Symposium 11: Next Generation Technologies for Innovative Surface Coatings

Thursday, January 31, 2013
Low Friction Coating for Automobile Applications
1:30 PM-3:40 PM
Room: Coquina Salon E
Session Chair(s): Ali Erdemir, Taejin Hwang

1:30 PM
(ICACC-S11-001-2013) Frontiers of Surface Engineering for Friction and Wear Control in Engines (Invited Speaker)
Ali Erdemir*, Osman Eryilmaz, Argonne Nat'l Lab, USA

2:00 PM
(ICACC-S11-002-2013) Hard nanocomposite coatings: Thermal stability, oxidation protection and resistance to cracking (Invited Speaker)
Jindrich Musil*, University of West Bohemia, Czech Republic

2:30 PM
(ICACC-S11-003-2013) Structure and properties of nc-Zr(Al)N/Cu thin films synthesized by multi-component single target with the Zr-based bulk metallic glass alloy
Kyoung Il Moon*, Ju Hyun Sun, Chang Hun Lee, Seung Yong Shin, KITECH, Republic of Korea

2:50 PM
(ICACC-S11-004-2013) Customized Coating Systems for Products with Added Value from Development to High Volume Production (Invited Speaker)
Tim Hosenfeldt*, Schaeffler Technologies GmbH & Co. KG, Germany

3:20 PM
(ICACC-S11-005-2013) Diamond-like Carbon Coatings for Low Friction Applications: Clean and Large Area Coating
Do-Geun Kim*, Seunghun Lee, Jong-Kuk Kim, KITECH, Republic of Korea

Advanced Coating for Energy Process

3:40 PM-6:30 PM
Room: Coquina Salon E
Session Chair(s): Hosenfeldt Tim, Do-Suck Han

3:40 PM
(ICACC-S11-006-2013) Vapor-phase Synthesis of Metal Oxide Films and Nanowires for Energy Applications (Invited Speaker)
Sanjay Mathur*, University of Cologne, Germany

4:10 PM
(ICACC-S11-007-2013) Carbon Nanomaterials For High Efficiency Energy Applications (Invited Speaker)
Wonbong Choi*, University of North Texas, USA

4:40 PM
(ICACC-S11-008-2013) Novel Metallic Interconnect Protective Coatings for Hermetic Sealing and Elimination of Cr Volatility in Planar SOFC Stacks (Invited Speaker)
Jung-Pyung Choi*, Jeffrey W Stevenson, Y.S. Matt Chou, Pacific Northwest National Lab, USA

5:10 PM
(ICACC-S11-009-2013) Corrosion and electrical properties of the Zr-based metallic glass bipolar plate for proton exchange membrane fuel cell
JuHyun Sun*, ChangHun Lee, Kyoung-II Moon, Seung-Yong Shin, KITECH, Republic of Korea

5:30 PM
(ICACC-S11-010-2013) Fabrication of piezoelectric MEMS vibration energy harvester with low
resonant frequency
Shuichi Murakami*, Takayuki Nagataki, Takuo Nakade, Technology Research Institute of Osaka Prefecture, Japan; Hiroki Miyabuchi, Takeshi Yoshimura, Norifumi Fujimura, Osaka Prefecture University, Japan

5:50 PM
(ICACC-S11-011-2013) Design and Synthesis of Hybrid Functional Noble Metal based Ternary Nitride Thin Films
Won-Sub Kwack, Se-Hun Kwon*, Pusan National University, Republic of Korea

6:10 PM
(ICACC-S11-012-2013) A self-healing scheme of biomimetic surface
Taejin Hwang*, Hohyoung Kim, Jae Young Park, KITECH, Republic of Korea

Friday, February 1, 2013
NEXT Generation Coating
8:00 AM-10:20 AM
Room: Coquina Salon E
Session Chair(s): Jun Akedo, Sang Sub Kim

8:00 AM
(ICACC-S11-013-2013) Grain orientation control of bismuth layer-structured ferroelectrics and bismuth based perovskite oxides thick films prepared by aerosol deposition method (Invited Speaker)
Muneyasu Suzuki*, Jun Akedo, National Institute of Advanced Industrial Science and Technology (AIST), Japan

8:30 AM
(ICACC-S11-014-2013) Atomic layer deposition of buffer and transparent conducting oxide layer for CIGS solar cell (Invited Speaker)
Jin-hyock Kim*, Hye-ri Kim, Jin-woong Kim, Hong Yu, SK Innovation, Republic of Korea

9:00 AM
(ICACC-S11-015-2013) Linearly aligned diamond fillers in polysiloxane/diamond composite films with enhanced thermal conductivity
Tadachika Nakayama*, Nagaoka Univ of Tech, Japan

9:20 AM
(ICACC-S11-016-2013) Highly Sensitive Chemiresistive Sensors Using Oxide Fibers Based on Interface Engineering
Sang Sub Kim*, Inha University, Republic of Korea

9:40 AM
(ICACC-S11-017-2013) Development of Porous TBC Systems with Enhanced Durability using TriplexPro 210 Technology
Mitchell Roy Dorfman*, Chris Dambra, Juan Medrano, Dianying Chen, Montia Nestler, Sulzer Metco (US) Inc, USA

10:00 AM
(ICACC-S11-018-2013) Enhancement of energy conversion efficiency of porous TiO2 thin films for DSSC application
Hohyoung Kim*, Taejin Hwang, KITECH, Republic of Korea

Innovative Surface Coating
10:20 AM-12:10 PM
Room: Coquina Salon E
Session Chair(s): Masahiro Yoshimura, Do-Geun Kim

10:20 AM
Masahiro Yoshimura*, National Cheng Kung University, Taiwan

10:50 AM
(ICACC-S11-020-2013) Influence of oxygen content on the hardness and electrical resistivity of Cr(N,O) thin films
Aoi Sato*, Toshiyuki Endo, Kazuma Suzuki, Tsuneo
Suzuki, Tadachika Nakayama, Hisayuki Suematsu, Koichi Niihara, Nagaoka University of Technology, Japan

11:10 AM
(ICACC-S11-021-2013) XPS analysis for tribological behavior of CrMoN film prepared by hybrid PVD
Yoon-Suk Oh*, Young-Hwan Yang, KICET, Republic of Korea; In-Woong Lyo, Hyundai & Kia, Republic of Korea; Sang-Jin Park, Hyundai Hysco, Republic of Korea; Dae-soon Lim, Korea University, Republic of Korea

11:30 AM
(ICACC-S11-022-2013) Preparation of Cr-Si-N single crystal thin film with epitaxial growth by pulsed laser deposition
Toshiyuki Endo*, Kazuma Suzuki, Aoi Sato, Tsuneo Suzuki, Tadachika Nakayama, Hisayuki Suematsu, Koichi Niihara, Nagaoka University of Technology, Japan

11:50 AM
(ICACC-S11-023-2013) Fabrication and characterization of porous TiO2 films for photocatalytic removal of VOC
Jae Young Park*, Taejin Hwang, KITECH, Republic of Korea

Wednesday, January 30, 2013
S11 Poster Session
5:00 PM-7:50 PM
Room: Ocean Center

(ICACC-S11-P134-2013) The properties of Ti-doped ZnO films deposited by Atomic Layer Deposition
Won-Sub Kwack*, Se-Hun Kwon, National Core Research Center, Pusan National University, Republic of Korea

(ICACC-S11-P135-2013) Formation of S-phase layer on AISI 304 stainless steel by low pressure gas nitriding
Jin Ki Kim, Hanbat National Univesity, Republic of Korea; Kyoung Il Moon, Korea Institute of Industrial Technology, Republic of Korea; Yoon Kee Kim*, Hanbat National Univesity, Republic of Korea

(ICACC-S11-P136-2013) Fabrication of Highly Ordered Freestanding ZnO-based Nanostructure Arrays and its Application
Won-Sub Kwack, Hyun-Jin Choi, Se Hun Kwon*, Pusan National University, Republic of Korea

(ICACC-S11-P137-2013) Influence of oxidation-reduction process on the low-pressure gas nitriding of stainless steel
Kyoung Il MooN*, Hyun Jun Park, Chul Woong Byun, KITECH, Republic of Korea

(ICACC-S11-P138-2013) The effects of the elements (Ti, Cr, Mo, N, F) on the properties of DLC films prepared by PECVD process
Kyoung Il Moon*, Jun Hyung Kim, Duck Hyeong Jung, kitech, Republic of Korea; Jong Wan Park, Hanyang university, Republic of Korea

(ICACC-S11-P139-2013) Characteristic studies on the Zr-based metallic glass thin films by magnetron sputtering process
Chang Hun Lee, Seung Yong Shin, Ju Hyun Sun*, Kyoung Il Moon, Korea Institute of industrial technology, Republic of Korea

(ICACC-S11-P140-2013) PECVD of Ti-Ru-N nanocomposite films on stainless steel as bipolar plates for PEMFC
Won-Sub Kwack, Hyun-Jin Choi, Se-Hun Kwon*, Pusan National University, Republic of Korea

(ICACC-S11-P141-2013) Residual stress and elastic properties of CrMoN films deposited by hybrid PVD
Yoon-Suk Oh*, Young-Hwan Yang, KICET, Republic of Korea; In-Woong Lyo, Hyundai & Kia, Republic of Korea; Sang-Jin Park, Hyundai Hysco, Republic of Korea; Dae-soon Lim, Korea University, Republic of Korea

(ICACC-S11-P142-2013) Anode Linear Ion Source for Large Area Surface Treatments: Simulation and
Process Development
Seunghun Lee*, Jong-Kuk Kim, Do-Geun Kim, KITECH, Republic of Korea

(ICACC-S11-P143-2013) PEO on Eco-Al as a tool for lightweight metal protection against corrosion and surface decoration
Jae Young Park*, Taejin Hwang, KITECH, Republic of Korea

(ICACC-S11-P144-2013) Study on the Probability of Gas selectivity on single device of Sol-gel prepared porous TiO2 thin film by a concurrent AC/DC electrical investigation
Jae Young Park*, Taejin Hwang, KITECH, Republic of Korea

(ICACC-S11-P145-2013) Multi-phase nano composite coating for high power engine component
In-woong Lyo*, Woong-pyo Hong, Kwang-hoon Choi, Hyuk Kang, Do-suck Han, KITECH, Republic of Korea

(ICACC-S11-P146-2013) Tribological behaviors of ternary amorphous B-C-N coatings
Doo-In Kim*, Dawoon Jeong, Pusan National University, Republic of Korea; Jong-Keuk Park, Korea Institute of Science and Technology, Republic of Korea; Kwang-Ho Kim, Pusan National University, Republic of Korea

(ICACC-S11-P147-2013) The characterization of MoN-Cu-Cr nano-composite coatings deposited by magnetron sputtering process with single alloying target
Duck Hyeong Jung*, Kyoung Il Moon, Han Chan Lee, SunYong C Lee, Korea Institute of Industrial Technology, Republic of Korea

(ICACC-S11-P148-2013) Enhancement of electrochemical properties of thin films containing composite nanoparticles synthesized from microemulsion medium
Myeongwhun Pyeon*, Taejin Hwang, KITECH, Republic of Korea