Symposium 10: Advanced Ceramic Coatings: Processing, Properties, and Applications
Thursday, June 6, 2013

Advanced Thermal and Environmental Barrier Coatings I

8:30 AM-12:00 PM
Room: Tudor
Session Chair(s): To Be Announced

8:30 AM
(PACRIM10-S10-001-2013) Thermodynamics of Rare Earth Silicate EBC Compositions (Invited Speaker)
Nathan Jacobson*, NASA Glenn Research Center, USA

9:10 AM
(PACRIM10-S10-002-2013) Thermal and Environmental Barrier Coatings (T/EBCs) for High Temperature Applications by Directed Vapor Deposition (Invited Speaker)
Balvinder Gogia*, Derek Hass, Directed Vapor Technology Intl, USA

10:20 AM
(PACRIM10-S10-004-2013) Thermal Stability and Mechanical Behavior of Flake-reinforced Oxide Coatings for CMC Surface Protection (Invited Speaker)
Hideki Kakisawa*, Takuya Matsumoto, Yutaka Kagawa, University of Tokyo, Japan

10:50 AM
(PACRIM10-S10-005-2013) Thermal Barrier Coatings (TBCs) With Reduced Erosion Rates via Unique Phase Architectures (Invited Speaker)
Douglas E. Wolfe*, Michael P Schmitt, The Pennsylvania State University, USA; Dongming Zhu, Bryan J Harder, NASA Glenn Research Center, USA; Amarendra K Rai, Rabi Bhattacharya, UES, Inc., USA

11:20 AM
Eugenio García*, Joana Mesquita-Guimaraes, Pilar Miranzo, Maria Isabel Osendi, Institute of Ceramics and Glass (ICV-CSIC), Spain; Cristian V Cojocaru, Rogerio S Lima, National Research Council of Canada (NRC), Canada

11:40 AM
(PACRIM10-S10-007-2013) Structure design for the impact resistance of environmental barrier coatings
Yiguang Wang*, Northwestern Polytechnical Univesity, China

Advanced Thermal and Environmental Barrier Coatings II

1:20 PM-3:20 PM
Room: Tudor
Session Chair(s): To Be Announced
1:20 PM
(PACRIM10-S10-008-2013) Characterization of Thermal Conductivity of ZrO2-Y2O3 Coatings Fabricated by EB-PVD (Invited Speaker)
Byung-Koog Jang*, National Institute for Materials Science, Japan; Jiangang Sun, Argonne National Laboratory, USA; Seongwon Kim, Yoon-Suk Oh, Hyung-Tae Kim, Korea Institute of Ceramic Engineering and Technology, Republic of Korea; Norio Yamaguchi, Hideaki Matsubara, Japan Fine Ceramics Center, Japan

1:50 PM
(PACRIM10-S10-009-2013) Advanced Thermal Barrier Coating Performance Under Simultaneous CMAS and Thermal Gradient Cycling Load
Daniel Emil Mack*, Maria O Jarligo, Doris Sebold, Fariba Tarasi, Tanja Wobst, Robert Vassen, Forschungszentrum Jülich GmbH, Germany

2:10 PM
(PACRIM10-S10-010-2013) Control of Mass-transfer through Grain Boundaries in Alumina Protective Layer by Dopant Configurations in further EBCs (Invited Speaker)
Satoshi Kitaoka*, Tsuneaki Matsudaira, Masashi Wada, Makoto Tanaka, Takafumi Ogawa, Japan Fine Ceramics Center, Japan; Yutaka Kagawa, The University of Tokyo, Japan

2:40 PM
(PACRIM10-S10-011-2013) Surface modification of hard coatings on silicon carbide substrate for glass molding process
Yangjie Yan*, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China; Yinsheng Li, Graduate University of the Chinese Academy of Sciences, China; Zhengren Huang, Xuejian Liu, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

3:00 PM
Break

Multifunctional Coatings, Processing and Advanced Surface Characterization

3:20 PM-5:50 PM
Room: Tudor
Session Chair(s): To Be Announced

3:20 PM
(PACRIM10-S10-012-2013) Development of new observation system used for deformation measurement of ceramics matrix composites at high temperature
Yali Dong*, Hideki Kakisawa, Yutaka Kagawa, The University of Tokyo, Japan

3:40 PM
Masahiro Yamazoe*, Hideki Kakisawa, Yutaka Kagawa, University of Tokyo, Japan; Satoshi Kitaoka, Japan Fine Ceramics Center, Japan

4:00 PM
(PACRIM10-S10-014-2013) Anti-Reflective Surface Structures In Spinel Ceramic Windows
Catalin M Florea*, Sotera Defense Solutions, USA; Lynda E Busse, Shyam S Bayya, Leslie B Shaw, US Naval Research Lab, USA; Ishwar D Aggarwal, Sotera Defense Solutions, USA; Jasbinder S Sanghera, US Naval Research Lab, USA

4:20 PM
Sung-Min Lee*, Yoon-Suk Oh, Hyung-Tae Kim, Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea
4:40 PM
(PACRIM10-S10-016-2013) Growth of La0.7Sr0.3MnO3 film by dc sputtering for spintronics application (Invited Speaker)
Diptiranjan Sahu*, University of the Witwatersrand, South Africa

5:10 PM
(PACRIM10-S10-017-2013) Fabrication of Li$_3$Fe$_2$(PO$_4$)$_3$ and Li$_4$Ti$_5$O$_{12}$ thin film for transparent Li ion battery
Hiroki Nagai*, Hiroki Hara, Mitsuhiro Enomoto, Chihiro Mochizuki, Ichiro Takano, Mitsunobu Sato, Kogakuin Univ., Japan

5:30 PM
(PACRIM10-S10-018-2013) Development of sol-gel nano-structured zirconia coating on ferritic steel and their hot corrosion studies in alkali salt deposits system at high temperature
Indra Bhushan Singh*, Gazala Ruhi, O. P Modi, S. Das, CSIR-Advanced Materials and Process Research Institute (AMPRI), India

Friday, June 7, 2013

Tribological, Wear- and Erosion-resistant Coatings

8:30 AM-10:20 AM
Room: Tudor
Session Chair(s): To Be Announced

8:30 AM
(PACRIM10-S10-019-2013) Erosion Resistant Coatings for the Suppression of Leading Edge Curl Deformation
Douglas E. Wolfe*, George M Slota, Guy S Showers, The Pennsylvania State University, USA

9:00 AM
(PACRIM10-S10-020-2013) Structure and properties of some PVD coatings on ceramic cutting inserts for dry and high speed cutting processes (Invited Speaker)
Ying Long, Qimin Wang, Shanghua Wu*, Guangdong University of Technology, China

9:30 AM
(PACRIM10-S10-021-2013) Synthesis and characterization of WC-Co by planetary ball-milling and spark plasma sintering
Han Chan Lee*, Kyoung Il Moon, Cheol Woong Byun, KITECH, Republic of Korea

9:50 AM
(PACRIM10-S10-022-2013) Effect of nitriding time for nitrided austenitic stainless steel at high temperature as 723K
HyunJun Park*, Kyoung Il Moon, KITECH, Republic of Korea; Jong Wan Park, Han Yang University, Republic of Korea

10:10 AM
Break

Advanced Hybrid Coatings and New Processing Methods

10:20 AM-11:50 AM
Room: Tudor
Session Chair(s): To Be Announced

10:20 AM
(PACRIM10-S10-023-2013) Developing multi-component coatings for structural applications by a hybrid HIPIMS technique (Invited Speaker)
Qimin Wang*, Guangdong University of Technology, China; Kwang Ho Kim, Pusan National University, Republic of Korea

10:50 AM
(PACRIM10-S10-024-2013) Microstructural and Mechanical Evaluations of Innovative Hybrid Multilayer Coatings Inspired by Abalone Nacre
Chang-Yu Sun*, Yu-Chen Chan, Tsung-Hao Hsu, Hsi-Ming Yang, Jyh-Wei Lee, Jenq-Gong Duh, Po-Yu Chen, National Tsing Hua University, Taiwan
11:10 AM
(PACRIM10-S10-025-2013) Sol-Gel-Derived Ceramic Thin Films on Plastics: A Versatile Technique Utilizing Transfer Process
Hiromitsu Kozuka*, Fukui Takafumi, Mitsuru Takahashi, Hiroaki Uchiyama, Shohei Tsuboi, Kansai University, Japan

11:30 AM
(PACRIM10-S10-026-2013) RF sputtering of PTFE films applying substrate bias power
Young Sik Song*, KITECH, Republic of Korea; JongRyoul Kim, Hanyang University, Republic of Korea