Schefold, J.	26-Jan	4:50PM	Ponce de Leon (North Tower)	57
Schierning, G.	25-Jan	9:30AM	Flagler A (South Tower)	33
Schilm, J.	25-Jan	8:30AM	Coquina Salon H (North Tower)	37
Schlacher, J.	24-Jan	9:20AM	Coquina Salon H (North Tower)	20
Schlacher, J.	25-Jan	10:50AM	Ballroom 5 (South Tower)	34
Schneider, T.	24-Jan	10:20AM	Flagler C (South Tower)	18
Schuh, C.A.	24-Jan	9:30AM	Coquina Salon D (North Tower)	15
Schwentenwein, M.	24-Jan	4:00PM	Coquina Salon H (North Tower)	28
Schwentenwein, M.	26-Jan	3:30PM	Coquina Salon H (North Tower)	59
Sciti, D.	23-Jan	3:50PM	Coquina Salon A (North Tower)	15
Sciti, D.	26-Jan	10:20AM	Coquina Salon B (North Tower)	52
Seidel, J.	24-Jan	10:40AM	Coquina Salon B (North Tower)	16
Sekino, T.	26-Jan	3:20PM	Coquina Salon D (North Tower)	56
Selopal, G.	25-Jan	2:30PM	Coquina Salon G (North Tower)	47
Seshadri, A.	25-Jan	2:00PM	Ballroom 4 (South Tower)	45
Shao, G.	25-Jan	10:30AM	Coquina Salon F (North Tower)	36
Sharma, V.	24-Jan	10:40AM	Coquina Salon F (North Tower)	20
Shen, F.	23-Jan	5:00PM	Coquina Salon E (North Tower)	13
Shifa, T.A.	25-Jan	3:20PM	Coquina Salon G (North Tower)	47
Shimanoe, K.	23-Jan	1:50PM	Coquina Salon D (North Tower)	9
Shimanoe, K.	23-Jan	2:10PM	Coquina Salon D (North Tower)	10
Shin, T.	26-Jan	8:30AM	Ponce de Leon (North Tower)	51
Shuck, C.E.	25-Jan	4:20PM	Ballroom 3 (South Tower)	45
Siaj, M.	23-Jan	2:30PM	Ballroom 3 (South Tower)	15
Siaj, M.	24-Jan	2:00PM	Coquina Salon G (North Tower)	29
Siciliano, U.	25-Jan	3:40PM	Coquina Salon C (North Tower)	46
Singh, D.	24-Jan	9:40AM	Coquina Salon H (North Tower)	20
Singh, D.	25-Jan	10:50AM	Coquina Salon D (North Tower)	33
Singh, G.	23-Jan	2:00PM	Ballroom 3 (South Tower)	15
Singh, G.	23-Jan	4:20PM	Ballroom 4 (South Tower)	14
Singh, G.	25-Jan	2:40PM	Ballroom 4 (South Tower)	45
Singh, P.	25-Jan	3:50PM	Coquina Salon D (North Tower)	40
Sirot, R.A.	26-Jan	3:30PM	Ballroom 5 (South Tower)	57
Skibinski, S.	24-Jan	4.20PM	Ballroom 1-2 (South Tower)	26
Smeacetto, F.	27-Jan	9:00AM	Ponce de Leon (North Tower)	62
Smith, C.	23-Jan	3:20PM	Ballroom 5 (South Tower)	10
Smith, J.	26-Jan	2:30PM	Flagler A (South Tower)	61
Smith, S.M.	23-Jan	2:40PM	Coquina Salon A (North Tower)	14
Smith, S.M.	25-Jan	9:40AM	Coquina Salon A (North Tower)	39
Sodisetty, V.	24-Jan	11:00AM	Ballroom 5 (South Tower)	17
Sofowora, E.	25-Jan	4:20PM	Flagler A (South Tower)	41
Somers, N.	25-Jan	10:20AM	Coquina Salon H (North Tower)	37
Song, H.	24-Jan	9:30AM	Coquina Salon B (North Tower)	16
Song, J.	24-Jan	11:20AM	Coquina Salon E (North Tower)	19
Soraru, G.D.	24-Jan	2:00PM	Ballroom 3 (South Tower)	30
Sougrati, M.	26-Jan	9:30AM	Coquina Salon E (North Tower)	52
Speck, O.	23-Jan	2:40PM	Coquina Salon B (North Tower)	9
Speck, T.	23-Jan	3:50PM	Coquina Salon B (North Tower)	9
Speck, T.	24-Jan	10:50AM	Ballroom 1-2 (South Tower)	19
Spicer, J.B.	25-Jan	9:30AM	Coquina Salon H (North Tower)	37
Spirrett, F.	24-Jan	2:20PM	Coquina Salon H (North Tower)	28
Srivastava, A.	25-Jan	1:30PM	Ballroom 3 (South Tower)	44
Steadman, B.	24-Jan	4:00PM	Ballroom 5 (South Tower)	24
Stievano, L.	26-Jan	2:30PM	Coquina Salon E (North Tower)	58
Stoecker, T.	24-Jan	1:30PM	Flagler C (South Tower)	25
Stokes, J.L.	24-Jan	4:30PM	Flagler C (South Tower)	25
Su, Y.	23-Jan	2:00PM	Coquina Salon C (North Tower)	8
Subhash, G.	24-Jan	10:50AM	Ballroom 4 (South Tower)	20
Subhash, G.	26-Jan	8:30AM	Coquina Salon B (North Tower)	52
Suehiro, M.	27-Jan	10:20AM	Ponce de Leon (North Tower)	62
Suematsu, H.	23-Jan	4:00PM	Coquina Salon F (North Tower)	13
Suematsu, H.	24-Jan	3:50PM	Coquina Salon B (North Tower)	23
Suematsu, H.	26-Jan	8:30AM	Coquina Salon D (North Tower)	49
Suematsu, K.	23-Jan	3:30PM	Coquina Salon D (North Tower)	10
Sugahara, Y.	25-Jan	10:20AM	Ballroom 3 (South Tower)	39
Suyama, S.	24-Jan	11:20AM	Ballroom 4 (South Tower)	20
Suzuki, T.S.	26-Jan	8:50AM	Coquina Salon D (North Tower)	50
Svintsitski, R.	25-Jan	11:00AM	Coquina Salon H (North Tower)	38
Swab, J.	26-Jan	2:00PM	Coquina Salon B (North Tower)	58
Swift, G.	25-Jan	11:30AM	Ballroom 5 (South Tower)	34
Szczodra, A.	23-Jan	2:30PM	Ballroom 1-2 (South Tower)	12
Sztymela, K.	25-Jan	4:00PM	Coquina Salon H (North Tower)	46
T				
Tabassum, A.	26-Jan	2:20PM	Ballroom 3 (South Tower)	61
Tafu, M.	26-Jan	9:30AM	Ballroom 1-2 (South Tower)	55
Takemura, H.	25-Jan	11:20AM	Coquina Salon D (North Tower)	33
Tamayo, A.	24-Jan	9:00AM	Ballroom 3 (South Tower)	22
Tanaka, S.	23-Jan	2:20PM	Coquina Salon F (North Tower)	13
Tang, M.	23-Jan	2:00PM	Ballroom 4 (South Tower)	13
Taraborelli, S.	26-Jan	11:20AM	Coquina Salon B (North Tower)	52
Tarancón, A.	25-Jan	8:30AM	Ponce de Leon (North Tower)	35
Tatami, J.	24-Jan	11:50AM	Coquina Salon D (North Tower)	16
Tatami, J.	24-Jan	2:00PM	Coquina Salon B (North Tower)	23
Tauber, F.J.	23-Jan	3:20PM	Coquina Salon B (North Tower)	9
Taylor, C.	24-Jan	3:20PM	Ballroom 4 (South Tower)	28
Taylor, C.N.	24-Jan	3:50PM	Ballroom 4 (South Tower)	28
Terasaka, S.	26-Jan	3:30PM	Coquina Foyer (North Tower)	60
Terrani, K.	24-Jan	2:30PM	Ballroom 4 (South Tower)	27
Thompson, G.	24-Jan	1:30PM	Coquina Salon A (North Tower)	29
Thorpe, F.	23-Jan	3:50PM	Coquina Salon C (North Tower)	8
to Baben, M.	24-Jan	10:20AM	Ballroom 4 (South Tower)	20
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Toda, K.	26-Jan	10:50AM	Flagler A (South Tower)	55
Topfer, J.	24-Jan	2:30PM	Flagler A (South Tower)	24
Toprak, M.S.	26-Jan	1:30PM	Coquina Salon G (North Tower)	59
Toprak, M.S.	27-Jan	9:00AM	Coquina Salon G (North Tower)	62
Torrell, M.	25-Jan	9:00AM	Ponce de Leon (North Tower)	35
Trachenko, K.	25-Jan	10:20AM	Flagler A (South Tower)	34
Triamnak, N.	24-Jan	9:00AM	Coquina Salon B (North Tower)	16
Trindade, A.C.	25-Jan	9:30AM	Coquina Salon C (North Tower)	38
Trindade, A.C.	25-Jan	10:20AM	Coquina Salon C (North Tower)	38
Tsai, P.	24-Jan	8:30AM	Coquina Salon E (North Tower)	19
Tsipas, S.A.	25-Jan	3:20PM	Ballroom 3 (South Tower)	45
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Ugata, Y.	25-Jan	1:30PM	Coquina Salon E (North Tower)	43
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Vakhshouri, M.	25-Jan	3:10PM	Ballroom 5 (South Tower)	41
Valle, M.	25-Jan	4:10PM	Ballroom 5 (South Tower)	41
Varghese, O.K.	25-Jan	2:00PM	Coquina Salon G (North Tower)	46
Venkatachalam, V.	23-Jan	4:20PM	Ballroom 5 (South Tower)	10
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Vetrone, F.	25-Jan	10:20AM	Coquina Salon G (North Tower)	38
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Vignoles, G.L.	24-Jan	1:30PM	Coquina Salon D (North Tower)	23
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Wachsman, E.D.	25-Jan	9:00AM	Coquina Salon E (North Tower)	35
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Wang, H.	25-Jan	9:00AM	Coquina Salon H (North Tower)	37

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Monday, January 23, 2023

Plenary Session

Room: Coquina Salon D (North Tower)

Session Chairs: Palani Balaya, National University of Singapore; Young-Wook Kim, University of Seoul

8:30 AM

Opening Remarks and Awards

8:50 AM

(ICACC-PLEN-001-2023) Testing and Design of Ceramic Structural Materials and Components at NASA

J. Salem*[1]

1. NASA Glenn Research Center, Materials and Structures, USA

9:30 AM

(ICACC-PLEN-002-2023) Additive manufacturing of ceramics from liquid feedstocks

P. Colombo*[1]

1. University of Padova, Industrial Engineering, Italy

10:10 AM

Break

10:40 AM

(ICACC-PLEN-003-2023) Westinghouse fuel innovation leveraging advanced ceramics

R. Baranwal*[1]

1. Westinghouse Electric Company, USA

11:20 AM

(ICACC-PLEN-004-2023) New Challenges for Ceramic Additive Manufacturing

H. Yun*[1]

1. Korea Institute of Materials Science, Republic of Korea

Special Focused Session on Diversity, Entrepreneurship, and Commercialization

Jubilee Golden Diversity Awards; Entrepreneurship, and Commercialization

Room: Coquina Salon H (North Tower)

Session Chair: Surojit Gupta, University of North Dakota

1:30 PM

Opening Remarks

1:40 PM

(ICACC-DIV-001-2023) Design and Manufacturing of Smart Materials and Structures (Invited)

M. Kim*[1]

1. Sungkyunkwan University, Republic of Korea

2:20 PM

(ICACC-DIV-002-2023) Understanding Failure Mechanisms in Advanced Ceramic Materials at Elevated Temperatures: From Nuclear Graphite, TRISO to Ceramic-Matrix Composites (Invited)

D. Liu*[1]

1. University of Bristol, United Kingdom

3:00 PM

(ICACC-DIV-003-2023) Materials Discovery for Lunar Dust Tolerant Applications (Invited)

V. L. Wiesner*[1]

1. NASA Langley Research Center, Advanced Materials and Processing Branch, USA

12th Global Young Investigator Forum

Global Young Investigator Forum

Room: Coquina Salon C (North Tower)

Session Chairs: Theresa Davey, Tohoku University; Kaline Furlan, Hamburg University of Technology

1:30 PM

(ICACC-GYIF-001-2023) MAX Phases in Extreme Environments (Invited)

C. Wang*[1]

1. Peking University, School of Physics, China

2:00 PM

(ICACC-GYIF-002-2023) Reactive molecular dynamics simulations clarifying the effect of carbon nanotube orientations on mechanical properties of SiC/CNT composites (Invited)

Y. Su*[1]; Y. Asano[1]; Q. Chen[1]; Y. Ootani[1]; N. Ozawa[2]; M. Kubo[1]

1. Tohoku University, Institute for Materials Research, Japan
2. Tohoku University, New Industry Creation Hatchery Center, Japan

2:30 PM

(ICACC-GYIF-003-2023) Surface grafted radical polymerization on spherical clusters of iron oxide nanoparticles (Invited)

L. Klauke*[1]; M. Kampferbeck[1]; C. von Bredow[1]; A. Meyer[1]; T. Vossmeyer[1]

1. University of Hamburg, Physical Chemistry, Germany

3:00 PM

Break

3:20 PM

(ICACC-GYIF-004-2023) Reactive spark plasma sintering of the high-entropy diboride ($Hf_{0.2}Nb_{0.2}Ta_{0.2}Ti_{0.2}Zr_{0.2})B_2$ (Invited)

K. Acord*[1]; D. Miracle[1]; L. M. Rueschhoff[1]

1. Air Force Research Lab, USA

3:50 PM

(ICACC-GYIF-005-2023) Conical Nozzle Levitator Equipped with Dual Lasers for High Temperature Testing (Invited)

F. Thorpe*[1]; S. J. McCormack[2]

1. University of California, Davis, Chemical Engineering/Materials Science, USA
2. University of California, Davis, Materials Science and Engineering, USA

4:20 PM

(ICACC-GYIF-006-2023) Microstructural Engineering of Alumina via Magnetic Powder Processing (Invited)

B. Conry*[1]; J. B. Harley[2]; M. R. Tonks[3]; M. S. Kesler[4]; A. Krause[1]

1. Carnegie Mellon University, Materials Science and Engineering, USA
2. University of Florida, Electrical and Computer Engineering, USA
3. University of Florida, Materials Science and Engineering, USA
4. Oak Ridge National Lab, USA

4:50 PM

(ICACC-GYIF-007-2023) Preparation of silicon nitride ceramics with high mechanical strength and thermal conductivity

Y. Nakashima*[1]; Y. Zhou[1]; K. Hirao[1]; M. Fukushima[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

5:10 PM

(ICACC-GYIF-008-2023) Processing of Preceramic Polymer-Based Ceramic Composites (Invited)

M. O'Masta*[1]; E. Stonkevitch[1]; E. Wernick[1]; P. Bui[1]; T. Schaedler[1]

1. HRL Laboratories, USA

FS1: Bioinspiration, Green Processing, and Related Technologies of Advanced Materials

Bioinspiration, Green Processing, and Related Technologies of Advanced Materials I

Room: Coquina Salon B (North Tower)

Session Chair: Thomas Speck, University of Freiburg

1:30 PM

(ICACC-FS1-001-2023) The Glassomer Technology – a nanocomposite approach to high-resolution glass structuring (Invited)

B. E. Rapp*[1]

1. Freiburg University, Department of Microsystems Technology, Germany

2:00 PM

(ICACC-FS1-002-2023) High resolution 3D printing of biocomposites for bioinspired materials

D. Böcherer*[1]; Y. Li[1]; B. E. Rapp[1]; D. Helmer[1]

1. University of Freiburg, Department of Microsystems Engineering, Germany

2:20 PM

(ICACC-FS1-003-2023) Liquid crystalline elastomer photoresists for microrobot 3D printing

B. Rashid Hanif[1]; S. Nocentini[2]; D. Martella[2]; C. Parmeggiani[2]; R. Taboryski[1]; D. Wiersma[2]; A. Bunea*[1]

1. Technical University of Denmark, DTU Nanolab, Denmark
2. European Laboratory for Non-linear Spectroscopy, Italy

2:40 PM

(ICACC-FS1-004-2023) Development of a cellular actuator inspired by the motor cells of grass leaves

O. Speck*[1]; A. Mader[2]; M. Langer[3]; J. Knippers[2]

1. University of Freiburg, Cluster of Excellence livMatS, Germany
2. University of Stuittgart, Institute of Building Structures and Structural Design (ITKE), Germany
3. University of Freiburg, Plant Biomechanics Group, Botanic Garden, Germany

3:00 PM

Break

Bioinspiration, Green Processing, and Related Technologies of Advanced Materials II

Room: Coquina Salon B (North Tower)

Session Chair: Ada-Ioana Bunea, Technical University of Denmark

3:20 PM

(ICACC-FS1-005-2023) Multi-material artificial Venus flytrap demonstrator combining principles of two snap-trap motions in plants (Invited)

F. J. Tauber*[1]; P. Auth[1]; J. Teichmann[1]; T. Speck[2]

1. University of Freiburg, EXC livMatS / Plant Biomechanics Group Freiburg / Botanical Garden Freiburg, Germany
2. University of Freiburg, Germany

3:50 PM

(ICACC-FS1-006-2023) 3D-printed bioinspired devices for micro-filtering and online analysis of washing suds in greener washing machines

T. Speck*[1]; U. Schaumann[2]; T. Kampowski[1]; K. Ulrich[1]; M. Thielen[1]; G. Bold[1]; M. Langer[1]; T. Masselter[1]

1. University of Freiburg, Germany
2. E.G.O. Elektro-Gerätebau Oberderdingen GmbH, Germany

4:10 PM

(ICACC-FS1-007-2023) Nanoarchitected Biological Ceramic Composites: Mitigation of Catastrophic Damage (Invited)

D. Kisailus*[1]

1. University of California at Irvine, Materials Science and Engineering, USA

4:40 PM

General Discussion

FS2: Materials for Thermoelectric and Thermionic Energy Conversion

Bulk Thermoelectric Materials I

Room: Flagler A (South Tower)

Session Chair: Michitaka Ohtaki, Kyushu University

1:30 PM

(ICACC-FS2-001-2023) Engineering of Materials Parameters for High-Performance Thermoelectric Materials (Invited)

K. Lee*[1]

1. Yonsei University, Republic of Korea

2:00 PM

(ICACC-FS2-002-2023) Approach to Determine the Density-of-States Effective Mass with Carrier Concentration-Dependent Seebeck Coefficient (Invited)

K. Lee[2]; S. Kim[1]; J. Lim[3]; J. Cho[4]; H. Yang[3]; H. Kim*[1]

1. University of Seoul, Republic of Korea
2. Yonsei University, Republic of Korea
3. Hongik University, Republic of Korea
4. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

3:00 PM

Break

Bulk Thermoelectric Materials II

Room: Flagler A (South Tower)

Session Chair: Kyu Hyoung Lee, Yonsei University

3:20 PM

(ICACC-FS2-003-2023) Defect chemistry and functionalisation of the conductive network in ternary and quaternary Cu-based sulfides (Invited)

E. Guilmeau*[1]

1. CNRS CRISMAT, France

3:50 PM

(ICACC-FS2-004-2023) High-temperature Thermoelectric Properties of Tungsten-based Magnéli Phase Oxide $(W_{1-x}Ti_x)_{18}O_{49}$

M. Ohtaki*[1]; N. Q. Tran[1]; K. Suekuni[1]

1. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan

FS3: Nanostructures and Low-Dimensional Materials for Chemical Sensors

Nanostructures and Low-Dimensional Materials for Chemical Sensors

Room: Coquina Salon D (North Tower)

Session Chairs: Ho Won Jang, Seoul National University; Koichi Suematsu, Kyushu University; Hyung Gi Byun, Kangwon National University; Kengo Shimanoe, Kyushu University

1:30 PM

(ICACC-FS3-001-2023) A way to standardize odor metadata from Electronic Nose for Olfactory-enhanced multimedia

H. Byun*[1]

1. Kangwon National University, Electronics, Information & Communication Eng., Republic of Korea

1:50 PM

(ICACC-FS3-002-2023) Development of micro gas sensors using new solid electrolyte for detection of oxygen and acidic gases

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., R&D Center, Japan

2:10 PM

(ICACC-FS3-003-2023) Design of MEMS-type gas sensor using metal oxides semiconductor for super selectivity

K. Shimanoe*[1]; K. Suematsu[1]; K. Watanabe[1]

1. Kyushu University, Japan

2:30 PM

(ICACC-FS3-004-2023) Luminescent gold nanoclusters by pulsed laser ablation in water: Modulation of the photoluminescent response by the interaction with heavy metal ions

T. Janqau[2]; G. Concas[2]; Q. Zaman[3]; N. Daldosso*[1]; F. Enrichi[1]; T. Del Rosso[2]

1. University of Verona, Italy
2. Pontificia Universidade Catolica, Fisica, Brazil
3. University of Buner, Physics, Pakistan

2:50 PM

(ICACC-FS3-005-2023) Visible light-activated NO_2 gas sensor based on 2-dimensional SnS_2 nanoflowers

G. Nam*[1]; H. Jang[1]

1. Seoul National University, Republic of Korea

3:10 PM

Break

3:30 PM

(ICACC-FS3-006-2023) Materials Design for the Thermally Modulated Semiconductor Gas Sensors: Composite of the $Ba_{0.9}La_{0.1}FeO_3$ and SnO_2 for Ethanol Sensing

K. Suematsu*[1]; Y. Hiroyama[1]; K. Watanabe[1]; K. Shimanoe[1]

1. Kyushu University, Japan

3:50 PM

(ICACC-FS3-007-2023) Chemoresistive Gas Sensing Properties of Tailored Graphene Micropatterns by Wafer-Scale Direct Transfer

S. Kim*[1]; H. Jang[1]

1. Seoul National University, Republic of Korea

4:10 PM

(ICACC-FS3-008-2023) Sensitive taste sensors using graphene decorated with metal or nafion for high selectivity to glucose and pH

H. Kim*[1]; C. Lee[1]; H. Jang[1]

1. Seoul National University, Republic of Korea

4:30 PM

(ICACC-FS3-009-2023) Sensitive taste sensors using surface tailored graphene for high selectivity to salt

C. Lee*[1]; H. Kim[1]; H. Jang[1]

1. Seoul National University, Materials Science and Engineering, Republic of Korea

S1: Mechanical Behavior and Performance of Ceramics & Composites

Thermo-mechanical Performance of Ceramic Matrix Composites (CMCs) in Various Environments

Room: Ballroom 5 (South Tower)

Session Chairs: Robert Goldberg, NASA Glenn Research Center; Gerard Vignoles, University Bordeaux; Craig Przybyla, Air Force Research Laboratory

1:30 PM

(ICACC-S1-001-2023) To drill or not to drill? - Creep of an oxide-oxide composite with diamond-drilled effusion holes at elevated temperature (Invited)

M. Harkins[1]; M. Ruggles-Wrenn*[1]

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

2:00 PM

(ICACC-S1-002-2023) Effects of processing parameters and layup techniques on the creep properties of an all Alumina oxide CMCs used for sealing applications at 1100°C (Invited)

T. J. Pirzada*[1]; J. Marrow[1]; M. Galano[1]; L. J. Vandeperre[2]; J. Al-Lami[2]

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

2:30 PM

(ICACC-S1-003-2023) Investigation of the high-temperature behavior of oxide-oxide ceramic matrix composites using in situ X-ray tomography and digital volume correlation (Invited)

P. Forna-Kreutzer*[1]; J. Ell[2]; H. Barnard[3]; I. Edmonds[4]; R. O. Ritchie[2]; D. Liu[1]

1. University of Bristol, School of Physics, United Kingdom
2. University of California, Department of Materials Science & Engineering, USA
3. Lawrence Berkeley National Laboratory, Advanced Light Source, USA
4. Rolls-Royce plc, United Kingdom

3:00 PM

Break

3:20 PM

(ICACC-S1-004-2023) Effects of cooling holes on SiC/SiC CMC strength and durability

C. Smith*[1]; S. Kalluri[2]; R. Bhatt[2]; M. J. Presby[1]

1. NASA Glenn Research Center, USA
2. HX5, USA

3:40 PM

(ICACC-S1-005-2023) Intermediate Temperature Oxidation of a SiC/SiC Composite with Turbine Cooling Holes

G. C. Ostdiek*[1]; R. J. Kerans[2]; G. Jefferson[3]; J. Pierce[4]

1. US Air Force, AFRL/RQTI, USA
2. Air Force Research Lab, Materials & Manufacturing Dir (emeritus), USA
3. USAF, RXCC, USA
4. University of Dayton, Research Institute, USA

4:00 PM

(ICACC-S1-006-2023) Tensile Behavior of 2700°F EBC-CMC System after High Temperature Steam Exposure

A. S. Almansour*[1]; J. D. Kiser[1]; K. Lee[2]; D. Gorican[3]; J. Setlock[4]

1. NASA Glenn Research Center, Ceramic & Polymer Composites Branch, USA
2. NASA Glenn Research Center, Environmental Effects & Coatings Branch, USA
3. HX5, LLC at NASA Glenn, Ceramic & Polymer Composites Branch, USA
4. University of Toledo at NASA Glenn, Environmental Effects & Coatings Branch, USA

4:20 PM

(ICACC-S1-007-2023) Thermomechanical properties of UHTCMCs produced using the RF-CVI technique (Invited)

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

1. University of Birmingham, Metallurgy and Materials, United Kingdom
2. Deutsches Zentrum für Luft-und Raumfahrt, DLR, Germany

4:50 PM

(ICACC-S1-008-2023) High-Temperature Mechanical Testing of Unidirectional SiC/SiC Composites using a Versatile Lamp Furnace

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

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

5:10 PM

(ICACC-S1-009-2023) Burner Rig Optimization for High Temperature Materials and Coating Systems

C. A. Ferguson*[1]

1. The University of Akron, Mechanical Engineering, USA

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications

Thermal Barrier Coatings

Room: Flagler C (South Tower)

Session Chairs: Douglas Wolfe, Pennsylvania State University; Eric Jordan, University of Connecticut

1:30 PM

(ICACC-S2-001-2023) Solution Precursor Plasma Sprayed Coatings Applied to Turbine Components with Engine Testing

E. H. Jordan*[1]

1. Solution Spray Technologies, USA

1:50 PM

(ICACC-S2-002-2023) Effect of laser-structured bondcoats on the furnace cycle lifetime of double-layer Y_2O_3-stabilized $ZrO_2/MgAl_2O_4$ thermal barrier coatings

H. Heyl*[1]; D. Mack[1]; M. Tandler[1]; S. Schrüfer[2]; R. Vassen[1]

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

2:10 PM

(ICACC-S2-003-2023) Numerical evaluation of solid particle erosion of EB-PVD TBCs under elevated temperature cycling conditions

K. Chen*[1]

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

2:30 PM

(ICACC-S2-004-2023) Thermodynamic investigations at high temperatures of the ZrO_2-$YTaO_4$ quasibinary for thermal barrier coating applications

M. Lepple*[1]; S. V. Ushakov[2]; K. Lilova[2]; C. A. Macauley[4]; C. G. Levi[3]; A. Navrostky[2]

1. Justus-Liebig-University Giessen, Institute of Inorganic and Analytical Chemistry, Germany
2. Arizona State University, School of Molecular Sciences, USA
3. University of California, Santa Barbara, Materials Department, USA
4. Friedrich-Alexander-University Erlangen-Neurnberg, Department of Materials Science and Engineering, Germany

2:50 PM

(ICACC-S2-005-2023) Highly tough, dense zirconia coatings

S. Badie*[1]; S. Conze[2]; L. Berger[2]; R. Vassen[1]

1. Forschungszentrum Juelich, IEK-1, Germany
2. Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany

3:10 PM

Break

3:30 PM

(ICACC-S2-006-2023) GAP-GZO Composite Thermal Barrier Coatings for Superior Thermomechanical Properties and Resistance to Calcium-Magnesium-Aluminosilicate Degradation

D. E. Wolfe*[1]; J. Reiss[1]; M. Schmitt[3]; A. K. Rai[2]; P. Albert[1]; C. DeSalle[1]

1. Pennsylvania State University, USA
2. UES Inc., USA
3. HAMR Industries LLC, USA

3:50 PM

(ICACC-S2-007-2023) Thermochemical Stability of High Entropy Rare Earth Oxides (HERO) as Thermal Environmental Barrier Coatings for Refractory Alloys

K. D. Ardrey*[1]; M. Ridley[2]; P. Balachandran[1]; B. Zhou[3]; P. E. Hopkins[3]; E. Opila[3]

1. University of Virginia, Materials Science and Engineering, USA
2. Oak Ridge National Lab, USA
3. University of Virginia, USA

4:10 PM

(ICACC-S2-008-2023) Investigating Thermal and Optical Properties in Novel Rare Earth Zirconates for Radiative Barrier Coatings

W. Riffe*[1]; H. B. Schonfeld[3]; M. Milich[3]; J. Deijkers[1]; V. Champagne[4]; H. Wadley[1]; D. Clarke[4]; P. Balachandran[1]; P. E. Hopkins[2]

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, USA

4:30 PM

(ICACC-S2-009-2023) Influence of composition on structural evolution and material properties of High Entropy Zirconates

P. Hutterer*[1]; M. Lepple[2]

1. DECHEMA Forschungsinstutut, Germany
2. Justus-Liebig-University Giessen, Institute of Inorganic and Analytical Chemistry, Germany

4:50 PM

(ICACC-S2-010-2023) Increased Scattering Coefficient in the Thermal Barrier Coating for High-Temperature Gas Turbine Operations

Y. Wang*[1]; P. Hsu[2]

1. Florida Institute of Technology, USA
2. Florida Institute of Technology, Mechanical Engineering, USA

S3: 20th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology

System Design and Demonstration

Room: Ponce de Leon (North Tower)

Session Chair: Mihails Kusnezoff, Fraunhofer IKTS

1:30 PM

(ICACC-S3-001-2023) Overview of U.S. DOE's Solid Oxide Fuel Cell Program (Invited)

P. Burke*[1]

1. National Energy Technology Laboratory, Department of Energy, USA

2:00 PM

(ICACC-S3-002-2023) Solid Oxide Cells Stacks Manufacturing for Power-to-gas and Gas-to-power Applications (Invited)

D. Montinaro*[1]

1. SOLIDpower SpA, Italy

2:30 PM

(ICACC-S3-003-2023) Elcogen SOC technology: Status and perspectives (Invited)

S. Pylypko*[1]; E. Ounpuu[1]; M. Noponen[1]; H. Grano-Fabritius[1]

1. Elcogen, Estonia

3:00 PM

Break

Electrolysis and Applications

Room: Ponce de Leon (North Tower)

Session Chair: Albert Tarancón, IREC / ICREA

3:20 PM

(ICACC-S3-004-2023) Power-to-X and Solid Oxide Electrolysis offerings at Topsoe (Invited)

S. D. Ebbesen*[1]; P. Blennow[1]; T. Heiredal-Clausen[1]; J. Rass-Hansen[1]; J. Bøgild Hansen[1]; P. Moses[1]

1. Topsoe, Power to X, Denmark

3:50 PM

(ICACC-S3-005-2023) Solid Oxide Technolgy Development and Demonstration for Terrestrial and Space Applications - Materials to Device Challenges (Invited)

S. Elangovan*[1]; J. J. Hartvigsen[1]

1. OxEon Energy, LLC, USA

4:20 PM

(ICACC-S3-006-2023) Optimization of solid oxide electrolyzers – through modified microstructure to enhanced macro-level performance (Invited)

J. Kupecki*[1]; A. Niemczyk[1]; S. Jagielski[1]; M. Kosiorek[1]; R. Kluczowski[1]; D. Katla[1]

1. Institute of Power Engineering, Center for Hydrogen Technologies (CTH2), Poland

4:50 PM

(ICACC-S3-007-2023) Upscaling of proton conducting ceramic cells and stack components (Invited)

R. Kiebach*[1]; F. Palmerini[1]; X. Georgolamprou[1]; S. Pirou[1]; P. V. Hendriksen[1]

1. Technical University Denmark, DTU Energy, Denmark

5:20 PM

(ICACC-S3-008-2023) AVL's SOEC Portfolio for highly efficient Hydrogen and eFuels production

R. Schauperl*[1]

1. AVL List GmbH, Research & Innovation, Austria

5:40 PM

(ICACC-S3-009-2023) Onboard Desulfurization of Jet Fuel for Fuel Cell Applications

Y. Du*[2]; D. Panthi[1]; H. Feng[2]; S. K. Sahu[2]; I. Soliman[2]

1. Kent State University, Engineering Technology, USA
2. Kent State University, USA

S5: Next-Generation Bioceramics and Biocomposites

Biomimetic and Bioactive Ceramics

Room: Ballroom 1-2 (South Tower)

Session Chair: Katalin Balazsi, Centre for Energy Research HAS

1:30 PM

(ICACC-S5-001-2023) Real-time monitoring of early-stage dissolution of bioactive glasses in simulated body fluids (Invited)

D. Galuskova[1]; H. Kankova[1]; L. Bunova[1]; D. Galusek*[1]

1. Alexander Dubcek Univeristy of Trencin, FunGlass, Slovakia

2:00 PM

(ICACC-S5-002-2023) Synthesis and in vitro biocompatibility of nanofibrous TiO_2 materials (Invited)

Y. Wang[1]; S. Chen[1]; W. Chen[1]; A. Osaka*[2]

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

2:30 PM

(ICACC-S5-003-2023) Novel borosilicate bioactive glass material for bone implants

A. Szczodra*[1]; A. Houaoui[2]; J. Massera[2]

1. Tampere University, Finland
2. Tampere University, Faculty of Medical Sciences and Technology, Finland

2:50 PM

Break

Biomimetic and Bio-inspired Ceramics

Room: Ballroom 1-2 (South Tower)

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

3:20 PM

(ICACC-S5-004-2023) Multifunctional scaffolds based on Sr,Mg,Ag-substituted octacalcium phosphate and carboxymethyl chitosan (Invited)

A. Ressler*[1]; M. M. Marić[1]; H. Ivanković[1]; M. Ivanković[1]

1. Faculty of Chemical Engineering and Technology, University of Zagreb, Croatia

3:50 PM

(ICACC-S5-005-2023) Bringing Light into darkness: Biophotonic scaffolds (Invited)

J. Massera*[1]

1. Tampere University, Faculty of Medical Sciences and Technology, Finland

4:20 PM

(ICACC-S5-006-2023) Development of peptide synthesized hydrogel with loaded calcium phosphate as bi-layered osteochondral structure

J. Kim*[2]; H. Park[1]; H. Yun[1]

1. Korea Institute of Materials Science, Republic of Korea
2. University of Science and Technology, Republic of Korea

4:40 PM

(ICACC-S5-007-2023) Bioinspired, osseoconductive calcium phosphate coatings by Electrostatic Spray Deposition

M. Veronica[2]; L. Gremillard*[1]; S. Tadier[1]; C. Gaillard[1]; E. Djurado[2]

1. INSA, Materials, Engineering and Science, France
2. CNRS LEPMI, France

5:00 PM

(ICACC-S5-008-2023) Investigation of rice husk-derived silica toxicities depending on synthesizing methods

J. Lee*[1]; R. J. Mitchell[2]; J. Park[1]; W. Mun[2]

1. Korea Institute of Ceramic Engineering and Technology (KICET), Biomaterials & Processing Center, Republic of Korea
2. Ulsan National Institute of Science and Technology, Republic of Korea

S6: Advanced Materials and Technologies for Rechargeable Energy Storage

All-solid-state Batteries I

Room: Coquina Salon E (North Tower)

Session Chairs: Palani Balaya, National University of Singapore; Olivier Guillon, Forschungszentrum Juelich

1:30 PM

(ICACC-S6-001-2023) Dynamic stability design for fast charging solid state batteries (Invited)

X. Li*[1]

1. Harvard University, SEAS, USA

2:00 PM

(ICACC-S6-002-2023) Interfacial stability of LLZO/LCO and LLTO/LNMO systems in oxides-based all-solid-state Li batteries (Invited)

S. Lin*[1]; C. Lin[1]

1. National Cheng Kung University, Materials Science and Engineering, Taiwan

2:30 PM

(ICACC-S6-003-2023) Interface Engineering of $Li_7La_3Zr_2O_{12}$ for all-solid-state-lithium battery

K. K. Halankar*[1]; S. Mathur[1]

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

2:50 PM

Break

All-solid-state Batteries II

Room: Coquina Salon E (North Tower)

Session Chairs: Valerie Pralong, CNRS ENSICAEN; Xin Li, Harvard University

3:10 PM

(ICACC-S6-004-2023) Protecting solid-state batteries from failure by using pulsed current waveform and ion implantation

D. Rettenwander*[1]

1. NTNU Norwegian University of Technology, DMSE, Norway

3:40 PM

(ICACC-S6-005-2023) Optimization and sintering of LATP-based solid-state battery (Invited)

M. Kusnezoff*[1]; K. Waetzig[1]; J. P. Beaupain[1]; H. Auer[1]; K. Nikolowski[1]; M. Partsch[1]; A. Michaelis[1]

1. Fraunhofer IKTS, Germany

4:10 PM

(ICACC-S6-006-2023) Scalable Fabrication of Composite Solid-State Electrolytes with Improved Stability (Invited)

Z. Chen*[1]

1. University of California, San Diego, Department of NanoEngineering, USA

4:40 PM

(ICACC-S6-007-2023) Wet-Chemical Spray Drying of Coatings on Cathode Active Materials for Solid-State Batteries

J. P. Beaupain*[1]; K. Waetzig[1]; S. Yanev[1]; H. Auer[1]; K. Nikolowski[1]; M. Partsch[1]; M. Kusnezoff[1]

1. Fraunhofer IKTS, Germany

5:00 PM

(ICACC-S6-008-2023) High performance solid-state batteries with garnet scaffolds prepared by phase inversion

F. Shen*[1]; M. Tucker[1]

1. Lawrence Berkeley National Laboratory, USA

S8: 17th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT17)

Design-oriented Manufacturing and Processing

Room: Coquina Salon F (North Tower)

Session Chair: Hisayuki Suematsu, Nagaoka University of Technology

1:30 PM

(ICACC-S8-001-2023) Advanced Thermal Diffusion Protective Coatings: Major Processing Principles and Applications (Invited)

E. Medvedovski*[1]

1. Endurance Technologies Inc., Canada

2:00 PM

(ICACC-S8-002-2023) Materials design to minimize the water absorption and pyroplastic deformation of alumina-strengthened porcelain

D. Hao*[1]; T. Akatsu[1]; N. Kamochi[2]

1. Saga University, Japan
2. Saga Ceramics Research Laboratory, Japan

2:20 PM

(ICACC-S8-003-2023) Control of forming time and magnetic flux density in colloidal forming in high magnetic field (Invited)

S. Tanaka*[1]

1. Nagaoka University of Technology, Materials Science and Technology, Japan

2:50 PM

Break

Green Manufacturing, Global Environmental Issues and Standards

Room: Coquina Salon F (North Tower)

Session Chair: Eugene Medvedovski, Consultant

3:20 PM

(ICACC-S8-004-2023) Chemisorption of molybdenum oxide on the surface of stainless steel 304 at high temperatures

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

3:40 PM

(ICACC-S8-005-2023) Design of Biofoams by Using different types of Biomasses

J. Zhang*[1]; G. Ngige[1]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA

4:00 PM

(ICACC-S8-006-2023) Color centers in K-Na-Cl crystals at low temperatures for remote sensing of Europa

H. Suematsu*[1]; Y. Namioka[1]; Y. Goto[1]; T. Kikuchi[3]; T. Do[1]; T. Nakayama[1]; G. Thorogood[2]

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. Australian Nuclear Science and Technology Organisation, Australia
3. Nagaoka University of Technology, Nuclear Technology, Japan

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems

Novel Ceramics and Composites for Nuclear Systems I

Room: Ballroom 4 (South Tower)

Session Chair: Takaaki Koyanagi, Oak Ridge National Laboratory

1:30 PM

(ICACC-S13-001-2023) New Approaches for Actinide Containing Waste Forms (Invited)

J. Amoroso*[1]

1. Savannah River National Laboratory, USA

2:00 PM

(ICACC-S13-002-2023) Phosphate Glass Waste Forms for Salt Waste Stream (Invited)

M. Tang*[1]; M. Page[1]; A. Gootgeld[1]; K. Brinkman[1]; J. George[2]; B. Riley[2]; S. Stariha[3]; W. Ebert[3]

1. Clemson University, Department of Materials Science & Engineering, USA
2. Pacific Northwest National Lab, USA
3. Argonne National Lab, USA

2:30 PM

(ICACC-S13-003-2023) Processing and properties of titanium beryllides ($Be_{12}Ti$) as a replacement material in future fusion applications

D. Bhardwaj*[1]; D. Sprouster[1]; B. Cheng[1]; J. Trelewicz[1]; L. Snead[1]

1. Stony Brook University, Material Science and Chemical Engineering, USA

2:50 PM

(ICACC-S13-004-2023) Application of spray drying processes for advanced uranium fuel preparation

P. Makurunje*[1]; J. T. Prabhakar[1]; S. C. Middleburgh[1]

1. Nuclear Futures Institute, Bangor University, United Kingdom

3:10 PM

Break

Radiation Effects and Advanced Characterization

Room: Ballroom 4 (South Tower)

Session Chair: Jose Arregui-Mena, Oak Ridge National Lab

3:30 PM

(ICACC-S13-006-2023) Materials science aspects of space propulsion reactor fuel development (Invited)

S. J. Zinkle*[1]

1. University of Tennessee, USA

4:00 PM

(ICACC-S13-007-2023) 3D tomography imaging-based study of PYCASSO TRISO fuel particles

D. Liu*[1]; S. Knol[2]; M. Jiang[1]; E. White[1]; M. Davies[3]; A. Vreeling[2]; M. Jordan[4]; N. Tzelepi[4]; D. Goddard[4]

1. University of Bristol, United Kingdom
2. NRG, Netherlands
3. USNC, USA
4. UK National Nuclear Laboratory, United Kingdom

4:20 PM

(ICACC-S13-008-2023) TRISO Analysis Capability in Fuel Performance Code BISON

G. Singh*[1]; W. Jiang[1]; A. Toptan[1]; S. Dhulipala[1]; Y. Che[1]; K. Gamble[1]; J. Hales[1]; S. Novascone[1]

1. Idaho National Lab, USA

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Advanced and Nanostructured Materials for Photonics, Electronics and Sensing I

Room: Coquina Salon G (North Tower)

Session Chairs: Marina Leite, UC Davis; Nicola Pinna, Humboldt-Universität zu Berlin

1:30 PM

(ICACC-S17-002-2023) Material issues for sustainable plasmonics (Invited)

J. Plain*[1]

1. Université de technologie de Troyes, France

2:00 PM

(ICACC-S17-003-2023) Effect of selenium integration on the electrochemical properties of Ni-hexacyanoferrate-based nanocubes: the oxygen evolution reaction (Invited)

F. Polo*[1]; E. Lushaj[1]; E. Moretti[1]; A. Vomiero[2]

1. Ca' Foscari University of Venice, Molecular Sciences and Nanosystems, Italy
2. Lulea University of Technology, Engineering Sciences & Mathematics, Sweden

2:30 PM

(ICACC-S17-004-2023) Transparent Lutetium-based, Sesquioxide Ceramic Scintillators

Y. Wang*[1]; U. Shirwadkar[1]; S. Onorato[1]; J. Nam[1]; C. Brecher[1]; K. Shah[1]; J. Glodo[1]

1. Radiation Monitoring Devices, Inc., Research, USA

2:50 PM

Break

3:10 PM

(ICACC-S17-005-2023) Cubic boron arsenide (c-BAs): A promising semiconductor for next generation electronics (Invited)

J. Bao*[1]

1. University of Houston, USA

3:40 PM

(ICACC-S17-006-2023) Photonics and energy applications of advanced nanomaterials (Invited)

D. Ban*[1]

1. University of Waterloo, Electrical and Computer Engineering, Canada

4:10 PM

(ICACC-S17-007-2023) YAG-based transparent ceramics: Study of nanopowders synthesis by batch or continuous co-precipitation

F. Delaunay*[1]; R. Boulesteix[1]; A. Maitre[1]

1. IRCER, France

4:30 PM

(ICACC-S17-008-2023) Ge-based Nanowires of Metastable Composition: Hyper-Doping and Alloy Formation

S. Barth*[1]; V. Krause[1]; R. Boeckle[2]; M. Sistani[2]

1. Goethe University Frankfurt, Germany
2. TU Wien, Institute of Solid State Electronics, Austria

S18: Ultra-High Temperature Ceramics

Compositionally Complex UHTCs I

Room: Coquina Salon A (North Tower)

Session Chair: William Fahrenholtz, Missouri University of Science & Technology

1:30 PM

Introductory comments

1:50 PM

(ICACC-S18-001-2023) High Entropy UHTCs: Are they better than conventional UHTCs? (Invited)

W. Fahrenholtz*[1]

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

2:20 PM

(ICACC-S18-002-2023) High-temperature oxidation and ablation behavior of high-entropy borides

A. C. Feltrin*[1]; F. Akhtar[1]

1. Luleå University of Technology, Materials Engineering, Sweden

2:40 PM

(ICACC-S18-003-2023) Interdiffusion of High-Entropy Borides and Carbides

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

1. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
2. Honeywell Federal Manufacturing and Technologies, USA

3:00 PM

Break

Novel Processing Methods I

Room: Coquina Salon A (North Tower)

Session Chairs: Lisa Rueschhoff, Air Force Research Lab; Diletta Sciti, ISTEC-CNR

3:20 PM

(ICACC-S18-004-2023) Novel processing and Compositions of fiber-reinforced UHTCs (Invited)

L. M. Rueschhoff*[1]; B. Lam[1]; C. Kassner[1]; C. Wyckoff[1]; K. Acord[1]; Z. D. Apostolov[1]; M. Cinibulk[1]

1. Air Force Research Lab, Materials and Manufacturing Directorate, USA

3:50 PM

(ICACC-S18-005-2023) Layered UHTCMCs with variable matrix type to enhance lightness and oxidation resistance (Invited)

D. Sciti*[1]; A. Vinci[2]; M. Mor[1]; L. Zoli[3]

1. ISTEC-CNR, Italy
2. ISTEC-CNR, DSCTM, Italy
3. CNR ISTEC, ISTEC, Italy

4:20 PM

(ICACC-S18-006-2023) $Ti_3C_2T_x$ MXene-Zirconium Diboride Based Spark Plasma Sintered Ultra-High Temperature Ceramic Composites

S. Nemani*[1]; Y. Im[1]; B. Anasori[1]

1. Indiana University--Purdue University, Mechanical Engineering, USA

4:40 PM

(ICACC-S18-007-2023) Fabrication of W-ZrC Composites by Using ZrO_2 and WC

S. Kim*[1]; Y. Han[2]; S. Ryu[1]; S. Lee[2]

1. Korea Institute of Ceramic Engineering and Technology (KICET), Engineering Materials Center, Republic of Korea
2. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

5:00 PM

(ICACC-S18-008-2023) Joining of HfB_2-ZrB_2 based composites with and without Ni filler layer

S. Bajpai*[1]; A. Bhadauria[1]; T. Venkateswaran[2]; K. Balani[1]

1. Indian Institute of Technology Kanpur, Materials Science and Engineering, India
2. Vikram Sarabhai Space Centre, India

S19: Molecular-level Processing and Chemical Engineering of Functional Materials

Chemical Approaches to Energy-related Functional Materials

Room: Ballroom 3 (South Tower)

Session Chair: Emanuel Ionescu, Technical University Darmstadt

1:30 PM

(ICACC-S19-001-2023) Atomic Scale Control Strategies to Boost Catalytic Activities toward High Performance Fuel Cells (Invited)

J. Baek[1]; M. Jung[1]; K. Kim[1]; S. Kwon*[1]

1. Pusan National University, School of Materials Science and Engineering, Republic of Korea

2:00 PM

(ICACC-S19-002-2023) On the performance of polymer derived ceramic nano-composites in sodium and potassium-ion half cells (Invited)

S. Dey[2]; S. Mujib[3]; G. Singh*[1]

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

2:30 PM

(ICACC-S19-003-2023) Electroactive low dimensional materials for Water-Splitting Electrocatalysts (Invited)

M. Siaj*[1]

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

3:00 PM

Break

Solution-processing of Functional Oxides

Room: Ballroom 3 (South Tower)

Session Chair: Eva Hemmer, University of Ottawa

3:20 PM

(ICACC-S19-004-2023) Synthesis of faceted metal oxides with unique properties in catalysis and carbon capture (Invited)

R. M. Richards*[1]

1. Colorado School of Mines, Chemistry, USA

3:50 PM

(ICACC-S19-005-2023) Tale of Two Bismuth Alkylthiolate Precursors' Bifurcating Paths in Chemical Vapor Deposition

T. Fischer*[1]; U. Atamtürk[1]; S. Mathur[1]

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

4:10 PM

(ICACC-S19-006-2023) Synthesis of amorphous and crystalline oxides from $MAl_3(O^iPr)_{12}$ (M = Ln, Cr) precursors (Invited)

G. Westin*[1]; M. Ek[1]

1. Uppsala University, Sweden

4:40 PM

(ICACC-S19-007-2023) Flexible and Scalable Thermoelectric Device and its Application as a Self-Sufficient Power Supply for Wearable Electronic Devices (Invited)

D. Madan*[1]

1. University of Maryland Baltimore County, Mechanical Engineering, USA

5:10 PM

(ICACC-S19-008-2023) Microwave-assisted synthesis of lanthanide-based nanoparticles for applications from biomedicine to printing (Invited)

E. Hemmer*[1]

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

Tuesday, January 24, 2023

Emerging Materials and Sustainable Manufacturing Technologies in a Global Landscape: Symposium in Honor of Dr. Tatsuki Ohji

Tatsuki Ohji Honorary Symposium I

Room: Coquina Salon D (North Tower)

Session Chairs: Mrityunjay Singh, Ohio Aerospace Institute; Stuart Hampshire, University of Limerick

8:30 AM

Opening Remarks

8:40 AM

(ICACC-HS-001-2023) Recent progress of porous ceramics to achieve sustainable development goals (Invited)

M. Fukushima*[1]; T. Ohji[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:00 AM

(ICACC-HS-002-2023) Review of Mechanical Properties of Porous Silicon Nitride Ceramics with Controlled Microstructures (Invited)

S. Hampshire*[1]

1. University of Limerick, The Bernal Institute, Ireland

9:30 AM

(ICACC-HS-003-2023) How Computational Thermodynamics, Lattice Engineering, and Data Science Work Together to Design Commensurate Martensitic Transformations in Zirconia (Invited)

E. Pang[1]; G. B. Olson[1]; C. A. Schuh*[1]

1. Massachusetts Institute of Technology, Department of Materials Science and Engineering, USA

10:00 AM

Break

10:20 AM

(ICACC-HS-004-2023) Silicon carbide ceramics with improved specific stiffness (Invited)

Y. Kim*[1]; G. Kim[1]; S. Yong[2]; W. Jung[2]

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea
2. Agency for Defense Development, Republic of Korea

10:50 AM

(ICACC-HS-005-2023) Ultra-high Creep Resistant SiC Ceramics (Invited)

P. Sajgalik*[1]

1. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Ceramic Department, Slovakia

11:20 AM

(ICACC-HS-006-2023) Nanocarbon added silicon nitrides (Invited)

C. Balazsi*[1]; K. Balazsi[2]

1. ELKH Centre for Energy Research, Hungary
2. Centre for Energy Research HAS, Thin Film Physics, Hungary

11:50 AM

(ICACC-HS-007-2023) Strength and plastic deformation of Si_3N_4 at mesoscale measured using microcantilever specimens (Invited)

J. Tatami*[1]; M. Tanabe[1]; T. Ohji[2]; H. Nakano[3]; M. Iijima[1]; T. Takahashi[4]; T. Yahagi[4]

1. Yokohama National University, Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan
3. Toyohashi University of Technology, Japan
4. Kanagawa Academy of Science and Technology, Japan

5th Pacific Rim Engineered Ceramics Summit

5th Pacific Rim Engineered Ceramics Summit I

Room: Coquina Salon B (North Tower)

Session Chair: Jan Seidel, UNSW Sydney

9:00 AM

(ICACC-PACRIM-001-2023) Characterizations of TiO_2-Silicate Glass Ceramic Composites Fabricated by Microwave Heating Technique (Invited)

N. Triamnak*[1]; S. Phupaichitkun[1]; S. Lapnookawow[1]; N. Wongdamnern[2]; T. Sareein[3]

1. Silpakorn University, Materials science and Engineering, Thailand
2. Rajamangala University of Technology Suvarnabhumi, Faculty of Science and Technology, Thailand
3. Rajamangala University of Technology Phra Nakhon, Thailand

9:30 AM

(ICACC-PACRIM-002-2023) Autonomous resonance tuning mechanism for environmental adaptive piezoelectric energy harvesting (Invited)

H. Song*[1]

1. Korea Institute of Science and Technology, Electronic Materials Research Center, Republic of Korea

10:00 AM

Break

5th Pacific Rim Engineered Ceramics Summit II

Room: Coquina Salon B (North Tower)

Session Chairs: Hyun-Cheol Song, Korea Institute of Science and Technology; Narit Triamnak, Silpakorn University

10:20 AM

(ICACC-PACRIM-003-2023) Dielectric breakdown strength for commercial and prepared silicon nitride substrate (Invited)

Y. Nakashima*[1]; Y. Zhou[1]; K. Hirao[1]; M. Fukushima[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

10:40 AM

(ICACC-PACRIM-004-2023) Functional topological defects in ferroelectric and multiferroic materials (Invited)

J. Seidel*[1]

1. UNSW Sydney, School of Materials Science and Engineering, Australia

11:10 AM

(ICACC-PACRIM-005-2023) Creation of predictive models of 5d-4f emission energy of Ce^{3+} in garnet-type oxides based on first-principles calculations and machine learning (Invited)

K. Ogasawara*[1]

1. Kwansei Gakuin University, Department of Chemistry, Japan

FS2: Materials for Thermoelectric and Thermionic Energy Conversion

Thermionic Energy Conversion

Room: Flagler A (South Tower)

Session Chair: Mona Zebarjadi, University of Virginia

9:00 AM

(ICACC-FS2-005-2023) Thermionics: More than meets the eye (Invited)

A. Nojeh*[1]

1. University of British Columbia, Electrical and Computer Engineering, Canada

9:30 AM

(ICACC-FS2-006-2023) Progress toward high power output in thermionic energy converters (Invited)

I. Bargatin*[1]

1. University of Pennsylvania, USA

10:00 AM

Break

Atomistic Control of Material Structures

Room: Flagler A (South Tower)

Session Chair: Igor Bargatin, University of Pennsylvania

10:30 AM

(ICACC-FS2-007-2023) Thermionic and Thermoelectric transport in 2D metal dichalcogenides (Invited)

M. Zebarjadi*[1]; G. Rosul[1]; S. Akhanda[1]

1. university of virginia, Electrical and Computer Eng., USA

11:00 AM

(ICACC-FS2-008-2023) The role of local symmetry breaking in $AgGaTe_2$: Ultralow thermal conductivity and high thermoelectric performance in diamondoid compounds

H. Xie*[1]; M. G. Kanatzidis[1]

1. Northwestern University, USA

11:20 AM

(ICACC-FS2-009-2023) Atomically-Controlled Nanomaterials for Thermoelectric Performance Enhancement (Invited)

Y. Nakamura*[1]; T. Ishibe[1]

1. Osaka University, Graduate School of Engineering Science, Japan

S1: Mechanical Behavior and Performance of Ceramics & Composites

Computational Approaches for Analyzing, and Predicting the Mechanical Behavior and Durability of Ceramic Matrix Composites (CMCs)

Room: Ballroom 5 (South Tower)

Session Chairs: Dong Liu, University of Bristol; Craig Smith, NASA Glenn Research Center

8:30 AM

(ICACC-S1-010-2023) Multiphysics Multiscale Analysis Framework for CMCs Including Scale-dependent Characterization and Quantification of Variability (Invited)

A. Chattopadhyay*[1]

1. Arizona State University, School for Engineering of Matter, Transport, and Energy, USA

9:00 AM

(ICACC-S1-011-2023) The behavior of self-healing ceramic-matrix composites under chemical and mechanical loads: Microscale characterization and modeling (Invited)

G. L. Vignoles*[1]; G. Bellezza[2]; A. Ebel[1]; R. Baggio[2]; G. Couégnat[1]; O. Caty[1]; F. Rebillat[1]; M. Ricchiuto[2]; M. Colin[2]; D. Bresch[3]; A. Mouret[4]

1. University Bordeaux, LCTS - Lab for ThermStructural Composites, France
2. INRIA Bordeaux Sud-Ouest, France
3. Université Savoie Mont Blanc, LAMA - Lab. of Mathematics, France
4. Safran Ceramics, France

9:30 AM

(ICACC-S1-012-2023) Effect of microstructure on matrix cracking and fiber fracture in unidirectional SiC-SiC composites (Invited)

A. Badran*[2]; E. Maillet[2]; D. B. Marshall[1]

1. University of Colorado Boulder, Aerospace Engineering, USA
2. GE Research, USA

10:00 AM

Break

10:20 AM

(ICACC-S1-013-2023) Analysis of the Effects of Local Mechanisms on the Tensile and Creep Response of Unidirectional Ceramic Matrix Composites

R. K. Goldberg*[1]; A. S. Almansour[2]; R. Sullivan[1]

1. NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA
2. NASA Glenn Research Center, Mechanical Engineering, USA

10:40 AM

(ICACC-S1-014-2023) Characterization of Heterogeneity and Mechanical Properties of SiC_f-SiC_m Composites

J. Nance*[1]

1. Sandia National Laboratories, USA

11:00 AM

(ICACC-S1-015-2023) An Analytical Model for Response and Residual Damage Prediction in Quasi-Statically Indented Alumina-Based Oxide/Oxide Ceramic Matrix Composites

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

1. Baylor University, Mechanical Engineering, USA

11:20 AM

(ICACC-S1-017-2023) Crack growth mechanism for an Orthogonal 3-D Woven Amorphous SiC Fiber/SiC/YSi2-Si Matrix Composites under fatigue testing at elevated temperature

S. Kanazawa*[1]; Y. Ikarashi[1]; T. Kishi[1]; K. Kubushiro[2]; T. Aoki[3]; T. Ogasawara[4]

1. IHI Corporation, Japan
2. IHI Asia Pacific (Thailand) Co., Ltd., Thailand
3. Japan Aerospace Exploration Agency, Advanced Composite Research Center, Institute of Aeronautical Technology, Japan
4. Tokyo University of Agriculture and Technology, Japan

11:40 AM

(ICACC-S1-016-2023) Fatigue lifetime prediction model of an orthogonal 3-D woven amorphous SiC fiber/SiC/YSi_2-Si based matrix composites at elevated temperature in air

Y. Ikarashi*[1]; S. Kanazawa[1]; T. Kishi[1]; K. Kubushiro[2]; T. Aoki[3]; T. Ogasawara[4]

1. IHI Corporation, Japan
2. IHI Asia Pacific (Thailand) Co., Ltd., Thailand
3. Japan Aerospace Exploration Agency, Advanced Composite Research Center, Institute of Aeronautical Technology, Japan
4. Tokyo University of Agriculture and Technology, Japan

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications

Advanced Ceramic Coatings for Extreme Environments I

Room: Flagler C (South Tower)

Session Chairs: Douglas Wolfe, Pennsylvania State University; Kang Lee, NASA Glenn Research Center

8:40 AM

(ICACC-S2-012-2023) Structural study of long-term-resistant to oxidation at 600 °C electrically conductive Ti-Al-C and Ti-Cr-Al-C coatings

T. Prikhna*[1]; O. Ostash[2]; A. Kuprin[3]; V. Podhurska[2]; T. Serbenyuk[1]; R. A. Haber[4]; V. Sverdun[1]; V. Moshchil[1]; B. Büchner[5]; M. Karpets[1]; P. Potapov[5]; S. Ponomaryov[6]; A. Matsenko[1]

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. Department of Materials Science and Engineering, Rutgers, The State University of New Jersey, USA
5. Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden e. V., Germany
6. Institute of Semiconductor Physics of the National Academy of Sciences of Ukraine, Ukraine

9:00 AM

(ICACC-S2-013-2023) Durability of hard protective coatings: Assessing the fracture and fatigue resistance of nanostructured thin films

L. Zauner[1]; R. Hahn*[1]; E. Aschauer[1]; T. Wojcik[1]; A. Davydok[2]; O. Hunold[3]; P. Polcik[4]; H. Riedl[5]

1. Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria, Austria
2. Helmholtz-Zentrum Hereon, Institut für Werkstoffphysik, Germany
3. Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein
4. Plansee Composite Materials GmbH, Germany
5. TU Wien, Institute of Materials Science and Technology, Austria

9:20 AM

(ICACC-S2-014-2023) $Ti_{1-x}Al_xN$ PVD Coatings in Hot-Corrosion Environments

O. Hudak*[1]; A. Scheiber[1]; L. Shang[2]; O. Hunold[2]; S. Kolozsvari[3]; H. Riedl[4]

1. TU Wien- CDL SEC, Austria
2. Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein
3. Plansee Composite Materials GmbH, Germany
4. TU Wien, Institute of Materials Science and Technology, Austria

9:40 AM

(ICACC-S2-015-2023) Tribochemical Reactions of Si_3N_4 in Water Lubrication Revealed by Reactive Molecular Dynamics Simulations

R. Kudo*[2]; A. Chiba[2]; M. Yokoi[2]; M. Kawaura[2]; Q. Chen[1]; Y. Asano[2]; Y. Ootani[2]; N. Ozawa[1]; M. Kubo[2]

1. Tohoku University, New Industry Creation Hatchery Center, Japan
2. Institute for Materials Research, Tohoku University, Japan

10:00 AM

Break

10:20 AM

(ICACC-S2-016-2023) Key parameters in the formation of SiC coatings by Liquid Silicon Infiltration

T. Schneider*[1]; P. Prakasan[1]; D. Koch[1]

1. University of Augsburg, Institute of Materials Resource Management MRM, Materials Engineering, Germany

10:40 AM

(ICACC-S2-017-2023) Development of Ablation-Resistant, High Emittance Coatings for Carbon/Carbon Composites for Hypersonic Application

A. A. Saad*[1]; C. Martinez[1]; R. Trice[1]

1. Purdue University, Materials Engineering, USA

11:00 AM

(ICACC-S2-018-2023) Thermal properties and ablation resistance of a high-entropy metal diboride: $(Hf_{0.2}Zr_{0.2}Ti_{0.2}Ta_{0.2}Nb_{0.2})B_2$

M. Hoque*[1]; P. E. Hopkins[1]

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

11:20 AM

(ICACC-S2-019-2023) The development of polymer-derived Si(Al)CN CMC for high temperature applications

M. Younas*[1]; J. Binner[2]; C. Hawkins[3]; S. Butterworth[4]

1. University of Birmingham, Metallurgy and Materials, United Kingdom
2. University of Birmingham, Ceramic Science & Engineering, United Kingdom
3. DSTL, United Kingdom
4. BAE Systems, United Kingdom

S3: 20th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology

Air Electrode

Room: Ponce de Leon (North Tower)

Session Chairs: Federico Smeacetto, Politecnico di Torino; Xingbo Liu, West Virginia University

8:30 AM

(ICACC-S3-010-2023) Enhancement of Low-Temperature Solid Oxide Fuel Cell Performance and Durability via Surface Chemistry Modification (Invited)

E. D. Wachsman*[1]; I. Robinson[1]; Y. Huang[1]; S. Horlick[1]; A. Hussain[1]; A. Pesaran[1]

1. University of Maryland, USA

9:00 AM

(ICACC-S3-011-2023) Enhancement of the SOE performance by fine-tuning the composition and microstructure of the air electrode based on state-of-the-art materials

A. Niemczyk*[1]; J. Kupecki[2]; S. Jagielski[1]; R. Kluczowski[3]

1. Institute of Power Engineering, Department of High Temperature Electrochemical Processes, Poland
2. Institute of Power Engineering, Center for Hydrogen Technologies (CTH2), Poland
3. Institute of Power Engineering, Ceramic Department CEREL, Poland

9:20 AM

(ICACC-S3-012-2023) Investigation of Cobalt-free air electrodes for solid oxide electrochemical cells

R. Kluczowski*[1]; A. Niemczyk[1]; Y. Naumovich[1]; K. Machaj[1]; K. Swierczek[2]; K. Li[2]; J. Kupecki[1]

1. Institute of Power Engineering, Center for Hydrogen Technologies (CTH2), Poland
2. AGH University of Science and Technology, Faculty of Energy and Fuels, Poland

9:40 AM

(ICACC-S3-013-2023) Optimization of Solid Oxide Cells 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. NETL-DOE, USA
2. NETL Support Contractor, USA

10:00 AM

Break

10:20 AM

(ICACC-S3-014-2023) Submicron- and Nano-materials for Solid Oxide Fuel Cells: Technical Challenges and Solutions

M. Juckel*[1]; F. Kullmann[2]; Y. Liu[2]; F. Wankmüller[2]; A. Weber[2]; N. H. Menzler[1]

1. Forschungszentrum Juelich, IEK-1, Germany
2. Karlsruhe Institute of Technology, Germany

10:40 AM

(ICACC-S3-015-2023) High Entropy Perovskites as Solid Oxide Fuel Cell Cathodes

Z. Li[1]; W. Li[2]; X. Liu*[1]

1. West Virginia University, Mechanical & Aerospace Engineering, USA
2. West Virginia University, Chemical & Biomedical Engineering, USA

11:00 AM

(ICACC-S3-016-2023) Structure-Property Relationships of $BaCo_{0.4}Fe_{0.4}Zr_{0.1}Y_{0.1}O_{3-\delta}$-type Triple-Conducting Materials

J. H. Duffy*[1]; N. Birkner[1]; E. M. Kelder[2]; K. Brinkman[1]

1. Clemson University, Materials Science and Engineering, USA
2. Delft University of Technology, Storage of Electrochemical Energy, Reactor Institute Delft, Netherlands

11:20 AM

(ICACC-S3-017-2023) $BaCo_{0.4}Fe_{0.4}Zr_{0.1}Y_{0.1}O_{3-\sigma}$ Cathode Performance for Proton Conducting Solid Oxide Fuel Cells with $BaZr_{1-x}Ce_xY_{0.1}Yb_{0.1}O_{3-\delta}$ Electrolytes

W. Li*[1]; M. Sozal[1]; V. Drozd[1]; A. Durygin[1]; Z. Cheng[1]

1. Florida International University, Mechanical & Materials Engineering, USA

11:40 AM

(ICACC-S3-018-2023) Fabrication and Electrochemical Testing of Silver Pattern Cathodes for Proton Conducting IT-SOFC

M. Sozal[1]; W. Li[1]; S. Das[1]; B. Jafarizadeh[1]; A. Chowdhury[1]; A. Durygin[2]; V. Drozd[2]; C. Wang[1]; Z. Cheng*[1]

1. Florida International University, Mechanical & Materials Engineering, USA
2. Florida International University, Center for the Study of Matter at Extreme Conditions (CeSMEC), USA

12:00 PM

(ICACC-S3-019-2023) Mitigating Air Electrode Delamination and Improving Durability of Solid Oxide Electrolysis Cells by Infiltrating $SrFe_2O_{4-d}$ Nanoparticles

Y. Fan*[1]; Y. Chen[2]; H. W. Abernathy[3]; R. Pineault[3]; R. Addis[1]; X. Song[2]; G. Hackett[3]; T. Kalapos[1]

1. LRST, National Energy Technology Laboratory, USA
2. West Virginia University, USA
3. DOE National Energy Technology Laboratory, USA

S5: Next-Generation Bioceramics and Biocomposites

Bioactive and Resorbable Ceramics

Room: Ballroom 1-2 (South Tower)

Session Chair: Cristina Balagna, Politecnico di Torino

8:30 AM

(ICACC-S5-009-2023) Bioresorbable devices enriched with multifunctional nano-biomaterials to stimulate compromised bone remodelling (Invited)

S. Fiorilli*[1]; G. Montalbano[1]; F. Banche Niclot[1]; C. Vitale-Brovarone[1]

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

9:00 AM

(ICACC-S5-010-2023) Preparation of Novel Guided Bone Regeneration Membrane by Lamination of Hydroxyapatite/ Collgen Bone-Like Nanocomposite and Poly-L-Lactide (Invited)

M. Kikuchi*[1]; T. Suraya[2]

1. National Institute for Materials Science (NIMS), Bioceramics Group, Japan
2. University of Tsukuba, Tsukuba Life Science Innovation, Graduate School of Science and Technology, Japan

9:30 AM

(ICACC-S5-011-2023) 3D printed PLA-TCP-CNPs scaffolds for bone tissue engineering

S. V. Harb*[1]; E. Kolanthai[2]; E. H. Backes[1]; C. A. Beatrice[1]; C. J. Neal[2]; S. Seal[2]; L. Pessan[1]

1. Federal University of Sao Carlos, Department of Materials Engineering, USA
2. University of Central Florida, Department of Materials Science and Engineering, USA

9:50 AM

Break

Nanostructured Bioceramics

Room: Ballroom 1-2 (South Tower)

Session Chair: Roger Narayan, North Carolina State University

10:20 AM

(ICACC-S5-012-2023) Light Triggered Theranostics (Invited)

F. Vetrone*[1]

1. INRS, Université du Québec, Centre Énergie, Matériaux et Télécommunications, Canada

10:50 AM

(ICACC-S5-013-2023) Bioinspired and biobased composite materials: Promise for a greener future? (Invited)

T. Speck*[1]

1. University of Freiburg, Germany

11:20 AM

(ICACC-S5-014-2023) Model Porous Minerals as Habitats for Microbial Consortia Through Suspension-based Freeze Casting

L. Quinn*[1]; D. Johnson[1]; K. Sharma[1]; Y. Jangir[1]; P. Samantaray[1]; V. Orphan[1]; J. Kornfield[1]; K. Faber[1]

1. California Institute of Technology, USA

S6: Advanced Materials and Technologies for Rechargeable Energy Storage

All-solid-state Batteries III

Room: Coquina Salon E (North Tower)

Session Chairs: Rick Laine, University of Michigan; Shusuke Kasamatsu, Yamagata University

8:30 AM

(ICACC-S6-009-2023) SoC-dependent Interfacial Stability of Electrolytes and Cathodes in Solid-state Lithium Batteries (Invited)

P. Tsai*[1]; Y. Wu[1]; J. Yang[1]

1. National Taiwan University of Science and Technology, Taiwan

9:00 AM

(ICACC-S6-010-2023) Mechanistic Analysis of Interface Stability in Solid-State Batteries (Invited)

B. Vishnugopi*[1]; P. P. Mukherjee[1]

1. Purdue University, USA

9:30 AM

(ICACC-S6-011-2023) Towards ceramic-based room-temperature solid-state sodium batteries (Invited)

O. Guillon*[1]; A. Yang[1]; Q. Ma[1]; F. Tietz[1]; F. Dina[1]

1. Forschungszentrum Juelich, IEK-1, Germany

10:00 AM

Break

All-solid-state Batteries IV

Room: Coquina Salon E (North Tower)

Session Chairs: Bairav Sabarish Vishnugopi, Purdue University; Palani Balaya, National University of Singapore

10:20 AM

(ICACC-S6-012-2023) Solid electrolyte (SE) coatings on high oxidation state cathode active materials (Invited)

R. M. Laine*[1]; M. Yu[2]; E. Temeche[1]; T. G. Brandt[1]

1. University of Michigan, Materials Science and Engineering, USA
2. University of Michigan, Macromolecular Science and Engineering, USA

10:50 AM

(ICACC-S6-013-2023) First-principles thermodynamics of ion order/disorder in many-component oxides and their interfaces (Invited)

S. Kasamatsu*[1]

1. Yamagata University, Japan

11:20 AM

(ICACC-S6-014-2023) Solid-state synthesized Argyrodite Li_6PS_5Cl Electrolytes with Si substitution for Enhanced Stability with Li-metal Anode

J. Song*[1]; J. Wang[2]; X. Dai[2]; D. Kim[2]; D. Kim[1]

1. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea
2. University of New South Wales, School of Chemistry, Australia

11:40 AM

(ICACC-S6-015-2023) Garnet-based Solid-State Li Batteries by advanced sintering techniques

M. Ihrig*[1]; A. M. Laptev[1]; T. Mishra[1]; M. Finsterbusch[1]; D. Fattakhova-Rohlfing[1]; O. Guillon[1]

1. Forschungszentrum Juelich, IEK-1, Germany

S8: 17th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT17)

Advanced Composite Manufacturing Technologies, Hybrid Processes I

Room: Coquina Salon F (North Tower)

Session Chairs: Nobuhito Imanaka, Osaka University; Thi Mai Dung Do, Nagaoka University of Technology

8:30 AM

(ICACC-S8-007-2023) Pressureless sintering in hydrogen of hot isostatic pressed Al_2O_3 prepared from oxidized AlN powder (Invited)

C. Balazsi*[1]; M. Furko[1]; K. Balazsi[2]

1. ELKH Centre for Energy Research, Hungary
2. Centre for Energy Research HAS, Thin Film Physics, Hungary

9:00 AM

(ICACC-S8-008-2023) Manufacturing of SiC_f/SiC and Al_2O_{3f}/Al_2O_3 ceramic matrix composites by microwave assisted chemical vapour infiltration

Z. Li*[1]; J. Binner[2]

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

9:20 AM

(ICACC-S8-009-2023) Study of metalized silicon nitride substrate reliability under thermal cycling test using digital image correlation

N. M. Chu*[1]; H. Miyazaki[1]; K. Hirao[1]; M. Fukushima[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Multi-material Research Institute, Japan

9:40 AM

Break

Advanced Powder Synthesis and Processing

Room: Coquina Salon F (North Tower)

Session Chair: Ngo Chu, National Institute of Advanced Industrial Science and Technology (AIST)

10:20 AM

(ICACC-S8-011-2023) SPS densification and phase stability of Y_2O_3 - cBN composites

J. Li*[1]; Y. Wu[1]

1. Alfred University, Kazuo Inamori School of Engineering, New York State College of Ceramics, USA

10:40 AM

(ICACC-S8-012-2023) Influence of Powder Feedstock Characteristics and Process Parameters on Extrusion-based 3D Printing of Magnetocaloric Structures

V. Sharma*[1]; L. L. Balderson[2]; M. Dey[3]; S. Gupta[3]; R. Hadimani[1]; H. Zhao[1]; R. Barua[1]

1. Virginia Commonwealth University, Department of Mechanical & Nuclear Engineering, USA
2. University of Virginia, Materials Science and Engineering, USA
3. University of North Dakota, Department of Mechanical Engineering, USA

11:00 AM

(ICACC-S8-013-2023) AlON Powder via dynamic thermochemical method

H. Boussebha*[1]

1. Sakarya University, Materials Science and Engineering, Turkey

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems

Material Technologies for Enhanced Accident Tolerance LWR Fuels and Core I

Room: Ballroom 4 (South Tower)

Session Chair: Ghatu Subhash, University of Florida

8:30 AM

(ICACC-S13-009-2023) Silicon carbide composite technology for accident-tolerant fuels – recent progress and updated R&D needs (Invited)

Y. Katoh*[1]; T. Koyanagi[1]; P. Xu[2]; C. Deck[3]; K. Shirvan[4]; L. Snead[5]

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

9:00 AM

(ICACC-S13-010-2023) Advanced Ceramic Matrix Composites for Extreme Environments in Nuclear Applications (Invited)

C. Deck*[1]; L. Borowski[1]; S. Gonderman[1]; R. Haefelfinger[1]; A. Giles[1]; A. Moore[1]; C. Hill[1]; S. Oswald[1]; G. Jacobsen[1]; J. Gazza[1]

1. General Atomics, Nuclear Technologies and Materials, USA

9:30 AM

(ICACC-S13-011-2023) Ceramic coatings by chemical vapor deposition towards development of accident tolerant fuel claddings (Invited)

H. Katsui*[1]; R. Usukawa[1]; S. Kondo[2]; K. Shimoda[3]; K. Yabuuchi[5]; S. Ebara[4]

1. National Institute of Advanced Industrial Science and Technology (AIST), Multi-Material Research Institute, Japan
2. Tohoku University, Institute for Materials Research, Japan
3. National Institute for Materials Science (NIMS), Research Center for Structural Materials, Japan
4. Tohoku University, Department of Quantum Science and Energy Engineering, Japan
5. Kyoto University, Institute of Advanced Energy, Japan

10:00 AM

Break

Material Technologies for Enhanced Accident Tolerance LWR Fuels and Core II

Room: Ballroom 4 (South Tower)

Session Chair: Kurt Terrani, Ultra Safe Nuclear

10:20 AM

(ICACC-S13-012-2023) Thermodynamic modelling of reactions between SiC and coating materials (Invited)

M. to Baben*[1]; P. J. Spencer[2]

1. GTT-Technologies, Germany
2. The Spencer Group, USA

10:50 AM

(ICACC-S13-013-2023) Characterization of Heterogeneity, Properties, and Uncertainty Quantification for SiC_f-SiC_m Braided Composite Tubes (Invited)

G. Subhash*[1]; J. Nance[2]; H. Thandaga Nagaraju[1]; B. Sankar[1]; N. Kim[1]

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

11:20 AM

(ICACC-S13-014-2023) Development of CVI/CVD-SiC/SiC Composites for Accident-Tolerant Fuels in LWR Applications

S. Suyama*[1]; M. Ukai[1]; T. Nishimura[1]; T. Takada[1]

1. Toshiba Energy Systems & Solutions Corporation, Japan

11:40 AM

(ICACC-S13-015-2023) Irradiation testing and technique development for evaluating radiation-induced bowing in SiC/SiC components

C. Petrie*[1]; J. W. Geringer[1]; A. James[1]; C. Deck[2]; T. Koyanagi[1]

1. Oak Ridge National Laboratory, USA
2. General Atomics, USA

S15: 7th International Symposium on Additive Manufacturing and 3-D Printing Technologies

Materials and Process Characterization Tools

Room: Coquina Salon H (North Tower)

Session Chair: Fiona Spirrett, Osaka University

8:30 AM

(ICACC-S15-001-2023) In-situ sensing system of suspension-based additive manufacturing (Invited)

J. Lee[1]; S. Jang[1]; H. Son[1]; S. Park[1]; C. Bae*[1]

1. Korea Institute of Materials Science, Department of 3D printing materials, Republic of Korea

9:00 AM

(ICACC-S15-002-2023) Ceramic additive manufacturing direct-ink-write and densification measurement needs

A. J. Allen*[1]; R. Maier[2]; F. Zhang[1]; I. Levin[2]

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

9:20 AM

(ICACC-S15-003-2023) Tailoring the mechanical properties of alumina ceramics through 3D-printing

J. Schlacher*[1]; A. Hofer[1]; S. Geier[2]; I. Kraleva[1]; S. Nohut[2]; M. Schwentenwein[2]; R. Bermejo[1]

1. Montanuniversitaet Leoben, Department of Materials Science, Austria
2. Lithoz GmbH, Austria

9:40 AM

(ICACC-S15-004-2023) The process-structure-property relationship of additive manufacturing mullite material

J. Tsai[1]; D. Singh*[1]

1. Argonne National Laboratory, Applied Materials Division, USA

10:00 AM

Break

Vat Photopolymerization / Substrate Stereolithography I

Room: Coquina Salon H (North Tower)

Session Chair: Martin Schwentenwein, Lithoz GmbH

10:20 AM

(ICACC-S15-005-2023) Micro-printing of metallized ceramics for microelectronics (Invited)

K. Porter*[1]; A. Yu[1]; E. Wernick[1]; E. Stonkevitch[1]; M. O'Masta[1]; P. Bui[1]; T. Schaedler[1]

1. HRL Laboratories, USA

10:50 AM

(ICACC-S15-006-2023) How to eliminate delamination cracks in ceramics manufactured via vat-photopolymerization: A practitioner's perspective

W. Yared*[1]; R. Gadow[1]

1. Institute for Manufacturing Technologies of Ceramic Components and Composites, University of Stuttgart, Germany

11:10 AM

(ICACC-S15-007-2023) Stereolithography-based additive manufacturing of polymer-derived structures exhibiting catalytic activity

J. Eßmeister*[1]; L. Schachtner[1]; A. Fuchsberger[1]; E. Szoldatits[3]; K. Föttinger[3]; A. A. Altun[2]; A. Lale[2]; M. Schwentenwein[2]; T. Konegger[1]

1. TU Wien, Institute of Chemical Technologies and Analytics, Austria
2. Lithoz GmbH, Austria
3. TU Wien, Institute of Materials Chemistry, Austria

11:30 AM

(ICACC-S15-008-2023) Novel routes for the fabrication of carbide components via sol-gel-based additive manufacturing

A. Zanini[1]; M. Y. Moshkovitz[2]; S. M. Carturan[3]; S. Corradetti[3]; P. Colombo[1]; S. Magdassi[2]; G. Franchin*[1]

1. University of Padova, Industrial Engineering, Italy
2. Institute of Chemistry and Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem, Israel
3. Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali di Legnaro, Italy

11:50 AM

(ICACC-S15-009-2023) Ti-6Al-4V/hydroxyapatite co-printing using digital light processing

C. Gal*[1]; J. Kim[2]; Y. Choi[1]; H. Park[1]; A. Sung[1]; H. Yun[1]

1. Korea Institute of Materials Science, Republic of Korea
2. Pusan National University, Republic of Korea

S16: Geopolymers, Inorganic Polymers and Sustainable Construction Materials

Geopolymers made from or with Waste Materials I

Room: Coquina Salon C (North Tower)

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

8:30 AM

(ICACC-S16-001-2023) Chemical resistance to the acidic environment of metakaolin-based binders containing spent corundum grit

G. Dal Poggetto*[1]; C. Leonelli[2]

1. University of Modena and Reggio Emilia, Engineering, Italy
2. University of Modena and Reggio Emilia, Department of Engineering Enzo Ferrari, Italy

8:50 AM

(ICACC-S16-003-2023) Characterization and synthesis of phosphogypsum reinforced geopolymer composites fabricated from industrial wastes.

H. Majdoubi*[1]; S. Sbi[1]; M. Nadi[2]; M. Bouchaib[1]; A. H. Jones[1]; H. Hannache[1]; Y. Tamraoui[1]

1. University Mohammed 6 Poytechnics, MSN, Morocco
2. University Hassan II Casablanca, Chimie, Morocco

9:10 AM

Break

Geopolymers made from or with Waste Materials II

Room: Coquina Salon C (North Tower)

Session Chair: Khadija Qureshi, Mehran University of engineering and Technology Jamshoro

10:20 AM

(ICACC-S16-005-2023) Properties of Potassium Activated Metakaolin and Fly Ash Based Geopolymer Mortars and Composites

R. Abufarsakh*[1]; H. Noorvand[1]; G. Arce[2]; M. Hassan[1]; S. Subedi[1]; O. D. Huang[3]; M. Radovic[3]

1. Louisiana State University, USA
2. Virginia Department of Transportation, USA
3. Texas A&M University, Materials Science & Engineering, USA

10:40 AM

(ICACC-S16-006-2023) Alkali Activation of Discarded Pharmaceutical Glass for Novel 'Unfired' Structural and Functional Materials (Invited)

G. Tameni[1]; F. Cammelli[1]; M. Mahmoud[2]; J. Kraxner[2]; H. Elsayed[1]; E. Bernardo*[1]

1. University of Padova, Department of Industrial Engineering, Italy
2. Alexander Dubcek University of Trencin, FunGlass, Slovakia

11:10 AM

(ICACC-S16-007-2023) Raw earth stabilization by alkali-activated slag: Mechanical study (Invited)

É. Prud'homme*[1]; U. De Filippis[1]; S. Meille[2]

1. MATEIS - INSA Lyon, Civil Engineering and Urban planning, France
2. MATEIS - INSA Lyon, Materials Science, France

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Advanced and Nanostructured Materials for Photonics, Electronics and Sensing II

Room: Coquina Salon G (North Tower)

Session Chair: Alessandro Martucci, University of Padova

8:30 AM

(ICACC-S17-009-2023) Lanthanide-based nanoparticles with tuneable emission wavelengths from visible to mid-infrared (Invited)

E. Hemmer*[1]

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

9:00 AM

(ICACC-S17-010-2023) Lanthanide doped ZnO; From micrometer to Ångström scale (Invited)

G. Westin*[1]

1. Uppsala University, Sweden

9:30 AM

(ICACC-S17-011-2023) Functionalized light emitting silicon nanoparticles (Invited)

N. Daldosso*[1]

1. University of Verona, Italy

9:30 AM

Break

Multi-functional Materials I

Room: Coquina Salon G (North Tower)

Session Chair: Federico Polo, Ca' Foscari University of Venice

10:10 AM

(ICACC-S17-012-2023) Non-hydrolytic sol-gel chemistry to functional hybrid materials (Invited)

N. Pinna*[1]

1. Humboldt-Universität zu Berlin, Department of Chemistry, Germany

10:40 AM

(ICACC-S17-013-2023) Optical Emitters for Thermophotovoltaics: from Photonics to Thermochemical Stability (Invited)

M. Leite*[1]

1. UC Davis, Materials Science and Engineering, USA

11:10 AM

(ICACC-S17-014-2023) 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

S18: Ultra-High Temperature Ceramics

Compositionally Complex UHTCs II

Room: Coquina Salon A (North Tower)

Session Chair: Stefano Curtarolo, Duke University

8:30 AM

(ICACC-S18-009-2023) Plasmonic high-entropy carbides (Invited)

S. Curtarolo*[1]; A. Calzolari[3]; C. Oses[1]; C. Toher[1]; M. Esters[1]; X. Campilongo[1]; S. Stepanoff[2]; D. E. Wolfe[2]

1. Duke University, Materials Science, Electrical Engineering and Physics, USA
2. Pennsylvania State University, USA
3. Istituto Nanoscienze CNR-NANO-S3, Italy

9:00 AM

(ICACC-S18-010-2023) The Role of Entropy and Enthalpy in Mixed Transition Metal Carbides

C. R. Weinberger*[1]; G. Thompson[2]; X. Tang[1]; K. Ma[1]

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

9:20 AM

(ICACC-S18-011-2023) Processing and properties of high entropy carbide ceramics synthesized by carbothermal reduction

P. Brune*[1]; L. Feng[3]; G. Hilmas[2]; W. Fahrenholtz[3]; J. Watts[3]

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

9:40 AM

(ICACC-S18-012-2023) Direct selective laser sintering of high-entropy carbide ceramics

X. Zhang[1]; N. Li[1]; X. Chen[1]; M. Stroup[1]; Y. Lu[1]; B. Cui*[1]

1. University of Nebraska–Lincoln, USA

10:00 AM

Break

Novel Processing Methods II

Room: Coquina Salon A (North Tower)

Session Chairs: Tamás Csanádi, Institute of Materials Research, Slovak Academy of Sciences; Sea-Hoon Lee, Korea Institute of Materials Science

10:20 AM

(ICACC-S18-013-2023) Recent research activity about UHTC and brief introduction of a Extreme Materials Demonstration Research Center project in KIMS (Invited)

S. Lee*[1]; M. Park[1]; Y. Zou[1]

1. Korea Institute of Materials Science, Republic of Korea

10:50 AM

(ICACC-S18-014-2023) Reaction Flash Sintering of Ternary Metal Nitrides

S. Das*[1]; A. Durygin[1]; V. Drozd[1]; A. Eskandariyun[1]; J. S. Smith[2]; Z. Cheng[1]

1. Florida International University, Mechanical and Materials Engineering, USA
2. Argonne National Laboratory, Advanced Photon Source, USA

11:10 AM

(ICACC-S18-015-2023) Effects of Ball-Milled Ti on Densification and Strength of Titanium Diboride

Y. Jimba*[1]; S. Kondo[2]; H. Yu[2]; Y. Okuno[3]; S. Nogami[1]; R. Kasada[2]

1. Tohoku University, Department of Quantum Science and Energy Engineering, Graduate School of Engineering, Japan
2. IMR Tohoku University, Japan
3. Institute for Integrated Radiation and Nuclear Science, Kyoto University, Japan

11:30 AM

(ICACC-S18-016-2023) Field Assisted Sintering of Ternary Hafnium-Tantalum Carbides for Reusable Hypersonic Thermal Protection Systems

D. E. Wolfe*[1]; C. DeSalle[1]; P. Albert[1]; J. Reiss[1]; C. Ryan[1]; S. Stepanoff[1]; Z. Boring[1]; P. Kolonin[1]

1. Pennsylvania State University, USA

S19: Molecular-level Processing and Chemical Engineering of Functional Materials

Polymer-Derived Ceramics I

Room: Ballroom 3 (South Tower)

Session Chair: Peter Kroll, University of Texas, Arlington

8:30 AM

(ICACC-S19-009-2023) Solution chemistry engineering of catalyst interface for solar water splitting (Invited)

F. L. de Souza*[1]

1. Federal University of ABC, Center of Natural Science and Humanity, Brazil

9:00 AM

(ICACC-S19-010-2023) Polymer Derived Ceramic particles capped with hyaluronic acid nanogates for the smart release of antiviral drugs (Invited)

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

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

9:30 AM

(ICACC-S19-011-2023) Strategies for macro- and microporosification of polymer-derived ceramics (Invited)

T. Konegger*[1]; C. Drechsel[1]; H. Peterlik[2]; K. Rauchenwald[1]

1. TU Wien - Vienna University of Technology, Institute of Chemical Technologies and Analytics, Austria
2. University of Vienna, Austria

10:00 AM

Break

Polymer-Derived Ceramics II

Room: Ballroom 3 (South Tower)

Session Chair: Yoshiyuki Sugahara, Waseda Universitry

10:20 AM

(ICACC-S19-012-2023) Ceramic Nonwovens with Exceptional Properties from Silazane/Polyacrylonitrile Hybrid Polymers (Invited)

G. Motz*[1]; J. Denk[1]; S. Schafföner[1]; X. Liao[2]; S. Agarwal[2]

1. University of Bayreuth, Ceramic Materials Engineering, Germany
2. University of Bayreuth, Macromolecular Chemistry 2, Germany

10:50 AM

(ICACC-S19-013-2023) Preceramic Polymer Pre-processing of Polycarbosilanes (Invited)

S. Bullock*[1]; C. L. Cramer[2]; T. Aguirre[2]; D. Mitchell[1]

1. Oak Ridge National Lab, MSTD, USA
2. Oak Ridge National Lab, Manufacturing Science Division, USA

11:20 AM

(ICACC-S19-014-2023) Hydrocarbon Precursor Effects on the Deposition Structure of Carbon Fibers

C. A. Cook*[1]; G. Thompson[2]

1. The University of Alabama, Metallurgical and Materials Engineering, USA
2. Thompson, Metallurgical & Materials Engineering, USA

11:40 AM

(ICACC-S19-015-2023) Preceramic Polymer / Nanoparticle Hybrids Assembled via Ionic Grafting

N. D. Posey[1]; M. B. Dickerson[2]; J. Ponder*[1]

1. Air Force Research Lab/UES Inc., Materials and Manufacturing Directorate, USA
2. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

Emerging Materials and Sustainable Manufacturing Technologies in a Global Landscape: Symposium in Honor of Dr. Tatsuki Ohji

Tatsuki Ohji Honorary Symposium 2

Room: Coquina Salon D (North Tower)

Session Chairs: Michael Halbig, NASA Glenn Research Center; Csaba Balazsi, ELKH Centre for Energy Research

1:30 PM

(ICACC-HS-008-2023) Opening new perspectives for Ceramic-Matrix Composites in seldom explored application sectors (Invited)

G. L. Vignoles*[1]

1. University Bordeaux, LCTS - Lab for ThermStructural Composites, France

2:00 PM

(ICACC-HS-009-2023) Short Fiber Reinforced Ceramic Matrix Composites (Invited)

W. Krenkel*[1]; G. Puchas[2]; J. Winkelbauer[1]; S. Flauder[1]

1. University of Bayreuth, Germany
2. University of Bayreuth, Ceramic Materials Engineering, Germany

2:30 PM

(ICACC-HS-010-2023) Joining and Integration of Silicon Carbide-Based Ceramic Materials for Aerospace Applications: An Overview (Invited)

M. C. Halbig*[1]; M. Singh[2]

1. NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA

3:00 PM

Break

3:20 PM

(ICACC-HS-011-2023) Bandgap engineering of epitaxial β-$(Al_xGa_{1-x})_2O_3$ films and its optical properties (Invited)

I. Milisavljevic[1]; Y. Wu*[1]

1. Alfred University, Kazuo Inamori School of Engineering, New York State College of Ceramics, USA

3:50 PM

(ICACC-HS-012-2023) Dielectric Properties of Lanthanum Doped $BaTiO_3$ Ceramics Fabricated with Defect-controlled Nanoparticles (Invited)

S. Lee*[2]; J. Song[2]; J. Oh[1]; D. Kim[2]

1. Samsung Electro-Mechanics, Republic of Korea
2. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea

4:20 PM

(ICACC-HS-014-2023) Photopolymerization-Based 3D Printing of Inorganic-Organic Hybrid Materials (Invited)

R. Narayan*[1]

1. North Carolina State University, USA

5th Pacific Rim Engineered Ceramics Summit

5th Pacific Rim Engineered Ceramics Summit III

Room: Coquina Salon B (North Tower)

Session Chairs: Mati Horprathum, National Electronics and Computer Technology Center (NECTEC); Jae Chul Kim, Stevens Institute of Technology

1:30 PM

(ICACC-PACRIM-006-2023) Glass Scintillator: Review and Their Recent Development (Invited)

J. Kaewkhao*[1]

1. Nakhon Pathom Rajabhat University, Center of Excellence in Glass Technology and Materials Science, Thailand

2:00 PM

(ICACC-PACRIM-007-2023) Transparent and fluorescent rare-earth doped α-SiAlON ceramics (Invited)

J. Tatami*[1]; K. Aminaka[1]; M. Iijima[1]; T. Takahashi[2]; T. Yahagi[2]; M. Yokouchi[2]

1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

2:20 PM

(ICACC-PACRIM-008-2023) Utilization of nanosecond pulsed electric field in water purification process by electrocoagulation method (Invited)

T. Nakayama*[1]; N. Que[2]; A. Munkhbadrakh[1]; H. Suematsu[1]; T. Goto[1]; K. Niihara[1]

1. Nagaoka University of Technology, Japan
2. Kyungpook National University, Republic of Korea

2:40 PM

(ICACC-PACRIM-009-2023) Catalytic Liquid-phase Oxidation of Phenol Utilizing Novel Catalysts Based on Lanthanum Oxyfluoride (Invited)

N. Imanaka*[1]

1. Osaka University, Applied Chesistry, Japan

3:00 PM

Break

5th Pacific Rim Engineered Ceramics Summit IV

Room: Coquina Salon B (North Tower)

Session Chairs: Tadachika Nakayama, Nagaoka University of Technology; Jakrapong Kaewkhao, Nakhon Pathom Rajabhat University

3:20 PM

(ICACC-PACRIM-010-2023) Design and engineering metal oxide ceramic nanostructures based on optical and electrical sensors for identification of VOCs (Invited)

M. Horprathum*[1]

1. National Electronics and Computer Technology Center (NECTEC), Thailand

3:50 PM

(ICACC-PACRIM-011-2023) Growth of β-MoO_3 whiskers for medical radiopharmacy applications (Invited)

H. Suematsu*[1]; N. M. Chu[2]; Y. Yang[1]; T. Do[3]; T. Nakayama[1]; K. Niihara[1]

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. AIST, Japan
3. Nagaoka University of Technology, Nuclear System Safety Engineering, Japan

4:10 PM

(ICACC-PACRIM-012-2023) Phase transformations driven by complex atomic interactions in layered sodium transition metal oxides (Invited)

J. Kim*[1]

1. Stevens Institute of Technology, Chemical Engineering & Materials Science, USA

4:40 PM

(ICACC-PACRIM-013-2023) Design and Analysis of Additively Manufactured Battery Thermal Management Systems

W. Nelson*[1]; A. S. Almansour[2]; M. Singh[3]; M. C. Halbig[4]; E. McNichols[4]

1. St. Cloud State University, USA
2. NASA Glenn Research Center, Mechanical Engineering, USA
3. Ohio Aerospace Institute, USA
4. NASA Glenn Research Center, USA

FS2: Materials for Thermoelectric and Thermionic Energy Conversion

Thermoelectric Generators I

Room: Flagler A (South Tower)

Session Chair: Mofasser Mallick, Karlsruhe Institute of Technology South Campus

1:30 PM

(ICACC-FS2-010-2023) Thermoelectric Materials for Low Temperature Power Generation (Invited)

Z. Ren*[1]

1. University of Houston, Physics & TcSUH, USA

2:00 PM

(ICACC-FS2-011-2023) Robust thermoelectric modules based on MgAgSb and $Mg_3(Sb,Bi)_2$ with conversion efficiency of 8.5% and maximum cooling of 72 K (Invited)

K. Nielsch*[1]

1. Leibniz Institute for Solid State and Materials Research, Institute of Metallic Materials, Germany

2:30 PM

(ICACC-FS2-012-2023) Thermoelectric oxides for Transverse Multilayer Thermoelectric Generators (Invited)

J. Topfer*[1]; R. Loehnert[1]; A. Bochmann[1]; A. Ibrahim[1]; B. Capraro[2]

1. Ernst-Abbe-Hochschule Jena, Germany
2. Fraunhofer IKTS, Germany

3:00 PM

Break

Thermoelectric Generators II

Room: Flagler A (South Tower)

Session Chair: Kornelius Nielsch, Leibniz Institute for Solid State and Materials Research

3:20 PM

(ICACC-FS2-013-2023) High ZT telluride-based flexible thermoelectric films through interfacial modification via millisecond photonic-curing for fully printed TEGs (Invited)

M. Mallick*[1]; L. Franke[1]; A. Rösch[1]; U. Lemmer[1]

1. Karlsruhe Institute of Technology South Campus, Light Technology Institute, Germany

3:50 PM

(ICACC-FS2-014-2023) Thermoelectrics for direct conversion of industrial waste heat into useful electrical power (Invited)

J. Cho*[1]

1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

4:20 PM

(ICACC-FS2-015-2023) Colossal Nernst power factor in topological semimetals for Ettingshausen refrigeration (Invited)

Q. Li*[1]

1. Stony Brook University and Brookhaven National Laboratory, USA

S1: Mechanical Behavior and Performance of Ceramics & Composites

Processing, Testing, and Characterization of Ceramic Fibers and Ceramic Matrix Composites (CMCs)

Room: Ballroom 5 (South Tower)

Session Chairs: Jason Baker, Rolls-Royce Corporation; Monica Ferraris, Politecnico di Torino

1:30 PM

(ICACC-S1-018-2023) Diametral C-ring Compression Strength of SiC Composite (Invited)

J. Park*[1]; W. Kim[2]

1. Korea Atomic Energy Research Institute, Nuclear Materials Development Division, Republic of Korea
2. Korea Atomic Energy Research Institute, Republic of Korea

2:00 PM

(ICACC-S1-019-2023) Non-Destructive Evaluation of processing defects in fiber reinforced, MI-SiC/SiC using electrical resistance

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

1. University of Akron, Dept. of Mechanical Engineering, USA

2:20 PM

(ICACC-S1-020-2023) Strategic production method of cost-competitive SiC fibers via innovative precursor synthesis

R. Naito*[1]; R. Iuchi[2]; J. Saito[1]; T. Goto[2]; K. Yamakawa[3]

1. Kureha Corporation, Organic Synthesis Research Department, Japan
2. Kureha Corporation, Process Innovation Department, Japan
3. Kureha Corporation, New Business Creation Project, Japan

2:40 PM

(ICACC-S1-021-2023) Characterization of SiC fiber obtained by a cost-competitive manufacturing method using our proprietary polycarbosilane as the key material

R. Iuchi*[1]; R. Naito[2]; J. Saito[2]; T. Goto[1]; K. Yamakawa[3]

1. Kureha Corporation, Process Innovation Department, Japan
2. Kureha Corporation, Organic Synthesis Research Department, Japan
3. Kureha Corporation, New Business Creation Project, Japan

3:00 PM

Break

3:20 PM

(ICACC-S1-022-2023) Processing and mechanical evaluation of oxide-oxide ceramic matrix composites manufactured using automated fibre placement

T. Nelson*[1]; J. Binner[2]; I. Edmonds[3]

1. University of Birmingham, School of Metallurgy and Materials, United Kingdom
2. University of Birmingham, Ceramic Science & Engineering, United Kingdom
3. Rolls-Royce Derby, United Kingdom

3:40 PM

(ICACC-S1-023-2023) Automated spraying process for the manufacturing of short fiber oxide fiber composites

G. Puchas*[1]; J. Winkelbauer[1]; S. Schafföner[1]; W. Krenkel[1]

1. University of Bayreuth, Ceramic Materials Engineering, Germany

4:00 PM

(ICACC-S1-024-2023) Improving the mechanical performance of phosphate-based ceramic matrix composites

B. Steadman*[1]; S. Butterworth[2]; J. Binner[1]

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

4:20 PM

(ICACC-S1-025-2023) Strength Degradation Due to Solid Particle Erosion at Elevated Temperatures of Oxide/Oxide Ceramic Matrix Composites

F. Mirza*[1]; R. Panakarajupally[1]; J. El Rassi[1]; G. N. Morscher[1]; F. Abdi[2]; S. R. Choi[3]

1. University of Akron, Mechanical Engineering, USA
2. AlphaSTAR Corporation, USA
3. Naval Air Station Patuxent River, USA

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications

Advanced Ceramic Coatings for Extreme Environments II

Room: Flagler C (South Tower)

Session Chair: Peter Mechnich, DLR - German Aerospace Center

1:30 PM

(ICACC-S2-020-2023) Aerosol Deposition – novel fields of applications beyond semiconductor business

T. Stoecker*[1]; M. Raettig[1]; I. V. Luck[1]

1. Heraeus, High Performance Coatings, Germany

1:50 PM

(ICACC-S2-021-2023) Advanced ceramic coatings on aluminum by laser treatment of filled organosilazane-based composites

A. Horcher*[1]; K. Tangermann-Gerk[2]; W. Krenkel[1]; S. Schafföner[1]; G. Motz[1]

1. University of Bayreuth, Ceramic Materials Engineering, Germany
2. Bayerisches Laserzentrum GmbH, Germany

2:10 PM

(ICACC-S2-022-2023) A Novel Method of Surface Fluorination of Y_2O_3 Ceramics via Gas Phase Reaction

S. Lee*[1]; K. Bae[2]; Y. Oh[1]

1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea
2. Korea University, Republic of Korea

2:30 PM

(ICACC-S2-023-2023) Thermally and mechanically stable superhydrophobic glass coatings containing nanoparticles

B. Witulski*[1]

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

2:50 PM

Break

CMAS-related Degradation and Mitigation Strategies I

Room: Flagler C (South Tower)

Session Chair: Peter Mechnich, DLR - German Aerospace Center

3:20 PM

(ICACC-S2-024-2023) Thermochemistry of Reactions between Ceramic Coating Materials and Silicate Melts (Invited)

G. Costa*[1]

1. NASA Glenn Research Center, USA

3:50 PM

(ICACC-S2-025-2023) Interactions between EBCs and CMAS: A thermochemical approach

J. Bonnal*[1]; C. Petitjean[1]; P. Panteix[1]; D. Bonina[1]; C. Gendarme[1]; S. Arnal[2]; M. Vilasi[1]

1. Université de Lorraine, CNRS, IJL, France
2. Safran Ceramics, France

4:10 PM

(ICACC-S2-026-2023) Modeling and design of CMAS-resistant multiphase T-EBC with CALPHAD tools

N. Arai*[1]; O. Kontsevoi[1]; Z. Liang[1]; D. L. Poerschke[2]; E. P. Godbole[3]; Y. Yu[2]; J. Gong[1]

1. QuesTek innovations, USA
2. University of Minnesota, Chemical Engineering and Materials Science, USA
3. University of Minnesota, Twin Cities, Chemical Engineering and Materials Science, USA

4:30 PM

(ICACC-S2-027-2023) Thermochemical/Thermomechanical Synergies in High Temperature Particle Erosion of CMAS Exposed EBCs

J. L. Stokes*[1]; M. J. Presby[1]; R. Webster[1]; J. Setlock[2]; B. J. Harder[1]

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

4:50 PM

(ICACC-S2-028-2023) Rare-earth Monosilicate Interactions with Calcuim-magnesium Aluminosilicate

C. Miller*[1]; E. Opila[1]

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

S3: 20th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology

Proton Conducting Ceramic Cells

Room: Ponce de Leon (North Tower)

Session Chairs: Eric Wachsman, University of Maryland; Jakub Kupecki, Institute of Power Engineering

1:30 PM

(ICACC-S3-020-2023) Proton ceramic electrolysers: An overview of pressurized tubular stack technology (Invited)

M. Fontaine*[1]; E. Vøllestad[1]

1. SINTEF AS, Sustainable Energy Technologies, Norway

2:00 PM

(ICACC-S3-021-2023) Tubular Solid Oxide Cell Testing (Invited)

Y. Du*[1]; D. Panthi[2]

1. Kent State University, USA
2. Kent State University, Engineering Technology, USA

2:30 PM

(ICACC-S3-022-2023) Current status of protonic ceramic fuel cell development at KIST (Invited)

J. Lee*[1]; H. Ji[1]; J. Kim[1]

1. Korea Institute of Science and Technology, Republic of Korea

3:00 PM

Break

3:20 PM

(ICACC-S3-023-2023) 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

3:50 PM

(ICACC-S3-025-2023) Rejuvenating the Electrolyte Surface of Protonic Ceramic Electrochemical Cells by Acid Etch

W. Bian*[1]

1. Idaho National Lab, USA

S5: Next-Generation Bioceramics and Biocomposites

Bioceramic Scaffolds

Room: Ballroom 1-2 (South Tower)

Session Chair: Dušan Galusek, IIC SAS

1:30 PM

(ICACC-S5-015-2023) Composite 3D Printing for Bone and Osteochondral Tissue Engineering (Invited)

M. Wang*[1]

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

2:00 PM

(ICACC-S5-016-2023) Additive manufacturing of 3D ceramic structures in hydrogel bath using self-setting bioceramic inks for bone tissue engineering

N. Raja*[1]; Y. Choi[1]; H. Park[1]; H. Yun[1]

1. Korea Institute of Materials Science, Republic of Korea

2:20 PM

(ICACC-S5-017-2023) Evaluation of Different Types of PEEK-based Composites for Biomedical Response

S. Javaid[1]; C. Matzke*[1]; A. Thorn[1]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA

2:40 PM

(ICACC-S5-018-2023) Development of osteogenesis enhanced bioink by cell-laden α-TCP/GelMA hydrogel with cement reaction

J. Kim*[1]; H. Park[2]; H. Yun[2]

1. University of Science and Technology (UST), Republic of Korea
2. Korea Institute of Materials Science, Republic of Korea

3:00 PM

Break

Bioceramic Coatings, Implants

Room: Ballroom 1-2 (South Tower)

Session Chair: Antonia Ressler, Faculty of Chemical Engineering and Technology

3:20 PM

(ICACC-S5-019-2023) Antipathogen composite coatings via co-sputtering technique for different applications

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

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

3:40 PM

(ICACC-S5-020-2023) Antimicrobial glass and ceramic-based coatings for air and water filtration

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

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

4:00 PM

(ICACC-S5-021-2023) Biomineralization and in vitro biocompatibility of marine-resource-based hydroxyapatite bioceramics with interconnected porous architecture

K. Hadagalli*[1]; A. Panda[2]; S. Mandal[3]; B. Basu[2]; R. Bordia[1]

1. Clemson University, Materials Science and Engineering, USA
2. Indian Institute of Science (IISc), Materials Research Centre, India
3. National Institute of Technology Karnataka, Metallurgical and Materials Engineering, India

4:20 PM

(ICACC-S5-022-2023) Novel polyhydroxyalkanoate blends as coatings of β tricalcium phosphate scaffolds

S. Skibinski*[1]; J. Czechowska[1]; E. Cichon[1]; P. Pantak[1]; M. Guzik[2]; P. Szymczak[1]; A. Zima[1]

1. Faculty of Materials Science and Ceramics, AGH University of Science and Technology, Poland
2. Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Poland

S6: Advanced Materials and Technologies for Rechargeable Energy Storage

Advanced Cathode Materials for Lithium Batteries I

Room: Coquina Salon E (North Tower)

Session Chair: Payam Kaghazchi, Forschungszentrum Juelich

1:30 PM

(ICACC-S6-016-2023) Earth-Abundant Cathode Active Materials: Research and Development Efforts at Argonne National Laboratory (Invited)

J. R. Croy*[1]; A. Gutierrez[1]; J. Chen[2]; A. Vu[1]; E. Lee[1]; B. Shi[3]; J. Gim[4]; M. Balasubramanian[5]; M. Thackeray[1]

1. Argonne National Laboratory, USA
2. Worcester Polytechnic Institute, USA
3. University of Rochester, USA
4. Argonne National Lab, CSE, USA
5. Oak Ridge National Lab, USA

2:00 PM

(ICACC-S6-017-2023) Exploration of cathode materials for high energy density rechargeable batteries (Invited)

K. Kawai*[1]; A. Yamada[2]

1. Waseda University, Japan
2. The University of Tokyo, Japan

2:30 PM

(ICACC-S6-018-2023) Li-rich layered oxides for lithium cells: Pushing positive electrodes to their limits (Invited)

S. Brutti*[1]

1. Università di Roma La Sapienza, Chemistry, Italy

3:00 PM

Break

Advanced Cathode Materials for Lithium Batteries II

Room: Coquina Salon E (North Tower)

Session Chairs: Jason Croy, Argonne National Laboratory; Kosuke Kawai, Waseda University

3:20 PM

(ICACC-S6-020-2023) Impact of Doping on Stability of Cathode Materials for Li-based Batteries: A Multiscale Modeling Study (Invited)

P. Kaghazchi*[1]

1. Forschungszentrum Juelich, Germany

3:50 PM

(ICACC-S6-021-2023) Structure and Doping of Lithium Rich Layered Oxides as a cathode material for Lithium Ion Batteries

A. Celeste*[1]; L. Silvestri[2]; S. Brutti[1]

1. Università di Roma La Sapienza, Chemistry, Italy
2. ENEA C.R., Tecnologie Energetiche e Fonti Rinnovabili, Italy

4:10 PM

(ICACC-S6-022-2023) Design of interfacial thermodynamics to increase stability of Li-based cathodes

R. Castro*[1]

1. University of California, Davis, Material Science & Engineering, USA

S8: 17th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT17)

Advanced Composite Manufacturing Technologies, Hybrid Processes II

Room: Coquina Salon F (North Tower)

Session Chair: Csaba Balazsi, ELKH Centre for Energy Research

1:30 PM

(ICACC-S8-014-2023) Catalytic Combustion-type Carbon Monoxide Gas Sensor Compose of Oxide Ion Conducting Solid (Invited)

N. Imanaka*[1]

1. Osaka University, Applied Chemistry, Japan

2:00 PM

(ICACC-S8-015-2023) Mechanical properties of potassium and metakaolin based geopolymer under electron irradiation

Y. Yang*[1]; H. Suematsu[2]; K. Niihara[2]; T. Nakayama[2]; T. Le[3]; T. Do[4]

1. Nagaoka University of Technology, Energy and Environment Science, Japan
2. Extreme Energy-Density Reserch Institute, Japan
3. Danang University of Science and Technology, Viet Nam
4. Nagaoka University of Technology, Nuclear System Safety Engineering, Japan

2:20 PM

(ICACC-S8-016-2023) Novel Wet Electrospinning Inside a Reactive Pre-ceramic Gel to Yield Advanced Nanofiber-Reinforced Geopolymer Composites

Y. Xu*[1]; A. Akono[1]

1. Northwestern University, Civil and Environmental Engineering, USA

2:40 PM

Break

Joining, Integration, Machining, Repair, and Refurbishment Technologies

Room: Coquina Salon F (North Tower)

Session Chairs: Hisayuki Suematsu, Nagaoka University of Technology; Chang-Jun Bae, Korea Institute of Materials Science

3:00 PM

(ICACC-S8-017-2023) Joining and integration technologies for ceramic- and CMC-based components (Invited)

M. Ferraris*[1]

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

3:30 PM

(ICACC-S8-018-2023) Surface strengthening of ceramics by high-temperature laser shock peening

F. Wang[1]; X. Chen[1]; D. P. DeLellis[2]; A. Krause[2]; Y. Lu[1]; B. Cui*[1]

1. University of Nebraska–Lincoln, USA
2. Carnegie Mellon University, Materials Science and Engineering, USA

3:50 PM

(ICACC-S8-019-2023) Joining of SiC components by pressureless reaction bonding using SiC loaded suspensions

R. Orta Guerra*[1]; O. Brandt[1]; R. Trice[1]; J. P. Youngblood[1]

1. Purdue University, Department of Materials Engineering, USA

Novel Forming/Sintering Technologies, Near-net Shaping

Room: Coquina Salon F (North Tower)

Session Chair: Monica Ferraris, Politecnico di Torino

4:30 PM

(ICACC-S8-020-2023) Understanding the role of transient liquid phases on the densification of cold sintered ZnO

A. Jabr*[1]; J. Fanghanel[2]; Z. Fan[2]; R. Bermejo[3]; C. Randall[4]

1. Montan Universitaet Leoben, Department Materials Science, Austria
2. Materials research institute, Materials Science and Engineering Department, USA
3. Montanuniversitaet Leoben, Institut fuer Struktur- und Funktionskeramik, Austria
4. Penn State University, Materials Science and Engineering, USA

4:50 PM

(ICACC-S8-021-2023) Influence of the monomer on the sintering of the gelcasted ceramics

L. Gauzere*[1]; C. Besnard[2]; S. Couillaud[2]; J. Léon[2]; J. Heintz[3]

1. ICMCB-CNRS, France
2. Galtenco Solutions, France
3. ENSCBP-Bordeaux INP, ICMCB, France

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems

High Temperature Ceramics for Space Reactor and Advanced Reactor Applications

Room: Ballroom 4 (South Tower)

Session Chair: Christian Deck, General Atomics

1:30 PM

(ICACC-S13-016-2023) Raman spectroscopy imaging of uranium nitride microspheres

E. Lopez Honorato*[1]; R. Seibert[1]; J. M. Kurley[1]; A. Nelson[1]

1. Oak Ridge National Lab, USA

1:50 PM

(ICACC-S13-017-2023) Chemical vapor deposition of ZrC for space nuclear propulsion

E. Lopez Honorato*[1]; R. Heldt[1]; T. J. Gerczak[1]; P. Doyle[1]; W. Cureton[1]; G. Helmreich[1]

1. Oak Ridge National Lab, USA

2:10 PM

(ICACC-S13-018-2023) Development of Zirconium Carbide - Uranium Mononitride Ceramic Composites by Spark Plasma Sintering Technique for Space Reactor Applications

N. D. Jerred*[1]; R. D. Scott[1]; S. R. Hamilton[1]; J. M. Zillinger[1]; R. C. O'Brien[2]; C. A. Fife[4]; D. E. Burns[3]

1. Idaho National Laboratory, Advanced Fuels Fabrication, USA
2. Idaho National Laboratory, Special Reactor Concepts, USA
3. Idaho National Laboratory, Space Nuclear Power & Isotope Systems, USA
4. Idaho National Laboratory, Irradiation Testing, USA

2:30 PM

(ICACC-S13-019-2023) Large Scale Additive Manufacturing of Silicon Carbide

K. Terrani*[1]; M. Trammell[1]; B. Jolly[1]; G. Garside[1]

1. Ultra Safe Nuclear, USA

2:50 PM

Break

New Materials and Containment for Neutron Moderators, Reflectors, and Shielding

Room: Ballroom 4 (South Tower)

Session Chair: Hirokazu Katsui, National Institute of Advanced Industrial Science and Technology (AIST)

3:20 PM

(ICACC-S13-020-2023) Advanced Hydrides for Terrestrial and Space Fission Reactors (Invited)

C. Taylor*[1]; T. Nizolek[2]; A. P. Shivprasad[1]; E. Luther[2]; T. Saleh[1]

1. Los Alamos National Lab, Materials Science and Technology Division, USA
2. Los Alamos National Lab, Sigma Division, USA

3:50 PM

(ICACC-S13-021-2023) Solid ceramic breeder materials for fusion and metal hydrides for microreactors (Invited)

C. N. Taylor*[1]; T. F. Fuerst[1]; M. N. Cinbiz[1]

1. Idaho National Laboratory, USA

4:20 PM

(ICACC-S13-022-2023) Surface Modification Strategies for Hydrogen Retention in Hydride Moderators

R. Bohanon*[1]; F. R. Caliari[2]; S. Sampath[2]; E. Luther[3]; S. S. Raiman[4]

1. Texas A&M University, Nuclear Engineering, USA
2. Stony Brook University, Center for Thermal Spray Research, USA
3. Los Alamos National Laboratory, USA
4. University of Michigan, Nuclear Engineering & Radiological Sciences, USA

4:40 PM

(ICACC-S13-023-2023) Development of Ceramic Matrix Entrained Metal Hydride Shield Composites

B. Cheng*[1]; D. Sprouster[1]; J. Trelewicz[1]; L. Snead[1]

1. Stony Brook University, Materials Science and Chemical Engineering, USA

S15: 7th International Symposium on Additive Manufacturing and 3-D Printing Technologies

Vat Photopolymerization / Substrate Stereolithography II

Room: Coquina Salon H (North Tower)

Session Chair: Majid Minary, University of Texas at Dallas

1:30 PM

(ICACC-S15-010-2023) High resolution 3D printing and injection molding of transparent fused silica glass (Invited)

F. Kotz-Helmer*[1]

1. Glassomer GmbH, Germany

2:00 PM

(ICACC-S15-011-2023) Nanocomposites Obtained with Vat Photopolymerization Techniques

L. Gil*[1]; H. A. Colorado L.[1]

1. Universidad de Antioquia, Colombia

2:20 PM

(ICACC-S15-012-2023) Ceramic Stereolithography for Sustainable Manufacturing

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

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

2:40 PM

(ICACC-S15-013-2023) Stereolithographic Additive Manufacturing of Geometrically Modulated Structures

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

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

3:00 PM

Break

Vat Photopolymerization / Substrate Stereolithography III

Room: Coquina Salon H (North Tower)

Session Chair: Dileep Singh, Argonne National Lab

3:20 PM

(ICACC-S15-014-2023) 3D printing alumina using DLP process

M. Minary*[1]

1. University of Texas at Dallas, Mechanical Engineering, USA

3:40 PM

(ICACC-S15-015-2023) Increasing Wall Thickness of Additively Manufactured Alumina Parts Through Improving the Burnout Schedule

B. Lam*[1]; C. Kassner[1]; J. W. Kemp[3]; W. J. Costakis[1]; C. Wyckoff[1]; L. M. Rueschhoff[2]

1. Air Force Research Lab, USA
2. Air Force Research Lab, Materials and Manufacturing Directorate, USA
3. Oak Ridge National Lab, Chemical Sciences Division, USA

4:00 PM

(ICACC-S15-016-2023) Lithography-based additive manufacturing of piezoceramics and highly dielectric ceramics

M. Schwentenwein*[1]; C. Bae[2]; A. A. Altun[1]; D. Brouczek[1]; C. Hofstetter[1]; S. M. Allan[3]

1. Lithoz GmbH, Austria
2. Korea Institute of Materials Science, Department of 3D printing materials, Republic of Korea
3. Lithoz America, LLC, USA

4:20 PM

(ICACC-S15-017-2023) DLP-based additive manufacturing technology for 3D transparent yttria construction

S. Zhang*[1]; C. Gal[2]; Y. Choi[2]; H. Kim[2]; Y. Park[2]; H. Yun[2]

1. University of Science and Technology, Republic of Korea
2. Korea Institute of Materials Science, Republic of Korea

S16: Geopolymers, Inorganic Polymers and Sustainable Construction Materials

Geopolymers made from or with Biological Materials

Room: Coquina Salon C (North Tower)

Session Chair: Cengiz Bagci, Hitit University

1:30 PM

(ICACC-S16-008-2023) Valorization of a fruit waste (Musa paradisiaca) for producing kaolinic and-illitic-based ceramics (Invited)

R. Serewane-Deramne[2]; G. Lecomte-Nana*[1]; G. Tchangbedji[3]; C. Peyratout[1]

1. IRCER, ENSIL-ENSCI, University of Limoges, France
2. Université de Bangui, Central African Republic
3. Université de Lomé, Togo

2:00 PM

(ICACC-S16-009-2023) A review on alternative use of Rice husk and its ash as a source of silica in ceramics (Invited)

S. .*[1]

1. Guru Nanak College Budhlada, Punjab, Agriculture & Food Processing, India

2:30 PM

(ICACC-S16-010-2023) Up-cycling of Rice Husk as a Precursor for SiC Reinforcement in Geopolymer Composites (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

3:00 PM

Break

3:20 PM

(ICACC-S16-011-2023) Geopolymer composite bamboo fiber reinforcement for high flexural strength and low water absorption (Invited)

M. G. Sá Ribeiro*[1]; I. P. Miranda[1]; W. M. Kriven[2]; A. Ozer[3]; R. A. Sa Ribeiro[4]

1. Bionorte Network, Biodiversity and Biotechnology, Brazil
2. University of Illinois at Urbana-Champaign, USA
3. University of Illinois at Urbana-Champaign, Material Science and Engineering, USA
4. INPA-National Institute for Amazonian Research, Green Building and Engineering Laboratory, Brazil

3:40 PM

(ICACC-S16-012-2023) Mechanical Properties of Hemp Hurd Reinforced Geopolymer

G. Jarrold*[1]; E. Oh[1]; W. M. Kriven[1]

1. University of Illinois at Urbana-Champaign, USA

Synthesis, Processing, Microstructure

Room: Coquina Salon C (North Tower)

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

4:00 PM

(ICACC-S16-013-2023) Formation of ferrisilicates during the geopolymerization of laterites: Phases evolution, microstructure and micromechanics (Invited)

E. Kamseu*[3]; A. Akono[1]; R. Kaze[2]; J. Nouping[3]; S. Rossignol[4]; C. Leonelli[5]

1. Northwestern University, Civil and Environmental Engineering, USA
2. University of Yaoundé 1, Department of Inorganic Chemistry, Cameroon
3. Local Materials Promotion Authority, Cameroon
4. University of Limoges, IRCER, UMR 7315, France
5. University of Modena and Reggio Emilia, Department of Engineering Enzo Ferrari, Italy

4:20 PM

(ICACC-S16-014-2023) Influence of alkaline and iron precursors on geopolymer matrix at high temperature (1150 °C)

Q. Cligny*[1]; D. Brandt[2]; S. Rossignol[3]

1. IRCER, Organisation Structurale multiéchelle des matériaux, France
2. CEA, DAM, France
3. Laboratoire SPCTS, France

4:40 PM

(ICACC-S16-015-2023) Effect of Nanomaterials on the Properties of KNa Activated Metakaolin Based Engineered Geopolymer Composites

R. Abufarsakh*[1]; H. Noorvand[1]; G. Arce[2]; M. Hassan[1]; S. Subedi[1]; S. Sukhishvili[3]; O. D. Huang[3]; M. Radovic[3]

1. Louisiana State University, USA
2. Virginia Department of Transportation, USA
3. Texas A&M University, Materials Science & Engineering, USA

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Multi-functional Materials II

Room: Coquina Salon G (North Tower)

Session Chairs: Daniel Chua, National University of Singapore; Elisa Moretti, Ca' Foscari University of Venice

1:30 PM

(ICACC-S17-015-2023) Radical Polymer Devices for Energy Storage and Hybrid Solar Cells (Invited)

G. Fanchini*[1]

1. University of Western Ontario, Physics and Astronomy, Canada

2:00 PM

(ICACC-S17-016-2023) Controllable synthesis and development of one dimensional oriented CdS nanoarray photoanodes for efficient photoelectrochemical hydrogen evolution (Invited)

M. Siaj*[1]

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

2:30 PM

(ICACC-S17-017-2023) Sustainable Carbon Nanomaterials in Green Energy Applications (Invited)

R. Naccache*[1]

1. Concordia University, Chemistry and Biochemistry, Canada

3:00 PM

Break

3:20 PM

(ICACC-S17-019-2023) Optical and magnetic probes of the interplay between spin, charge, and lattice in the multiferroic RMn_2O_5 (Invited)

S. Mansouri[1]; M. Chaker*[1]

1. INRS, Energie materiaux télécommunications, Canada

3:50 PM

(ICACC-S17-020-2023) Double Perovskite Oxides as Bifunctional Catalysts for Oxygen Evolution and Reduction Reactions

A. Bhardwaj*[1]; Z. Aytuna[1]; B. Witulski[1]; S. Mathur[1]

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

S18: Ultra-High Temperature Ceramics

Processing-Microstructure-Property Relationship I

Room: Coquina Salon A (North Tower)

Session Chair: Gregory Thompson, Thompson

1:30 PM

(ICACC-S18-017-2023) Deposition Characteristics and Corresponding Microstructural Evolution in Composite-based UHTC Structures (Invited)

G. Thompson*[1]; M. Large[1]; C. Stotts[2]; C. R. Weinberger[2]

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

2:00 PM

(ICACC-S18-018-2023) Micro/nanomechanics of ZrB_2 grains: The effect of anisotropy, temperature and dislocations (Invited)

T. Csanádi*[1]

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

2:30 PM

(ICACC-S18-019-2023) Densification, Microstructure, and Properties of Zirconium Diboride (ZrB_2) with Carbon Additions

Y. Zhou*[1]; W. Fahrenholtz[1]; G. Hilmas[1]

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

2:50 PM

Break

Response in Extreme Environments I

Room: Coquina Salon A (North Tower)

Session Chair: Luca Zoli, CNR ISTEC

3:20 PM

(ICACC-S18-020-2023) Elevated Temperature Flexural Strength of Ultra-High Temperature Ceramic Matrix Composites Manufactured by Sintering, Pyrolysis or Hybrid Processes (Invited)

L. Zoli*[1]; F. Servadei[1]; A. Vinci[1]; P. Galizia[1]; D. Sciti[1]

1. CNR-ISTEC, Italy

3:50 PM

(ICACC-S18-021-2023) Investigation of mechanical properties and melting point of tantalum and hafnium carbo-nitrides

J. Manaud*[1]; M. Cologna[1]; L. Vlahovic[1]

1. European Commission, Joint Research Center Karlsruhe, Germany

4:10 PM

(ICACC-S18-022-2023) Melting point determination of high entropy materials via laser heating and radiation pyrometry

M. Milich*[1]; E. Hoglund[5]; H. B. Schonfeld[1]; M. Qin[4]; D. Robba[2]; L. Vlahovic[2]; K. Boboridis[2]; R. Konings[2]; J. Luo[3]; P. E. Hopkins[1]

1. University of Virginia, Mechanical and Aerospace Engineering, USA
2. EU Joint Research Center-Institute for Transuranic Materials, Germany
3. University of California, San Diego, USA
4. University of California, San Diego, Department of NanoEngineering, Program of Materials Science and Engineering, USA
5. University of Virginia, Materials Science and Engineering Department, USA

4:30 PM

(ICACC-S18-023-2023) A steady-state laser heating technique to measure the thermal conductivity of ceramics at ultrahigh temperatures and in their molten state

P. E. Hopkins*[1]; M. Milich[2]; S. Bender[1]; H. B. Schonfeld[2]; D. Robba[3]; L. Vlahovic[3]; K. Boboridis[3]; R. Konings[3]; J. Luo[4]; J. Gaskins[5]

1. University of Virginia, USA
2. University of Virginia, Mechanical and Aerospace Engineering, USA
3. Joint Research Centre, Germany
4. UCSD, USA
5. Laser Thermal, Inc., USA

S19: Molecular-level Processing and Chemical Engineering of Functional Materials

Polymer-Derived Ceramics III

Room: Ballroom 3 (South Tower)

Session Chair: Günter Motz, University of Bayreuth

1:30 PM

(ICACC-S19-016-2023) Modification of organosilicon polymers by transition metal complexes towards functional nanocomposites for energy (Invited)

S. Bernard*[1]

1. CNRS, IRCER, France

2:00 PM

(ICACC-S19-017-2023) Pyrolysis of silicone resin in reactive CO_2 environment: A comprehensive study of the polymer-to-ceramic transformation

G. D. Soraru*[1]; R. Campostrini[1]; A. Zambotti[1]; M. Biesuz[1]

1. University of Trento, Industrial Engineering, Italy

2:20 PM

(ICACC-S19-018-2023) On the oxidation of polymer derived silicon carbide ceramics by in situ NAP-XPS and NMR

J. O. Garcia*[1]; H. Jain[2]; G. Singh[3]; R. Thorpe[5]; J. Roberts[4]; W. Breyer[4]

1. Lehigh University, Materials Science and Engineering, USA
2. Lehigh University, International Materials Institute for New Functionality in Glass, USA
3. Kansas State University, Mechanical and Nuclear Engineering Dept., USA
4. Lehigh University, Chemistry, USA
5. Lehigh University, Institute for Functional Materials and Devices, USA

2:40 PM

(ICACC-S19-019-2023) Design, doping strategy and characterization of Polymer Dervied SiAlON

M. Kumari*[1]

1. CNRS, IRCER, France

3:00 PM

Break

Polymer-Derived Ceramics IV

Room: Ballroom 3 (South Tower)

Session Chair: Samuel Bernard, CNRS

3:20 PM

(ICACC-S19-020-2023) Synthesis of UHTC powders using wet or dry process (Invited)

S. Lee*[1]; H. Lee[1]; S. J. McCormack[2]

1. Korea Institute of Materials Science, Republic of Korea
2. University of California, Davis, Materials Science and Engineering, USA

3:50 PM

(ICACC-S19-021-2023) Effect of ultra-fast ceramization of polymer-derived SiOC aerogels and their application as anodes for Na-ion batteries

A. Zambotti*[1]; M. Melzi d'Eril[2]; M. Graczyk-Zajac[2]; E. Ionescu[2]; G. D. Soraru[1]

1. University of Trento, Industrial Engineering, Italy
2. Technical University Darmstadt, Germany

4:10 PM

(ICACC-S19-022-2023) Functional Bioglass-C Nanocomposite Scaffolds by Masked Stereolithography of a Preceramic Polymer-based Nanoemulsion (Invited)

F. M. Stabile[2]; H. Elsayed[1]; E. Bernardo*[1]

1. Unniversity of Padova, Department of Industrial Engineering, Italy
2. CETMIC, Argentina

4:40 PM

(ICACC-S19-023-2023) Heterometallic Actinide Alkoxides as Molecular Precursors for the Formation of Ternary Actinide Oxide Nanomaterials

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

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

Poster Session A

Room: Ocean Center Arena

5:00 PM

(ICACC-P002-2023) 3-D Printing of Interdigitated Battery Electrodes

D. H. Nguyen*[2]; A. S. Almansour[1]; M. Singh[3]; M. C. Halbig[2]; Z. Tuchfeld[2]

1. NASA Glenn Research Center, Mechanical Engineering, USA
2. NASA Glenn Research Center, USA
3. Ohio Aerospace Institute, USA

(ICACC-P003-2023) Room temperature synthesis of Al^{3+}-doped γ-Ga_2O_3 nanoparticles by direct oxidation of Al-Ga alloy using ultrasound irradiation

T. Yamanaka*[1]; Y. Hayashi[1]; J. Fukushima[1]; H. Takizawa[1]

1. Tohoku University, School of Engineering, Japan

(ICACC-P004-2023) Ion Gated Thermoelectricity with Thin Film Oxides for the Internet of Things

C. Nunez Lobato*[1]; N. Pryds[2]

1. DTU, Energy, Functional Oxides, Denmark
2. Technical University of Denmark, Denmark

(ICACC-P005-2023) Influence of Spark Plasma Sintering Technique on Thermoelectric Properties of Sodium Tungsten Bronze

S. Maneeyom*[1]; M. Ohtaki[1]

1. Kyushu University, Department of Applied Science for Electronics and Materials, Japan

(ICACC-P006-2023) Fabrication of Oxide Multilayer Thermoelectric Generators

B. Capraro*[1]; D. Schabbel[1]; R. Loehnert[2]; A. Bochmann[2]; A. Ibrahim[2]; J. Topfer[2]

1. Fraunhofer IKTS, Germany
2. Ernst-Abbe-Hochschule Jena, Germany

(ICACC-P007-2023) Enhanced Thermoelectric Properties of Metal Nanoparticles Incorporated Skutterudite Composites

M. Lee[1]; M. Kang[1]; G. Lee[2]; J. Cho[1]; Y. Lim[3]; W. Nam*[1]

1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea
2. Korea Basic Science Institute, Republic of Korea
3. Pukyong National University, Department of Materials System Engineering, Republic of Korea

(ICACC-P008-2023) Evaluation of Thermal Conductivity and Melting Temperature of Single and Multi-Component Rare-Earth Disilicates

H. B. Schonfeld*[1]; M. Milich[1]; M. Ridley[2]; T. Pfeifer[1]; W. Riffe[3]; L. Doumaux[3]; D. Robba[4]; L. Vlahovic[4]; K. Boboridis[4]; R. Konings[4]; D. Olson[5]; J. Gaskins[5]; R. Golden[6]; G. Harrington[6]; A. L. Chamberlain[6]; E. Opila[3]; P. E. Hopkins[1]

1. University of Virginia, Mechanical and Aerospace Engineering, USA
2. Oak Ridge National Lab, USA
3. University of Virginia, Department of Materials Science and Engineering, USA
4. Joint Research Centre, Germany
5. Laser Thermal Inc., USA
6. Rolls-Royce Corporation, USA

(ICACC-P009-2023) Al_2O_3 aerogel-modified EB-PVD TBCs with enhanced CMAS corrosion resistance

S. Qin*[1]; Y. Chen[1]; P. Xiao[1]

1. University of Manchester, Materials, United Kingdom

(ICACC-P010-2023) High-temperature oxidation resistance of polymer-derived CMCs

S. Mujib*[1]; M. Rasheed[1]; G. Singh[1]

1. Kansas State University, Mechanical & Nuclear Engineering, USA

(ICACC-P011-2023) Numerical and experimental studies on the preparation of ceramic coatings by aerosol deposition method

B. Xie*[1]

1. The University of Manchester, Department of Materials, United Kingdom

(ICACC-WWP4-2023) Thermal Environmental Barrier Coatings and their Deposits-Induced Degradation

C. J. Louzon*[1]; L. R. Turcer[1]; N. P. Padture[1]

1. Brown University, School of Engineering, USA

(ICACC-P013-2023) Spatially Resolved Thermal Conductivity Mapping of CMAS Reacted EBCs

E. Tiernan*[1]; M. Milich[1]; R. Golden[2]; G. Harrington[2]; A. L. Chamberlain[2]; P. E. Hopkins[3]

1. University of Virginia, Mechanical and Aerospace Engineering, USA
2. Rolls-Royce Corporation, USA
3. University of Virginia, USA

(ICACC-P014-2023) 3D Printing of Anticancer Drug-loaded 3D Scaffolds for Liver Cancer Treatment

X. Zhang[1]; M. Wang*[1]

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

(ICACC-P016-2023) Chemical Imaging of Li-rich Disordered Rocksalt-type Vanadium Oxide Particles Using Hard X-ray Spectroscopic Ptychography

H. Uematsu*[2]; N. Ishiguro[2]; M. Abe[2]; S. Takazawa[2]; J. Kang[3]; I. Konuma[1]; N. Yabuuchi[4]; Y. Takahashi[2]

1. Yokohama National University, Japan
2. Tohoku University, International Center for Synchrotron Radiation Innovation Smart (SRIS), Japan
3. RIKEN SPring-8 Center (RSC), Japan
4. Yokohama National University, Japan

(ICACC-P017-2023) Compositional Studies of Spinel-Structured High-Entropy Oxides For Next-Generation Anodes

A. R. Tuokkola*[1]; T. G. Brandt[1]; R. M. Laine[1]

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

(ICACC-P018-2023) Fabrication of $Li_{1.3}Al_{0.3}Ti_{1.7}(PO_4)_3$ Protective Coating Sol of Ni-Rich Cathode Materials for All-Solid-State Lithium Batteries

K. Nam*[1]; H. Hwang[1]

1. Inha University, Republic of Korea

(ICACC-P019-2023) Boosting Li-Ion Rate Capability and Efficiency Stability Enabled by MoS_2 Nanosheets in Polymer-Derived Silicon Oxycarbide Freestanding Electrodes

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

1. Kansas State University, Mechanical Engineering, USA

(ICACC-P020-2023) Electrochemical Performance of Lithium Argyrodite Li_6PS_5Cl Electrolytes Prepared via Wet Milling

K. Kim*[1]; H. Hwang[2]

1. Inha university, Materials science and engineering, Republic of Korea
2. Inha University, Republic of Korea

(ICACC-P021-2023) The solution-based synthesis of Li_6PS_5Cl solid electrolyte for facile lithium ion conduction in the cathode electrode of all-solid-state batteries

J. Park*[1]; C. Cho[1]; y. Huh[1]; J. Park[1]; B. Kim[1]; Y. Lee[1]; W. Lee[1]; S. Lee[1]; Y. Ha[1]

1. Korea Electrotechnology Research Institute(KERI), Republic of Korea

(ICACC-P023-2023) Superhydrophobic IP-PDMS micro-hoodoo arrays fabricated by two-photon polymerization direct laser writing

N. Szczotka[1]; J. Navne[1]; M. Vadmand Adelmark[1]; A. Bunea*[1]; R. Taboryski[1]

1. Technical University of Denmark, DTU Nanolab, Denmark

(ICACC-WWP3-2023) Lead-free (1-x)$BaZr_{0.08}Ti_{0.92}O_3$/(x)$CoFe_2O_4$ nanocomposite obtained by SPS

L. P. Caminata*[1]; J. A. Eiras[2]; R. H. Kiminami[1]

1. Federal University of Sao Carlos, Brazil
2. Federal University of Sao Carlos, Physics, Brazil

(ICACC-P025-2023) Boron – challenging and exciting element

T. Schmidt*[1]; S. E. Vogel[2]

1. Höganäs Germany GmbH, Applied Technology, Germany
2. North American Hoganas High Alloys LLC, USA

(ICACC-P026-2023) Structure and properties of spark plasma sintered bulk alumina ceramics with graded microstructure

A. C. Feltrin*[1]; F. Akhtar[1]

1. Luleå University of Technology, Materials Engineering, Sweden

(ICACC-P028-2023) Correlation between uniaxial pressing and initial sintering stage for YSZ8

L. Souza*[1]; H. E. Araujo[1]

1. IFSP, Brazil

(ICACC-P029-2023) Effect of sintering pressure on the synthesis of superhard tungsten tetraboride by SPS

H. D. Nguyen*[1]; T. Nishimura[1]; N. Kawamoto[1]; T. Do[2]; T. Nakayama[3]; H. Suematsu[3]

1. National Institute for Materials Science (NIMS), Japan
2. Nagaoka University of Technology, Nuclear System Safety Engineering, Japan
3. Nagaoka University of Technology, Japan

(ICACC-P030-2023) Synthesis and Characterization of Soybean Feestock-based Composite Systems

T. Esenamunjor*[2]; J. Zhang[1]; Y. Ji[2]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA
2. University of North Dakota, Chemical Engineering, USA

(ICACC-P031-2023) Co-sputtered W/Fe interlayers for joining tungsten to steel

V. Casalegno*[1]; D. Dorow-Gerspach[2]; S. Heuer[2]; S. Lauciello[3]; R. Sedlak[4]; V. Girman[5]; S. Perero[1]; M. Ferraris[6]

1. Politecnico di Torino, DISAT, Italy
2. Forschungszentrum Jülich, Germany
3. Electron Microscopy Facility, Istituto Italiano di Tecnologia, Italy
4. Institute of Materials Research, Slovakia
5. Faculty of Science, Institute of Physics, Pavol Jozef Šafárik University in Košice, Slovakia
6. Politecnico di Torino, Department of Applied Science and Technology, Italy

(ICACC-P109-2023) Preparation of High Entropy Titanite and Zirconate Pyrochlores and Thermodynamic/Radiation Stability Study

A. Gootgeld*[1]; M. Tang[1]

1. Clemson University, Department of Materials Science & Engineering, USA

(ICACC-P032-2023) Manufacturing of ceramic structure by a newly developed extrusion 3D printer with optimized ceramic pastes

J. Han[2]; H. Park[2]; H. Lee*[1]

1. Andong National University, Materials Science and Engineering, Republic of Korea
2. Materials and Machinery Square, Republic of Korea

(ICACC-P033-2023) Conformal Additive Manufacturing of Zirconia and its Application

B. Basnet*[1]; R. Huang[1]; B. Tabatabaei[1]; J. Choi[1]

1. The University of Akron, Mechanical Engineering, USA

(ICACC-P034-2023) Direct Ink Writing (DIW) of log-pile structures based on $BaTiO_3$

S. Bhandari*[1]; L. L. Silva[2]; M. Hinterstein[2]; G. Franchin[1]

1. University of Padova, Italy, Industrial Engineering, Italy
2. Karlsruhe Institute of Technology, Institute for Applied Materials - Ceramic Materials and Technologies, Germany

(ICACC-P035-2023) In-situ Self-Healing and Self-Glazing Geopolymer Composites for high temperature Applications

P. Mokhtari*[1]; D. Samuel[1]; A. Ozer[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

(ICACC-P036-2023) In Situ Crystallization of Jadeite from Sodium Geopolymer

A. S. Brandvold[1]; B. S. Hulbert*[1]; G. Shen[3]; W. M. Kriven[2]

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, USA
3. Argonne National Lab, USA

(ICACC-P037-2023) Using Recycled Plant Fibers in Geopolymer Matrix for Thermal Insulation in Buildings

R. Guha[1]; D. Samuel*[1]; M. Taylor[3]; W. M. Kriven[2]

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, USA
3. University of Illinois at Urbana-Champaign, School of Architecture, USA

(ICACC-P038-2023) Geopolymer cements made of construction and demolition waste

A. Cardoza*[1]; H. A. Colorado L.[1]

1. Universidad de Antioquia, Colombia

(ICACC-P039-2023) Production and use of cellulosic nanofibers from Guadua spp to reinforce cement composites

A. F. Ruiz Rodriguez*[1]; C. Morais[1]; J. Murad[1]; M. G. Sá Ribeiro[2]

1. Universidade Federal do Acre, Biotechnology, Brazil
2. Bionorte Network, Biodiversity and Biotechnology, Brazil

(ICACC-P040-2023) Solid Wastes Utilization in Construction Materials

N. Singh*[1]

1. Punjabi University, Patiala, India

(ICACC-P041-2023) Characterization of Bacillus sp. HK-1, Healing Concrete Cracks

M. Hong[1]; H. Kang[1]; Y. Kim[1]; S. Park[1]; J. Won[1]; H. Lee[1]; J. Lee[1]; B. Jeon*[1]

1. Korea Institute of Ceramic Engineering and Technology (KICET), Biomaterials & Processing Center, Republic of Korea

(ICACC-P042-2023) Effect of curing temperature on the resilience of marginal excavation, construction and demolition waste mixed with hydraulic cement

L. C. Hernández García*[1]; H. A. Colorado L.[1]

1. Universidad de Antioquia, Colombia

(ICACC-P043-2023) Addition Effect of Recycled Concrete on Permeable Concrete

E. Murillo*[2]; Y. P. Arias[2]; H. A. Colorado L.[1]

1. Universidad de Antioquia, Colombia
2. Universidad Nacional de Colombia, Colombia

(ICACC-P044-2023) Influence of Weathered Polyethylene Terephthalate on Performance of Cement-polymer Composites

R. E. Cook*[1]; S. Jhang[1]; A. Newman[1]; L. Sung[1]

1. National Institute of Standards and Technology, Engineering Laboratory, USA

(ICACC-P045-2023) Effect of WC on the Microstructure and Properties of Zirconium Diboride

D. A. Kosanovic*[1]

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

(ICACC-P046-2023) Comparison of Oxidation Behavior of C_f / MC-SiC (with M = Hf, Zr) Composites in an Oxyacetylene Torch and in an Arc Plasma Torch

T. Bourdeau[2]; N. Teneze*[1]; L. Maillé[2]; Y. Le Petitcorps[2]; P. Bertrand[3]; A. Allemand[1]; F. Rebillat[2]; A. Quet[1]; J. Longuet[1]; J. Couzy[4]

1. CEA, DAM, Le Ripault, France
2. University of Bordeaux - Laboratory for Thermostructural Composites (LCTS), UMR 5801, France
3. ICB-LERMPS, France
4. CEA, DAM, CESTA, France

(ICACC-P047-2023) Enhanced high temperature stability of UHTC modified C_f/SiC composite fabricated by liquid silicon infiltration

J. Kong*[2]; S. Lee[2]; J. Song[2]; Y. Son[1]; D. Kim[2]

1. Agency for Defense Development, Republic of Korea
2. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea

(ICACC-P049-2023) 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

(ICACC-P050-2023) $Ti_3C_2T_x$ MXene-Zirconium Diboride Based Spark Plasma Sintered Ultra-High Temperature Ceramic Composites

S. Nemani*[1]; Y. Im[1]; B. Anasori[1]

1. Indiana University--Purdue University, Mechanical Engineering, USA

(ICACC-P051-2023) Chemical Vapor Deposition of Phase-Pure Uranium Dioxide Thin Films from Uranium(IV) Amidate Precursors

A. Lichtenberg*[1]; A. Raauf[1]; J. Leduc[1]; M. Frank[1]; M. Straub[2]; T. Lohrey[2]; S. Minasian[2]; S. Mathur[1]; J. Arnold[2]

1. University of Cologne, Institute of Inorganic Chemistry, Germany
2. University of California, Berkeley, Department of Chemistry, USA

(ICACC-P052-2023) Highly efficient theranostic nanocarriers with a dual therapeutic approach against triple-negative breast cancer

S. Ilyas*[1]; A. Szymura[1]; E. Sahnoun[2]; P. Habib[3]; F. Mottaghy[2]; S. Mathur[1]

1. University of Cologne, Institute of Inorganic Chemistry, Germany
2. University Hospital Aachen, Department of Nuclear Medicine, Germany
3. University Hospital Aachen, Department of Neurology, Germany

(ICACC-WWP1-2023) Enhanced Hardness of Thin-Film High-Entropy Transition Metal Ceramics

N. S. McIlwaine*[1]; M. D. Hossain[2]; B. Holcombe[1]; J. Maria[1]

1. The Pennsylvania State University, Materials Science and Engineering, USA
2. Pacific Northwest National Lab, USA

(ICACC-WWP2-2023) Investigation of Glasses and Glass-Ceramics formed in the $Ga_2O_3 – B_2O_3$ Binary

J. M. Bussey*[1]; K. Grogan[1]; B. Dutton[1]; J. McCloy[1]

1. Washington State University, School of Mechanical and Materials Engineering, USA

(ICACC-WWP5-2023) Ammonolysis and Sintering of Complex Nitride Compounds

S. R. Rogers*[1]; G. Brennecka[1]; E. Toberer[2]; R. Smaha[3]

1. Colorado School of Mines, Metalurgical and Materials Engineering, USA
2. Colorado School of Mines, Physics, USA
3. National Renewable Energy Laboratory, USA

(ICACC-WWP6-2023) Magnetic Field-assisted Chemical Vapor Deposition of $MgFe_2O_4$ Films for Photoelectrochemical Water Splitting

Z. Aytuna*[1]; H. Lee[1]; A. Bhardwaj[1]; M. Wilhelm[1]; B. May[2]; D. Müller[2]; K. Lê[1]; S. Mathur[1]

1. Institute of inorganic Chemistry, Department of Chemistry, Germany
2. Forschungszentrum Juelich, Germany

(ICACC-WWP7-2023) 20 years dispersing carbon nanophases into ceramics: Results, problems, and solutions

P. Rivero-Antunez*[1]

1. Universidad de Sevilla, Spain

Wednesday, January 25, 2023

Emerging Materials and Sustainable Manufacturing Technologies in a Global Landscape: Symposium in Honor of Dr. Tatsuki Ohji

Tatsuki Ohji Honorary Symposium 3

Room: Coquina Salon D (North Tower)

Session Chairs: Alexander Michaelis, Fraunhofer IKTS; Palani Balaya, National University of Singapore

8:30 AM

(ICACC-HS-015-2023) Additive Manufacturing of Porous Geopolymers for Environmental Applications (Invited)

P. Colombo*[1]; G. Franchin[1]; M. D'Agostini[1]; M. Muracchioli[1]

1. University of Padova, Industrial Engineering, Italy

9:00 AM

(ICACC-HS-016-2023) A Brief Perspective in Green Manufacturing of Ceramics and Composites (Invited)

S. Gupta*[1]

1. University of North Dakota, Mechanical Engineering, USA

9:30 AM

(ICACC-HS-017-2023) Purification Processes Utilizing the Ion-Exchange Reactivity of Nanometric Metal Oxides (Invited)

A. Apblett*[1]; C. Perkins[1]

1. Oklahoma State University, USA

10:00 AM

Break

10:20 AM

(ICACC-HS-018-2023) Advanced Ceramics and Coatings for Mining, Mineral, Oil & Gas Production and Power Generation (Invited)

E. Medvedovski*[1]

1. Endurance Technologies Inc., Canada

10:50 AM

(ICACC-HS-019-2023) Development and Testing of a Ceramic Heat Exchanger (Invited)

D. Singh*[1]

1. Argonne National Lab, USA

11:20 AM

(ICACC-HS-020-2023) Recent trends of advanced ceramics industry and Fine Ceramics Roadmap 2050 (Invited)

H. Takemura*[1]

1. Japan Fine Ceramics Association, Japan

5th Pacific Rim Engineered Ceramics Summit

5th Pacific Rim Engineered Ceramics Summit V

Room: Coquina Salon B (North Tower)

Session Chairs: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences; Yamato Hayashi, Tohoku University

8:30 AM

(ICACC-PACRIM-014-2023) Mechanochemical Synthesis of Fluoride Ion Conducting Ceramics for Electrochemical Applications (Invited)

A. Mineshige*[1]

1. University of Hyogo, Japan

9:00 AM

(ICACC-PACRIM-015-2023) Towards developing safe and fast chargeable lithium-ion battery (Invited)

P. Balaya*[1]

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

9:30 AM

(ICACC-PACRIM-016-2023) Advanced ceramic research in Slovak - Czech cross-border region (Invited)

D. Galusek*[1]

1. Alexander Dubcek University of Trencin, FunGlass, Slovakia

10:00 AM

Break

5th Pacific Rim Engineered Ceramics Summit VI

Room: Coquina Salon B (North Tower)

Session Chairs: Atsushi Mineshige, University of Hyogo; Palani Balaya, National University of Singapore

10:20 AM

(ICACC-PACRIM-017-2023) Directionally solidified high-entropy $RE_3Al_5O_{12}/Al_2O_3$ eutectic with outstanding crystallographic texture formation capability (Invited)

J. Wang*[1]

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

10:40 AM

(ICACC-PACRIM-018-2023) SDGs oriented processing of nano metal related materials from ceramics powder (Invited)

Y. Hayashi*[1]

1. Tohoku University, School of Engineering, Japan

11:10 AM

(ICACC-PACRIM-020-2023) Tailoring the structure of electrospun nanofibers for specific functionalities (Invited)

G. Grader*[1]

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

FS2: Materials for Thermoelectric and Thermionic Energy Conversion

Topological Thermoelectric Materials, Theories and Computations

Room: Flagler A (South Tower)

Session Chairs: Jon Goldsby, NASA Glenn Research Center; Gabi Schierning, Bielefeld University

9:00 AM

(ICACC-FS2-016-2023) Thermoelectric and topological insulator properties of compacted Bi_2Te_3 nanoparticles with high residual porosity (Invited)

G. Schierning*[1]; S. Izadi[1]; A. Bhattacharya[3]; S. Salloum[2]; J. Han[3]; L. Schnatmann[1]; I. Ennen[1]; A. Hütten[1]; S. Schulz[4]; M. Mittendorff[3]

1. Bielefeld University, Eyperimental Physics, Germany
2. University of Duisburg-Essen, Chemistry, Germany
3. University of Duisburg-Essen, Eyperimental Physics, Germany
4. University of Duisburg-Essen, Chemistry and CENIDE, Germany

9:30 AM

(ICACC-FS2-017-2023) Lower bounds on thermal conductivity and thermal diffusivity from fundamental physical constants

K. Trachenko*[1]

1. Queen Mary University of London, Physics, United Kingdom

9:50 AM

(ICACC-FS2-018-2023) Assessment of Silicon Germanium Proprieties for Direct Energy Conversion Using Density Functional Theory (Invited)

J. C. Goldsby*[1]

1. NASA Glenn Research Center, Chief, Ceramic and Polymer Composites, USA

S1: Mechanical Behavior and Performance of Ceramics & Composites

Mechanical Testing, and Characterization of Ceramics and Composites

Room: Ballroom 5 (South Tower)

Session Chairs: Ji Yeon Park, Korea Atomic Energy Research Institute; Emmanuel Maillet, GE Research

8:30 AM

(ICACC-S1-026-2023) Fabrication and Characterization of MAX Phase Materials for High Temperature Applications

B. Ma*[1]; P. Chaugule[1]; M. Du[1]; D. Singh[1]

1. Argonne National Laboratory, USA

8:50 AM

(ICACC-S1-027-2023) Dynamic compression induced phase transitions of ZrW_2O_8, $(Cu_{0.2}Co_{0.2}Mg_{0.2}Ni_{0.2}Zn_{0.2})O$, and $(La_{0.2}Ce_{0.2}Pr_{0.2}Sm_{0.2}Y_{0.2})O_2$

S. Bishop*[1]; D. R. Lowry[1]; A. Peretti[1]; C. Riley[1]; M. Blea-Kirby[1]; J. Park[1]; P. Kalita[1]; M. Knudson[1]; A. Sarracino[1]; S. Murray[1]

1. Sandia National Laboratories, USA

9:10 AM

(ICACC-S1-028-2023) Fracture Mechanisms of High Entropy Ceramics at Micro- and Nano-size Level

P. Hvizdoš*[1]

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

9:30 AM

(ICACC-S1-029-2023) Structure, mechanical characteristics and high temperature stability of sintered under high and by hot pressing ZrB_2- and HfB_2– based composites

T. Prikhna*[1]; A. Lokatkina[1]; R. A. Haber[2]; Z. Ayguzer Yasar[2]; P. Barvitskyi[1]; V. Moshchil[1]; M. Karpets[1]; O. Borimskyi[1]

1. Institute for Superhard Materials of the National Academy of Sciences of Ukraine, Ukraine
2. Rutgers, The State University of New Jersey, Materials Science and Engineering, USA

9:50 AM

Break

10:10 AM

(ICACC-S1-030-2023) Method for Weibull analysis of Ball-on-3-Ball strength data with non-uniform specimen sizes

K. Breder*[1]; E. Buchovecky[1]

1. Saint-Gobain, Saint-Gobain Research North America, USA

10:30 AM

(ICACC-S1-031-2023) Testing and size scaling of ceramic tubes and tube sectors

E. Buchovecky*[1]; K. Breder[1]

1. Saint-Gobain, Saint-Gobain Research North America, USA

10:50 AM

(ICACC-S1-032-2023) Fracture behaviour of alumina-based ceramic architectures with tailored microstructures

J. Schlacher*[1]; Z. Chlup[2]; T. Csanádi[3]; A. Hofer[1]; R. Bermejo[1]

1. Montanuniversitaet Leoben, Department of Materials Science, Austria
2. Czech Academy of Sciences, Institute of Physics of Materials, Czechia
3. Institute of Materials Research, Slovak Academy of Sciences, Slovakia

11:10 AM

(ICACC-S1-033-2023) Enhanced contact damage tolerance of multilayer alumina ceramics with tailored microstructures

A. Jabr*[1]; J. Schlacher[2]; A. Hofer[3]; R. Bermejo[4]

1. Montan Universitaet Leoben, Department Materials Science, Austria
2. Montanuniversitaet Leoben, Austria
3. Montanuniversitaet Leoben, Materials Science, Austria
4. Montanuniversitaet Leoben, Institut fuer Struktur-und Funktionskeramik, Austria

11:30 AM

(ICACC-S1-034-2023) Thermal Expansion of Si_3N_4 via Neutron Diffraction

G. Swift*[1]

1. Southern Illinois University Carbondale, School of Mechanical, Aerospace, and Materials Engineering, USA

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications

CMAS-related Degradation and Mitigation Strategies II

Room: Flagler C (South Tower)

Session Chairs: Ravisankar Naraparaju, DLR - German Aerospace Center; David Poerschke, University of Minnesota

8:30 AM

(ICACC-S2-029-2023) Recession behavior of CMAS resistance Environmental Barrier Coating system in hot gas environment

N. Hosoya*[1]; N. Yamazaki[1]; T. Nakamura[1]; H. Kakisawa[2]; K. Shimoda[2]; M. Watanabe[2]

1. IHI Corporation, Japan
2. National Institute for Materials Science (NIMS), Japan

8:50 AM

(ICACC-S2-030-2023) Exploring CMAS-Steam Synergy on Yb-silicate Degradation

C. Luckhardt*[1]; E. J. Opila[2]

1. University of Virginia, Department of Materials Science & Engineering, USA
2. University of Virginia, Materials Science and Engineering, USA

9:10 AM

(ICACC-S2-031-2023) Impact of Surface Roughness on the Wettability of Molten Synthetic Sand on Thermal Barrier Coatings

A. Wright*[1]; A. Ghoshal[2]; M. Murugan[1]; L. Bravo[1]

1. US Army Research Laboratory, USA
2. US Army Research Laboratory, USA

9:30 AM

(ICACC-S2-032-2023) Study of CMAS infiltration and evaporation behaviour under water vapour/sulphur oxide conditions in EB-PVD 7YSZ (Invited)

R. Naraparaju*[1]; M. Xabier[2]; M. C. Galetz[2]; U. Schulz[1]

1. DLR - German Aerospace Center, Materials Research, Germany
2. DECHEMA, Germany

10:00 AM

Break

10:20 AM

(ICACC-S2-033-2023) Computational and Experimental methods for characterization of Thermal and Environmental Barrier Coatings

A. Ghoshal*[1]; A. Wright[1]; L. Bravo[1]; M. Murugan[1]; R. Koneru[1]; A. Flatau[1]

1. US Army Research Laboratory, USA

10:50 AM

(ICACC-S2-034-2023) Corrosion behavior of gadolinium silicates with CMAS for environmental barrier coatings

B. Jang*[1]; S. Kim[2]

1. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan
2. Kyushu University, Interdisciplinary Graduate School of Engineering Science, Japan

11:10 AM

(ICACC-S2-035-2023) Improvement of Resistance to CMAS Corrosion of Environmental Barrier Coating by Using Rare Earth-Based Oxides

N. Yamazaki*[1]; S. Kanazawa[2]; T. Nakamura[1]; T. Ito[3]; M. Tanaka[4]; S. Kitaoka[3]

1. IHI Corporation, Japan
2. IHI Corporation, Japan
3. Japan Fine Ceramics Center, Japan
4. Japan Fine Ceramics Center, Japan

11:30 AM

(ICACC-S2-036-2023) Rare-earth disilicate systems for T/EBC application: Synthesis and high temperature interaction with CMAS

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

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

11:50 AM

(ICACC-S2-037-2023) CMAS Induced Stiffening of Magnesia-Alumina Spinel Thermal Barrier Coatings

M. Vreeswijk*[1]; N. Jones[1]

1. University of Cambridge, Department of Materials Science and Metallurgy, United Kingdom

S3: 20th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology

Novel Processing

Room: Ponce de Leon (North Tower)

Session Chairs: Sebastian Molin, Gdansk University of Technology; Dario Montinaro, SOLIDpower SpA

8:30 AM

(ICACC-S3-027-2023) Towards the Next Generation of 3D printed Solid Oxide Cells and Stacks (Invited)

A. Tarancón*[1]; N. Kostretsova[2]; R. S. Pavlov[2]; L. Bernadet[2]; M. Lira[2]; M. Núñez[2]; A. Sabato[2]; A. Morata[2]; M. Torrell[2]

1. IREC / ICREA, Spain
2. IREC, Spain

9:00 AM

(ICACC-S3-028-2023) Study and optimisation of thin film based barrier layer for large area Solid Oxide Cells

M. Torrell*[1]; L. Bernadet[1]; J. Segura[4]; D. Montinaro[2]; A. Morata[1]; A. Tarancón[3]

1. IREC, Adv. Materials for Energy, Spain
2. SOLIDpower SpA, Italy
3. IREC / ICREA, Spain
4. ID16B, European Synchrotron (ESRF), France

9:20 AM

(ICACC-S3-029-2023) Fabrication of Micro-Tubular Metal Supported Solid Oxide Fuel Cells

S. K. Sahu*[1]; D. Panthi[1]; Y. Du[1]

1. Kent State University, USA

9:40 AM

(ICACC-S3-030-2023) Laser-drilling of gas channels for solid oxide cells

S. Molin*[1]

1. Gdansk University of Technology, Laboratory of Functional Materials, Faculty of Electronics, Telecommunications and Informatics, Poland

10:00 AM

Break

10:20 AM

(ICACC-S3-031-2023) Advanced Materials and Processes for Highly Efficient Protonic Ceramic Electrochemical Cells (Invited)

K. Lee*[1]

1. Korea Advanced Institute of Science and Engineering (KAIST), Mechanical Engineering, Republic of Korea

10:50 AM

(ICACC-S3-032-2023) Fabrication of spinel ceramics for SOFC support and fuel reforming applications

A. Veronese*[1]; J. T. Irvine[1]

1. University of St Andrews, United Kingdom

11:10 AM

(ICACC-S3-033-2023) Additive manufacturing of high performance protonic ceramic fuel cells

M. Asghar*[1]; P. Lund[1]

1. Aalto University, New Energy Technologies Group, Department of Applied Physics, Finland

11:30 AM

(ICACC-S3-034-2023) Novel designs to improve the performance of solid oxide cells by 3D printing technologies

Z. Zhou*[1]; V. K. Nadimpalli[2]; D. B. Pedersen[2]; V. Esposito[1]

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark
2. Technical University of Denmark, Department of Mechanical Engineering, Denmark

11:50 AM

(ICACC-S3-035-2023) Symmetrical solid oxide electrolysis cells with gradual porosity produced by the freeze tape casting technique

D. Cademartori[1]; E. Mercadelli[2]; A. Sanson[2]; A. Gondolini[2]; M. Carpanese*[1]

1. University of Genoa, DICCA, Italy
2. CNR-ISTEC, Italy

S6: Advanced Materials and Technologies for Rechargeable Energy Storage

Advanced Anode Materials for Lithium Batteries I

Room: Coquina Salon E (North Tower)

Session Chairs: Dominic Bresser, Helmholtz Institute Ulm; Prashant Kumta, University of Pittsburgh

8:30 AM

(ICACC-S6-023-2023) Reliability of Li Metal Protection Layers (Invited)

R. Dominko*[1]; N. Pavlin[1]; J. Bobnar[1]; U. Kosir[1]; B. Genorio[2]

1. National Institute of Chemistry, Slovenia
2. FKKT, University of Ljubljana, Slovenia

9:00 AM

(ICACC-S6-024-2023) Enabling High-Rate Lithium Metal Anodes by Tailored Structures and Interfaces (Invited)

E. D. Wachsman*[1]

1. University of Maryland, USA

9:30 AM

(ICACC-S6-025-2023) Silicon-Based Anode Materials for Advanced Lithium and Sodium Ion Batteries (Invited)

R. Riedel*[1]

1. TU Darmstadt, Materials Science, Germany

10:00 AM

Break

Advanced Anode Materials for Lithium Batteries II

Room: Coquina Salon E (North Tower)

Session Chairs: Eric Wachsman, University of Maryland; Robert Dominko, National Institute of Chemistry

10:20 AM

(ICACC-S6-026-2023) Alternative Charge Storage Mechanism for Alkali Metal-Ion Anodes (Invited)

D. Bresser*[1]

1. Helmholtz Institute Ulm, Germany

10:50 AM

(ICACC-S6-027-2023) Emergent Electrochemically Active Materials for High Energy Density Li-S Batteries (Invited)

P. N. Kumta*[1]

1. University of Pittsburgh, Mechanical Engineering and Materials Science, USA

11:20 AM

(ICACC-S6-028-2023) Electrochemical performance of polymer-derived SiOC/GNP- composites for high-performance Li-ion batteries

D. K. Panda*[1]; G. Jella[2]; N. Sapkota[3]; A. M. Rao[3]; S. Ravindran[2]; R. Bordia[1]

1. Clemson University, Materials Science and Engineering, USA
2. Birla Institute of Technology & Science Pilani, Hyderabad Campus, Mechanical Engineering, India
3. Clemson University, Department of Physics and Astronomy, USA

11:40 AM

(ICACC-S6-029-2023) Suppressing Li-dendrite formation at Li Metal Anode by Metall Oxide Protecting Nano-Coatings with Application in Sustainable Energy Storage

D. Patrun*[1]; M. Wilhelm[3]; S. Mathur[2]

1. University of Cologne, Inorganic/Materials Chemistry, Germany
2. University of Cologne, Institute of Inorganic Chemistry, Germany
3. University of Cologne, Germany

S8: 17th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT17)

Microwave Processing, SPS, Flash Sintering, High Pressure Assisted Sintering

Room: Coquina Salon F (North Tower)

Session Chairs: Enrico Bernardo, University of Padova; Anne Leriche, Université Polytechnique Hauts-de-France

9:00 AM

(ICACC-S8-022-2023) Nanostructured rutile TiO_2 ceramics fabricated by High Pressure Spark Plasma Sintering: effect of high pressure on physical densification phenomena (Invited)

S. Cottrino*[1]; T. Gaudisson[2]; E. Ferrara[1]; Y. Le Godec[3]; S. Le Floch[2]

1. MATEIS Laboratory, Material, France
2. Lumière Matière Institut, France
3. IMPMC laboratory, France

9:30 AM

(ICACC-S8-023-2023) Applications and developments in the field of FAST/SPS-Sintering, taking the development of graded ceramic solid state electrolyte as an example

J. W. Huber*[1]

1. Dr. Fritsch Sondermaschinen GmbH, FAST/SPS Sintering Technology, Germany

9:50 AM

(ICACC-S8-024-2023) Synthesis and Characterization of High Entropy Nitrides

S. Das*[1]; A. Eskandariyun[1]; M. Sozal[1]; V. Drozd[2]; A. Durygin[2]; M. Cinibulk[3]; Z. Cheng[1]

1. Florida International University, Mechanical and Materials Engineering, USA
2. Florida International University, Center for the Study of Matter at Extreme Conditions (CeSMEC), USA
3. Air Force Research Lab, USA

10:10 AM

Break

10:30 AM

(ICACC-S8-025-2023) Dynamic sinter forging for preparation of high-performance SiC whisker reinforced Al_2O_3 composite (Invited)

G. Shao*[1]; H. He[1]; H. Wang[1]; R. Zhang[2]; L. An[3]

1. Zhengzhou University, School of Materials Science and Engineering, China
2. Zhengzhou University of Aeronautics, Henan Key Laboratory of Aeronautical Material and Application Technology, China
3. Dongguan University of Technology, China

11:00 AM

(ICACC-S8-026-2023) Correlation with the Microstructure and Synergistic Physiochemical Etching Resistance of Nanocomposites under Fluorine-Containing Plasma

H. Ma*[1]; S. Hong[2]; H. Kim[1]; J. Lee[1]; M. Kim[1]; H. Lee[2]; Y. Park[1]

1. Korea Institute of Materials Science, Republic of Korea
2. Korea Research Institute of Standards and Science, Republic of Korea

S11: Advanced Materials and Innovative Processing Ideas for Production Root Technologies

New Concepts and Emerging Technologies for Enhanced Product Performance I

Room: Ballroom 1-2 (South Tower)

Session Chair: Chisung Ahn, Korea Institute of Industrial Technology

9:00 AM

(ICACC-S11-001-2023) Machine Learning approach in designing catalytic alloy nanoparticle (Invited)

Y. Kim*[1]

1. Kookmin University, School of Advanced Materials Engineering, Republic of Korea

9:30 AM

(ICACC-S11-002-2023) Material design 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

10:00 AM

Break

New Concepts and Emerging Technologies for Enhanced Product Performance II

Room: Ballroom 1-2 (South Tower)

Session Chair: Sungwook Mhin, Korea Institute of Industrial Technology

10:20 AM

(ICACC-S11-003-2023) Simulation Paradigm Shift to the Platform: Materials Square (Invited)

M. Park*[1]

1. Virtual Lab Inc., Republic of Korea

10:50 AM

(ICACC-S11-005-2023) Development of Surface Treatment Process to Prepare High Density Slurry for Ceramic 3D Printing

C. Ahn*[1]

1. Korea Institute of Industrial Technology, Republic of Korea

11:10 AM

(ICACC-S11-006-2023) Intrinsic self-healing of $RE_2Si_2O_7$/RE_2SiO_5 (RE = Y, Ho, Gd) ceramic matrix composites for environmental barrier coatings

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

1. National Institute of Technology, Kushiro College, Department of Creative Engineering, Japan
2. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems

Test Methods, Codes and Standards, Design Methodology, and Material Qualification

Room: Ballroom 4 (South Tower)

Session Chair: Gyanender Singh, Idaho National Laboratory

8:30 AM

(ICACC-S13-024-2023) Compressive Strength of CMC Tubular Components for High-Temperature Reactors (HTR): Progress on ASTM Draft Standard for Compressive Axial Loading

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

1. Bothell Engineering and Science Technologies, USA

8:50 AM

(ICACC-S13-025-2023) Nuclear Applications of SiC-SiC CMCs and Graphite: Design and Construction Rules in ASME BPV Code Section III, Division 5 for Nonmetallic Materials

M. G. Jenkins*[1]; S. T. Gonczy[2]; J. W. Geringer[3]; Y. Katoh[3]

1. Bothell Engineering and Science Technologies, USA
2. Gateway Materials Technology, USA
3. Oak Ridge National Laboratory, USA

9:10 AM

(ICACC-S13-026-2023) Initial analysis of the ASME Code Rules for Composite Materials for HTR Design Requirements

J. W. Geringer*[1]; J. Podhiny[5]; S. T. Gonczy[2]; M. G. Jenkins[3]; W. Windes[6]; N. Gallego[4]; T. Koyanagi[4]

1. Oak Ridge National Lab, Materials Science and Technology, USA
2. Gateway Materials Technology, USA
3. Bothell Engineering and Science Technologies, USA
4. Oak Ridge National Laboratory, USA
5. Materials Research and Design Inc., USA
6. Idaho National Lab, USA

9:30 AM

(ICACC-S13-027-2023) Infrared imaging and image-based modeling assessment of SiC/SiC cladding - Novel methods to assess the diffusivity and defects in composites

J. D. Arregui-Mena*[1]; T. Koyanagi[1]; H. Wang[1]; Y. Katoh[1]

1. Oak Ridge National Laboratory, USA

9:50 AM

Break

Novel Ceramics and Composites for Nuclear Systems II

Room: Ballroom 4 (South Tower)

Session Chair: Takaaki Koyanaga, Oak Ridge National Lab

10:20 AM

(ICACC-S13-028-2023) High entropy hydrides for neutron moderators/shielding (Invited)

C. Moore[1]; S. C. Middleburgh*[1]; J. Astbury[2]

1. Bangor University, Nuclear Futures Institute, United Kingdom
2. Tokamak Energy, United Kingdom

10:50 AM

(ICACC-S13-029-2023) Direct LiT Electrolysis in Molten Lithium (Invited)

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

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

11:20 AM

(ICACC-S13-030-2023) Hydrogen desorption kinetics in hafnium hydride

J. P. Pollard*[1]; J. Astbury[2]; F. Giuliani[1]; S. A. Humphry-Baker[1]

1. Imperial College London, Materials, United Kingdom
2. Tokamak Energy Ltd, United Kingdom

11:40 AM

(ICACC-S13-031-2023) Microstructural Optimisation of W_2B_{5-x} via Hot Pressing for High Energy Neutron Shielding

J. Davidson*[1]; J. Astbury[2]; S. A. Humphry-Baker[1]

1. Imperial College London, Materials, United Kingdom
2. Tokamak Energy Ltd, United Kingdom

S15: 7th International Symposium on Additive Manufacturing and 3-D Printing Technologies

Applications of Materials and Components

Room: Coquina Salon H (North Tower)

Session Chair: Soshu Kirihara, Osaka University

8:30 AM

(ICACC-S15-018-2023) Near-net-shape manufacturing of glasses for a wide range of applications (Invited)

J. Schilm*[1]; T. Moritz[1]; D. Wagner[1]; E. Schwarzer[1]; S. Weingarten[1]; J. Abel[1]; A. Mannschatz[1]; A. Mueller-Koehn[1]

1. Fraunhofer Gesellschaft, Institut für Keramische Technologien und Systeme, Germany

9:00 AM

(ICACC-S15-019-2023) 3D Printed Polishing Tools Towards Precision Engineering: Design, Fabrication and Performance (Invited)

H. Wang*[1]

1. National University of Singapore, Mechanical Engineering, Singapore

9:30 AM

(ICACC-S15-020-2023) Non-oxide Ceramic Synthesis using Laser-Induced Reaction Bonding (Invited)

J. B. Spicer*[1]; A. B. Peters[1]; D. Zhang[2]; D. Nagle[3]; A. Hernandez[1]; C. Wang[1]; T. Mueller[1]

1. Johns Hopkins University, Materials Science and Engineering, USA
2. Johns Hopkins University Applied Physics Laboratory, USA
3. Johns Hopkins University, Energetics Research Group, USA

10:00 AM

Break

Multi-Material and Hybrid Printing Techniques

Room: Coquina Salon H (North Tower)

Session Chair: Hao Wang, National University of Singapore

10:20 AM

(ICACC-S15-021-2023) Photonic sintering of ceramics applied to additive manufacturing for a single step process

N. Somers*[1]; A. Monton[1]; M. D. Losego[1]

1. Georgia Institute of Technology, School of Materials Science and Engineering, USA

10:40 AM

(ICACC-S15-022-2023) Multi-material Additive Manufacturing and Characterization of Lightweight Polymeric Materials

V. Vakharia*[1]; M. Singh[2]; M. C. Halbig[1]

1. NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA

11:00 AM

(ICACC-S15-023-2023) 3DPrinting, Several technologies in One, a new machine to shape ceramics

R. Svintsitski*[1]; R. Gaignon[1]

1. 3DCERAM SINTO, France

11:20 AM

(ICACC-S15-024-2023) How to produce a wide range of complex-shaped ceramic materials from selective laser melting of polymers

M. Pelanconi*[1]; P. Colombo[2]; A. Ortona[1]

1. SUPSI, Department of Innovative Technologies, Switzerland
2. University of Padova, Industrial Engineering, Italy

11:40 AM

(ICACC-S15-025-2023) SiC-SiC Composites Joined by Embedded-Wire CVD, as an Extension of LCVD-based Additive Manufacturing Techniques

M. C. Schaefer*[1]

1. Free Form Fibers, USA

S16: Geopolymers, Inorganic Polymers and Sustainable Construction Materials

Mechanical Properties of Geopolymer Composites I

Room: Coquina Salon C (North Tower)

Session Chair: Mohsen Issa, University of Illinois at Chicago

8:30 AM

(ICACC-S16-016-2023) Influence of Nanomaterials on the Structure and Performance of Metakaolin-Based Geopolymers – State-of-the-art and Lessons Learned (Invited)

A. Akono*[1]

1. Northwestern University, Civil and Environmental Engineering, USA

9:00 AM

(ICACC-S16-017-2023) Modeling the compressive strength of metakaolin-based geopolymers (Invited)

M. Muracchioli*[1]; M. D'Agostini[1]; G. Franchin[1]; G. Menardi[2]; P. Colombo[1]

1. University of Padova, Industrial Engineering, Italy
2. University of Padova, Statistical Sciences, Italy

9:30 AM

(ICACC-S16-018-2023) The mechanical efficiency of distinct geopolymer composites reinforced with aggregates and fibers (Invited)

A. C. Trindade*[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

Mechanical Properties of Geopolymer Composites II

Room: Coquina Salon C (North Tower)

Session Chairs: Waltraud Kriven, University of Illinois at Urbana-Champaign; Ana Carolina Trindade, University of Illinois at Urbana-Champaign

10:20 AM

(ICACC-S16-019-2023) On the effect of adding reinforcements to prevent brittle geopolymer failure: A study on composition, reinforcement type, specimen scale and geometry

A. C. Trindade*[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

10:40 AM

(ICACC-S16-020-2023) Metakaolin-based geopolymer matrix design for higher flexural strength (Invited)

R. A. Sa Ribeiro*[1]; M. G. Sá Ribeiro[2]; D. Samuel[3]; A. Ozer[3]; W. M. Kriven[4]

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

11:00 AM

(ICACC-S16-021-2023) Optimization of Workability and Strength of Metakaolin-based Geopolymer Concrete Mixture: An Experimental Study of Railroad GPC Crossties Prestressed (Invited)

G. K. Al-Chaar[2]; M. A. Issa*[1]; M. Kassem[1]; A. Saroufim[1]; M. Mahdi[1]

1. University of Illinois at Chicago, Civil, Materials, and Environmental Engineering, USA
2. US Army Corps of Engineers, Research and Development Center, USA

11:30 AM

(ICACC-S16-022-2023) Fatigue Response of Metakaolin-Based Geopolymer (Invited)

A. Akono*[1]

1. Northwestern University, Civil and Environmental Engineering, USA

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Multi-functional Materials III

Room: Coquina Salon G (North Tower)

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

8:30 AM

(ICACC-S17-022-2023) Structured porous ammonia carriers for seasonal energy storage (Invited)

F. Akhtar*[1]

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

9:00 AM

(ICACC-S17-023-2023) Biomimetic Advanced materials for Photonics and Energy applications (Invited)

V. M. Castano*[1]

1. Universidad Nacional Autonoma de Mexico, Mexico

9:30 AM

(ICACC-S17-024-2023) Design of photoactive inorganic nanosystems for energy and environmental applications (Invited)

E. Moretti*[1]; L. Liccardo[1]; M. Bordin[1]; A. Vomiero[2]

1. Ca' Foscari University of Venice, Department of Molecular Sciences and Nanosystems, Italy
2. Lulea University of Technology, Engineering Sciences & Mathematics, Sweden

10:00 AM

Break

10:20 AM

(ICACC-S17-025-2023) Rare Earth Doped Nanoparticles: Design, Architecture and Applications (Invited)

F. Vetrone*[1]

1. INRS, Université du Québec, Centre Énergie, Matériaux et Télécommunications, Canada

10:50 AM

(ICACC-S17-026-2023) Towards tunable mid-infrared detection for advanced optical imaging with epitaxial graphene on silicon carbide on silicon (Invited)

F. Iacopi*[1]

1. University of Technology Sydney, Faculty of Engineering & IT, Australia

S18: Ultra-High Temperature Ceramics

Processing-Microstructure-Property Relationship II

Room: Coquina Salon A (North Tower)

Session Chair: Scott McCormack, University of California, Davis

8:30 AM

(ICACC-S18-024-2023) Uncertainty quantification and processing optimization for UHTC manufacturing through an ICME framework (Invited)

R. Swanson[1]; A. Hilmas[2]; H. Babaee[4]; W. Xiong[4]; 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 & Technology, Dept. of Materials Science and Engineering, USA
4. University of Pittsburgh, Mechanical and Materials Science, USA

9:00 AM

(ICACC-S18-025-2023) Effect of mechanical activation on carbo-thermal synthesis and densification of ZrC

N. Obradovic*[1]; S. Filipovic[1]; L. Feng[2]; M. Mirkovic[3]; W. Fahrenholtz[4]

1. Institute of technical sciences of SASA, Materials, Serbia
2. Missouri University of Science & Technology, USA
3. University of Belgrade, "Vinca" Institute of Nuclear Sciences-National Institute of the Republic of Serbia, Materials, Serbia
4. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

9:20 AM

(ICACC-S18-026-2023) Gel casting elaboration process for porous alumina ceramics with complex shapes

Y. Belrhiti*[1]; P. Kerth[2]; M. McGilvray[2]; L. J. Vandeperre[1]

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

9:40 AM

(ICACC-S18-027-2023) Thermal and Electrical Properties of (Ti,Cr)B_2 Ceramics

S. M. Smith*[1]; L. Feng[1]; W. Fahrenholtz[1]; L. Silvestroni[2]

1. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
2. CNR, ISTEC, Italy

10:00 AM

Break

Response in Extreme Environments II

Room: Coquina Salon A (North Tower)

Session Chair: Elizabeth Opila, University of Virginia

10:20 AM

(ICACC-S18-028-2023) Oxidation mechanisms of developmental refractory materials (Invited)

C. Stephens[1]; L. Backman[2]; C. Brandenburg[1]; E. J. Opila*[1]

1. University of Virginia, Materials Science and Engineering, USA
2. U.S. Naval Research Laboratory, Spacecraft Engineering Division, USA

10:50 AM

(ICACC-S18-029-2023) Study of Ceramic Composites High-Temperature Response in Aerospace High-Enthalpy Flows (Invited)

S. Mungiguerra*[1]; A. Cecere[1]; R. Savino[1]

1. University of Naples Federico II, Department of Industrial Engineering, Italy

11:20 AM

(ICACC-S18-030-2023) Oxidation resistance of polymer-derived (Hf,Ta)C/SiC ceramic monoliths

N. Petry*[1]; N. Thor[2]; J. Bernauer[3]; Q. Wen[4]; A. S. Ulrich[1]; E. Ionescu[5]; H. Kleebe[3]; M. C. Galetz[1]; M. Lepple[6]

1. DECHEMA-Forschungsinstitut, Materials and Corrosion, Germany
2. Technical University Darmstadt, Institute of Applied Geosciences, Germany
3. Technical University Darmstadt, Institute of Materials Science, Germany
4. Central South University, Powder Metallurgy Research Institute, China
5. Fraunhofer Research Institution for Materials Recycling and Resource Strategies IWKS, Germany
6. Justus-Liebig-University Giessen, Institute of Inorganic and Analytical Chemistry, Germany

11:40 AM

(ICACC-S18-031-2023) Effect of HfO_2 coatings on the oxidation behavior of ZrB_2

J. E. Förster*[1]; R. Naraparaju[2]; W. Fahrenholtz[3]; G. Hilmas[3]

1. DLR - German Aerospace Center, Institute of Materials Research, Germany
2. DLR - German Aerospace Center, Materials Research, Germany
3. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

S19: Molecular-level Processing and Chemical Engineering of Functional Materials

Polymer-Derived Ceramics V

Room: Ballroom 3 (South Tower)

Session Chair: Sven Barth, Goethe University Frankfurt

8:30 AM

(ICACC-S19-024-2023) Polycarbosilanes: A Versatile Bridge between Polymer Chemistry, Soft Matter Processing, and High-Temperature Ceramics (Invited)

M. B. Dickerson*[1]; K. Martin[1]; J. Bowen[1]

1. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

9:00 AM

(ICACC-S19-025-2023) Quantum-Chemical Simulation of Early Stages in Pyrolysis of SiCON Polymers (Invited)

P. Kroll*[1]

1. University of Texas, Arlington, USA

9:30 AM

(ICACC-S19-026-2023) Machine Learning in Materials Design and Knowledge Discovery (Invited)

O. N. Oliveira*[1]; M. Ferreira de Oliveira[2]

1. University of Sao Paulo, Sao Carlos Physics Institute, Brazil
2. University of Sao Paulo, Brazil

10:00 AM

Break

Innovative Chemical Approaches & Processing Methods

Room: Ballroom 3 (South Tower)

Session Chair: Thomas Fischer, University of Cologne

10:20 AM

(ICACC-S19-027-2023) Preparation of functional nanosheets via controlled interlayer surface modification and subsequent exfoliation

Y. Sugahara*[1]; R. Suzuki[2]; T. Kamibe[3]

1. Waseda University, Department of Applied Chemistry and Kagami Memorial Research Institute for Materials Science and Technology, Japan
2. Waseda University, Kagami Memorial Research Institute for Materials Science and Technolog, Japan
3. Waseda University, Department of Applied Chemistry, Japan

10:40 AM

(ICACC-S19-028-2023) Charged Particle-Based Direct-Write Techniques for the Growth of Inorganic Nanostructures (Invited)

S. Barth*[1]; F. Jungwirth[1]; F. Porrati[1]; M. Huth[1]

1. Goethe University Frankfurt, Germany

11:10 AM

(ICACC-S19-029-2023) Chemically Engineered Nanocarriers for Tumor Specific Localization and Drug delivery

S. Ilyas*[1]; A. Szymura[1]; A. Renner[1]; E. Sahnoun[2]; P. Habib[3]; F. Mottaghy[2]; S. Mathur[1]

1. University of Cologne, Institute of Inorganic Chemistry, Germany
2. University Hospital Aachen, Department of Nuclear Medicine, Germany
3. University Hospital Aachen, Department of Neurology, Germany

11:30 AM

(ICACC-S19-030-2023) Silicon carbide and tantalum carbide nanocomposite coatings of by laser chemical vapor deposition

H. Katsui*[1]; K. Shimoda[2]; M. Hotta[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Multi-Material Research Institute, Japan
2. National Institute for Materials Science (NIMS), Research Center for Structural Materials, Japan

11:50 AM

(ICACC-S19-031-2023) Compositional and Structural Disorder as Enablers for the Circular Economy

E. Ionescu*[2]; T. Dharma Teja[1]; R. Yan[1]; X. Xiao[1]; M. Widenmeyer[1]; S. Klemenz[2]; J. Gassmann[2]; G. Homm[2]; A. Weidenkaff[1]

1. Technical University Darmstadt, Materials Science, Germany
2. Fraunhofer IWKS, Germany

Emerging Materials and Sustainable Manufacturing Technologies in a Global Landscape: Symposium in Honor of Dr. Tatsuki Ohji

Tatsuki Ohji Honorary Symposium IV

Room: Coquina Salon D (North Tower)

Session Chairs: Dileep Singh, Argonne National Lab; Paolo Colombo, University of Padova

1:30 PM

(ICACC-HS-021-2023) Advanced ceramics for green hydrogen technology (Invited)

A. Michaelis*[1]

1. Fraunhofer IKTS, Germany

2:00 PM

(ICACC-HS-022-2023) Advanced Strategies of Reclaiming and Reusing of Discarded Graphite from Spent Lithium-Ion Batteries (Invited)

R. Riedel*[1]

1. TU Darmstadt, Materials Science, Germany

2:30 PM

(ICACC-HS-023-2023) Band-gap Engineering of Perovskites for Photovoltaics (Invited)

M. Braun[1]; M. J. Hoffmann*[1]

1. Karlsruhe Institute of Technology, Institute for Applied Materials (IAM-KWT), Germany

3:00 PM

Break

3:20 PM

(ICACC-HS-024-2023) Size Effects on Transport, Thermodynamics and Energy Storage (Invited)

P. Balaya*[1]

1. National University of Singapore, Department of Mechanical Engineering, College of Design and Engineering, Singapore

3:50 PM

(ICACC-HS-025-2023) Studies on Double Perovskite $Pr_{1-x}Ba_{1+x}Co_2O_{6-\delta}$ and Ruddlesden popper $Sm_{2-x}Sr_xNiO_{4-\delta}$ systems for energy storage applications (Invited)

A. S. Bangwal[1]; M. Chauhan[1]; P. Singh*[1]

1. Indian Institute of Technology(BHU), Physics, India

4:20 PM

(ICACC-HS-026-2023) Energy recovery from fluctuating heat sources using thermoelectric cycling (Invited)

T. Nakayama*[1]; B. Amila[1]; N. Trung[1]; H. Suematsu[2]; T. Goto[1]; K. Niihara[1]

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

FS4: Ceramic/Carbon Reinforced Polymers

Mechanical Behavior of Composite Materials

Room: Flagler A (South Tower)

Session Chair: Asami Nakai, Gifu University

1:30 PM

(ICACC-FS4-001-2023) Experimental observation and modeling of resin pocket cracking in CFRP laminates with ply discontinuity (Invited)

M. Fikry[1]; V. Vinogradov[2]; S. Ogihara*[1]

1. Tokyo University of Science, Department of Mechanical Engineering, Japan
2. Newcasle University, School of Engineering, United Kingdom

2:00 PM

(ICACC-FS4-002-2023) High-resolution in situ characterization of microscopic failure mechanisms in CFRP laminates under mode II loading (Invited)

S. Oshima*[1]; M. Hojo[2]

1. Tokyo Metropolitan University, Department of Aeronautics and Astronautics, Japan
2. Kyoto University, Department of Mechanical Engineering and Science, Japan

2:30 PM

(ICACC-FS4-003-2023) Progressive damage observation and numerical simulation for thin-ply CFRP laminates with a hole under compressive loading

Y. Fujisawa*[1]; K. Ito[1]; T. Mikami[1]; T. Ogasawara[2]; K. Aoki[3]; S. Uchiyama[3]; S. Sugimoto[5]; T. Yokozeki[4]

1. Tokyo University of Agriculture and Technology, Institute of Engineering, Japan
2. Tokyo University of Agriculture and Technology, Japan
3. SUBARU Corporation, Japan
4. The University of Tokyo, Japan
5. Japan Aerospace Exploration Agency, Japan

2:50 PM

(ICACC-FS4-004-2023) Numerical Study on the Effect of Process-induced Fiber Waviness on Mechanical Properties of Composite Laminates

T. Nishioka*[1]; R. Higuchi[1]; T. Yokozeki[1]

1. University of Tokyo, Japan

3:10 PM

Break

Composites for SDGs

Room: Flagler A (South Tower)

Session Chair: Satoshi Kobayashi, Tokyo Metropolitan University

3:30 PM

(ICACC-FS4-005-2023) Circular Economy of Carbon-Fiber Reinforced Polymer Composites (Invited)

E. Ionescu*[1]; W. Benner[1]; M. Vogelgesang[1]; C. Li[1]; A. Gassmann[1]; G. Homm[1]; C. Deubel[2]

1. Fraunhofer IWKS, Germany
2. SKZ - das Kunststoff-Zentrum, Germany

4:00 PM

(ICACC-FS4-006-2023) Effect of cooling conditions during c-FRTP molding on the crystallinity and mechanical properties

A. Nakai*[1]

1. Gifu University, Japan

4:20 PM

(ICACC-FS4-007-2023) Design of novel Cellulose Acetate blends by adding lignin and cellulose as reinforcement

E. Sofowora*[2]; Y. Ji[2]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA
2. University of North Dakota, Chemical Engineering, USA

S1: Mechanical Behavior and Performance of Ceramics & Composites

Processing-Microstructure-Mechanical Properties Correlation I

Room: Ballroom 5 (South Tower)

Session Chairs: Marina Ruggles-Wrenn, Air Force Institute of Technology; Matthew Appleby, NASA Glenn Research Center

1:30 PM

(ICACC-S1-035-2023) Microstructure and high-temperature mechanical properties of WC-Ni cemented carbides sintered from novel precursor powders

P. H. Gruber*[1]; S. Naim Katea[3]; G. Westin[2]; F. Akhtar[1]

1. Luleå University of Technology, Materials Science - Engineering materials, Sweden
2. Uppsala University, Sweden
3. Höganäs AB, Sweden

1:50 PM

(ICACC-S1-036-2023) Pillar Compression Study of Binderless Tungsten Carbide Consolidated by Flash Sintering and Spark Plasma Sintering

I. Mazo*[1]; A. Molinari[1]; J. Molina-Aldareguia[2]; V. M. Sglavo[1]

1. University of Trento, Industrial Engineering, Italy
2. IMdea Materials, Spain

2:10 PM

(ICACC-S1-037-2023) Effect of the Manufacturing Conditions on the Local Mechanical Behavior of Cast Tungsten Carbide

M. Ciurans Oset*[1]; D. Jarzabek[2]; J. Mouzon[1]; F. Akhtar[1]

1. Lulea University of Technology, Division of Materials Science, Sweden
2. Institute of Fundamental Technological Research, Polish Academy of Sciences, Department of Mechanics of Materials (ZMM), Poland

2:30 PM

(ICACC-S1-038-2023) On the development of multifunctional ceramic composites – Fracture resistance

C. Muñoz Ferreiro*[1]; H. Reveron[2]; J. Chevalier[2]; A. Rodríguez Morales[1]; R. Poyato[3]; Á. Gallardo López[1]

1. Universidad de Sevilla, Física de la Materia Condensada, Spain
2. Univ Lyon, MATEIS UMR5510, Insa de Lyon, Ceramics and Composites Group, France
3. Instituto de Ciencia de Materiales de Sevilla (ICMS), Spain

2:50 PM

Break

3:10 PM

(ICACC-S1-039-2023) Fabrication of Al_2O_3-Y_2O_3-ZrO_2 composites using Spark Plasma Sintering

M. Vakhshouri*[1]; A. Najafzadehkhoee[2]; A. Talimian[1]; Á. Gallardo-López[3]; R. Poyato Galan[3]; F. Gutiérrez-Mora[3]; A. Prnova[2]; D. Galusek[1]

1. FunGlass, Alexander Dubček University of Trenčín, Slovakia
2. Joint Glass Centre of the IIC SAS, TNUAD, and FChPT STU, FunGlass, Slovakia
3. Universidad de Sevilla, Dpto. de Física de la Materia Condensada, Spain

3:30 PM

(ICACC-S1-040-2023) Tailoring Structural Properties of Reaction Bonded Diamond – Silicon Carbide Composites via Microstructural Parameters

S. McAnany*[1]; S. Salamone[1]; G. Evans[1]

1. Coherent, USA

3:50 PM

(ICACC-S1-041-2023) Silicon Nitride Collimator Bench for Copernicus CO2M Spectrometer

N. Louh*[1]

1. Thales Alenia Space, France

4:10 PM

(ICACC-S1-059-2023) Carbon-fiber-reinforced ceramic-matrix composites (Cf-CMCs) for high temperatures: processing flexibility and tailored microstructures

M. Valle*[1]

1. Petroceramics S.p.A., Italy

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications

Environmental Barrier Coatings I

Room: Flagler C (South Tower)

Session Chairs: Jie Zhang, Institute of Metal Research, Chinese Academy of Sciences; Julin Wan, GE Research

1:30 PM

(ICACC-S2-038-2023) Construction of Dual-Phase Ytterbium Disilicate Coatings with Tailored Performance (Invited)

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

1. Institute of Metal Research, CAS, Advanced Ceramics and Composites, China

2:00 PM

(ICACC-S2-039-2023) Environmental Barrier Coatings with Oxide-Based Bond Coat for Ceramic Matrix Composites

K. Lee*[1]; R. I. Webster[1]; B. J. Puleo[1]; B. J. Harder[1]; M. J. Presby[1]; W. D. Jennings[1]

1. NASA Glenn Research Center, USA

2:20 PM

(ICACC-S2-040-2023) Accelerating the design of multicomponent rare earth silicates for SiC_f/SiC CMC by combinatorial material chip design and high throughput screening

X. Lv*[1]; Y. Lei[1]; J. Zhang[1]; J. Wang[2]

1. institute of metal research, Chinese Academy of Sciences, Advanced Ceramics and Composites Division, China
2. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics Division, China

2:40 PM

(ICACC-S2-041-2023) Phase Stability and Sintering Resistance of Mulltiphase Rare Earth Aluminate-Zirconate Materials as Prospective T/EBC Materials

Y. Yu[2]; D. L. Poerschke*[1]

1. University of Minnesota, Chemical Engineering and Materials Science, USA
2. University of Minnesota, Chemical Engineering and Materials Science, USA

3:00 PM

Break

3:20 PM

(ICACC-S2-042-2023) Modeling oxidation kinetics of mullite-silicon composites

J. Wan*[1]

1. GE Research, USA

3:40 PM

(ICACC-S2-043-2023) Environmental barrier coating to mitigate ignition-risk in high pressure oxygen-rich environments

I. Gupta*[1]; C. M. Kiel[2]; A. G. Jimenez[1]; Z. Cordero[1]

1. Massachusetts Institute of Technology, Aeronautics and Astronautics, USA
2. Massachusetts Institute of Technology, Materials Science and Engineering, USA

4:00 PM

(ICACC-S2-044-2023) Creep behavior of an environmental barrier coating under thermal gradient

I. Hamadouche*[1]; T. Archer[1]; T. Vandellos[2]; P. Beauchêne[1]; F. Hild[3]

1. ONERA, France
2. Safran Ceramics, France
3. LMPS ENS Paris Saclay, France

4:20 PM

(ICACC-S2-045-2023) Effect of TEBC on the Performance of Al_2O_3/Al_2O_3 Ceramic Matrix Composites

P. Mechnich*[1]; G. Alkan[1]; F. Flucht[1]

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

S3: 20th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology

Simulation and Testing

Room: Ponce de Leon (North Tower)

Session Chairs: Henrik Frandsen, Technical University of Denmark; Kevin Huang, University of South Carolina

1:30 PM

(ICACC-S3-036-2023) Stack-Scale Modeling of Solid Oxide Cells (Invited)

O. Babaie Rizvandi*[1]; H. L. Frandsen[2]

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark
2. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

2:00 PM

(ICACC-S3-037-2023) Experimental and computational investigations of the multiple impurities effect on the SOFC cathode materials

R. Wang*[1]; L. R. Parent[3]; S. Gopalan[2]; Y. Zhong[1]

1. WPI, Mechanical and Materials Engineering, USA
2. Boston University, Mechanical Engineering, USA
3. University of Connecticut, USA

2:20 PM

(ICACC-S3-038-2023) A Machine Learning Framework for Rapid Assessment and Optimization of SOC Electrodes from Low Resolution Data

W. K. Epting[1]; H. W. Abernathy*[1]; Y. Lei[1]; G. Hackett[1]; T. Kalapos[1]

1. US DOE National Energy Technology, USA

2:40 PM

(ICACC-S3-039-2023) Insights in the temperature dependence of area specific resistance of SOFC stack

M. Kusnezoff*[1]; S. Megel[1]; N. Trofimenko[1]; S. Rothe[1]; W. Beckert[1]; J. Schoene[1]; S. Hielscher[1]; A. Michaelis[1]

1. Fraunhofer IKTS, Germany

3:00 PM

Break

3:20 PM

(ICACC-S3-040-2023) Using simulation to study solid oxide cell degradation (Invited)

H. W. Abernathy*[1]; W. K. Epting[2]; Y. Lei[2]; T. Yang[2]; P. Salvador[3]

1. National Energy Technology Laboratory, Thermal Sciences, USA
2. US DOE National Energy Technology, USA
3. Carnegie Mellon University, Materials Science and Engineering, USA

3:50 PM

(ICACC-S3-041-2023) Ni Migration in Porous Ni-YSZ Electrodes During Electrolysis (Invited)

Q. Zhang[1]; D. Cox[1]; S. Du[2]; A. Chadwick[1]; K. Thornton[2]; S. Barnett[1]; P. Voorhees*[1]

1. Northwestern University, USA
2. University of Michigan, USA

4:20 PM

(ICACC-S3-042-2023) Simulating Ni redistribution in the hydrogen electrodes of solid oxide cells: The effect of initial microstructural properties

Y. Lei*[1]; Y. Lee[1]; W. K. Epting[1]; J. H. Mason[1]; T. Cheng[1]; H. W. Abernathy[1]; G. Hackett[1]; Y. Wen[1]

1. US DOE National Energy Technology, USA

4:40 PM

(ICACC-S3-043-2023) Reactive Molecular Dynamics Simulations for Microstructural Changes in Ni/YSZ Cermet in a Solid Oxide Fuel Cell Anode

T. Ishikawa*[2]; Q. Chen[1]; Y. Asano[2]; Y. Ootani[2]; N. Ozawa[1]; M. Kubo[2]

1. Tohoku University, New Industry Creation Hatchery Center, Japan
2. Institute for Materials Research, Tohoku University, Japan

S4: Armor Ceramics - Challenges and New Developments

Recent Progress in Diamond-Ceramic Composites

Room: Coquina Salon B (North Tower)

Session Chair: Jerry LaSalvia, DEVCOM Army Research Laboratory

1:30 PM

(ICACC-S4-001-2023) Microstructure and properties of silicon infiltrated diamond-SiC composites with high diamond content (Invited)

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

1. Fraunhofer IKTS, Germany

2:00 PM

(ICACC-S4-002-2023) Effect of Temperature and Time on Diamond Graphitization in a Reaction Bonded Diamond Silicon Carbide Composite

S. D. Walck*[1]; S. G. Hirsch[1]; A. A. DiGiovanni[1]; J. LaSalvia[1]

1. DEVCOM Army Research Laboratory, USA

2:20 PM

(ICACC-S4-003-2023) Effect of Diamond Content on the Densification, Microstructure, and Residual Stress of Hot-Pressed Al_2O_3 - Diamond Particulate Reinforced Composites

T. W. Moore*[1]; K. D. Behler[2]; A. A. DiGiovanni[2]; M. C. Guziewski[2]; J. LaSalvia[3]

1. DEVCOM-Army Research Lab, SURVICE Engineering, USA
2. DEVCOM-Army Research Lab, Ceramics and Transparent Materials Branch, USA
3. U.S. Army Research Laboratory, DEVCOM, USA

2:40 PM

(ICACC-S4-004-2023) Effects of Diamond Particle Size and TiC-coating on the Phases and Microstructure of Hot-Pressed SiB_6/Diamond Powder Mixtures

J. LaSalvia*[1]; S. D. Walck[1]; C. Garcia[2]; T. W. Scharf[2]; A. A. DiGiovanni[1]

1. DEVCOM Army Research Laboratory, USA
2. University of North Texas, Department of Materials Science and Engineering, USA

3:00 PM

Break

Advances in the Role of Interfaces on Sintering, Microstructure, and Mechanical Properties

Room: Coquina Salon B (North Tower)

Session Chair: Scott Walck

3:20 PM

(ICACC-S4-005-2023) Controlling Densification and Grain Growth During Sintering via Dopants: Doping Alumina with Carbon (Invited)

L. Cohen[1]; R. Marder[1]; W. D. Kaplan*[1]

1. Technion - Israel Institute of Technology, Dept. of Materials Science and Engineering, Israel

3:50 PM

(ICACC-S4-006-2023) Kinetics of multiple complexion transitions at 1800 °C in Eu-doped MgAl2O4 (Invited)

C. Marvel*[1]; C. Riedel[2]; A. Koenig[2]; M. Harmer[2]

1. Louisiana State University, Mechanical and Industrial Engineering, USA
2. Lehigh University, USA

4:20 PM

(ICACC-S4-007-2023) Absolute Surface Energies of Yttrium Oxide

K. Joshi*[1]; J. Mason[2]; R. Castro[1]

1. University of California, Davis, Materials Science and Engineering, USA
2. University of California, Davis, USA

4:40 PM

(ICACC-S4-008-2023) Grain boundary role on hardness of Gd- doped and undoped nanocrystalline YSZ

I. Costa*[1]; R. Castro[2]

1. University of California, Davis, USA
2. University of California, Davis, Material Science & Engineering, USA

5:00 PM

(ICACC-S4-009-2023) On the Terminal Velocity of Cracks in Glasses and Ceramics with Relevance to Armor Applications

G. D. Quinn*[1]

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

S6: Advanced Materials and Technologies for Rechargeable Energy Storage

Materials Design, Screening, and Electrode Architectures for Lithium Batteries I

Room: Coquina Salon E (North Tower)

Session Chairs: Dany Carlier, CNRS, University Bordeaux; Olivier Guillon, Forschungszentrum Juelich

1:30 PM

(ICACC-S6-030-2023) Solvation Structure and Ion Transport in Highly Concentrated Li salt/Sulfone Electrolyte Solutions (Invited)

Y. Ugata*[1]; K. Ueno[1]; M. Watanabe[1]; K. Dokko[1]

1. Yokohama National University, Japan

2:00 PM

(ICACC-S6-031-2023) Silicon Oxynitrides Derived from Agricultural Waste for Li^+ Batteries

M. Yu*[1]; R. M. Laine[2]

1. University of Michigan, Macromolecular Science and Engineering, USA
2. University of Michigan, Materials Science and Engineering, USA

2:20 PM

(ICACC-S6-032-2023) Atom efficient provision of lithium and sodium sulfide (M_2S; M=Li, Na) cathode material by air-stable single molecular sources

V. Brune*[1]; D. Patrun[1]; S. Mathur[2]

1. University of Cologne, Inorganic/Materials Chemistry, Germany
2. University of Cologne, Institute of Inorganic Chemistry, Germany

2:40 PM

(ICACC-S6-033-2023) Carbon-Coated Electrospun Nickel Vanadate Nanofibers as High-Performance Anode Material for Lithium-Ion Batteries

A. Bhardwaj*[1]; K. K. Halankar[1]; M. Wilhelm[1]; T. Fischer[1]; S. Mathur[1]

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

3:00 PM

Break

Materials Design, Screening, and Electrode Architectures for Lithium Batteries II

Room: Coquina Salon E (North Tower)

Session Chairs: Valerie Pralong, CNRS ENSICAEN; Yosuke Ugata, Yokohama National University

3:20 PM

(ICACC-S6-034-2023) Formation, sintering, and mechanical properties of a novel $Li_7La_3Zr_{0.5}Nb_{0.5}Ta_{0.5}Hf_{0.5}O_{12}$ high-entropy Li-garnet

Z. Fu*[1]

1. Penn State Harrisburg, USA

3:40 PM

(ICACC-S6-035-2023) Thermodynamic and Thermophysical Properties of Glass-Ceramic Solid Electrolytes

M. Rohde*[1]; H. J. Seifert[1]

1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

4:00 PM

(ICACC-S6-036-2023) Modified separator for trapping poly-sulphides in lithium sulphur batteries

K. K. Halankar*[1]; S. Mathur[1]

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

S8: 17th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT17)

Polymer-based Processing

Room: Coquina Salon F (North Tower)

Session Chair: Sandrine Cottrino, MATEIS Laboratory

1:30 PM

(ICACC-S8-027-2023) Silicone-aided Advanced Additive Manufacturing of Glass-ceramic Scaffolds (Invited)

H. Elsayed[1]; F. M. Stabile[3]; J. Kraxner[2]; D. Galusek[2]; E. Bernardo*[1]

1. University of Padova, Department of Industrial Engineering, Italy
2. Alexander Dubcek University of Trencin, FunGlass, Slovakia
3. CETMIC. Centro de Tecnología de Recursos Minerales y Cerámica, Argentina

2:00 PM

(ICACC-S8-028-2023) Coarse-Grained Molecular Dynamics Simulations on Wear Mechanism of Concentrated Polymer Brush Grafted on Ceramics Substrate

A. Chiba*[2]; R. Kudo[2]; M. Yokoi[2]; M. Kawaura[2]; Q. Chen[1]; Y. Asano[2]; Y. Ootani[2]; N. Ozawa[1]; M. Kubo[2]

1. Tohoku University, New Industry Creation Hatchery Center, Japan
2. Institute for Materials Research, Tohoku University, Japan

2:20 PM

(ICACC-S8-029-2023) Investigation of Lamination Approaches for SiC-Filled Thermoplastic Polymer Blends

O. Brandt*[1]; R. Orta Guerra[1]; R. Trice[1]; J. P. Youngblood[1]

1. Purdue University, School of Materials Engineering, USA

2:40 PM

Break

Rapid Prototyping, 3D Printing, Patterning, Templates and Self-assembly

Room: Coquina Salon F (North Tower)

Session Chair: Gang Shao, Zhengzhou University

3:00 PM

(ICACC-S8-030-2023) Tailoring of ceramic powder for various additive manufacturing techniques (Invited)

A. L. Leriche*[1]; D. Grossin[2]

1. Université Polytechnique Hauts-de-France, France, France
2. CIRIMAT ENSIACET, France

3:30 PM

(ICACC-S8-031-2023) Dielectric composite materials for passive RF components manufactured by 3D printing (Invited)

J. Heintz*[1]; N. Penin[3]; C. Elissalde[2]; J. Silvain[2]; T. Fournier[4]; T. Hoang[5]; B. Loiseaux[5]; P. Pouliguen[6]

1. ENSCBP-Bordeaux INP, ICMCB, France
2. ICMCB-CNRS, France
3. ICMCB-University of Bordeaux, France
4. Plateforme Technologique CANOE, France
5. Thales Research & Technology, France
6. DGA/AID, France

4:10 PM

(ICACC-S8-032-2023) Process Principles of Additive Manufacturing to Fabricate 3D Structured Piezoceramics

S. Jang*[1]; S. Hossain[1]; H. Son[1]; S. Park[1]; C. Bae[1]

1. Korea Institute of Materials Science, Department of 3D printing materials, Republic of Korea

4:30 PM

(ICACC-S8-033-2023) Quantifying the effect of reactive binders when sintering 3D printed ceramic aggregates

L. O. Grant*[2]; R. Maier[2]; C. Higgs[1]; Z. Cordero[3]

1. Rice University, Materials Science and NanoEngineering, USA
2. National Institute of Standards and Technology, USA
3. Massachusetts Institute of Technology, Department of Aeronautics and Astronautics, USA

S11: Advanced Materials and Innovative Processing Ideas for Production Root Technologies

Forming and Shaping Processes for Advanced Materials

Room: Ballroom 1-2 (South Tower)

Session Chair: Kyoung Il Moon, KITECH

1:50 PM

(ICACC-S11-007-2023) Application of Data Science Methods on the Machining of Ceramic Matrix Composites (Invited)

R. Goller*[1]; P. León-Pérez[1]; J. Macken[1]; A. Rösiger[1]

1. University of Applied Sciences, Mechanical Engineering, Germany

2:20 PM

(ICACC-S11-008-2023) Development of a composite pressure sensor in which the change in contact area to the electrode interface dominates the piezoresistive behavior

T. Katagiri*[1]; K. Kawahara[2]; K. Niihara[1]; K. Umemoto[1]; T. Nakayama[1]; T. Miyoshi[1]

1. Nagaoka University of Technology, Japan
2. Inaba rubber Co.Ltd., Japan

2:40 PM

Break

Starting Materials: Mining, Particles, Bulk, and Functional Materials and Precursors

Room: Ballroom 1-2 (South Tower)

Session Chair: Chisung Ahn, Korea Institute of Industrial Technology

3:20 PM

(ICACC-S11-009-2023) Observation of alloying behavior Al-Cr-Fe-Ti alloy powder by changing milling energy

A. Ahn[1]; H. Park[1]; B. Choi[1]; H. Yoon[1]; K. Moon*[1]

1. KITECH, Republic of Korea

3:40 PM

(ICACC-S11-010-2023) Measurement of electrical waveform by applied nanosecond pulsed electric field to the sintered body

H. Saito*[1]; K. Yoshida[1]; K. Nagao[2]; K. Niihara[1]; T. Nakayama[1]

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. National Institute of Technology, Oyama College, Japan

4:00 PM

(ICACC-S11-011-2023) Enhancing the power generation of lead-free pyroelectric Ba(Zr Ti)O_3 with strontium (Sr) doping

N. Ngo*[2]; H. Sugiyama[1]; B. Amila[2]; J. Wiff[1]; T. Suzuki[2]; H. Suematsu[3]; T. Nakayama[2]

1. Nagaoka University of Technology, Department of Science of Technology Innovation, Japan
2. Nagaoka University of Technology, Japan
3. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

4:20 PM

(ICACC-S11-012-2023) Observed changes in the fluoride doped properties of high temperature thermoelectric material-Yttrium Aluminoboride

W. Mita*[1]; K. Nishida[1]; H. Son[2]; M. Takeda[1]; T. Mori[2]; K. Niihara[1]; T. Nakayama[1]

1. Nagaoka University of Technology, Japan
2. National Institute for Materials Science (NIMS), Japan

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)

Methods for Improving Damage Tolerance and Performance I

Room: Ballroom 3 (South Tower)

Session Chairs: Miladin Radovic, Texas A&M University; Michael Naguib, Tulane University

1:30 PM

(ICACC-S12-001-2023) Crystallographic Slip, cracking and kinking in MAX phases (Invited)

A. Srivastava*[1]

1. Texas A&M University, USA

2:00 PM

(ICACC-S12-002-2023) Mechanisms of Low Wear of PEEK/MoAlB in Ethanol vs. High Wear in Alkanes (Invited)

S. Berkebile*[1]; S. Ruggiero[2]; M. Ferrera[1]; C. Matzke[2]; K. Jacques[3]; S. Gupta[2]

1. US Devcom ARL, USA
2. University of North Dakota, Mechanical Engineering, USA
3. The University of North Texas, USA

2:30 PM

(ICACC-S12-003-2023) Deformation twinning in MAX phase single crystals: A complementary experimental analysis (Invited)

A. Joulain*[1]; S. Parent[1]; H. Bahsoun[1]; G. Renou[2]; C. Tromas[1]

1. Institut PPRIME, France
2. SIMAP, France

3:00 PM

Break

Design of Novel Compositions and Manufacturing Methods I

Room: Ballroom 3 (South Tower)

Session Chairs: Babak Anasori, Drexel University; Konstantina Lambrinou, University of Huddersfield

3:20 PM

(ICACC-S12-004-2023) MAX phases: Synthesis and processing by Powder Injection Moulding and Additive Manufacturing (Invited)

S. A. Tsipas*[1]; A. Jimenez-Morales[1]; E. Tabares[1]

1. Universidad Carlos III de Madrid, Spain

3:50 PM

(ICACC-S12-005-2023) Bulk and thin film Cr_2AlC: A debated oxidation resistant MAX phase (Invited)

C. Azina*[1]; T. Bartsch[1]; J. Gonzalez-Julian[2]; P. Eklund[3]; J. M. Schneider[1]

1. RWTH Aachen University, Materials Chemistry, Germany
2. Chair of Ceramics, RWTH Aachen University, Germany
3. Linkoping University, Dept. of Physics, Chemistry, and Biology, Sweden

4:20 PM

(ICACC-S12-006-2023) Synthesis of Solid-Solution MXenes with Tunable Electronic, Optical, and Electrochemical Properties (Invited)

C. E. Shuck*[1]; Y. Gogotsi[1]

1. Drexel University, Materials Science and Engineering, USA

4:50 PM

(ICACC-S12-007-2023) Synthesis and Characterization of Novel Glass-MAX/MAB Composites

M. Dey*[1]; E. Sofowora[1]; E. Oloo[1]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems

Radiation Damage, Defect Production, Evolutions, and Interactions

Room: Ballroom 4 (South Tower)

Session Chair: Tatsuya Hinoki, Kyoto University

1:30 PM

(ICACC-S13-032-2023) Spatial distribution of radiation damage in ceramics and composites (Invited)

P. A. Burr*[1]; M. I. Brand[1]

1. The University of New South Wales, Australia

2:00 PM

(ICACC-S13-033-2023) Hydrothermal Corrosion behavior of Neutron Irradiated Additively Manufactured SiC fibers

A. Seshadri*[1]; J. Pegna[2]; K. L. Williams[2]; S. Harrison[2]; K. Shirvan[3]

1. Arunkumar Seshadri, Arunkumar Seshadri, USA
2. Free Form Fibers, USA
3. Massachusetts Institute of Technology, USA

2:20 PM

(ICACC-S13-034-2023) Development and qualifcation of ATF cladding materials - the H2020 ILTROVATORE experience

K. Lambrinou*[1]

1. University of Huddersfield, School of Computing and Engineering, United Kingdom

2:40 PM

(ICACC-S13-035-2023) Analysis of Silicon Carbide Cladding with Fuel Performance Code BISON

G. Singh*[1]; K. Gamble[1]; A. Recuero[1]; J. Hales[1]; S. Novascone[1]

1. Idaho National Lab, USA

3:00 PM

Break

Material Technologies for Enhanced Accident Tolerance LWR Fuels and Core III

Room: Ballroom 4 (South Tower)

Session Chair: Arunkumar Seshadri, Arunkumar Seshadri

3:20 PM

(ICACC-S13-036-2023) Joining of SiC-SiC Composites by a Novel Embedded-Wire CVD Technique

M. C. Schaefer*[1]

1. Free Form Fibers, USA

3:40 PM

(ICACC-S13-037-2023) Formation of Rare Earth Silicate on Silicon Carbide Utilizing Oxidation

T. Hinoki*[1]; H. Sakai[1]; J. Lee[1]

1. Kyoto University, Japan

4:00 PM

(ICACC-S13-038-2023) Mechanical properties of SiC composites neutron irradiated at ~300°C to 30dpa

T. Koyanagi*[1]; Y. Katoh[1]

1. Oak Ridge National Laboratory, USA

S15: 7th International Symposium on Additive Manufacturing and 3-D Printing Technologies

Material Extrusion / Fused Deposition Modeling

Room: Coquina Salon H (North Tower)

Session Chair: Mark Du, Argonne National Lab

1:30 PM

(ICACC-S15-026-2023) Fused Deposition Modelling of Fibre Reinforced Ceramic Matrix Composites

D. Ye*[1]; J. Binner[2]

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

1:50 PM

(ICACC-S15-027-2023) EVA-PVA Binder for Fused Deposition Modeling of Large Polymer Derived Ceramics

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

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

2:10 PM

(ICACC-S15-028-2023) Evaluating Extrusion Deposited Additively Manufactured Fiber-Reinforced Thermoplastic Polymers as Carbon/Carbon Preforms

E. Romero*[2]; E. Barocio[1]; R. Trice[2]

1. Composite Manufacturing and Simulation Center, USA
2. Purdue University, Department of Materials Engineering, USA

2:30 PM

(ICACC-S15-029-2023) Additive manufacturing and ultra-fast high-temperature sintering (UHS) of zirconia ceramics

S. Bhandari[3]; M. Biesuz[2]; C. Manière[1]; G. Franchin*[3]

1. Chargé de Recherche CNRS Laboratoire CRISMAT, France
2. University of Trento, Department of Industrial Engineering, Italy
3. University of Padova, Department of Industrial Engineering, Italy

2:50 PM

Break

Direct Writing / Ink Jet Printing Technologies

Room: Coquina Salon H (North Tower)

Session Chair: Fateme Sarraf, Empa, Swiss Federal Laboratories for Materials Science and Technology

3:20 PM

(ICACC-S15-030-2023) Polymer-assisted direct ink writing of carbon fiber reinforced silicon carbide composites.

L. L. Balderson*[1]; T. Sun[1]; E. Opila[1]

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

3:40 PM

(ICACC-S15-031-2023) Additive manufacturing of CMCs by DIW of preceramic polymers

F. Da Rin Betta*[1]; B. Baker[2]; R. Seabright[2]; C. Footer[2]; G. Franchin[1]; P. Colombo[1]

1. University of Padova, Industrial Engineering, Italy
2. Qinetiq, United Kingdom

4:00 PM

(ICACC-S15-032-2023) Opportunities and challenges of Inkjet Printing for the fabrication of Lithium-ion batteries

K. Sztymela*[1]; F. Rossignol[1]; M. Cerbelaud[1]; M. Bienia[1]

1. Institute of Research for Ceramics (IRCER), UMR CNRS 7315, France

Binder Jetting Processes

Room: Coquina Salon H (North Tower)

Session Chair: Giorgia Franchin, University of Padova

4:20 PM

(ICACC-S15-033-2023) 3D Printed Ceramics After ISS Spaceflight

A. B. Bailey*[1]; X. Wang[1]; D. Stohr[1]

1. Alfred University, School of Engineering, USA

4:40 PM

(ICACC-S15-034-2023) Reaction-bonded Joining and Densification of Additively Manufactured Silicon Carbide by Liquid Silicon Infiltration

M. Du*[1]; J. Thomas[1]; B. Ma[1]; D. Singh[1]

1. Argonne National Laboratory, USA

S16: Geopolymers, Inorganic Polymers and Sustainable Construction Materials

Novel Applications of Geopolymers I

Room: Coquina Salon C (North Tower)

Session Chair: Henry Colorado L., Universidad de Antioquia

1:30 PM

(ICACC-S16-023-2023) Dielectric properties of chemosynthetic alumino-silicates and metakaolin-based geopolymers and composites (Invited)

M. B. Ogundiran*[1]; J. S. Dolado[2]; G. Goracci[2]

1. University of Ibadan, Department of Chemistry, Nigeria
2. CSIC-UPV/EHU, Material Physics Centre, Spain

2:00 PM

(ICACC-S16-024-2023) Geopolymer Composites Exposed to Molten Chlorides and Carbonates (Invited)

P. F. Keane*[1]; N. Stanford[2]; F. Bruno[1]

1. University of South Australia, Future Industries Institute, Australia
2. University of South Australia, STEM, Australia

2:30 PM

(ICACC-S16-025-2023) Geopolymer composite formulations as flame retardant materials (Invited)

S. Rossignol*[1]

1. IRCER, France

3:00 PM

Break

Novel Applications of Geopolymers II

Room: Coquina Salon C (North Tower)

Session Chair: Henry Colorado L., Universidad de Antioquia

3:20 PM

(ICACC-S16-026-2023) Crystallization of nano-kalsilite via hydrothermal decomposition of kaolin clay in potassium hydroxide solution

E. F. Yusslee*[2]; N. Dahon[1]; M. Abdul Rajak[1]; S. E. Arshad[2]

1. Universiti Malaysia Sabah, Preparatory Centre for Science & Technology, Malaysia
2. Universiti Malaysia Sabah, Faculty of Science and Natural Resources, Malaysia

3:40 PM

(ICACC-S16-027-2023) Evaluation of the effect of temperature and pressure on geopolymers for oil wells applications

U. Siciliano*[1]; J. Zhao[2]; A. C. Trindade[3]; F. d. Silva[4]

1. Pontifícia Universidade Católica do Rio de Janeiro, Department of Civil and Environmental Engineering, Brazil
2. Technische Universität Dresden, Institut für Baustoffe, Germany
3. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
4. Pontificia Universidade Católica do Rio de Janeiro (PUC-Rio), Civil Engineering, Brazil

4:00 PM

(ICACC-S16-028-2023) Stabilization of Cohesionless Soil using Metakaolin-based Geopolymer

O. D. Huang*[1]; J. Jang[2]; S. Congress[3]; A. Puppala[4]; M. Radovic[1]

1. Texas A&M University, Materials Science & Engineering, USA
2. Terracon Consultants, Inc., USA
3. North Dakota State University, Department of Civil, Construction and Environmental Engineering, USA
4. Texas A&M University, Zachry Department of Civil and Environmental Engineering, USA

4:20 PM

(ICACC-S16-039-2023) Machine learning and analysis of microstructural evolution of porosity in geopolymer composites

J. Gruber*[1]; W. M. Kriven[2]; P. F. Keane[3]

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, USA
3. University of South Australia, Future Industries Institute, Australia

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Advanced and Nanostructured Materials for Photo-voltaics and Solar Fuels

Room: Coquina Salon G (North Tower)

Session Chair: Rafik Naccache, Concordia University

1:30 PM

(ICACC-S17-027-2023) Ceramic based transparent conductive oxides for thin film solar cells (Invited)

A. Romeo*[1]; E. Artegiani[1]

1. University of Verona, Computer Science, Italy

2:00 PM

(ICACC-S17-028-2023) Understanding the propagation of photons and high-energy ions through low dimensional semiconductors (Invited)

O. K. Varghese*[1]; J. Napagoda[1]; D. Waligo[1]; M. Paulose[1]; D. Chen[1]; W. Chu[1]

1. University of Houston, Department of Physics, USA

2:30 PM

(ICACC-S17-029-2023) Optimization of Colloidal Quantum Dots for Clean Energy Technologies (Invited)

G. Selopal*[1]; H. Zhao[2]; F. Vidal[3]; Z. M. Wang[4]; F. Rosei[3]

1. Dalhousie University, Department of Engineering/ Faculty of Agriculture, Canada
2. Qingdao University, College of physics, China
3. INRS-EMT, Canada
4. Institute of Fundamental and Frontier Sciences, University of Electronic Science and Technology of China, China

3:00 PM

Break

3:20 PM

(ICACC-S17-030-2023) Water Splitting Catalysis: Strategies for Performance Enhancement (Invited)

T. A. Shifa*[1]

1. Ca' Foscari University of Venice, Department of Molecular Science and Nanosystem, Italy

3:50 PM

(ICACC-S17-031-2023) Advanced TiO2 nanotubes for enhanced photocatalytic H_2 generation and CO_2 conversion (Invited)

N. Nguyen*[1]

1. Concordia University, Chemical and Materials Engineering, Canada

4:20 PM

(ICACC-S17-032-2023) Nanostructured Optical Limiter Photonic Thin Films for Reusable High Irradiance Shielding of High Energy Lasers

D. E. Wolfe*[1]; C. DeSalle[1]; J. Reiss[1]; P. Albert[1]; R. Romesberg[1]; S. Stepanoff[1]; M. Schmitt[2]; J. Keiper[2]

1. Pennsylvania State University, USA
2. HAMR Industries LLC, USA

S18: Ultra-High Temperature Ceramics

Simulations and Characterizations

Room: Coquina Salon A (North Tower)

Session Chair: Tianli Feng, University of Utah

1:30 PM

(ICACC-S18-032-2023) Accurate first-principles prediction of thermal and mechanical properties of ultra-high temperature ceramics (Invited)

T. Feng*[1]

1. University of Utah, Mechanical Engineering, USA

2:00 PM

(ICACC-S18-033-2023) Local bonding and carbon vacancy ordering in UHTC high-entropy carbides

T. Davey*[1]; Y. Chen[1]

1. Tohoku University, School of Engineering, Japan

2:20 PM

(ICACC-S18-035-2023) Stability of GDC and MgO Ceramics in Combustion Environments for Direct Power Extraction

M. S. Bowen*[1]; D. Cann[1]; R. Woodside[2]

1. Oregon State University, Mechanical, Industial, and Manufacturing Engineering, USA
2. National Energy Technology Laboratory, Albany, USA

2:40 PM

Break

Compositionally Complex UHTC III

Room: Coquina Salon A (North Tower)

Session Chair: Bai Cui, University of Nebraska–Lincoln

3:20 PM

(ICACC-S18-036-2023) Composition-Property Relationships in High-Entropy Boride Ceramics

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

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

3:40 PM

(ICACC-S18-037-2023) Predicting Phase Stability of Compositionally Complex $5RE_2B_2O_7$ Type Rare Earth Zirconates

D. R. Lowry*[1]; M. Blea-Kirby[1]; J. Boro[1]; L. Jauregui[1]; N. Valdez[1]; M. Rodriguez[1]; S. Bishop[2]

1. Sandia National Laboratories, USA
2. Sandia National Laboratories, Materials, USA

4:00 PM

(ICACC-S18-038-2023) Ab Initio prediction and experimental preparation of $(HfNbTaTiZr)B_2$ structures based on the different molar ratios of transition metals

I. Zhukova*[1]; V. Kombamuthu[2]; M. Tatarkova[2]; D. Zagorac[3]; A. Kovalčíková[5]; I. Dlouhy[4]; B. Matovic[3]; 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 Nuclear Sciences, Belgrade University, Serbia
4. Institute of Materials Science and Engineering, Czechia
5. Institute of Materials Research, Slovakia

Poster Session B

Room: Ocean Center Arena

5:00 PM

(ICACC-P053-2023) Effects of resin pocket length on cracking behavior in CFRP laminate with ply discontinuity

M. Fikry[1]; V. Vinogradov[2]; S. Ogihara*[1]

1. Tokyo University of Science, Mechanical Engineering, Japan
2. Newcastle University, School of Engineering, United Kingdom

(ICACC-P054-2023) Deformation and molecular orientation analysis of tricalcium phosphate / poly(lactic acid) composite screws molded by extrusion die forging

M. Sakaguchi*[1]; S. Kobayashi[2]

1. Salesian Polytechnic, Mechanical and Electronic Engineering, Japan
2. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-P055-2023) Improvement of powder injection molding process using cellulose nanofibers

T. Osada*[1]; S. Kobayashi[2]

1. Tokyo Metropolitan University, Japan
2. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-P056-2023) Mode I fracture toughness of adhesively bonded CFRP joints under cyclic freeze-thaw conditions

K. Kitagawa[1]; S. Oshima*[1]; T. Takeda[2]; H. Kumazawa[2]; K. Koichi[1]

1. Tokyo Metropolitan University, Department of Aeronautics and Astronautics, Japan
2. Japan Aerospace Exploration Agency (JAXA), Aviation Technology Directorate, Japan

(ICACC-P057-2023) Residual Strength Evaluation for Composite cylinders using Plate Specimen

S. Kobayashi*[1]; T. Osada[2]

1. Tokyo Metropolitan University, Mechanical Engineering, Japan
2. Tokyo Metropolitan University, Japan

(ICACC-P058-2023) AE Based Damage Characterization of CFRP with Considering AE Sensor Response Function

A. Garg*[1]; T. Sakai[1]

1. Saitama University, Japan

(ICACC-P060-2023) Splitting Progress in Unidirectional Carbon Fiber Reinforced Plastics

S. Kobayashi*[1]; T. Osada[2]

1. Tokyo Metropolitan University, Mechanical Engineering, Japan
2. Tokyo Metropolitan University, Japan

(ICACC-P061-2023) Fabrication of Biocompatible Oxide Ceramic Parts by Injection Molding

T. Osada*[1]; Y. Nagai[1]; S. Kobayashi[2]

1. Tokyo Metropolitan University, Japan
2. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-P062-2023) High Thermal Conductivity Reaction-bonded Diamond/SiC Composites

J. Wang*[1]; J. Coppola[1]; N. Coombs[1]; M. Aghajanian[1]

1. II-VI Inc., USA

(ICACC-P063-2023) ASTM International Standards for Properties & Performance of Advanced Ceramics–Helping Our World Work Better with Standard Worldwide

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 Incorporated, SP-FR-04, USA
5. National Institute of Standards and technology, Materials Measuremenet Sciences Division, USA

(ICACC-P064-2023) The effect of BN coating layer thickness for LSI processed SiC/SiC composites

S. Kim*[1]; I. Han[1]; H. Bang[1]; S. Kim[1]; Y. Seong[1]; S. Lee[1]

1. Korea Institute of Energy Research, Republic of Korea

(ICACC-P065-2023) A study on the SiC slurry and SiC slurry tape for LSIed-SiC_f/SiC composite

Y. Seong*[1]; S. Lee[1]; S. Kim[1]; S. Kim[1]; H. Bang[1]; I. Han[1]

1. Korea Institute of Energy Research, Republic of Korea

(ICACC-P066-2023) New process and fabrication techniques for zirconia-toughened alumina (ZTA) ceramic gelcasting methods

K. Tingler*[1]; R. Vaidyanathan[1]

1. Oklahoma State University, MSE, USA

(ICACC-P067-2023) A study on the properties change of SiC/SiC ceramic matrix composites after high temperature long-term fatigue test

S. Lee*[1]; I. Han[1]; S. Kim[1]; Y. Seong[1]; S. Kim[1]; H. Bang[1]

1. Korea Institute of Energy Research, Republic of Korea

(ICACC-P068-2023) Electrochemical study of Inconel 600 to TiC-Composites joints using a BNi3 alloy

M. Braulio*[1]; R. Orozco[1]; P. Duran[1]

1. Instituto Tecnológico Superior del Sur de Guanajuato, Ingeniería en Sistemas Automotrices, Mexico

(ICACC-P069-2023) Synthesis of carbides by reactive sintering from binders for 3D printing

D. Valasek*[1]; D. Salamon[1]

1. Brno University of Technology, CEITEC - Advanced Multifunctional Ceramics, Czechia

(ICACC-P070-2023) Effect of fine-bubbles on enhanced charge transfer reaction in glass CMP process

S. Mochizuki*[1]; S. Suda[1]

1. Shizuoka University, Engineering, Japan

(ICACC-P071-2023) Fabrication of Carbon Fiber Reinforced Ceramic Matrix Composites

M. Rasheed*[1]; S. Mujib[1]; G. Singh[1]

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

(ICACC-P072-2023) Effect of Al_2O_3 and Carbon Fiber Addition on Thermal Conductivity and Tensile strength of Polyamide-6

M. Ijiri*[1]; S. Ishida[1]; T. Osada[1]; S. Kobayashi[1]

1. Tokyo Metropolitan University, Japan

(ICACC-P073-2023) A fractal analysis of crack branching and the relationship to fractographic parameters

D. P. DeLellis*[2]; N. A. Mecholsky[3]; G. D. Quinn[1]; A. Krause[2]; J. Mecholsky[4]

1. National Institute of Standards and technology, Materials Measuremenet Sciences Division, USA
2. Carnegie Mellon University, Materials Science and Engineering, USA
3. Catholic University of America, Vitreous State Laboratory, USA
4. University of Florida, Materials Science & Engineering, USA

(ICACC-P074-2023) Processing and mechanical properties of ZrO_2-Zr ceramic-metal composites

D. Estrada[1]; J. F. Bartolomé*[1]

1. Instituto de Ciencia de Materiales de Madrid (ICMM) - Consejo Superior de Investigaciones Científicas (CSIC), Spain

(ICACC-P075-2023) Repair Method of Blast Furnace Hot Stove Combustion Chamber

S. Jang*[1]

1. Hyundai-steel, ironmaking refractory team, Republic of Korea

(ICACC-P077-2023) Preferred-oriented BEAZ grains Protective layer for enhanced chemical stability toward Strontium

A. Ullah*[1]; B. Hussain[1]; S. Hussain[2]

1. University of science and Technology South Korea, Fuel Cell and Energy Engineering, Republic of Korea
2. Chungnam National University, Chemical Engineering, Republic of Korea

(ICACC-P078-2023) Cation diffusion and electrode properties in LSM/CeO_2 nanocomposite cathode

Y. Tsutsui*[1]; S. Suda[1]; M. Hase[2]

1. Shizuoka University, Engineering, Japan
2. National Institute for Materials Science (NIMS), Japan

(ICACC-P079-2023) Effect of the CGO solution properties on the long-term performance of CGO infiltrated Ni-YSZ SOEC electrodes

V. Bilalis*[1]; M. Khoshkalam[1]; H. L. Frandsen[1]; M. Chen[1]

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

(ICACC-P080-2023) Optimal microstructure for fabrication anode-supported SOFC by microwave selective sintering

Y. Narita*[1]; S. Suda[2]; T. Fujitate[4]; A. Kishimoto[3]

1. Shizuoka University, Department of Engineering, Japan
2. Shizuoka University, Engineering, Japan
3. Okayama University, Japan
4. Nissin inc., Japan

(ICACC-P081-2023) Change in SOFC cathodic properties of $La_{1-x}Sr_xFe_{1-y}Ni_yO_3$ by sintering high temperatures

H. Tanaka*[1]; S. Suda[2]; M. Hase[3]

1. Shizuoka University, Japan
2. Shizuoka University, Engineering, Japan
3. National Institute for Materials Science (NIMS), Japan

(ICACC-P082-2023) Metal-Supported Solid Oxide Fuel Cell Using Proton Conducting Electrolyte for Direct Ammonia Utilization

X. Li*[2]; H. Tian[1]; B. Guan[1]; L. Zhou[2]; Q. Li[1]; X. Liu[1]; W. Li[2]

1. West Virginia University, Mechanical & Aerospace Engineering, USA
2. West Virginia University, Chemical and Biomedical Engineering, USA

(ICACC-P083-2023) Numerical Modeling of Long-Term Performance Degradation for Solid Oxide Fuel Cell with Multiple Degradation Mechanisms

T. Yang*[1]; Y. Lei[1]; Y. Fan[1]; J. Liu[2]; B. Guan[1]; W. K. Epting[2]; H. W. Abernathy[3]; G. Hackett[2]; T. Kalapos[1]

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

(ICACC-P084-2023) Oxidation inhibitor ceria-layers for SOC's metal support by laser powder bed fusion

Z. Zhou*[1]; V. K. Nadimpalli[2]; A. R. Lalwani[2]; S. Wang[1]; Y. Shang[1]; D. B. Pedersen[2]; V. Esposito[1]

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark
2. Technical University of Denmark, Department of Mechanical Engineering, Denmark

(ICACC-P085-2023) Composite glass-zirconia sealings for solid oxide electrolyzers fabricated by 3D printing

M. Kosiorek*[1]; A. Zurawska[1]; L. Ajdys[1]; M. Skrzypkiewicz[1]; J. Kupecki[2]

1. Center for Hydrogen Technologies (CTH2), Institute of Power Engineering, Poland
2. Institute of Power Engineering, Center for Hydrogen Technologies (CTH2), Poland

(ICACC-P086-2023) Microstructural changes of active Ni fuel electrode/electrolyte interface in solid oxide fuel cells

Z. Ouyang*[1]; A. Sciazko[1]; Y. Komatsu[1]; K. Nishimura[1]; N. Shikazono[1]

1. The University of Tokyo, Institute of Industrial Science, Japan

(ICACC-P087-2023) Proton Ceramic Cells for electrochemical reactions: materials and cells development

M. Fontaine*[1]

1. SINTEF AS, Sustainable Energy Technologies, Norway

(ICACC-P089-2023) Thermal Conductivity of Oxide Materials with Metallic Electrical Conductivity

S. Choi[1]; C. Sun Gwan*[1]; C. Moon[1]; H. Jeong[1]; J. Heo[1]

1. Koreatech University, Republic of Korea

(ICACC-P090-2023) Modeling Effects of Coulomb Forces in Explosions

M. Greenfield*[1]; S. Bilyk[1]

1. The US Army Research Laboratory, WMRD, USA

(ICACC-P092-2023) Development of sustainable CO_2 capture system by seawater electrolysis using optimized hydrogen evolution electrode

S. Machida*[1]; S. Suda[2]

1. Shizuoka univ, Engineering, Japan
2. Shizuoka University, Engineering, Japan

(ICACC-P093-2023) Catalyst support design for durability improvement in PEMFC

S. Choi[1]; C. Moon*[1]; s. Cha[1]; J. Heo[1]

1. KOREATECH, Korea University of Technology and Education, Republic of Korea

(ICACC-P095-2023) Intercalative hybridization of CdS nanoparticles and N-doped TiO_2 nanosheets for efficient solar-driven hydrgen production

T. Kim*[1]

1. Korea Institute of Energy Research, Republic of Korea

(ICACC-P096-2023) Development of Ag-sensitized Eu^{3+}-doped luminescent zeolites for sensing

F. Enrichi[1]; M. Cassetta[1]; N. Daldosso*[1]; A. Akinwekomi[2]; A. Vomiero[2]; F. Akhtar[2]; W. Cairns[3]

1. University of Verona, Department of Computer Science, Italy
2. Lulea University of Technology, Engineering Sciences & Mathematics, Sweden
3. National Research Council of Italy, Institute of Polar Sciences, Italy

(ICACC-P099-2023) Oyster Mushroom Gills: As decorative art piece

D. Memon*[1]; S. Bugti[1]; S. Ikram[2]

1. Aror University of Art, Architecture, Design and Heritage, Department of Fine Arts, Pakistan
2. Pakistan Institute of Fashion and Design, Department of Ceremics, Pakistan

(ICACC-P100-2023) Development of an ML Potential for SiC

M. P. MacIsaac*[1]; G. Subhash[1]

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

(ICACC-P101-2023) Effect of Plasma Nitiriding & Oxynitriding Temperature on Wear and Corrosion Resistance of the AISI 4140 Steel

H. Park*[1]; K. Kwon[1]; H. Yoon[1]; B. Choi[1]; A. Ahn[1]; K. Moon[2]

1. Korea Institute of Industrial Technology, Republic of Korea
2. KITECH, Republic of Korea

(ICACC-P102-2023) Wear of PEEK/MoAlB Composites in Ethanol and Alkane/Ethanol mixtures

S. Ruggiero*[1]; S. Berkebile[2]; C. Matzke[1]; M. Ferrera[2]; K. Jacques[2]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA
2. US Devcom ARL, USA

(ICACC-P103-2023) Exploration of PEEK-based Composites for Multifunctional Applications

K. Lambrecht*[1]; T. Fah[1]; B. Walhausen[1]; M. Malusky[1]; S. Ruggiero[1]; C. Matzke[1]; S. Javaid[1]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA

(ICACC-P104-2023) Ultrafast Laser Bessel Beam Cutting of Glass

S. Gillespie*[1]; E. Chowdhury[1]

1. Ohio State University, Materials Science and Engineering, USA

(ICACC-P105-2023) Understanding the Effects of Polar Topological Phases in Epitaxial Oxide Super Lattices on Phonon Scattering Rate

S. Makarem*[1]; E. Hoglund[1]; P. Meisenheimer[2]; R. Ramesh[2]; P. E. Hopkins[1]

1. University of Virginia, Materials Science and Engineering, USA
2. UCBerkeley, MSE/Physics, USA

(ICACC-P107-2023) Enhanced piezoelectric properties of tungsten-modified $Bi_5Ti_3FeO_{15}$ ceramics for high-temperature piezoelectric applications

Q. Wang*[1]; E. Liang[1]; C. Wang[1]

1. Shandong University, School of Physics, State Key Laboratory of Crystal Materials, China

(ICACC-P108-2023) Enhanced energy storage performance of BNT-based lead-free relaxor ferroelectric ceramics

J. Li[1]; Q. Wang*[1]; C. Wang[1]

1. Shandong University, School of Physics, State Key Laboratory of Crystal Materials, China

(ICACC-P109-2023) Data-driven strategies to create artificial intelligence model with humanlike image discrimination: Example of toughened silicon nitride ceramics

R. Furushima*[1]; Y. Maruyama[1]; Y. Nakashima[1]; M. Ngo[1]; T. Ohji[1]; M. Fukushima[1]

1. National Institute of Advanced Science and Technology, Japan

Thursday, January 26, 2023

Emerging Materials and Sustainable Manufacturing Technologies in a Global Landscape: Symposium in Honor of Dr. Tatsuki Ohji

Tatsuki Ohji Honorary Symposium V

Room: Coquina Salon D (North Tower)

Session Chairs: Hisayuki Suematsu, Nagaoka University of Technology; Jerzy Lis, AGH University of Science and Technology

8:30 AM

(ICACC-HS-028-2023) Synthesis of β-MoO_3 nanosized powders by pulsed wire discharge (Invited)

H. Suematsu*[1]; N. M. Chu[2]; T. Kitagawa[1]; T. Do[1]; T. Nakayama[1]; K. Niihara[1]

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. AIST, Japan

8:50 AM

(ICACC-HS-029-2023) Tailoring Microstructure of Ceramics by colloidal processing and external fields (Invited)

T. S. Suzuki*[1]

1. National Institute for Materials Science, Ceramics Processing Group, Japan

9:10 AM

(ICACC-HS-031-2023) Development of Materials Engineering at AGH University of Science and Technology (Invited)

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

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

9:40 AM

Break

10:00 AM

(ICACC-HS-032-2023) Additive Manufacturing of structural ceramics (Invited)

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

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

10:30 AM

(ICACC-HS-033-2023) Bonding and densification mechanism between particles in the RTIC phenomenon of fine ceramic particles (Invited)

J. Akedo*[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Device Technology Research Institute, Japan

10:50 AM

(ICACC-HS-034-2023) Unique Route to Grow Single-Crystals of NonstoichiometricTerbium Oxides and Alumina Electrochemically (Invited)

N. Imanaka*[1]

1. Osaka University, Applied Chesistry, Japan

S1: Mechanical Behavior and Performance of Ceramics & Composites

Fracture Mechanics, Failure Analysis, and Fractography

Room: Ballroom 5 (South Tower)

Session Chairs: Jonathan Salem, NASA Glenn Research Center; Kevin Strong, Sandia National Laboratories

8:30 AM

(ICACC-S1-042-2023) A Meso-Scale LEFM Approach to Understanding CMC Interlaminar Strength (Invited)

J. D. Baker*[1]

1. Rolls-Royce Corporation, USA

9:00 AM

(ICACC-S1-043-2023) Statistical modeling of mechanical lifetime in glass and ceramic (Invited)

S. Grutzik*[1]; T. Diebold[2]; K. T. Strong[3]

1. Sandia National Laboratories, Materials and Failure Modeling, USA
2. Sandia National Laboratories, Material Mechanics and Tribology, USA
3. Sandia National Laboratories, Material Mechanics and Triboloty, USA

9:30 AM

(ICACC-S1-044-2023) Finding the "Real" Fracture Toughness of Glass: Draft ASTM Standards Using CNSB, DCB, DT, SEPB Test Methods

M. G. Jenkins*[1]; J. Salem[2]; J. Westbrook[3]; E. Aaldenberg[3]; B. M. Sundaram[3]; G. D. Quinn[4]

1. Bothell Engineering and Science Technologies, USA
2. NASA Glenn Research Center, Materials and Structures, USA
3. Corning Incorporated, USA
4. National Institute of Standards and technology, Materials Measuremenet Sciences Division, USA

9:50 AM

Break

10:10 AM

(ICACC-S1-045-2023) Alumina toughened zirconia composites with time-dependent strength improvement

Z. Pedzich*[1]; A. Wojteczko[1]; M. Grabowy[2]

1. AGH University of Science and Technology, Department of Ceramics and Refractory Materials, Poland
2. CEREL, Ceramic Department, Poland

10:30 AM

(ICACC-S1-046-2023) 3D Mapping of Glass Indentation Stress Fields

A. J. Bellafatto*[1]; I. Reimanis[2]

1. Colorado School of Mines, Materials Science, USA
2. Colorado School of Mines, USA

10:50 AM

(ICACC-S1-047-2023) Evaluating Mechanical Properties of FAST-processed Hard Ceramics via Multiscale Indentation and Holistic Elastoplastic-Fracture Analysis

D. E. Wolfe*[1]; C. DeSalle[1]; C. Ryan[1]; R. Slapikas[1]; R. Sweny[1]; R. Crealese[1]; P. Kolonin[1]; S. Stepanoff[1]; S. Divilov[2]; H. Eckert[2]; C. Oses[2]; M. Esters[2]; D. Brenner[3]; W. Fahrenholtz[4]; J. Maria[1]; C. Toher[5]; E. Zurek[6]; S. Curtarolo[7]

1. Pennsylvania State University, USA
2. Duke University, USA
3. NC State University, USA
4. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
5. University of Texas at Dallas, USA
6. State University of New York at Buffalo, USA
7. Duke University, USA

11:10 AM

(ICACC-S1-048-2023) Microstructural Effects on Polycrystalline Ceramic Fracture as Revealed via Synchrotron Radiation

S. F. Gorske*[1]; M. Ramesh[2]; J. Park[3]; P. Kenesei[3]; H. Sharma[4]; J. Almer[3]; P. Voorhees[2]; K. Faber[1]

1. California Institute of Technology, Materials Science, USA
2. Northwestern University, Materials Science and Engineering, USA
3. Argonne National Lab, Materials Physics and Engineering, USA
4. Argonne National Lab, Computational X-ray Science, USA

11:30 AM

(ICACC-S1-049-2023) Damage Control Measures in Composites: BVID Damage Progression

K. Jribi*[1]; J. Gosse[2]; D. Neill[2]; A. Mello[1]

1. Embry-Riddle Aeronautical University, Aerospace Engineering, USA
2. Computational Engineering Software, LLC, USA

11:50 AM

(ICACC-S1-050-2023) Soldered Tensile Failure Stress of Ceramics in Multilayered Ceramic Capacitors

T. J. Rogers*[1]; K. T. Strong[2]; J. Yang[2]; S. Grutzik[3]; R. Wheeling[1]

1. Sandia National Laboratories, USA
2. Sandia National Laboratories, Material Mechanics and Triboloty, USA
3. Sandia National Laboratories, Materials and Failure Modeling, USA

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications

Environmental Barrier Coatings II

Room: Flagler C (South Tower)

Session Chairs: Bryan Harder, NASA Glenn Research Center; Katherine Faber, California Institute of Technology

8:40 AM

(ICACC-S2-046-2023) A multiscale 3D investigation approach for characterizing damage in coatings and woven ceramic matrix composites

H. Bale*[1]

1. Carl Zeiss Research Microscopy Solutions, USA

9:00 AM

(ICACC-S2-047-2023) Coating Processing and Materials Testing with the Plasma Spray- Physical Vapor Deposition (PS-PVD) Facility at NASA Glenn Research Center

B. J. Harder*[1]; L. C. Hoffman[1]; M. Kulis[1]; K. Lee[2]; M. J. Presby[1]

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

9:20 AM

(ICACC-S2-048-2023) Plasma Sprayed Disilicate-based Environmental Barrier Coatings: a comparative study

E. Garcia Granados*[1]; S. Sampath[1]

1. Stony Brook University, Center for Thermal Spray Research, USA

9:40 AM

(ICACC-S2-049-2023) Varying processing parameters in the development of slurry-based oxide bond coat for environmental barrier coatings

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

1. NASA Glenn Research Center, USA

10:00 AM

Break

10:20 AM

(ICACC-S2-050-2023) Effect of Cycle Frequency on Steam Oxidation of Environmental Barrier Coatings

M. Ridley*[1]; M. Lance[1]; T. Aguirre[1]; K. Kane[1]; B. Pint[1]

1. Oak Ridge National Lab, USA

10:40 AM

(ICACC-S2-051-2023) In-situ Synchrotron Studies of Environmental Barrier Coatings Under Steam and Air Conditions at Elevated Temperatures

B. Herren[1]; C. Chuang[2]; J. Almer[2]; K. Lee[3]; K. Faber*[1]

1. California Institute of Technology, USA
2. Argonne National Laboratory, Advanced Photon Source, USA
3. NASA Glenn Research Center, USA

11:00 AM

(ICACC-S2-052-2023) Temperature Dependent Thermal Expansion Anisotropy of Rare Earth Disilicates Via Synchrotron X-Ray Scattering

A. Salanova*[1]; I. Brummel[1]; E. J. Opila[1]; J. Ihlefeld[1]

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

11:20 AM

(ICACC-S2-053-2023) Foreign Object Damage (FOD) in Environmental Barrier Coatings (EBCs)

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

1. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
2. HX5, LLC., USA

S3: 20th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology

Electrolytes

Room: Ponce de Leon (North Tower)

Session Chair: Scott Barnett, Northwestern Univ

8:30 AM

(ICACC-S3-044-2023) Strategies for Achieving high performance in Solid Oxide Electrochemical Devices using LSGM at KICET (Invited)

T. Shin*[1]

1. Korea Institute of Ceramic Engineering & Technology, Hydrogen Energy Materials Center, Republic of Korea

9:00 AM

(ICACC-S3-045-2023) Defect Thermodynamics and Transport Properties of Proton Conducting Oxide $BaZr_{1-x}Y_xO_{3-\delta}$ ($x \leq 0.1$) Evaluated Based on Density Functional Theory Modeling

Y. Lee*[1]; Y. Duan[1]; D. C. Sorescu[1]; W. Saidi[1]; D. Morgan[2]; T. Kalapos[1]; W. K. Epting[1]; G. Hackett[1]; H. W. Abernathy[1]

1. National Energy Technology Laboratory, USA
2. University of Wisconsin-Madison, Materials Science and Engineering, USA

9:20 AM

(ICACC-S3-046-2023) Conductivity Increase as a Result of Eliminating Short-Range Ordering in a Scandia-Zirconia Electrolyte

S. Zhang*[1]; C. Savaniu[1]; J. T. Irvine[1]

1. University of St Andrews, School of Chemistry, United Kingdom

9:40 AM

(ICACC-S3-047-2023) Measurement of mechanical properties of thin zirconia substrates

C. Steinborn[1]; M. Kusnezoff*[1]

1. Fraunhofer IKTS, Germany

10:00 AM

Break

Fuel Electrode

Room: Ponce de Leon (North Tower)

Session Chair: Prabhakar Singh, University of Connecticut

10:20 AM

(ICACC-S3-048-2023) Metal Oxide Electrocatalysts for High Temperature CO_2 Splitting in Solid Oxide Electrolysis Cells (Invited)

V. Birss*[1]; H. Ansari[1]; A. Bass[1]; S. Bouzidi[1]

1. University of Calgary, Department of Chemistry, Canada

10:50 AM

(ICACC-S3-049-2023) Solid Oxide Cell Degradation and Failure due to Siloxane Deposition (Invited)

R. Milcarek*[1]

1. Arizona State University, School for Engineering of Matter, Transport and Energy, USA

11:20 AM

(ICACC-S3-050-2023) Enhancing exsolution electrode performance by infiltration

S. Wang*[1]; P. V. Hendriksen[1]; B. Sudireddy[1]

1. Technical University of Denmark, DTU Energy, Denmark

11:40 AM

(ICACC-S3-051-2023) Investigation of $Ce(Mn, Fe)O_2$/$La(Sr)Cr(Mn)O_3$ composite as oxide cathode for high-temperature CO_2 electrolysis

S. Lee*[1]; T. Shin[2]

1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea
2. Korea Institute of Ceramic Engineering & Technology, Energy Materials Center, Republic of Korea

12:00 PM

(ICACC-S3-052-2023) Conversion of Methane to Valuable Chemicals over SFM Anode-based Metal Supported Solid Oxide Cells

B. Hu*[1]; M. Tucker[2]; f. Rosner[2]; H. Breunig[2]

1. Lawrence Berkeley National Laboratory, Energy Storage and Distributed Resources, USA
2. Lawrence Berkeley National Laboratory, USA

S4: Armor Ceramics - Challenges and New Developments

Current Developments in Boron Carbide and Advanced Ceramics I

Room: Coquina Salon B (North Tower)

Session Chair: Chris Marvel, Louisiana State University

8:30 AM

(ICACC-S4-010-2023) Bond-level Representation of Deformation and Fracture During Tensile Shock Loading of Boron Carbide (Invited)

G. Subhash*[1]

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

9:00 AM

(ICACC-S4-011-2023) Development of Deep Neural Network Learned Interatomic Potential for Shock Simulations of B_4C

K. Ghaffari*[2]; S. Bavdekar[1]; G. Subhash[2]; D. Spearot[2]

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

9:20 AM

(ICACC-S4-012-2023) Effect of TiB_2 Addition on the Properties B_4C

Z. Ayguzer Yasar*[1]; R. A. Haber[1]

1. Rutgers University, Material Science and Engineering, USA

9:40 AM

(ICACC-S4-013-2023) A Mechanism-based Approach towards Improving the Impact Performance of Boron Carbide

P. Malhotra[1]; A. Zare*[1]; M. He[1]; J. Moreno[1]; M. Shaeffer[1]; K. Ramesh[1]

1. Johns Hopkins University, Mechanical Engineering, USA

10:00 AM

Break

Current Developments in Boron Carbide and Advanced Ceramics II

Room: Coquina Salon B (North Tower)

Session Chair: Arezoo Zare, Johns Hopkins University

10:20 AM

(ICACC-S4-014-2023) Microstrucutre, properties and ballistic tests of strong B_4C-TiB_2 composites densified by gas pressure sintering

D. Sciti*[1]; S. Failla[2]

1. ISTEC-CNR, Italy
2. National Research Council of Italy - Institute of Science and Technology for Ceramics, Department of Chemical Science and Materials Technologies (DSCTM), Italy

10:40 AM

(ICACC-S4-015-2023) Boron Carbide-Silicon Carbide composites for next generation armour

H. Payne*[1]; L. J. Vandeperre[1]; F. Giuliani[1]

1. Imperial College London, Materials, United Kingdom

11:00 AM

(ICACC-S4-016-2023) New armor ceramic material based on Silicon carbide for multi-hit ballistic performance

B. Pérez Román*[1]; J. Pérez Gallego[1]; J. Rubio[1]

1. Institute of Ceramics and Glass, CSIC, Chemical-Physics of Surfaces and Processes, Spain

11:20 AM

(ICACC-S4-017-2023) Improvement of the mechanical properties of TiB2 for armour applications using different additives and sintering techniques.

S. Taraborelli*[1]; S. Failla[2]; D. Sciti[3]

1. University of Parma, Chemical science, life science and environmental sustainability, Italy
2. National Research Council of Italy - Institute of Science and Technology for Ceramics, Department of Chemical Science and Materials Technologies (DSCTM), Italy
3. ISTEC-CNR, Italy

11:40 AM

(ICACC-S4-018-2023) Surfing boundary conditions to characterize effective fracture-toughness of brittle composites

Z. Hossain*[1]

1. University of Delaware, USA

S6: Advanced Materials and Technologies for Rechargeable Energy Storage

Diagnostics and Materials Characterization for Lithium Batteries I

Room: Coquina Salon E (North Tower)

Session Chairs: Chongmin Wang, Pacific Northwest National Lab; Yu Katayama, Osaka University

8:30 AM

(ICACC-S6-037-2023) X-ray Spectroscopic Studies of Energy Storage Systems (Invited)

M. Balasubramanian*[1]

1. Oak Ridge National Laboratory, USA

9:00 AM

(ICACC-S6-038-2023) Chemical States Visualization of Cathode Active Materials by X-ray Spectroscopic Ptychography (Invited)

N. Ishiguro*[1]

1. Tohoku University, International Center for Synchrotron Radiation Innovation Smart (SRIS), Japan

9:30 AM

(ICACC-S6-039-2023) Anionic redox in Li-ion cathode materials: A spectroscopy point of view (Invited)

M. Sougrati*[1]

1. CNRS ICGM, France

10:00 AM

Break

Diagnostics and Materials Characterization for Lithium Batteries II

Room: Coquina Salon E (North Tower)

Session Chairs: Nozomu Ishiguro, Tohoku University; Mahalingam Balasubramanian, Oak Ridge National Lab

10:20 AM

(ICACC-S6-040-2023) In-situ and cryo-TEM diagnosis of SEI layer characteristics in rechargeable battery (Invited)

C. Wang*[1]

1. Pacific Northwest National Lab, USA

10:50 AM

(ICACC-S6-041-2023) Operando Understanding of the Electrode/ Electrolyte Interface in Lithium Batteries (Invited)

Y. Katayama*[1]

1. Osaka University, SANKEN, Japan

11:20 AM

(ICACC-S6-042-2023) Design of new ionic conductor used as an electrode or solid electrolyte for non-aqueous batteries (Invited)

V. Pralong*[1]; J. Jean[1]; A. Sagot[1]; A. Neveu[1]

1. CNRS ENSICAEN, France

S7: 17th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications

Metal Oxide Nanostructures and Chalcogenides for Energy, Environmental and Water-splitting Applications I

Room: Coquina Salon G (North Tower)

Session Chair: Muhammet Toprak, KTH Royal Institute of Technology

8:30 AM

(ICACC-S7-001-2023) Advances in Photon-harvesting Technologies for Perovskite Absorbers and Water Splitting Reactions (Invited)

S. Mathur*[1]

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

9:00 AM

(ICACC-S7-002-2023) Role of Heterojunctions in Metal Oxide Heterostructures for Energy and Environmental Applications (Invited)

N. Pinna*[1]

1. Humboldt-Universität zu Berlin, Department of Chemistry, Germany

9:30 AM

(ICACC-S7-003-2023) New generaton of chalcogenide and phosphide catalyst for water splitting and thermoelectric applications (Invited)

D. Chua*[1]

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

10:00 AM

Break

Metal Oxide Nanostructures and Chalcogenides for Energy, Environmental and Water-splitting Applications II

Room: Coquina Salon G (North Tower)

Session Chair: Thomas Fischer, University of Cologne

10:20 AM

(ICACC-S7-004-2023) Synthetic approach to metal chalcogenide functional materials for sustainable energy conversion by molecular building block assembly

V. Brune*[1]; D. Patrun[1]; Z. Aytuna[1]; S. Mathur[1]

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

10:40 AM

(ICACC-S7-005-2023) Hydrogen Evolution Reaction with Metal Chalcogenide Nanofilms as Catalysts in Electrochemical Water Splitting.

D. Patrun*[1]; L. Jürgensen[1]; S. Mathur[1]

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

11:00 AM

(ICACC-S7-006-2023) Metal Alkoxides Derived High Entropy Oxides: A Design Strategy For Efficient Oxygen Evolution Reaction (OER) Electrocatalysts

Z. Aytuna*[1]; A. Bhardwaj[1]; M. Wilhelm[1]; S. Mathur[1]

1. Institute of inorganic Chemistry, Department of Chemistry, Germany

11:20 AM

(ICACC-S7-007-2023) Understanding of Degradation Process on the Photoelectrochemical Energy and Materials

S. Kang*[1]

1. Chonnam National University, Department of Chemistry education, Republic of Korea

11:40 AM

(ICACC-S7-008-2023) Facile synthesis of high-surface area anatase from $TiOSO_4.2H_2O$ as excellent photocatalyst

T. L. Nguyen*[1]; D. Seo[1]

1. Arizona State University, School of Molecular Sciences, USA

S9: Porous Ceramics: Novel Developments and Applications

Structure and Properties of Porous Ceramics

Room: Coquina Salon H (North Tower)

Session Chairs: Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST); Surojit Gupta, University of North Dakota

8:30 AM

(ICACC-S9-001-2023) Exploration of DDGS-PLA and HAP-PLA Scaffolds for Tissue Engineering (Invited)

M. Geigle*[1]; E. Eades[1]; S. Javaid[1]; A. Thorn[1]; S. Gupta[1]

1. University of North Dakota, Mechanical Engineering, USA

9:00 AM

(ICACC-S9-002-2023) Mechanical Behavior of Calcium Phosphate - Alumina Ceramic Composite Porous Scaffolds Coated with Poly(lactic acid)

Y. Zusho*[1]; S. Kobayashi[2]

1. Tokyo Metropolitan University, Mechanical Systems Engineering, Japan
2. Tokyo Metropolitan University, Mechanical Engineering, Japan

9:20 AM

(ICACC-S9-003-2023) Porous Silicon Nitride Ceramics for RF Radomes Fabricated by Slip Casting

A. Kimery*[1]; C. Martinez[1]; R. Trice[1]

1. Purdue University, Department of Materials Engineering, USA

9:40 AM

(ICACC-S9-004-2023) Evolution of crack path in porous carbides

Z. Hossain*[1]

1. University of Delaware, USA

10:00 AM

Break

10:20 AM

(ICACC-S9-005-2023) Properties and estimation of mullite based thermal Insulators prepared by gelation freezing Route

M. Fukushima*[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

10:40 AM

(ICACC-S9-006-2023) Understanding thermal stability in doped zirconia aerogels for high temperature applications

N. Olson*[1]; J. Meyer[1]; H. Guo[2]; F. Hurwitz[3]; J. L. Stokes[4]; J. A. Krogstad[5]

1. University of Illinois at Urbana-Champaign, Materials Science & Engineering, USA
2. Universities Space Research Association, USA
3. NASA Glenn Research Center, Materials Chemistry and Physics Branch, USA
4. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
5. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

11:00 AM

(ICACC-S9-007-2023) Porous composites from cold sintering applied to insulating and hygroscopy

E. Kamseu*[1]; Z. Ngouloure[1]; L. K. Tiogning-Djiogue[5]; A. Akono[2]; F. Andreola[4]; B. Nait-Ali[3]; S. Rossignol[3]; C. Leonelli[4]

1. Local Materials Promotion Authority, Cameroon
2. Northwestern University, Civil and Environmental Engineering, USA
3. University of Limoges, IRCER, UMR 7315, France
4. University of Modena and Reggio Emilia, Department of Engineering Enzo Ferrari, Italy
5. University of Yaoundé 1, National Advanced School of Engineering, Cameroon

11:20 AM

(ICACC-S9-008-2023) Development of porous phyllosilicate-based ceramics using freeze tape casting

K. Barry[2]; G. Lecomte-Nana*[1]; M. Seynou[2]; P. Blanchart[1]; C. Peyratout[1]

1. IRCER, ENSIL-ENSCI, University of Limoges, France
2. University Joseph Ki Zerbo de Ouagadougou I, Burkina Faso

11:40 AM

(ICACC-S9-009-2023) Incorporating Ni catalysts into freeze-cast SiOC porous materials

K. Yu*[1]; K. Faber[2]

1. Caltech, Materials Science, USA
2. California Institute of Technology, USA

S10: Modeling and Design of Ceramics and Composites

Modeling of Ceramics and Composites I

Room: Coquina Salon A (North Tower)

Session Chair: Gerard Vignoles, University Bordeaux

8:30 AM

(ICACC-S10-001-2023) Distinctive Mechanical and Functional Properties Due to Glide Dislocations in Zinc Sulfide (Invited)

K. Matsunaga*[1]

1. Nagoya University, Materials Physics, Japan

9:00 AM

(ICACC-S10-002-2023) Light scattering prediction approaches for transparent ceramics

S. Hribalova*[1]; W. Pabst[1]

1. University of Chemistry and Technology, Prague, Department of Glass and Ceramics, Czechia

9:20 AM

(ICACC-S10-003-2023) High-throughput extrapolation of 0 K calculated phase stability to relevant temperatures

M. to Baben*[1]; C. Aras[1]

1. GTT-Technologies, Germany

9:40 AM

(ICACC-S10-004-2023) Pt Alloy/Oxide Catalysts for Suppressing H_2O_2 Formation in Polymer Electrolyte Fuel Cell Anodes by First-Principles Calculations

R. Kano*[1]; Y. Asano[1]; Q. Chen[2]; Y. Ootani[1]; N. Ozawa[2]; M. Kubo[1]

1. IMR Tohoku University, Japan
2. Tohoku University, New Industry Creation Hatchery Center, Japan

10:00 AM

Break

Modeling of Ceramics and Composites II

Room: Coquina Salon A (North Tower)

Session Chair: Katsuyuki Matsunaga, Nagoya University

10:20 AM

(ICACC-S10-005-2023) Random Walks for image-based simulations of heat or mass transfer in evolving porous media: Applications to Ceramic-Matrix Composites & Ceramic Foams (Invited)

G. L. Vignoles*[1]

1. University Bordeaux, LCTS - Lab for ThermStructural Composites, France

10:50 AM

(ICACC-S10-006-2023) Flowsheet simulation applied for porcelain tile manufacturing optimization and sustainability

C. Lourenco Alves*[1]; V. Skorych[1]; A. De Noni Jr.[2]; D. Hotza[2]; S. Y. Gómez González[2]; S. Heinrich[1]

1. Hamburg University of Technology, Institute of Solids Process Engineering and Particle Technology, Germany
2. Federal University of Santa Catarina (UFSC), Department of Chemical Engineering (EQA), Brazil

11:10 AM

(ICACC-S10-007-2023) Unveiled the origin of structural instability of LixNi1/3Co1/3Mn1/3O2 and LixNi0.8Co0.1Mn0.1O2 cathode materials upon delithiation/lithiation

L. Kuo*[1]; O. Guillon[2]; P. Kaghazchi[3]

1. Ming Chi University of Technology, Chemical Engineering, Taiwan
2. Forschungszentrum Juelich, IEK-1, Germany
3. Forschungszentrum Juelich, Germany

11:30 AM

(ICACC-S10-008-2023) Data-driven discovery of computationally complex 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

11:50 AM

(ICACC-S10-009-2023) Evaluation of Macrocharacteristics of Materials Based on Highly Boron Compounds by Ab-initio Research at Atomic Level

E. Kartuzov*[1]; V. Kartuzov[1]; L. Ovsiannikova[1]; N. Rozhenko[1]

1. IPMS NASU, Ukraine

12:10 PM

(ICACC-S10-010-2023) New approaches to computer design of ultrahigh-temperature ceramics based on refractory compounds

V. Kartuzov*[1]; O. Vasiliev[1]; V. Bekenev[1]; V. Muratov[1]; D. Vedel[1]; E. Kartuzov[1]

1. IPMS NASU, Ukraine

S11: Advanced Materials and Innovative Processing Ideas for Production Root Technologies

Recycling and Reuse Processes

Room: Ballroom 1-2 (South Tower)

Session Chair: Sungwook Mhin, Korea Institute of Industrial Technology

9:00 AM

(ICACC-S11-013-2023) Innovative Recycling Technology for Used Li-ion Batteries using Li Separation Method by Ionic Conductor: LiSMIC (Invited)

T. Hoshino*[1]; K. Morita[1]; T. Matsumoto[1]

1. National Institutes for Quantum Science and Technology (QST), Breeding Functional Materials Development Group, Department of Blanket Systems Research, Rokkasho Fusion Institute, Fusion Energy Directorate, Japan

9:30 AM

(ICACC-S11-014-2023) Preparation of carbon-free lime from unused resources by using the ethical process (Invited)

M. Tafu*[1]; T. Fukumura[2]

1. National Institute of Technology, Toyama College, Japan
2. National Institute of Technology, Ichinoseki College, Japan

10:00 AM

Break

Sustainable Energy Concepts and Applications

Room: Ballroom 1-2 (South Tower)

Session Chair: Chisung Ahn, Korea Institute of Industrial Technology

10:20 AM

(ICACC-S11-015-2023) Flexible nanogenerator with co-additive, $ZnSnO_3$/surface-modified carbon nanotubes, for high-power energy harvesting and pulse sensing (Invited)

S. Mhin*[2]; H. Han[3]; K. Kim[1]

1. Korea Institute of Industrial Technology, Republic of Korea
2. Kyonggi University, Republic of Korea
3. Konkuk University, Republic of Korea

10:50 AM

(ICACC-S11-016-2023) Application of Manganese Dioxide in Aqueous Zinc-ion Secondary Batteries (Invited)

S. Lee[2]; M. Kim[2]; T. Kim[3]; S. Mhin[2]; J. Kim*[1]

1. Daegu Mechatronics & Materials Institute, Republic of Korea
2. Kyonggi University, Republic of Korea
3. Korea Institute of Industrial Technology, Republic of Korea

11:20 AM

(ICACC-S11-017-2023) The enhancement of power generation through pyroelectric bodies under the pulse power electric field

S. Buddhika Amila Kumara*[1]; T. Nakayama[1]

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

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)

Design of Novel Compositions and Manufacturing Methods II

Room: Ballroom 3 (South Tower)

Session Chairs: Anne Joulain, Institut PPRIME; Helmut Riedl, TU Wien

8:30 AM

(ICACC-S12-008-2023) Magnetocaloric properties of MAB phases (Invited)

D. Cakir*[1]; Y. Loh[1]

1. University of North Dakota, Physics and Astrophysics, USA

9:00 AM

(ICACC-S12-009-2023) Si containing transition metal diborides (TM-Si-B_{2+z}) – Advanced ternary compounds for high temperature oxidative environments

L. Zauner[2]; T. Glechner[2]; A. Bahr[2]; A. Hirle[2]; C. Fuger[2]; R. Hahn[2]; T. Wojcik[2]; J. Ramm[3]; O. Hunold[3]; P. Polcik[4]; H. Riedl*[1]

1. TU Wien, Institute of Materials Science and Technology, Austria
2. Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria
3. Oerlikon Surface Solutions AG, Liechtenstein
4. Plansee Composite Materials GmbH, Germany

9:20 AM

(ICACC-S12-010-2023) Analyzing the effects of external deformation constraint on the mechanical response of MAX phase crystals

M. Dujovic*[1]; M. Radovic[2]; A. Srivastava[3]; T. Ouisse[4]

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

9:40 AM

Break

Design of Novel Compositions and Manufacturing Methods III

Room: Ballroom 3 (South Tower)

Session Chairs: Sophia Tsipas, Universidad Carlos III de Madrid; Ankit Srivastava, Texas A&M University

10:20 AM

(ICACC-S12-012-2023) Nano and Sub-Nano Scales Manipulation of 2D Materials (Invited)

M. Naguib*[1]

1. Tulane University, Physics and Engineering Physics, USA

10:50 AM

(ICACC-S12-013-2023) Expanding the Large Family of Ordered Double-Transition Metal 2D MXenes (Invited)

B. Anasori*[1]

1. Indiana University – Purdue University, Mechanical and Energy Engineering, USA

11:20 AM

(ICACC-S12-014-2023) Radiation-induced swelling in MAX phase ceramics for nuclear applications (Invited)

K. Lambrinou*[1]; N. Goossens[2]; B. Tunca[2]; T. Lapauw[2]; K. Van Loo[2]; S. Huang[2]; J. Hinks[1]; P. Persson[3]; J. Vleugels[2]

1. University of Huddersfield, School of Computing and Engineering, United Kingdom
2. KU Leuven, Department of Materials Engineering, Belgium
3. Linköping University, Department of Physics, Chemistry and Biology, Sweden

S14: Crystalline Materials for Electrical, Optical and Medical Applications

Battery / Piezoelectric Material

Room: Flagler A (South Tower)

Session Chairs: Kenji Toda, Niigata University; Nerine Cherepy, Lawrence Livermore National Lab

10:10 AM

(ICACC-S14-001-2023) Lead-free 3D Piezoelectric Transition-Metal Tantalate for Ubiquitous Sub-kHz Sensing and Classification of Dynamic Vibrations

R. Mitra*[1]; U. Manju[1]

1. CSIR-Institute of Minerals and Materials Technology, Materials Chemistry Department, India

10:30 AM

(ICACC-S14-002-2023) Highly Flexible PMN-0.3PT/PDMS Based Piezoelectric Polymer Composites for Energy Harvesting Application

A. Kumar*[1]; A. Roy[1]

1. Indian Institute of Technology Bhubaneswar, School of Minerals, Metallurgical and Materials Engineering, India

10:50 AM

(ICACC-S14-003-2023) Synthesis of Cathode Materials using Water-Assisted Solid-State Reaction method for LIBs (Invited)

K. Toda*[1]

1. Niigata University, Japan

11:20 AM

(ICACC-S14-004-2023) High Performance Aurivillius Phase Calcium Bismuth Niobate for High-Temperature Piezoelectric Applications

C. Wang[1]; Q. Wang*[1]

1. Shandong University, School of Physics, State Key Laboratory of Crystal Materials, China

11:40 AM

(ICACC-S14-005-2023) Simultaneously achieving high energy storage density and energy efficiency in $BaTiO_3$-$Bi(Mg_{1/2}Sn_{1/2})O_3$ ceramics

Q. Wang*[1]; X. Zhao[2]; C. Wang[1]

1. Shandong University, School of Physics, State Key Laboratory of Crystal Materials, China
2. Shandong University, Center for Optics Research and Engineering (CORE), Key Laboratory of Laser and Infrared System of Ministry of Education, China

S16: Geopolymers, Inorganic Polymers and Sustainable Construction Materials

3D Printing of Geopolymers I

Room: Coquina Salon C (North Tower)

Session Chair: Sylvie Rossignol, Laboratoire SPCTS

8:30 AM

(ICACC-S16-029-2023) Composition and synthesis protocol as tools to tailor the textural properties of 3D printed geopolymeric components (Invited)

M. D'Agostini[1]; M. Muracchioli[1]; P. Colombo[1]; G. Franchin*[1]

1. University of Padova, Industrial Engineering, Italy

9:00 AM

(ICACC-S16-030-2023) 3D printing of Martian/Lunar Regolith Simulant-based Geopolymer Composites (Invited)

P. He*[1]; S. Ma[1]

1. Harbin Institute of Technology, School of Materials Science and Engineering, China

9:30 AM

(ICACC-S16-031-2023) Effect of Temperature on Rheology during Early Stage Geopolymerization (Invited)

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

10:00 AM

Break

3D Printing of Geopolymers II

Room: Coquina Salon C (North Tower)

Session Chair: Ange-Therese Akono, Northwestern University

10:20 AM

(ICACC-S16-032-2023) Influence of raw materials on the 3D printing behaviour of geopolymer slurries without organic additives

P. Scanferla*[1]; W. N'Cho[1]; J. Jouin[1]; S. Rossignol[2]

1. University of Limoges, IRCER, France
2. Laboratoire SPCTS, France

10:40 AM

(ICACC-S16-033-2023) Composition dependence of water loss rate and near-surface microstructure of open air-cured metakaolin geopolymers for 3D printing

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

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

11:00 AM

(ICACC-S16-034-2023) Sustainability of additive manufacturing: Case studies of solid wastes and circular economy (Invited)

H. A. Colorado L.*[1]

1. Universidad de Antioquia, Colombia

Porous Geopolymers I

Room: Coquina Salon C (North Tower)

Session Chair: Enrico Bernardo, University of Padova

11:30 AM

(ICACC-S16-035-2023) Formulation and mechanical properties of porous extruded geopolymers (Invited)

C. Zoude*[2]; L. Gremillard[2]; É. Prud'homme[2]; K. Johannes[1]

1. INSA Lyon, Centre for Energy and Thermal Sciences of Lyon, France
2. INSA Lyon, Materials, Engineering and Science, France

Emerging Materials and Sustainable Manufacturing Technologies in a Global Landscape: Symposium in Honor of Dr. Tatsuki Ohji

Tatsuki Ohji Honorary Symposium VI

Room: Coquina Salon D (North Tower)

Session Chairs: Katalin Balazsi, Centre for Energy Research HAS; Tohru Sekino, Osaka University

1:30 PM

(ICACC-HS-035-2023) 3D Printed Fiber-reinforced Highly Ductile Composite Scaffolds for Bone Tissue Engineering (Invited)

J. Chen[1]; S. Chen[1]; M. Wang*[1]

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

2:00 PM

(ICACC-HS-036-2023) Waste material as source for nanosized bioceramics, bioactive coatings and porous ceramics (Invited)

K. Balazsi*[1]; M. Furko[1]; H. R. Ben Zine[1]; M. H. Kaou[2]; C. Balazsi[3]

1. Centre for Energy Research HAS, Thin Film Physics, Hungary
2. Óbuda University, Doctoral School on Materials Sciences and Technologies, Hungary
3. ELKH Centre for Energy Research, Hungary

2:30 PM

(ICACC-HS-037-2023) Environmental barrier coating for SiC_f/SiC CMC: Science and Technology (Invited)

J. Wang*[1]

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

3:00 PM

Break

3:20 PM

(ICACC-HS-038-2023) Chemical and Structural Tuning of Visible-light Responsible Nano-structured Titania for Photochemical Functions (Invited)

T. Sekino*[1]; H. Park[1]; D. Han[1]; S. Chou[1]; H. Nishida[1]; T. Goto[2]; M. Kakihana[1]; Y. Morimoto[1]

1. Osaka University, SANKEN (The Institute of Scientific and Industrial Research), Japan
2. Osaka University, Institute for Advanced Co-Creation Studies, Japan

S1: Mechanical Behavior and Performance of Ceramics & Composites

Processing-Microstructure-Mechanical Properties Correlation II

Room: Ballroom 5 (South Tower)

Session Chairs: Prabhakar Singh, Indian Institute of Technology(BHU); Tetiana Prikhna, Institute for Superhard Materials of the National Academy of Sciences of Ukraine

1:30 PM

(ICACC-S1-051-2023) Correlating the extent of thermal exfoliation of graphene oxide with dispersibility/reinforcing ability of reduced-graphene oxide in glass-ceramics

V. Verma*[1]; L. Gurnani[1]; A. Mukhopadhyay[1]

1. Indian Institute of Technology Bombay, Metallurgical Engineering and Materials Science, India

1:50 PM

(ICACC-S1-052-2023) Shape Memory Ceramics Under Stress

H. Ozcan*[1]; E. Pang[1]; C. A. Schuh[1]

1. Massachusetts Institute of Technology, Department of Materials Science and Engineering, USA

2:10 PM

(ICACC-S1-053-2023) Ceramic upside-down composites for electronic applications

N. Kuzmic*[1]; M. Nelo[2]; S. D. Škapin[1]; H. M. Jantunen[2]; M. Spreitzer[1]

1. Jozef Stefan Institute, Advanced Materials Department, Slovenia
2. University of Oulu, Microelectronics Research Unit, Finland

2:30 PM

(ICACC-S1-056-2023) Processing-Microstructure-Property Characterization of 3D-Printed Metal-Reinforced Polylactic Acid and Acrylonitrile Butadiene Styrene Composites

M. Ranaiefar*[2]; M. Singh[1]; S. Gupta[3]; J. Salem[2]; M. C. Halbig[2]

1. Ohio Aerospace Institute, USA
2. NASA Glenn Research Center, USA
3. University of North Dakota, USA

2:50 PM

Break

3:10 PM

(ICACC-S1-057-2023) Study on Thermal Conductivity and Mechanical Properties for Polyamide-11 Composite Including Alumina Particle

M. Ijiri*[1]; S. Ishida[1]; T. Osada[1]; S. Kobayashi[1]

1. Tokyo Metropolitan University, Japan

3:30 PM

(ICACC-S1-058-2023) Thermal and Mechanical Analysis of Epoxy Matrix Composites with Abaca and Pineapple Leaf Fiber Reinforcements

R. A. Sirot[1]; R. E. Alemania[1]; E. D. Magdaluyo[1]; A. Pungongbayan*[1]

1. University of the Philippines Diliman, Department of Mining, Metallurgical, and Materials Engineering, Philippines

S3: 20th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology

Degradation

Room: Ponce de Leon (North Tower)

Session Chairs: Marie-Laure Fontaine, SINTEF AS; Tae Ho Shin, Korea Institute of Ceramic Engineering & Technology

1:30 PM

(ICACC-S3-053-2023) Materials Interfacial Stability in Solid Oxide Cells (Invited)

S. Barnett*[1]

1. Northwestern Univ, USA

2:00 PM

(ICACC-S3-054-2023) Pt Current Collectors Artificially Boosting Si-Contaminated Praseodymium Doped Ceria Oxygen Surface Exchange Coefficients (Invited)

Y. Ma[1]; T. E. Burye[1]; J. D. Nicholas*[1]

1. Michigan State University, Chemical Engineering and Materials Science, USA

2:30 PM

(ICACC-S3-055-2023) Atomically-flat $SrTi_{0.5}Fe_{0.5}O_{3-\delta}$ Model Thin Film – a Case Study of Activity Degradation of an Ideal Perovskite Surface (Invited)

W. Jung*[1]

1. Korea Advanced Institute of Science and Engineering (KAIST), MSE, Republic of Korea

3:00 PM

Break

3:20 PM

(ICACC-S3-056-2023) Exsolution of phase-separated nanoparticles via trigger effect toward reversible solid oxide cell (Invited)

J. Myung*[1]

1. Incheon National University, Dept. of Materials Science and Engineering, Republic of Korea

3:50 PM

(ICACC-S3-057-2023) Mitigating nitridation in ammonia fueled SOFCs

H. L. Frandsen*[1]; D. G. Marin[1]; F. Mondi[1]; A. Nemati[1]; H. Nami[1]; C. Goebel[1]; M. Chen[1]

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

4:10 PM

(ICACC-S3-058-2023) Electrochemically-Induced Degradation of Solid Oxide Electrolyzer Cells (SOECs)

P. Elahi*[1]

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

4:30 PM

(ICACC-S3-059-2023) Exploring the Safe Operational Current Density for High Temperature Solid Oxide Electrolyzers

K. Huang[1]; Y. Wen*[1]

1. University of South Carolina, Mechanical Engineering, USA

4:50 PM

(ICACC-S3-060-2023) Durability Comparison of Electrolyte Supported Solid Oxide Cells Operated During 10,000 to 50,000 Hours as Steam Electrolyser

J. Schefold*[1]; A. Léon[1]

1. European Institute for Energy Research, EIFER, Germany

5:10 PM

(ICACC-S3-061-2023) Review on Fault Diagnosis and Prognosis of Solid Oxide Fuel Cells

N. Ghulamullah*[1]; Y. Du[2]

1. Kent State University, Mechatronics, USA
2. Kent State University, USA

5:30 PM

(ICACC-S3-068-2023) On the optimal energy integration and lifetime of solid oxide cells: Towards a wholistic multi-scale optimization approach (Invited)

R. Nogueira Nakashima*[1]; S. de Oliveira Junior[2]; H. L. Frandsen[3]

1. Technical University Darmstadt, DTU Energy, Denmark
2. University of São Paulo, Mechanical Engineering, Brazil
3. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

S4: Armor Ceramics - Challenges and New Developments

Army Outreach: Funding Opportunities at the Army Research Office

Room: Coquina Salon B (North Tower)

Session Chair: Jerry LaSalvia, DEVCOM Army Research Laboratory

1:30 PM

(ICACC-S4-019-2023) Extramural basic research funding opportunities at DEVCOM ARL Army Research Office (Invited)

M. P. Bakas*[1]; C. Varanasi[1]

1. U.S. Army Research Lab DEVCOM, USA

Dynamic Response and Failure of Ceramics and Glasses I

Room: Coquina Salon B (North Tower)

Session Chair: Jerry LaSalvia, DEVCOM Army Research Laboratory

2:00 PM

(ICACC-S4-020-2023) Static and Dynamic Compression Strength of Advanced Ceramics

J. Swab*[1]; J. J. Pittari[1]; C. Meredith[1]

1. Army Research Laboratory, USA

2:20 PM

(ICACC-S4-021-2023) Dynamic Knoop Indentation of Ceramics using a Miniature Kolsky Bar Method

D. T. Casem*[1]; E. Retzlaff[4]; J. Swab[2]; M. Mello[3]

1. CCDC Army Research Laboratory, USA
2. Army Research Laboratory, USA
3. CalTech, USA
4. US Naval Academy, USA

2:40 PM

Break

Dynamic Response and Failure of Ceramics and Glasses II

Room: Coquina Salon B (North Tower)

Session Chair: Daniel Casem, CCDC Army Research Laboratory

3:20 PM

(ICACC-S4-022-2023) Dynamic Failure of Acrylic Glass and Glass Ceramic under Multiaxial Loading (Invited)

L. Zhang*[1]; D. Townsend[1]

1. University of Oxford, Department of Engineering Science, United Kingdom

3:50 PM

(ICACC-S4-023-2023) Computer modeling of impact of hybrid protective panel with a shock absorber layer made from aluminum foam granules and discrete reinforcing elements

E. Kartuzov*[1]; V. Kartuzov[1]; O. Mikhailov[1]; A. Mikhailov[1]

1. IPMS NASU, Ukraine

S6: Advanced Materials and Technologies for Rechargeable Energy Storage

Sodium Batteries, Potassium Batteries, Magnesium Batteries and Calcium Batteries I

Room: Coquina Salon E (North Tower)

Session Chairs: Moulay Tahar Sougrati, CNRS ICGM; Sergio Brutti, Università di Roma La Sapienza

1:30 PM

(ICACC-S6-043-2023) New Approaches and Materials for Na-ion Batteries (Invited)

M. Fichtner*[1]

1. Helmholtz Institute Ulm, Germany

2:00 PM

(ICACC-S6-044-2023) Facile Wet-Processes of $MgMn_2O_4$ Spinel Nanoparticles Synthesis for Magnesium Rechargeable Batteries (Invited)

H. Kobayashi*[1]

1. Tohoku University, Institute of Multidisciplinary Research for Advanced Materials, Japan

2:30 PM

(ICACC-S6-045-2023) From bulk alloys to surface coatings: Developing performing magnesium negative electrodes (Invited)

C. Pechberty[1]; L. Stievano*[1]; R. Berthelot[1]

1. Université de Montpellier, Institut Charles Gernardt Montpellier, France

3:00 PM

Break

Sodium Batteries, Potassium Batteries, Magnesium Batteries and Calcium Batteries II

Room: Coquina Salon E (North Tower)

Session Chairs: Shih-kang Lin, National Cheng Kung University; Hiroaki Kobayashi, Tohoku University

3:20 PM

(ICACC-S6-046-2023) Solid state NMR characterization of $Na_3V_2(PO_4)_2F_{3-y}O_y$ positive electrode materials for Na-ion batteries (Invited)

D. Carlier*[1]

1. CNRS, University Bordeaux, France

3:50 PM

(ICACC-S6-047-2023) Impact of Li and Ni doping on P2-Na_xMnO_2 cathodes for Sodium-Ion Batteries

N. Yaqoob*[1]; P. Kaghazchi[2]

1. Forschungszentrum Juelich, Material Synthesis and Manufacturing Processes (IEK-1), Germany
2. Forschungszentrum Juelich, Germany

4:10 PM

(ICACC-S6-048-2023) Optimized electric-energy storage in $BiFeO_3$-$BaTiO_3$ ceramics via microstructure tailoring

R. H. Montecillo*[1]; C. Chen[2]; Y. Lee[3]; P. Chen[1]; C. Tu[4]

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

S7: 17th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications

Nanomaterials for Thermoelectrics, Photocatalysis, Electrocatalysis

Room: Coquina Salon G (North Tower)
Session Chair: Sanjay Mathur, University of Cologne

1:30 PM

(ICACC-S7-009-2023) Green Chemical Syntheses of High-Efficiency Nanostructured Bi_2Te_3 and its Hybrids (Invited)

M. S. Toprak*[1]

1. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden

2:00 PM

(ICACC-S7-010-2023) Performance Analysis of Phase Change Materials and Thermoelectric Module Integrated Concentrated Photovoltaic System (Invited)

A. Yusuf[1]; S. Ballikaya*[2]

1. Istanbul University, Elec. Engineering Dept., Turkey
2. Istanbul University-Cerrahpasa, Engineering Science, Turkey

2:30 PM

Break

Nanomaterials for Energy Conversion and Storage and Catalysis

Room: Coquina Salon G (North Tower)
Session Chair: Sedat Ballikaya, Istanbul University

3:00 PM

(ICACC-S7-011-2023) Solution grown Silicon Nanowires in High Mass Loadings from 3D Electrode Substrates for High Performance Lithium ion Batteries (Invited)

K. M. Ryan*[1]; s. Imtiaz[1]

1. University of Limerick, Chemical Sciences, Ireland

3:30 PM

(ICACC-S7-012-2023) New cathode materials for Li-S batteries (Invited)

C. Zhang[1]; A. Cabot*[1]

1. Catalonia Institute for Energy Research, Spain

4:00 PM

(ICACC-S7-013-2023) Nanostructured lead-free piezoelectric materials for energy harvesting and piezo-catalytic applications (Invited)

T. Fischer*[1]; A. Verma[1]; A. Ichangi[1]; S. Mathur[1]

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

4:30 PM

(ICACC-S7-014-2023) Ammonia synthesis based on piezo-assisted materials

B. Witulski*[1]

1. University of Cologne, Institute of inorganic chemistry, Germany

S9: Porous Ceramics: Novel Developments and Applications

Innovative Processing of Porous Ceramics

Room: Coquina Salon H (North Tower)
Session Chairs: Paolo Colombo, University of Padova; Farid Akhtar, Lulea University of Technology

1:30 PM

(ICACC-S9-010-2023) Porous ceramics from capillary suspensions - unique proprties & applications (Invited)

N. Willenbacher*[1]

1. Karlsruhe Institute of Technology (KIT)IT, MVM, Germany

2:00 PM

(ICACC-S9-011-2023) 3D thermal energy storage materials based on highly porous patterned printed scaffolds (Invited)

M. Belmonte*[1]; I. Díaz-Herrezuelo[1]; L. Moreno-Sanabria[1]; M. I. Osendi[1]; P. Miranzo[1]

1. Institute of Ceramics and Glass, CSIC, Spain

2:30 PM

(ICACC-S9-012-2023) Direct Ink Writing of porous geopolymers for thermochemical energy storage

C. Zoude*[1]; L. Gremillard[1]; É. Prud'homme[1]; K. Johannes[2]

1. INSA Lyon, Materials, Engineering and Science, France
2. INSA Lyon, Centre for Energy and Thermal Sciences of Lyon, France

2:50 PM

Break

3:10 PM

(ICACC-S9-013-2023) Crack-Free Macroporous Structures by 3D Printing combined with Colloidal Assembly

B. Winhard[1]; L. Grassi Maragno[1]; A. Gómez Gómez[1]; J. Katz[1]; K. P. Furlan*[1]

1. Hamburg University of Technology, Institute of Advanced Ceramics, Integrated Materials Systems group, Germany

3:30 PM

(ICACC-S9-014-2023) Lithography-based ceramic manufacturing of isotropic and functionally graded porous alumina ceramics

M. Schwentenwein*[1]; J. Schlacher[2]; R. Bermejo[3]; S. Nohut[1]

1. Lithoz GmbH, Austria
2. Montanuniversitaet Leoben, Austria
3. Montanuniversitaet Leoben, Institut fuer Struktur-und Funktionskeramik, Austria

3:50 PM

(ICACC-S9-015-2023) A hybrid robocasting process for ceramics with hierarchical porosity

L. Tabard[1]; V. Garnier[1]; É. Prud'homme[1]; S. Meille[1]; J. Adrien[1]; Y. Jorand[1]; E. Courtial[2]; K. Johannes[3]; L. Gremillard*[1]

1. INSA, Materials, Engineering and Science, France
2. 3D.FAB, France
3. CETHIL, INSA, France

4:10 PM

(ICACC-S9-016-2023) Direct Extrusion-based 3D-Printing of Lunar Soil Simulant

D. T. Desai*[1]; A. Kumar[1]; K. Viswanathan[1]

1. Indian Institute of Science, Mechanical Engineering, India

S10: Modeling and Design of Ceramics and Composites

Modeling of Ceramics and Composites III

Room: Coquina Foyer (North Tower)

Session Chair: Sota Terasaka, Japan Fine Ceramics Center

1:30 PM

(ICACC-S10-011-2023) Four parameter scalar continuum damage models for ceramic matrix composites with significant in plane ply anisotropy (Invited)

C. P. Przybyla*[1]; A. Debarre[2]; J. Maire[2]; E. Baranger[3]; F. Laurin[2]

1. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA
2. Office National d'Etudes et de Recherches Aérospatiales (ONERA), France
3. ENS Paris-Saclay, France

2:00 PM

(ICACC-S10-012-2023) Examination of Discontinuous Changes in Grain Boundary Velocity Induced by Grain Boundary Transformations

C. Marvel*[1]; B. Zalatan[2]; H. Zhou[2]; C. Riedel[3]; B. Chen[2]; M. Harmer[3]

1. Louisiana State University, Mechanical and Industrial Engineering, USA
2. Lehigh University, Computer Science and Engineering, USA
3. Lehigh University, Materials Science and Engineering, USA

2:20 PM

(ICACC-S10-013-2023) Simplified analysis of delamination propagation at the free edge of cfrp composite fan blade

S. Kajihara*[1]; R. Higuchi[1]; T. Yokozeki[1]; T. Aoki[1]

1. University of Tokyo, Japan

2:40 PM

(ICACC-S10-014-2023) Effect of porosity on ablation resistance of C/C composites

M. Fradin*[1]; G. L. Vignoles[2]; G. Couégnat[2]; F. Rebillat[3]; K. Haras[4]; C. Grégis[4]

1. ArianeGroup SAS / LCTS, France
2. LCTS - CNRS, France
3. University Bordeaux, Laboratory of thermostuctural composites, France
4. ArianeGroup SAS, France

3:00 PM

Break

Modeling of Ceramics and Composites IV

Room: Coquina Foyer (North Tower)

Session Chairs: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences; Matthew Guziewski, US Army Research Laboratory

3:30 PM

(ICACC-S10-015-2023) Simulation study on microstructural changes of ceramic powder by sintering (Invited)

S. Terasaka*[1]; H. Nomura[1]; T. Kimura[1]; H. Matsubara[2]

1. Japan Fine Ceramics Center, Japan
2. Tohoku University, Graduate School of Environmental Studies, Japan

4:00 PM

(ICACC-S10-016-2023) Hierarchical Design Optimization of Ceramic Composite Laminates (Invited)

M. C. Guziewski*[1]; K. D. Behler[2]; N. Ku[3]; T. W. Moore[4]; J. LaSalvia[5]; J. Pelz[6]; T. Shoulders[7]; J. Swab[1]

1. US Army Research Laboratory, USA
2. DEVCOM-Army Research Lab, Ceramics and Transparent Materials Branch, USA
3. DEVCOM - Army Research Laboratory, Ceramics and Transparent Materials Branch, USA
4. DEVCOM-Army Research Lab, SURVICE Engineering, USA
5. DEVCOM Army Research Laboratory, USA
6. US Army Research Laboratory, DEVCOM, USA
7. CCDC Army Research Laboratory, USA

4:30 PM

(ICACC-S10-017-2023) Prediction of filled-hole tensile strength of CFRP laminates with various ply thicknesses (Invited)

R. Aoki*[1]; R. Higuchi[1]; T. Yokozeki[1]; K. Aoki[3]; S. Uchiyama[3]; T. Ogasawara[2]

1. The University of Tokyo, Department of Aeronautics and Astronautics, Japan
2. Tokyo University of Agriculture and Technology, Japan
3. SUBARU CORPORATION, Japan

5:00 PM

(ICACC-S10-018-2023) The Anomalous Hardness in the Transition Metal Carbides and Nitrides

C. R. Weinberger*[1]; H. R. Brumblay[2]; G. Thompson[3]

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

5:20 PM

(ICACC-S10-019-2023) Surfing boundary conditions to characterize effective fracture-toughness of ceramic composites

Z. Hossain*[1]

1. University of Delaware, USA

5:40 PM

(ICACC-S10-020-2023) Numerical and Experimental Ballistic Performance Investigation of Fiber Reinforced Polymer Composites

A. M. Punongbayan*[1]; R. A. Sirot[1]; E. d. Magdaluyo[1]

1. University of the Philippines Diliman, Department of Mining, Metallurgical, and Materials Engineering, Philippines

6:00 PM

(ICACC-S10-021-2023) First principles investigation of surface stability and water adsorption behavior of Lu_2SiO_5

M. Liu*[1]; J. Wang[2]; J. Wang[3]

1. Institute of Metal Research, Chinese Academy and Sciences, Advanced Ceramics and Composites Division, China
2. Institute of Metal Research, High-performance Ceramic Division, China
3. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics Division, China

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)

Design of Novel Compositions and Manufacturing Methods IV

Room: Ballroom 3 (South Tower)

Session Chairs: Surojit Gupta, University of North Dakota; Christopher Shuck, Drexel University; Deniz Cakir, University of North Dakota

1:30 PM

(ICACC-S12-015-2023) Scalable synthesis and purification of high-yield monolayer MXene dispersions in different media (Invited)

N. Goossens*[2]; K. Lambrinou[1]; J. Vleugels[2]

1. University of Huddersfield, School of Computing and Engineering, United Kingdom
2. KULeuven, Materials Engineering, Belgium

2:00 PM

(ICACC-S12-016-2023) Synthesis, Characterization, Properties, First Principles Calculations, and X-ray Photoelectron Spectroscopy of Bulk Mn_5SiB_2 and Fe_5SiB_2

T. A. Elmeligy*[1]; S. Kota[3]; V. Natu[1]; H. Lind[2]; J. Palisaitis[2]; P. Persson[2]; J. Rosen[4]; M. Barsoum[5]

1. Drexel University, Materials Science and Engineering, USA
2. Department of Physics, Chemistry and Biology (IFM), Sweden
3. The Timken Company, USA
4. Department of Physics, Chemistry and Biology, Sweden
5. Drexel University, Materials Science and Engineering, USA

2:20 PM

(ICACC-S12-018-2023) Synthesis of New Carbonitride MXenes and Their Electrochemical Behavior

A. Tabassum*[1]; K. Liang[1]; C. E. Shuck[2]; K. Prenger[1]; A. Majed[1]; C. Dun[4]; J. Urban[4]; Y. Gogotsi[3]; M. Naguib[1]

1. Tulane University, Physics and Engineering Physics, USA
2. Drexel University, Materials Science and Engineering, USA
3. Drexel University, USA
4. The Molecular Foundry, LawrenceBerkeley National Laboratory, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications

Scintillator

Room: Flagler A (South Tower)

Session Chair: Kenji Toda, Niigata University

1:30 PM

(ICACC-S14-006-2023) Fabrication and characteristics of a rare-earth ion doped calcium fluoride transparent ceramics for dosimetric applications (Invited)

N. Kawano*[1]; D. Nakauchi[2]; G. Okada[3]; N. Kawaguchi[2]; T. Yanagida[2]

1. Akita University, Japan
2. Nara Institute of Science and Technology, Japan
3. Kanazawa Institute of Technology, Japan

2:00 PM

(ICACC-S14-007-2023) Transparent Ceramic Scintillators (Invited)

N. Cherepy*[1]; R. Osborne[1]; J. Smith[1]; S. O'Neal[1]; D. Schneberk[1]; Z. M. Seeley[1]; C. McNamee[1]; S. A. Payne[1]

1. Lawrence Livermore National Laboratory, USA

2:30 PM

(ICACC-S14-008-2023) Additive manufactured high-aspect-ratio pixelated transparent ceramic scintillator for x-ray imaging (Invited)

J. Smith*[1]; R. Osborne[1]; T. Yee[1]; B. Moran[1]; Z. M. Seeley[1]; N. Cherepy[1]; S. A. Payne[1]

1. Lawrence Livermore National Laboratory, USA

3:00 PM

Break

Optical Material

Room: Flagler A (South Tower)

Session Chair: Nerine Cherepy, Lawrence Livermore National Lab

3:20 PM

(ICACC-S14-009-2023) Development of transparent SrF_2 ceramics for laser gain applications

T. Rudzik*[1]; Z. M. Seeley[3]; N. Cherepy[2]; 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

3:40 PM

(ICACC-S14-010-2023) Contamination and Laser Damage Morphology on Fused Silica Polished by Magnetic Field-Assisted Finishing

J. T. Long*[1]; Y. Tsunezuka[3]; A. Uemura[3]; D. Funayama[3]; T. Kamimura[3]; R. Yasukuni[3]; H. Yamaguchi[2]

1. University of Florida, Materials Science and Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA
3. Osaka Institute of Technology, Japan

4:00 PM

(ICACC-S14-011-2023) Fabrication of Laser Transparent Ceramics via Additive Manufacturing

R. Osborne*[1]; T. J. Wineger[1]; T. Yee[1]; Z. M. Seeley[1]; I. R. Phillips[1]; T. Rudzik[1]; J. Smith[1]; N. Cherepy[1]; R. M. Gaume[2]; M. Dubinskiy[3]; S. A. Payne[1]

1. Lawrence Livermore National Laboratory, USA
2. University of Central Florida, CREOL, USA
3. US Army Research Laboratory, USA

4:20 PM

(ICACC-S14-012-2023) Optical properties and laser performance of Nd:Y_2O_3 ceramics with fine-grained microstructure

H. Kim*[1]; H. Oh[1]; Y. Park[1]; J. Ko[1]; J. Lee[1]; H. Ma[1]

1. Korea Institute of Materials Science, Republic of Korea

4:40 PM

(ICACC-S14-013-2023) Fabrication of Rugged Transparent Ceramics

J. Gild*[1]; A. Floyd[1]; B. Sadowski[2]; T. Zhou[3]; W. Kim[1]; S. Bayya[1]; J. Sanghera[1]

1. Naval Research Laboratory, Optical Science Division, USA
2. Jacobs, USA
3. University Research Foundation, USA

5:00 PM

(ICACC-S14-014-2023) Relationship Between Grain Size and Grain Boundary Energy of Yttria Nanoceramics

N. M. O'Shea*[1]; J. Mason[1]; R. Castro[1]

1. University of California, Davis, Materials Science & Engineering, USA

S16: Geopolymers, Inorganic Polymers and Sustainable Construction Materials

Porous Geopolymers II

Room: Coquina Salon C (North Tower)

Session Chair: Enrico Bernardo, University of Padova

1:30 PM

(ICACC-S16-036-2023) Porous geopolymer composite filter media for the removal arsenic from ground water (Invited)

K. Qureshi*[1]

1. Mehran University of engineering and Technology Jamshoro, Chemical Engineering, Pakistan

2:00 PM

(ICACC-S16-037-2023) Development of porous geopolmer by using different methods for the removal arsenic from synthetic waste water (Invited)

A. Qadeer*[1]

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

2:30 PM

(ICACC-S16-038-2023) Preparation of alkali-activated foams by using peracetic acid as a novel blowing agent (Invited)

M. A. Bhuyan*[1]; C. Kurtulus[2]; A. Heponiemi[3]; T. Luukkonen[1]

1. University of Oulu, Fibre and Particle Engineering Research Unit, Finland
2. Afyon Kocatepe University, Department of Materials Science and Engineering, Turkey
3. University of Oulu, Research Unit of Sustainable Chemistry, Finland

Friday, January 27, 2023

S3: 20th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology

Interconnects and Coatings

Room: Ponce de Leon (North Tower)

Session Chairs: John Hardy, Pacific Northwest National Laboratory; Mihails Kusnezoff, Fraunhofer IKTS

8:30 AM

(ICACC-S3-062-2023) Protective-conducting ceramic coatings for SOFC steel interconnects (Invited)

T. Brylewski*[1]; L. Mazur[1]; S. Molin[2]; A. Gil[1]

1. AGH University of Science and Technology, Faculty of Materials Science and Ceramics, Poland
2. Gdansk University of Technology, Laboratory of Functional Materials, Faculty of Electronics, Telecommunications and Informatics, Poland

9:00 AM

(ICACC-S3-063-2023) Electrophoretic deposition of ceramic coatings: From the spinel in-situ modification to the multilayer approach

F. Smeacetto*[1]; E. Zanchi[1]; H. Javed[4]; S. Molin[2]; A. R. Boccaccini[3]

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. Sunfire, Germany

9:20 AM

(ICACC-S3-064-2023) Wet powder spraying derived spinel protective coatings for solid oxide cell interconnects

M. Wolff*[1]; C. Lenser[1]; N. H. Menzler[1]

1. Forschungszentrum Jülich GmbH, IEK-1, Germany

9:40 AM

(ICACC-S3-065-2023) Ag-Based Brazes with Built-In Aluminum Getters to Produce Dense, Strong, and Low-Resistance Electrical Contacts on Al_2O_3-Protected Stainless Steel

G. Hu*[1]; J. D. Nicholas[1]

1. Michigan State University, Chemical Engineering and Materials Science, USA

10:00 AM

Break

10:20 AM

(ICACC-S3-066-2023) Application of Alumina Forming Stainless Steel on SOFC Stack for Automotive Use (Invited)

M. Suehiro*[1]; K. Ichihara[1]; T. Shiomi[1]; M. Abdul Jabbar[1]; P. Singh[2]; N. Dale[1]; Y. Furuya[1]

1. Nissan, USA
2. University of Connecticut, Materials Science and engineering, USA

10:50 AM

(ICACC-S3-067-2023) Chromium poisoning mitigation coatings for stainless steel interconnects and balance of plant protection in solid oxide electrolysis systems

S. Ibanez*[1]; E. Dogdibegovic[2]; A. Wallace[1]; D. Kopechek[1]; G. Arkenberg[2]; J. Funk[1]; P. Singh[3]; D. Ding[4]; M. Tucker[5]; S. Swartz[1]

1. Nexceris LLC, Fuel Cells and Electrolyzers, USA
2. Nexceris, USA
3. University of Connecticut, Materials Science and Engineering, USA
4. Idaho National Lab, Hydrogen and Electrochemistry, USA
5. Lawrence Berkeley National Laboratory, USA

11:10 AM

Closing Remarks & Summary

S7: 17th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications

Nanotoxicity, Bio-imaging, Drug-delivery and Tissue Engineering with Tailored Nano-bioconjugates

Room: Coquina Salon G (North Tower)

Session Chair: Andreu Cabot, Catalonia Institute for Energy Research

9:00 AM

(ICACC-S7-015-2023) Multimodal Contrast Agents for Complementary XFCT-MRI Bioimaging (Invited)

G. Saladino[1]; B. Brodin[1]; H. M. Hertz[1]; M. S. Toprak*[1]

1. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden

9:30 AM

(ICACC-S7-016-2023) Light emitting porous silicon microparticles as optimized carriers for anticancer agents and immunologic enhancers (Invited)

A. Sambugaro[1]; E. Chisté[1]; C. Nardon[3]; M. Donini[2]; S. Dusi[2]; M. Scarpa[4]; N. Daldosso*[1]

1. University of Verona, Italy
2. University of Verona, Medicine - General Pathology, Italy
3. University of Verona, Biotechnology, Italy
4. University of Trento, Physics, Italy

10:00 AM

Break

Functional Coatings and Innovative Thin Film Techniques

Room: Coquina Salon G (North Tower)

Session Chair: Muhammet Toprak, KTH Royal Institute of Technology

10:20 AM

(ICACC-S7-017-2023) Electrostatic jet deflection to improve printing speed and resolution of electrohydrodynamic jet printing (Invited)

A. Cabot*[1]

1. Catalonia Institute for Energy Research, Spain

10:50 AM

(ICACC-S7-018-2023) Cross-sectional Profiling of Photocarrier Mobility in Solar Cells via Nongeminate Recombination and Charge Extraction

N. B. Stocek[1]; G. Fanchini*[1]

1. University of Western Ontario, Physics and Astronomy, Canada

11:10 AM

(ICACC-S7-019-2023) Thermal and electrical conductivity properties controlled by manipulation of defect using ion implantation in ScN coatings

R. Burcea[1]; J. Barbot[1]; P. Renault[1]; D. Eyidi[1]; T. Girardeau[1]; M. Marteau[1]; F. Giovannelli[3]; A. Zenji[2]; J. Rampoux[2]; S. Dilhaire[2]; P. Eklund[4]; A. le Febvrier*[4]

1. University of Poitiers, Institut Pprime, France
2. Université de Bordeaux, Laboratoire LOMA, France
3. Université de Tours, Laboratoire GREMAN, France
4. Linkoping University, Dept. of Physics, Chemistry, and Biology, Sweden

11:30 AM

(ICACC-S7-020-2023) Sol-gel spin-coated zinc oxide thin film as an efficient counter electrode in electrochromic devices

H. Ajitha Haridasan*[1]

1. FunGlass – Centre for Functional and Surface Functionalized Glass, Coating, Slovakia

11:50 AM

(ICACC-S7-021-2023) Laser crystallization of thermochromic VO_2 thin films obtained by an environmentally friendly sol gel approach (Invited)

M. Basso[1]; E. Colusso[1]; C. Carraro[2]; E. Napolitani[2]; A. Martucci*[1]

1. University of Padova, Industrial Engineering, Italy
2. University of Padova, Physics, Italy

S9: Porous Ceramics: Novel Developments and Applications

Porous Ceramics for Functional Applications

Room: Coquina Salon H (North Tower)

Session Chairs: Tobias Fey, Friedrich-Alexander University Erlangen-Nürnberg; Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST)

8:30 AM

(ICACC-S9-018-2023) Porous ceramics – why it's important to identify the representative volume-of-interest

T. Fey*[1]

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany

8:50 AM

(ICACC-S9-020-2023) Tracking Shape Memory Transformations in Porous Zirconia via Raman Spectroscopy

L. Quinn*[1]; K. Faber[1]

1. California Institute of Technology, USA

9:10 AM

(ICACC-S9-021-2023) Sustainable Water Treatment via Ceramic Sorbent to Fertilizer Technology (Invited)

A. Apblett*[1]; C. Kelley[1]; P. Kitzel[1]

1. Oklahoma State University, USA

9:40 AM

(ICACC-S9-022-2023) Novel glass-based sorbents for the stabilization of liquid nuclear waste

D. C. Lago*[2]; J. Kraxner[2]; E. Bernardo[1]

1. University of Padova, Department of Industrial Engineering, Italy
2. Centre for Functional and Surface Functionalized Glass, Italy

10:00 AM

Break

10:20 AM

(ICACC-S9-023-2023) Glyphosate adsorption performances of polymer-derived SiC/C aerogels

A. Zambotti*[1]; A. Bruni[1]; G. D. Soraru[1]; L. Rivoira[2]; M. Castiglioni[2]; E. Cagno[2]; B. Onida[3]; M. C. Bruzzoniti[2]

1. University of Trento, Industrial Engineering, Italy
2. University of Turin, Chemistry, Italy
3. Polytechnic of Turin, Applied Science and Technology, Italy

10:40 AM

(ICACC-S9-024-2023) Calcium/strontium chloride impregnated zeolite A and X granules as optimized ammonia sorbents

F. Akhtar*[1]; Z. Cao[1]

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

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, **Sanjay Mathur** / 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

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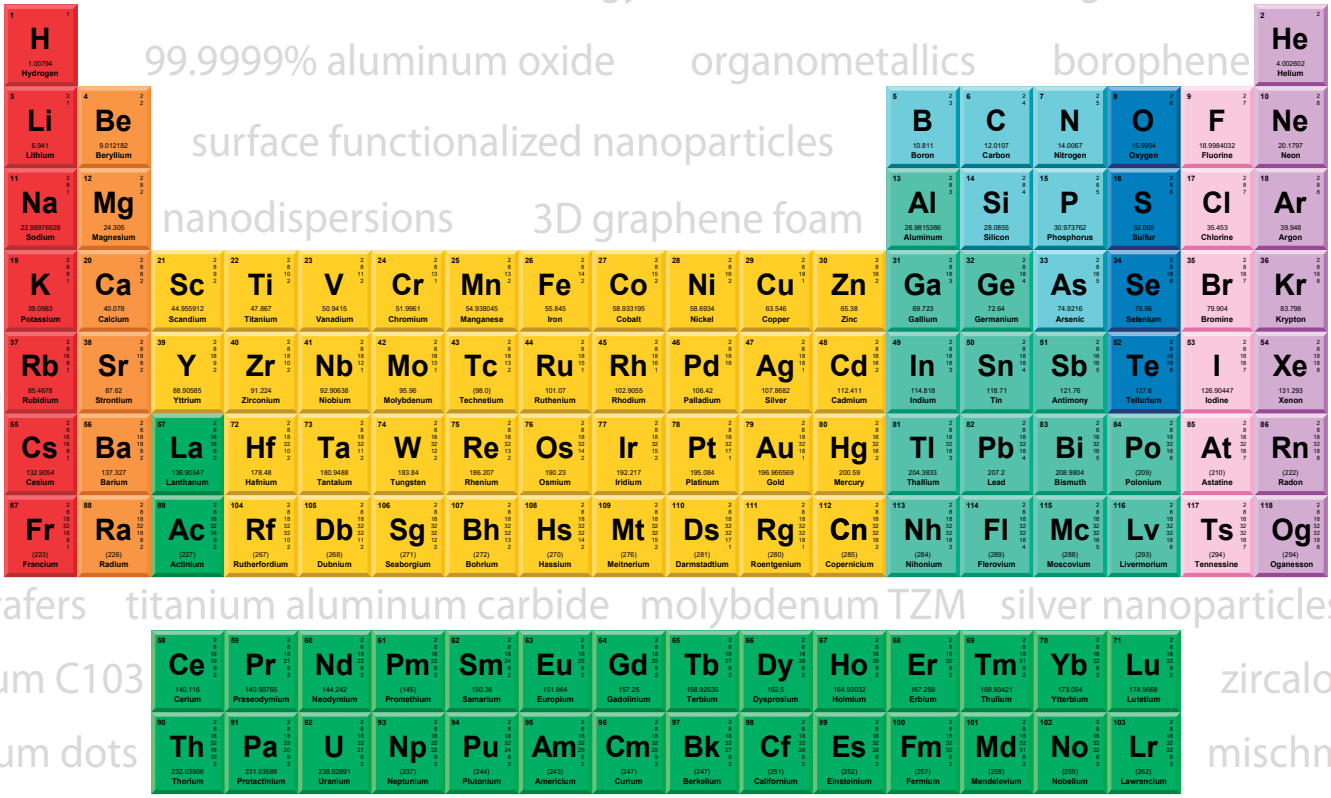

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