Technical Sessions
Key to Session/Paper Numbers

A Coatings for Use at High Temperatures

B Hard Coatings and Vapor Deposition Technology

C Advanced Materials for Modern Device Applications

D Coatings for Biomedical and Healthcare Applications

E Tribology & Mechanical Behavior of Coatings and Engineered Surfaces

EX Exhibition Keynote Lecture

F New Horizons in Coatings and Thin Films

G Applications, Manufacturing, and Equipment

PL Plenary Lecture

TS Topical Symposia

Program numbers are listed with the symposium letter first, the session number second, and the number of the paper last (i.e., A1-1-1= symposium A, session one, paper number one).

Symposium scheduling pointers:

- All morning sessions begin at 8:00 am except for Monday when the technical sessions begin at 10:00 am following the 8:00 am Plenary Session
- Monday and Thursday afternoon sessions start at 1:30 pm; Tuesday and Wednesday afternoon sessions starting times vary 1:30 - 2:10 pm. Most session lunch breaks start at 12:00 pm
- Invited speakers (marked as such in the program) are allotted 40 minutes. Contributed speakers are allotted 20 minutes

If you are making an oral presentation:

All technical session rooms are equipped with computers, LCD projectors, screens, laser pointers and microphones. Please test your presentation materials to be certain that they are compatible with the equipment being provided in the technical session rooms. The room used for the Presenter's Preview Screening is the Dover. Please allow ample time for the test, preferably the day before your presentation. The Preview Room's hours of operation are Sunday, 3:30-6:30 pm and Monday – Thursday 8:00 am–5:30 pm

If you are making a poster presentation:

Boards will be available for posting materials at 11:00 am until 3:00 pm on Thursday, May 1. Prior to entering the Town & Country Poster Session Hall, authors presenting a poster are required to check in at the table located in the Hall's doorway. Please be prepared to show photo identification as well as your registration badge. These forms of identification must match the name of the presenter of the poster in the ICMCTF program. A sign listing the paper's number, title, and presenting author will aid each presenter in locating the correct board where the poster is to be displayed. The board which is provided is approximately four feet by four feet. All poster materials MUST be posted by 3:00 pm. All presenters are required to be at their poster presentation during the entire session (5:00 - 7:00 pm); to promote discussion and for the author to answer attendee questions. Be forewarned, all poster materials will be discarded if not removed from the boards by 9:00 pm Thursday evening.

Plenary Lecture

8:00-9:45
Room: San Diego

Plenary Lecture Session

Professor

Sybrand van der Zwaag

TU Delft, Netherlands

”Self-healing Materials: An Alternative Approach to Create More Durable/Reliable Materials and Products”

Please see full abstract on the
Plenary Session Page

8:00 – 9:45 am
San Diego Room

Monday Morning, April 28, 2014

	Hard Coatings and Vapor Deposition Technology **Room: Royal Palm 1-3 - Session B1-1** **PVD Coatings and Technologies** **Moderators: A.N. Ranade**, The Boeing Company, US, **S. Weißmantel**, University of Applied Sciences Mittweida, Germany, **J.W. Lee**, Ming Chi University of Technology, Taiwan	**Hard Coatings and Vapor Deposition Technology** **Room: Sunset - Session B5-1** **Hard and Multifunctional Nano-Structured Coatings** **Moderators: J. Paulitsch**, Vienna University of Technology, Austria, **J. Houska**, University of West Bohemia, Czech Republic
10:00 am	**B1-1-1** Composition Control in Zr-Cu-Ni-Al Thin Film Metallic Glass for Improvement of Mechanical and Anti-microbial Properties, **J.L. LEE**, K.C. HSU, J.G. DUH, National Tsing Hua University, Taiwan	**B5-1-1** Hard Multifunctional Hf-B-Si-C Films Prepared by Pulsed Magnetron Sputtering, **P. MARES**, J. KOHOUT, J. VLCEK, J. HOUSKA, R. CERSTVY, P. ZEMAN, University of West Bohemia, Czech Republic, M. ZHANG, J. JIANG, E. MELETIS, University of Texas at Arlington, US, S. ZUZJAKOVA, University of West Bohemia, Czech Republic
10:20 am	**B1-1-2** Low-Temperature, High-Rate Growth of Dense, Hard and Stress-free Refractory Ceramic Alloy Coatings, **G. GRECZYNSKI**, J. LU, J. JENSEN, Linköping University, IFM, Thin Film Physics Division, Sweden, I. PETROV, J. GREENE, University of Illinois at Urbana-Champaign, US, W. KÖLKER, S. BOLZ, C. SCHIFFERS, O. LEMMER, CemeCon AG, Germany, L. HULTMAN, Linköping University, IFM, Thin Film Physics Division, Sweden	**B5-1-2** Influence of Hf on the Structure, Thermal Stability and Oxidation Resistance of Ti-Al-N Coatings, Y. XU, Central South University, China, L. CHEN, Central South University and Zhuzhou Cemented Carbide Cutting Tools Co., LTD, China, **Y. DU**, Central South University, China, F. PEI, Central South University and Zhuzhou Cemented Carbide Cutting Tools Co., LTD, China, Y. PENG, Central South University, China
10:40 am	**B1-1-3** Estimating Metastable Phase Formation During Magnetron Sputtering, **K. CHANG**, D. MUSIC, D. LANGE, M. TO BABEN, H. BOLVARDI, J. SCHNEIDER, RWTH Aachen University, Germany	**B5-1-3** Growth of Hard Amorphous Ti-B-Si-N Coatings by Cathodic Arc Evaporation, **H. FAGER**, Thin Film Physics Division, IFM, Linköping University, Sweden, J. ANDERSSON, Seco Tools AB, Swedon, J. LU, J. JENSEN, L. HULTMAN, Thin Film Physics Division, IFM, Linköping University, Sweden
11:00 am	**B1-1-4** Microstructure and Superhardness Effects of VC/TiC Nanoscale Multilayer Films, **J.L. YUE**, J. CHEN, X.C. DONG, Central South University, China, G.Y. LI, Shanghai Jiaotong University, China	**B5-1-4** Structure, Oxidation Resistance and High Temperature Tribological Properties of CrTiAlN Coatings, **J. LIN**, K. COULTER, P. LEE, Southwest Research Institute, US, W. SPROUL, Reactive Sputtering, Inc., US
11:20 am	**B1-1-5 Invited** Recent Developments in Industrial Scale Pulsed Laser Deposition Technology for Thin Films, **J. LIIMATAINEN**, V. KEKKONEN, Picodeon, Ltd., Finland	**B5-1-5** Growth of $AlYB_{14}$ Thin Films by HPPMS, **O. HUNOLD**, D. MUSIC, Y.-T. CHEN, S. MRÁZ, J. SCHNEIDER, RWTH Aachen University, Germany
11:40 am	Invited talk continued.	
	Hysitron: Focused Topic Session **"Advancements in Thin Film Characterization"** **12:15-1:15 pm** **Royal Palm 1-3**	

Monday Morning, April 28, 2014

	Advanced Materials for Modern Device Applications **Room: Sunrise - Session C1** **Recent Advances in Optical Thin Films and Nanomaterials** **Moderators:** Taiwan, **L. Martinu**, Polytechnique Montreal, Canada	**Tribology & Mechanical Behavior of Coatings and Engineered Surfaces** **Room: California - Session E1-1** **Friction, Wear, and Lubrication: Effects and Modeling** **Moderators: M. Chandross**, Sandia National Laboratories, US, **O.L. Eryilmaz**, Argonne National Laboratory, US, **K. Polychronopoulou**, Khalifa University of Science, Technology & Research, UAE
10:00 am	**C1-1 Invited** Challenges and Perspectives of Optical Interference Coatings: FromTelecom and Space to Security and Consumer Electronics Applications, **R. SARGENT**, J. OCKENFUSS, D. HENDRIX, JDSU, US	**E1-1-1 Invited** Contact and Friction of Rough Adhesive Surfaces, **M. ROBBINS**, Johns Hopkins University, US, L. PASTEWKA, Fraunhofer IWM, Germany, T. SHARP, Johns Hopkins University, US
10:20 am	Invited talk continued.	Invited talk continued.
10:40 am	**C1-3** Assessment of the Mechanical Properties of Optical Coatings by *in situ* Real-time Approaches, **SCHMITT, T**. POIRIÉ, E. BOUSSER, L. MARTINU, J.E. KLEMBERG-SAPIEHA, Polytechnique Montreal, Canada	**E1-1-3** Wear Phenomena of ta-C Under Ultra-low Friction Conditions, **S. MAKOWSKI**, V. WEIHNACHT, F. SCHALLER, A. LESON, Fraunhofer IWS, Germany
11:00 am	**C1-4** Low Temperature Deposition of Thermochromic VO_2 Optical Coatings Using HiPIMS, S. LOQUAI, B. BALOUKAS, R. VERNHES, O. ZABEIDA, **J.E. KLEMBERG-SAPIEHA**, L. MARTINU, Polytechnique Montreal, Canada	**E1-1-4** Temperature-induced Low Friction of Sputtered Si-containing Amorphous Carbon Coatings, **O. JANTSCHNER**, Montanuniversität Leoben, Austria, S. FIELD, Teer Coatings Limited, Miba Coating Group, UK, K. ZORN, MIBA High Tech Coatings, Austria, D. MUSIC, J. SCHNEIDER, RWTH Aachen University, Germany, C. MITTERER, Montanuniversität Leoben, Austria
11:20 am	**C1-5** The Characteristics of Heavily Ga-doped ZnO Films with High Carrier Concentration for use in Plasmonics, **T. YAMAMOTO**, H. SONG, J. NOMOTO, H. MAKINO, Kochi University of Technology, Japan	**E1-1-5** The Aging and Temperature effects of DLC Coatings, **H. RONKAINEN**, VTT Technical Research Centre of Finland, K. HOLMBERG, VTT Technical Resesearch Centre of Finland, A. LAUKKANEN, VTT Technical Research Centre of Finland
11:40 am	**C1-6 Invited** Smart Optical Coating Systems for Energy Efficient Building Envelopes, **C.M. LAMPERT**, Star Science, US	**E1-1-6** Nanoscale Sliding Friction Phenomena at the Interface of Diamond-like Carbon and Tungsten, **P. STOYANOV**, Kennametal, Inc., US, P. ROMERO, M. DIENWIEBEL, M. MOSELER, Fraunhofer-Institute for Mechanics of Materials IWM, Germany
12:00 pm	Invited talk continued.	**E1-1-7** Scratch Testing for Diamond-like Coatings Evaluation at Micro and Nano-scale, F.L.C. LUCAS, University of Paraiba Valley IP&D/UNIVAP, São Jose dos Campos - SP, Brazil, S.F. FISSMER, Technologic Institute of Aeronautics, ITA/CTA, São Jose dos Campos - SP, Brazil, **L.V. SANTOS**, University of Paraiba Valley IP&D/UNIVAP, São Jose dos Campos - SP, Brazil, D.S. SILVA, Institute of Chemistry, University of Campinas - UNICAMP, Campinas SP, Brazil, C.A.R. COSTA, E.M. LANZONI, F. GALEMBECK, National Nanotechnology Laboratory at the National Center for Energy and Materials Research, Campinas SP, Brazil
12:20 pm	**C1-8** Potential Impact of Ambient Gases and Oxygen Partial Pressure on Structural, Hydrophobic, Optical and Electrical Property of Nanostructured HfO_xN_y Film, **V. DAVE**, Indian Institute of Technology Roorkee, India, P.K. MISHRA, Ranchi University, India, H.O. GUPTA, R. CHANDRA, Indian Institute of Technology Roorkee, India	**E1-1-8** Failure Mechanisms of DLC Coated Ti-6Al-4V and CoCr Biomedical Materials under Cyclic High Combined Contact Stresses, **Y. CHEN**, X. NIE, University of Windsor, Canada

Monday Morning, April 28, 2014

	New Horizons in Coatings and Thin Films Room: Royal Palm 4-6 - Session F5 Coatings for Compliant Substrates Moderator: N.R. Moody, Sandia National Laboratories, US	Applications, Manufacturing, and Equipment Room: Tiki - Session G4 Coatings for Machining Advanced Materials and for use in Advanced Manufacturing Methods Moderators: D. Kurapov, Oerlikon Balzers Coating AG, Liechtenstein, R. Cremer, KCS Europe GmbH, Germany
10:00 am	**F5-1** Electromechanical Properties of ZNO:Al Thin Films on Polymer Substrates for Optoelectronics Applications, **D. MOHAMMED**, University of Birmingham, UK, R. WADDINGHAM, A. FLEWITT, University of Cambridge, UK, S. KUKUREKA, University of Birmingham, UK	**G4-1** Nobel Wear Resistant Coating System for AHSS Stamping Die, **K. YAMAMOTO**, K. OZAKI, Kobe Steel Ltd., Japan, T. KASHI, Nippon Koshuha Steel Co., Ltd., Japan, H. YAMASHITA, Kams Co. Ltd., Japan
10:20 am	**F5-2** Low Temperature Titanium Dioxide Diffusion Barrier Layers on PEN Using Spatial Atomic Layer Deposition, **M. AGHAEE**, P. MAYDANNIK, Lappeenranta University of Technology, Finland, P. JOHANSSON, Tampere University of Technology, Finland, K. LAHTINEN, D. CAMERON, Lappeenranta University of Technology, Finland, J. KUUSIPALO, Tampere University of Technology, Finland	**G4-2** Development of (Cr,Al)ON Coatings using Middle Frequency Magnetron Sputtering and Investigations on Tribological Behavior against Polymers, K. BOBZIN, N. BAGCIVAN, **T. BRÖGELMANN**, Surface Engineering Institute - RWTH Aachen University, Germany
10:40 am	**F5-3 Invited** Stretch to the Limit: Ductility of Thin Metal Films on Polymer and Elastomer Substrates, **T. LI**, University of Maryland, US	**G4-3 Invited** Tailoring Wear Resistant PVD Coatings for Metal Cutting Applications, **E. GÖTHELID**, Sandvik Coromant, Sweden
11:00 am	Invited talk continued.	Invited talk continued.
11:20 am	**F5-5** Small Diameter Circular Ion Sources for Surface Engineering of Polymers, **F. PAPA**, Gencoa Ltd., US, D. MONAGHAN, V. BELLIDO-GONZALEZ, R. BROWN, A. AZZOPARDI, L. SORZABAL-BELLIDO, Gencoa Ltd., UK	**G4-5** Investigation of Suitability of CVD Diamond Thick Film Tool Coatings for High Performance Cutting of Ti6Al4V Super Alloys, **F. DEGEN**, F. KLOCKE, T. BERGS, M. BUSCH, Fraunhofer Institute for Production Technology IPT, Germany
11:40 am	**F5-6** Mechanical Design of Organic Light Emitting Diodes on Polymer Substrates, **S.J. BULL**, Newcastle University, UK	**G4-6 Invited** Technology Trends in Coated Cemented Carbides for High Demanding Applications CVD, PVD, Cutting Tool, **C. CZETTL**, M. POHLER, CERATIZIT Austria GmbH, Austria
12:00 pm	**F5-7** On the Response of Ti-6Al-4V and Ti-6Al-7Nb Alloys to a Nitron-100 Treatment, J.C. AVELAR-BATISTA WILSON, **S. BANFIELD**, J. HOUSDEN, Tecvac Ltd, UK, C. OLIVERO, P. CHAPON, Horiba Jobin Yvon S.A.S., France	Invited talk continued.
12:20 pm	**F5-8** A Comparison of Nanoindentation Pile-up in Bulk Materials and Thin Films, **N. MOHARRAMI**, S.J. BULL, Newcastle University, UK	
	Hysitron: Focused Topic Session **"Advancements in Thin Film Characterization"** **12:15-1:15 pm** **Royal Palm 1-3**	

Monday Afternoon, April 28, 2014

	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B1-2 PVD Coatings and Technologies **Moderators: A.N. Ranade**, The Boeing Company, US, **S. Weißmantel**, University of Applied Sciences Mittweida, Germany, **J.W. Lee**, Ming Chi University of Technology, Taiwan	Hard Coatings and Vapor Deposition Technology Room: Sunset - Session B5-2 Hard and Multifunctional Nanostructured Coatings **Moderators: J. Paulitsch**, Vienna University of Technology, Austria, **J. Houska**, University of West Bohemia, Czech Republic
1:30 pm	**B1-2-1** High-temperature Sputter Deposition of $Ti_{1-x}Al_xN$/TiN Multilayer Coatings on Powder-metallurgical High-speed Steels, T. WEIRATHER, K. CHLADIL, Montanuniversität Leoben, Austria, B. SARTORY, Materials Center Leoben Forschung GmbH, Austria, D. CALISKANOGLU, Böhler Edelstahl GmbH & Co KG, Austria, R. CREMER, KCS Europe GmbH, Germany, W. KÖLKER, CemeCon AG, Germany, **C. MITTERER**, Montanuniversität Leoben, Austria	**B5-2-1** The Selection of Interfaces for Achieving Super- and Ultrahardness, **S. VEPREK**, Technical University Munich, Germany, V. IVASHCHENKO, Institute of Problems of Material Science, NAS of Ukraine, Ukraine, M. VEPREK-HEIJMAN, Technical University Munich, Germany
1:50 pm	**B1-2-2** Wear Protective Coating for Cutting Tools Applications Deposited by S3p™, D. KURAPOV, S. KRASSNITZER, T. BACHMANN, J. HAGMANN, W. KALSS, **M. ARNDT**, H. RUDIGIER, Oerlikon Balzers Coating AG, Liechtenstein	**B5-2-2** Comparison of TiSiN and TiSiVN Films Deposited by DC and HIPIMS Reactive Magnetron Sputtering Techniques, F. FERNANDES, University of Coimbra, Portugal, T. POLCAR, University of Southampton, UK, **A. CAVALEIRO**, University of Coimbra, Portugal
2:10 pm	**B1-2-3 Invited** Internal Oxidation of Nanolaminated Coatings, **Y.I. CHEN**, National Taiwan Ocean University, Taiwan	**B5-2-3** Structure and Properties of Novel Al-based PVD Nanostructured/Amorphous Coatings, **J. LAWAL**, A. LEYLAND, A. MATTHEWS, University of Sheffield, UK
2:30 pm	Invited talk continued.	**B5-2-4** The Modifying Effect of Cu and Ni on Nanostructuring and Properties of ARC - PVD Coatings Based on Titanium Nitride, **D.S. BELOV**, I.V. BLINKOV, A.O. VOLKHONSKIY, National University of Science and Technology "MISIS", Russian Federation
2:50 pm	**B1-2-5** Ion Energy Distributions in DC Arc Plasma from Compound Cathodes, I. ZHIRKOV, O. VOZNIY, **J. ROSEN**, Thin Film Physics Division, IFM, Linköping University, Sweden	**B5-2-5** Low Temperature Synthesis of Mo_2BC Thin Films, **H. BOLVARDI**, J. EMMERLICH, S. MRÁZ, RWTH Aachen University, Germany, M. ARNDT, H. RUDIGIER, OC Oerlikon Balzers AG, Liechtenstein, J. SCHNEIDER, RWTH Aachen University, Germany
3:10 pm	**B1-2-6** Filtered Cathodic Vacuum Arc Processes for Nano-scale Layering of Wear-resistant Structure on High Speed Steel Tools, **A. VERESCHAKA**, M. VOLOSOVA, S. GRIGORIEV, A. VERESCHAKA, Moscow State University of Technology (MSUT "STANKIN"), Russian Federation, A. BATAKO, Liverpool John Moores University, UK	**B5-2-6 Invited** Nanostructured Coatings with Adaptive Friction and Thermal Properties, **A.A. VOEVODIN**, Air Force Research Laboratory, US, C. MURATORE, University of Dayton, US, J.J. HU, J. GENGLER, Air Force Research Laboratory, US, D. STONE, S.M. AOUADI, University of North Texas, US, O. JANTSCHNER, C. MITTERER, R. RACHBAUER, Montanuniversität Leoben, Austria, P.H. MAYRHOFER, Vienna University of Technology, Austria, D. MUSIC, J. SCHNEIDER, RWTH Aachen University, Germany
3:30 pm	**B1-2-7** Structure and Corrosion Properties of TiN Films Deposited by Combined HIPIMS-DCMS Process, **P.EH. HOVSEPIAN**, A.A. SUGUMARAN, A.P. EHIASARIAN, Sheffield Hallam University, UK	Invited talk continued.
3:50 pm	**B1-2-8** Ternary Carbonitride Coatings deposited by High Power Impulse Magnetron Sputtering, **T. HIRTE**, R. FEUERFEIL, V. PEREZ-SOLORZANO BORRAGAN, Robert Bosch GmbH, Germany, M. SCHERGE, Fraunhofer Institute for Mechanics of Materials, IWM, Germany	**B5-2-8** Synthesis and Characterization of Multifunctional Me-B-C (Me = Cr, Nb, Mo) Thin Films Deposited by DC Magnetron Sputtering, **P. MALINOVSKIS**, N. NEDFORS, U. JANSSON, Uppsala University, Angstrom Laboratory, Sweden, J. LU, P. EKLUND, L. HULTMAN, Linköping University, IFM, Thin Film Physics Division, Sweden
4:10 pm	**B1-2-9 Invited** Laser Assisted and Arc Technologies for Hard Carbon Film Deposition – An Overview from the Beginning up to the Industrial Application, **H.J. SCHEIBE**, Fraunhofer Institute for Material and Beam Technology IWS, Germany	**B5-2-9** High Temperature Properties of Hexagonal Structured ZrAlN Thin Films, **L. ROGSTRÖM**, N. NORRBY, Linköping University, IFM, Nanostructured Materials, Sweden, M. AHLGREN, Sandvik Coromant, Sweden, N. SCHELL, Helmholtz-Zentrum Geesthacht, Germany, J. BIRCH, Linköping University, IFM, Thin Film Physics Division, Sweden, M. ODÉN, Linköping University, IFM, Nanostructured Materials, Sweden
4:30 pm	Invited talk continued.	**B5-2-10** Multi-Scale Mechanical Properties of Nanocrystalline Coatings Revealed by Micro- and Nano-Mechanical Tests, **J. ZÁLEŠÁK**, Erich Schmid Institute, Austrian Academy of Sciences, Austria, M. BARTOSIK, P.H. MAYRHOFER, Vienna University of Technology, Austria, J. KECKES, Montanuniversität Leoben, Austria
4:50 pm	**B1-2-11** Super-hard Tetrahedral Amorphous Carbon Films (ta-C) with Low Internal Stress -The Potential of the Pulsed Laser Deposition Technique, **K. GUENTHER**, University of Applied Sciences Mittweida, Germany, V. WEIHNACHT, Fraunhofer IWS, Germany, S. WEIßMANTEL, Univ. of Applied Sciences Mittweida, Germany	
5:10 pm	**B1-2-12 Withdrawn** Structure and Properties of Nitride Coatings, Prepared by PIII&D Using Multicomponent As-cast TiAl-based Cathodes, V. BELOUS, V. VASYLIEV, A. LUCHANINOV, V. MARININ, E. RESHETNYAK, V. STREL'NITSKIJ, National Science Center "Kharkov Institute of Physics and Technology", Ukraine, S. GOLTVYANYTSYA, **V. GOLTVYANYTSYA**, Real Ltd., Ukraine	

Welcome Mixer 6:00 - 7:30 pm in the Atlas Foyer
Sponsored by Oerlikon Balzers

Monday Afternoon, April 28, 2014

	Coatings for Biomedical and Healthcare Applications **Room: Sunrise - Session D1** **Surface Functionalization, Drug Delivery, and Anti-microbial Coatings** **Moderators: S. Rodil Posada**, Universidad Nacional Autonoma de Mexico, Mexico, **D.V. Shtansky**, National University of Science and Technology "MISIS", Russian Federation	**Tribology & Mechanical Behavior of Coatings and Engineered Surfaces** **Room: California - Session E2-1** **Mechanical Properties and Adhesion** **Moderators: J. Michler**, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland, **R. Chromik**, McGill University, Canada, **D.F. Bahr**, Purdue University, US
1:30 pm	**D1-1** Wetting and Biocompatible Properties of Oxygen Plasma Treatment on Diamond-like Carbon Thin Films, **C. JONGWANNASIRI**, Nippon Institute of Technology, Japan, A. KHANTACHAWANA, King Mongkut's University of Technology Thonburi, Thailand, S. WATANABE, Nippon Institute of Technology, Japan	**E2-1-1 Invited** Thin Film Adhesion can be Measured From The Morphology of Telephone Cord Buckles, J.-Y. FAOU, S. GRACHEV, CNRS/Saint-Gobain, France, G. PARRY, Grenoble INP-CNRS-UJF, France, **E. BARTHEL**, CNRS/Saint-Gobain, France
1:50 pm	**D1-2** Preparation and Assessment of Bone Morphogenetic Proteins Immobilized Titanium Dioxide on Titanium Surface for Bone Implant, **H.W. SHU**, Feng Chia University, Taiwan, H.T. CHEN, China Medical University Hospital, Taiwan, C.J. CHUNG, Central Taiwan University of Science and Technology, Taiwan, J.L. HE, Feng Chia University, Taiwan	Invited talk continued.
2:10 pm	**D1-3 Invited** Biofilm formation and consequences in dental implants: New insights, **A. ALMAGUER-FLORES**, Universidad Nacional Autónoma de México, Mexico	**E2-1-3** Interface Delamination Study of Diamond-Coated Carbide Tools Considering Coating Fractures, P. LU, The University of Alabama, US, X. XIAO, Research & Development Center,General Motors Corporation, US, **K. CHOU**, The University of Alabama, US
2:30 pm	Invited talk continued.	**E2-1-4** Grain Structure Effect on the Stochastic Distribution of Local Adhesion Strength at Metal/Dielectric Layer Interface in Copper Wiring Systems, **N. SHISHIDO**, C. CHEN, S. KAMIYA, K. KOIWA, Nagoya Institute of Technology, Japan, M. OMIYA, Keio University, Japan, H. SATO, M. NISHIDA, Nagoya Institute of Technology, Japan, T. NAKAMURA, T. SUZUKI, Fujitsu Laboratories Limited, Japan, T. NOKUO, T. SUZUKI, JEOL, Japan
2:50 pm	**D1-5** Medical Coating Innovations: Antimicrobial PVD Coatings, **C. ACIKGOZ**, C. PINERO, V. DERFLINGER, A. JANSSEN, H. RUDIGIER, Oerlikon Balzers Coating AG, Liechtenstein	**E2-1-5** Evaluation of Scratch Adhesion Resistance on Boride Coatings Formed on the Surface of AISI 304 Steel, G. RODRÍGUEZ-CASTRO, **L.F. JIMÉNEZ-TINOCO**, Instituto Politecnico Nacional, Mexico, J.V. MÉNDEZ-MÉNDEZ, I. ARZATE-VÁZQUEZ, Instituto Politecnico Nacional, CNMN, Mexico, J. MARTÍNEZ-TRINIDAD, I. CAMPOS-SILVA, Instituto Politecnico Nacional, Mexico
3:10 pm	**D1-6** Surface Modification of Biodegradable Magnesium Alloys *via* Plasma-based Methods, **G.S. WU**, P.K. CHU, City University of Hong Kong, Hong Kong Special Administrative Region of China	**E2-1-6** Incoherent Interface Effect in the Mechanical Properties of Cu/W and Zr/Nb Nanomultilayers, **E. FRUTOS TORRES**, Czech Technical University in Prague, Czech Republic, M. CALLISTI, University of Southampton, UK, M. KARLIK, Czech Technical University in Prague, Czech Republic, T. POLCAR, University of Southampton, UK
3:30 pm	**D1-7** Corrosion Resistance, Anti-microbial Properties of Cu-Zr-Ag-Al Thin Film Metallic Glass with Various Cu/Zr Ratio in PBS Solution, **K.C. HSU**, J.G. DUH, National Tsing Hua University, Taiwan	**E2-1-7** Interface Toughness Optimization of Metal/Oxide Interfaces for Functional Coatings, **J. ZECHNER**, C. FRANTZ, R. KOODAKAL, L. PHILIPPE, J. MICHLER, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland
3:50 pm	**D1-8** Comparison of anti-HER2 Immobilization Using Three Different Techniques on Al-AlN-Al Thin Films, **M. HERNÁNDEZ**, I. GONZÁLEZ, H. GARCÍA, J. OSEGUERA, ITESM-CEM, Mexico	**E2-1-8 Invited** Using Nanoindentation to Assess Fracture Toughness and Interface Adhesion of Thin Coating, **J. CHEN**, Newcastle University, UK
4:10 pm	**D1-9** Formation and Characterization of Nanostructured Bioactive Apatite Coating on TiVAl Alloys, Y. GREISH, A. AL SHAMSI, A. AYESH, United Arab Emirates University (UAEU), UAE, **K. POLYCHRONOPOULOU**, Khalifa University, UAE	Invited talk continued.
4:30 pm		**E2-1-10** Yb:fiber Laser Surface Texturing of Stainless Steel Substrate, with MCrAlY Deposition and CO_2 Laser Treatment, **V. TELEGINSKI**, D. CHAGAS, Instituto Tecnológico de Aeronáutica (ITA), Brazil, J.C. SANTOS, J. AZEVEDO, G. VASCONCELOS, Instituto de Estudos Avançados (IEAv), Brazil
4:50 pm		**E2-1-11** Design and Evaluation of a Novel Testing Method for Surfaces Subjected to Combined Impact and Sliding or Rolling Loads, **P. EPAMINONDA**, C. REBHOLZ, University of Cyprus, Cyprus
5:10 pm		**E2-1-12 WITHDRAWN** Prevention of Ice and Snow Accumulation in Cold Environments, **R. FILLION**, A.R. RIAHI, A. EDRISY, University of Windsor, Canada
	Welcome Mixer 6:00 - 7:30 pm in the Atlas Foyer **Sponsored by Oerlikon Balzers**	

Monday Afternoon, April 28, 2014

	New Horizons in Coatings and Thin Films **Room: Royal Palm 4-6 - Session F1** **Nanomaterials, Nanofabrication, and Diagnostics** **Moderators: Y. Yamada-Takamura**, Advanced Institute of Science and Technology, Japan, **C. Ciobanu**, Colorado School of Mines, US	**Applications, Manufacturing, and Equipment** **Room: Tiki - Session G2** **Additive Manufacturing** **Moderators: D. Pappas,** EP Technologies, LLC, US, **X. Nie**, University of Windsor, Canada
1:30 pm	**F1-1 Invited** In Situ Diagnostics during Plasma Synthesis and Passivation of Group IV Nanocrystals, **S. AGARWAL**, Colorado School of Mines, US	**G2-1 Invited** Thin Films in a Thick 3D Printed World: How Thin Film will Enable 3D Printing., **K. CHURCH**, nScrypt Inc., US
1:50 pm	Invited talk continued.	Invited talk continued.
2:10 pm	**F1-3** Synthesis Of Copper Oxide Nanomaterials For Solar Cell Applications, **A. BHAUMIK**, K. GHOSH, Missouri State University, US	**G2-3** Barium Hexaferrite, Yttrium Iron Garnet and ZnS/Diamond Composite Thick Films Formed by the Aerosol Deposition Method, **C. EDDY, JR.**, U.S. Naval Research Laboratory, US, S. JOHNSON, American Association for Engineering Education, US, S.-F. CHENG, M.-J. PAN, F. KUB, U.S. Naval Research Laboratory, US
2:30 pm	**F1-4** Synthesis by Reactive Magnetron Sputtering and Characterization of Nanostructured n-type and p-type Semiconductor Coatings as Dodecane Sensors, **M. ARAB POUR YAZDI**, A. TAGUETT, IRTES-LERMPS-UTBM, France, J. SANCHEZ, UMR CNRS 6249, Université de Franche Comté, France, E. MONSIFROT, SARL DEPHIS, France, P. BRIOIS, IRTES-LERMPS-UTBM, France, F. BERGER, UMR CNRS 6249, Université de Franche Comté, France, A. BILLARD, IRTES-LERMPS-UTBM, France	**G2-4 Invited** Laser Consolidation – Converting 3D Design to Net-shape Functional Metallic Components, **L. XUE**, National Research Council, Canada
2:50 pm	**F1-5** Improved Dielectric and Magnetic Properties in Hexagonal-$Ymn_{1-x}Fe_xO_3$ (x=0, 0.1) Thin Films Deposited by Pulsed Laser Deposition, **S. CHAUHAN**, R. CHANDRA, P. DUBEY, S. SRIVASTAVA, A.S. RAJPUT, Indian Institute of Technology Roorkee, India	Invited talk continued.
3:10 pm	**F1-6 Invited** Formation of Metallic Glass Nanowires by Gas Atomization, **K. NAKAYAMA**, Tohoku University, Japan	**G2-6** Protective Coatings of Ultra High Toughness – Ceramic-based Composite Inspired from Natural Armors, **T.H. HSU**, P.Y. CHEN, National Tsing Hua University, Taiwan
3:30 pm	Invited talk continued.	**G2-7 Invited** 3D Printing (aka Additive Manufacturing): From Prototypes to Uniquely Designed Production Parts, **R. WICKER**, University of Texas at El Paso, US
3:50 pm	**F1-8** Namomechanical Properties of Platinum Thin Films Synthesized by Atomic Layer Deposition, M.A. MAMUN, D. GU, H. BAUMGART, A.A. ELMUSTAFA, **D. NMINIBAPIEL**, Old Dominion University, US	Invited talk continued.
4:10 pm	**F1-9** Improving Electrochemical Performance of Silicon Based Anodes by Forming a Well-Aligned CuSi Helices via an Oblique Angle Co-deposition Method for LIB, B.D. POLAT, Istanbul Technical University, Turkey, L. ERYILMAZ, R. ERCK, Argonne National Laboratory, US, **O. KELES**, Istanbul Technical University, Turkey, A. ERDEMIR, K. AMINE, Argonne National Laboratory, US	
4:30 pm	**F1-10** Relaxation Phenomena and Modeling Processes in Lithium Heptagermanate Li2Ge7O15 Crystals, **Y. OBAIDAT**, King Khalid University, Saudi Arabia	
4:50 pm	**F1-11** The Synthesis and Optoelectronic Properties of Fluorinated Vanadium Oxide Nanowires, **K.Y. PAN**, National Tsing Hua University, Taiwan, K.C. CHEN, H.C. SHIH, Chinese Culture University, Taiwan	

Welcome Mixer 6:00 - 7:30 pm in the Atlas Foyer
Sponsored by Oerlikon Balzers

Tuesday Morning, April 29, 2014

	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B1-3 PVD Coatings and Technologies **Moderators: A.N. Ranade**, The Boeing Company, US, **S. Weißmantel**, University of Applied Sciences Mittweida, Germany, **J.W. Lee**, Ming Chi University of Technology, Taiwan	Hard Coatings and Vapor Deposition Technology Room: Sunset - Session B5-3 Hard and Multifunctional Nano-Structured Coatings **Moderators: J. Paulitsch**, Vienna University of Technology, Austria, **J. Houska**, University of West Bohemia, Czech Republic
8:00 am	**B1-3-1** Properties of Composite ZrO_2-Al_2O_3 Coatings Deposited by Pulsed-DC Magnetron Sputtering and Filtered Vacuum Arc Techniques, I. ZUKERMAN, NRC-Negev, Israel, A. RAVEH, Advanced Coatings Center, Rotem Industries Ltd, Israel, **R.L. BOXMAN**, Tel Aviv University, Israel, J.E. KLEMBERG-SAPIEHA, L. MARTINU, École Polytechnique de Montréal, Canada	**B5-3-1** Struture of CrN/NbN Nano-scale Multilayer Coating Deposited by Cathodic Arc Technique, J. ARAUJO, R. SOUZA, University of São Paulo, Brazil, N. LIMA, Energetic and Nuclear Research Institute, Brazil, **A.P. TSCHIPTSCHIN**, University of São Paulo, Brazil
8:20 am	**B1-3-2** Cutting Performance Comparison of Thick PVD Nitride Coating and CVD Oxide Coating in High Speed Turning of Cast Iron, **M. ABE**, K. YAMAMOTO, S. TANIFUJI, Kobe Steel Ltd., Japan	**B5-3-2** The Role of a Superelastic Interlayer on the Tribological Behaviour of Hard Coatings, **M. CALLISTI**, National Centre for Advanced Tribology Southampton, UK, B. MELLOR, T. POLCAR, University of Southampton, UK
8:40 am	**B1-3-3** The Structure and Composition Analyses of Tungsten Oxides Thin Film by PVD Process, C. LI, National Central University, Taiwan, J.H. HSIEH, Ming Chi Institute of Technology, Taiwan, **B.Q. HUANG**, National Central University, Taiwan	**B5-3-3 Invited** Contemporary Thin Film Ceramics Behaviour in the Extreme Environments, **V. VISHNYAKOV**, Manchester Metropolitan University, UK
9:00 am	**B1-3-4** Plasma-activated High-rate Deposition of Titanium Dioxide Coatings by Electron Beam, Spotless Arc and Dual Crucible Technology, **C. METZNER**, B. SCHEFFEL, G. MATTAUSCH, TH. MODES, Fraunhofer FEP, Germany	Invited talk continued.
9:20 am	**B1-3-5** An Investigation Into the Improvement of the Corrosion Behaviour of PVD Coatings, **JL. DAURE**, KT. VOISEY, PH. SHIPWAY, University of Nottingham, UK, DA. STEWART, Rolls-Royce plc, UK	**B5-3-5** The Microstructure and Mechanical Properties Evaluation of Cr-Si-B-N/Ti-Si-B-N Multilayered Thin Films, **L.C. HSU**, J.W. LEE, Ming Chi University of Technology, Taiwan
9:40 am	**B1-3-6** Effect of Cathode Composition on Cathodic Arc Synthesis of Multi-element Material from Compound Cathodes, **I. ZHIRKOV**, J. ROSEN, Thin Film Physics Division, IFM, Linköping University, Sweden	**B5-3-6** Study of Sensing Properties of Zinc Oxide and Cu-doped Zinc Oxide Nanowires, **Y.W. YEH**, C.P. LIU, National Cheng Kung University, Taiwan, R.C. WANG, National Kaohsiung University, Taiwan, J.L. HUANG, National Cheng Kung University, Taiwan
10:00 am	**B1-3-7** Investigations on Erosion Behavior of TiAlSiN Nanocomposite Coatings Deposited by High Speed-physical Vapor Deposition, K. BOBZIN, N. BAGCIVAN, T. BRÖGELMANN, **B. YILDIRIM**, RWTH Aachen University, Germany	**B5-3-7** Fabrication of n-type ZnO and p-type Cu_2O Nanostructures and its Photoelectrochemical Properties, **Y.H. CHEN**, Y.M. SHEN, National Cheng Kung University, Taiwan, S.C. WANG, Southern Taiwan University, Taiwan, J.L. HUANG, National Cheng Kung University, Taiwan
10:20 am	**B1-3-8** High-Rate Deposition of AlTiN and Related Coatings with Dense Morphology by Central Cylindrical DC Magnetron Sputtering, **M. JILEK**, SHM s.r.o., Czech Republic, F. MENDEZ MARTIN, Montanuniversität Leoben, Austria, P.H. MAYRHOFER, Vienna University of Technology, Austria, S. VEPREK, Technical University Munich, Germany	**B5-3-8 Moved to BP60** Fabrication and Characterization of Tungsten-Yttrium Coatings for Nuclear Reactor Applications, **G. MARTINEZ**, University of Texas at El Paso, US, C. RAMANA, University of Texas at El Paso
10:40 am	**B1-3-9 Invited** Oxidation Resistance and their Applications of Multicomponent TiAlSiN and CrAlSiN Hard Coatings Synthesized by Cathodic Arc Evaporation, **Y. CHANG**, National Formosa University, Taiwan	
11:00 am	Invited talk continued.	
11:20 am	**B1-3-11** Oriented Cubic Al-Ti-N Films with Large Compressive Stress Deposited by Dual Source Type Reactive Plasma Deposition System, **K. TANAKA**, M. TAKAHASHI, Mitsubishi Materials Corporation, Japan	
11:40 am	**B1-3-12** Oxidation Resistance and Mechanical Properties of CrTaSiN Coatings Prepared using Co-sputter Deposition, Y.I. CHEN, **H.H. WANG**, National Taiwan Ocean University, Taiwan	

Exhibition Hall Opens Today
Town & Country/San Diego/Golden West
12:00 - 7:00 pm
Enjoy lunch in the Exhibition Hall 12:15 pm

Tuesday Morning, April 29, 2014

	Coatings for Biomedical and Healthcare Applications **Room: Sunrise - Session D2-1** **Coatings for Bio-corrosion, Tribo-corrosion and Bio-tribology** **Moderators: J. Geringer**, Ecole Nationale Supérieure des Mines de Saint Etienne, France, **T. Shokuhfar**, Michigan Technological University, US	**Tribology & Mechanical Behavior of Coatings and Engineered Surfaces** **Room: California - Session E2-2** **Mechanical Properties and Adhesion** **Moderators: J. Michler**, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland, **R. Chromik**, McGill University, Canada, **D.F. Bahr**, Purdue University, US
8:00 am		**E2-2-1 Invited** Tensile Deformation Behavior in Highly Nanotwinned Cu and CuAl Alloys, **A. HODGE**, University of Southern California, US
8:20 am	**D2-1-2** Properties of Waterborne Polyurethane/Graphene Coatings, **M. RAHMAN**, Q. HABIB, King Fahd University of Petroleum and Minerals, Saudi Arabia	Invited talk continued.
8:40 am	**D2-1-3 Invited** Corrosion and Tribological Film of CoCrMo Metal-on-Metal Hip Replacement, **Y. LIAO**, P. PANIGRAPHI, Northwestern University, US, M. MATHEW, R. POURZAL, A. FISCHER, M. WIMMER, Rush University Medical Center, US, L. MARKS, Northwestern University, US	**E2-2-3** Electromechanical and Chemomechanical Performance of Laser Oxide Coatings on Metallic Substrates, **S.K. LAWRENCE**, Purdue University, US, D. ADAMS, Sandia National Laboratories, US, D.F. BAHR, Purdue University, US, N.R. MOODY, Sandia National Laboratories, US **STUDENT AWARD FINALIST**
9:00 am	Invited talk continued.	**E2-2-4** Room Temperature Nanoindentation Creep of Nanograined NiTiW Shape Memory Thin Films, **N. KAUR**, D. KAUR, Indian Institute of Technology Roorkee, India
9:20 am	**D2-1-5** Electrochemical and Tribocorrosion Aspects of Mixed Metal Contacts in Hip Prostheses, D. ROYHMAN, M. RUNA, M. WIMMER, J. JACOBS, N. HALLAB, **M. MATHEW**, Rush University Medical Center, US	**E2-2-5 Invited** Deformation and Fracture of Metal Films on Polymer Substrates, **M.J. CORDILL**, V. MAIER, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria, J. BERGER, O. GLUSHKO, Erich Schmid Institue of Materials Science, Austrian Academy of Sciences, Austria, J. PAULITSCH, Vienna University of Technology, Austria
9:40 am	**D2-1-6** Hydrothermal Deposition of Bio-resorbable Calcium-Phosphate Coating on AZ31 Magnesium for Implant Application, **S. KAABI FALAHIEH ASL**, Nanyang Technological University, School of Mechanical & Aerospace Engineering, Singapore Institute of ManufacturingTechnology, Singapore, N. SANDOR, Singapore Institute of Manufacturing Technology, Singapore, M.J. TAN, Nanyang Technological University , School of Mechanical & Aerospace Engineering,, Singapore	Invited talk continued.
10:00 am	**D2-1-7 Invited** Layers of Nanocrystallines and Tribofilm on Artificial Hip Implants Surfaces Induced by Bio-tribo-corrosion Processes, **Y. YAN**, Key Laboratory for Environmental Fracture (MOE), University of Science and Technology Beijing, China	**E2-2-7** Numerical Evaluation of Cohesive and Adhesive Failure Modes During the Indentation of Coated System with Compliant Substrate, **N. FUKUMASU**, R. SOUZA, University of São Paulo, Brazil
10:20 am	Invited talk continued.	
10:40 am	**D2-1-9** Fretting Corrosion of Co-Cr-Mo Alloy with Ti: Specific Tribocorrosive Behavior and Benefits in Comparison with Usual Metallic Alloys Dedicated to Orthopedic Implants, **S. NAKAHARA**, Department of Material Processing, Japan, A. TOWAREK, Warsaw University of Technology, Poland, K. UEDA, Department of Material Processing, Japan, T. NARUSHIMA, Tohoku University, Japan, J. GERINGER, Ecole Nationale Supérieure des Mines de Saint Etienne, France	
11:00 am	**D2-1-10** Studies of Unbleached Cotton Fabric Treated with TiO_2 Anchored by Diamond-like Carbon Film: Microbiological Inhibition Growth Rate With and Without UV Exposition, **E.D. SANTOS**, D.F. FURTADO, F.S. MIRANDA, F.L.C. LUCAS, R.S. PESSOA, H.S. MACIEL, Universidade do Vale do Paraíba, Brazil, E. ESPOSITO, Universidade Federal de São Paulo, Brazil, L.V. SANTOS, Universidade do Vale do Paraíba, Brazil	
	Exhibition Hall Opens Today **Town & Country/San Diego/Golden West** **12:00 - 7:00 pm** **Enjoy lunch in the Exhibition Hall 12:15 pm**	

Tuesday Morning, April 29, 2014

	New Horizons in Coatings and Thin Films Room: Royal Palm 4-6 - Session F2-1 High Power Impulse Magnetron Sputtering (HIPIMS) **Moderators: D. Lundin**, Université Paris-Sud 11, France, **S. Konstantinidis**, University of Mons, Belgium	Topical Symposia Room: Tiki - Session TS1 Mechanical Properties Challenges for Greener Energy Applications and Emissions Reduction **Moderators: G. Dadheech**, General Motors Research and Development Center, US
8:00 am	**F2-1-1** Imaging Of Self-Organized Plasma Structures In DC Magnetron Sputtering And HiPIMS Discharges, **M. PANJAN**, S. LOQUAI, J.E. KLEMBERG-SAPIEHA, L. MARTINU, École Polytechnique de Montréal, Canada	**TS1-1 Invited** Surface Engineering for Improving the Performance and Durability of Lithium Ion Batteries, **Y.T. CHENG**, University of Kentucky, US
8:20 am	**F2-1-2** Ionized Sputtering with a Pulsed Hollow Cathode Magnetron, **F. FIETZKE**, B.-G. KRÄTZSCHMAR, Fraunhofer Institute for Electron Beam and Plasma Technology FEP, Germany	Invited talk continued.
8:40 am	**F2-1-3** High-rate Reactive High-power Impulse Magnetron Sputtering of Densified Zirconium Dioxide Films, **J. VLCEK**, J. REZEK, University of West Bohemia, Czech Republic	**TS1-3** How Residual Stresses Affect the Elastic Properties of Ni, P. GADAUD, **X. MILHET**, Pprime Institute - UPR CNRS 3346 - Université de Poitiers - ENSMA - France, O. HUBERT, ENS Cachan, France, P.O. RENAULT, C. COUPEAU, Pprime Institute - UPR CNRS 3346 - Université de Poitiers - ENSMA - France
9:00 am	**F2-1-4** $CuInSe_2$ Thin Film Photovoltaic Absorber Layers by HIPIMS at Low Temperature, **A.P. EHIASARIAN**, D. LOCH, Sheffield Hallam University, UK, V. SITTINGER, Fraunhofer IST, Germany	**TS1-4** Strength and Fatigue Lifetime of Silicon in Hydrogen Atmosphere, **U. ARASU**, S. KAMIYA, H. IZUMI, Nagoya Institute of Technology, Japan
9:20 am	**F2-1-5 Invited** Plasma Spokes and Particle Transport in HiPIMS Discharges, **A. HECIMOVIC**, T. DE LOS ARCOS, V. SCHULZ-VON DER GATHEN, J. WINTER, Institut for Experimental Physics II, Ruhr-Universität Bochum, Germany	**TS4 Session Continues Immediately Following TS1 in the same room. See Page 12**
9:40 am	Invited talk continued.	
10:00 am	**F2-1-7** Effects of Cr and Ta Interlayers on the Adhesion and Mechanical Properties of CN_x Thin Films Deposited by HiPIMS on Steel Substrates, **K.D. BAKOGLIDIS**, S. SCHMIDT, G. GRECZYNSKI, J. LU, E. BROITMAN, L. HULTMAN, Linköping University, IFM, Thin Film Physics Division, Sweden	
10:20 am	**F2-1-8** Comparison of CrN/AlN Multilayer Coatings Deposited via Middle Frequency Pulsed and High Power Pulsed Magnetron Sputtering, N. BAGCIVAN, K. BOBZIN, **R.H. BRUGNARA**, Surface Engineering Institute - RWTH Aachen University, Germany	
10:40 am	**F2-1-9** Microstructure and Electrical Transport Properties of HIPIMS-Deposited ZnO Thin Films, **A.N. REED**, P.J. SHAMBERGER, Air Force Research Laboratories, Wright-Patterson AFB, C. MURATORE, University of Dayton, US, J.E. BULTMAN, University of Dayton Research Institute, US, A.A. VOEVODIN, Air Force Research Laboratory, Materials and Manufacturing Directorate, US	
11:00 am	**F2-1-10** A Comparative Study of Nanocomposite TiBCN Coatings Deposited by DC Magnetron Sputtering, Pulse DC Magnetron Sputtering and Deep Oscillation Magnetron Sputtering, **B. WANG**, M. KAUFMAN, G. BOURNE, W. SPROUL, J. LIN, Colorado School of Mines, US	
	Exhibition Hall Opens Today **Town & Country/San Diego/Golden West** **12:00 - 7:00 pm** **Enjoy lunch in the Exhibition Hall 12:15 pm**	

Topical Symposia
Room: Tiki - Session TS4

Graphene and 2D Nanostructures
Moderators: C. Teichert, Montanuniversität Leoben, Austria, **M. Chhowalla**, Rutgers University, US, **J. Huang**, Northwestern University, US

	TS1 in Previous Time Slots located in the same room. See Page 11	
9:20 am	**TS4-5** Synthesis, Properties, and Application of Two-dimensional Nano-Yttrium Oxide, **X. HE**, H. LIANG, Texas A&M University, US	
9:40 am	**TS4-6** Toward Growth of Few Layer Hexagonal Boron Nitride via Pulsed Laser Deposition, **N. GLAVIN**, Air Force Research Laboratory and Birck Nanotechnology Center, Purdue University, US, M. CHECK, M. JESPERSEN, University of Dayton Research Institute, US, J. GENGLER, Spectral Energies, LLC, US, T. FISHER, School of Mechanical Engineering and Birck Nanotechnology Center, Purdue University, US, A.A. VOEVODIN, Materials and Manufacturing Directorate, Air Force Research Laboratory, US	
10:00 am	**TS4-7 Invited** Reduction and Healing of Graphene Oxyde in Carbon Monoxide Atmosphere, **C. CIOBANU**, Colorado School of Mines	
10:20 am	Invited talk continued.	
10:40 am	**TS4-9** Mobility and Preferential Edge-Site Binding of Metal Adatoms on Graphene, **T. HARDCASTLE**, C. SEABOURNE, University of Leeds, UK, R. ZAN, Manchester, UK, R. BRYDSON, University of Leeds, UK, U. BANGERT, Manchester, UK, Q. RAMASSE, SuperSTEM Laboratory, Daresbury, UK, K. NOVOSELOV, Manchester, UK, A. SCOTT, University of Leeds, UK **STUDENT AWARD FINALIST**	
11:00 am	**TS4-10** High Energy Density Asymmetric Supercapacitor Based on Nitrogen Doped Graphene, **F.N. SARI**, J.-M. TING, National Cheng Kung University, Taiwan	
11:20 am	**TS4-11 Invited** Graphene-based Supercapacitors, **R.B. KANER**, L. WANG, J. HWANG, S. DUBIN, M. LI, H. WANG, University of California, Los Angeles, US, M. EL-KADY, Cairo University, Egypt, M. MOUSAVI, Tarbiat Modares University, Iran	
11:40 am	Invited talk continued.	
12:00 pm	**TS4-13** Characterization of 2D Nanomaterials with Spectroscopic Imaging Ellipsometry, P. THIESEN, Accurion GmbH, Germany, **G. HEARN**, Accurion Inc., US, U. WURSTBAUER, A. HOLLEITNER, B. MILLER, E. PARZINGER, Technische Universität München, Germany, U. WURSTBAUER, Columbia University, US, C. ROLING, Technische Universität München, Germany	**Exhibition Hall Opens Today** **Town & Country/San Diego/Golden West** **12:00 - 7:00 pm** **Enjoy lunch in the Exhibition Hall 12:15 pm**
12:20 pm	**TS4-14** Effect of Laser Irradiation on Structural and Electrical Properties of CVD Grown Graphene, **K. GHOSH**, M. LANGHOFF, A. BHAUMIK, Missouri State University, US, W. MITCHEL, Air Force Research Laboratory, AFRL/RXA, WPAFB, US, G.S. TOMPA, N. SBROCKEY, E. GALLO, T. SALAGAJ, Structured Materials Industries Inc., US	

Tuesday Morning, April 29, 2014

Exhibitors Keynote Lecture

11:00 am-12:00 pm
Room: California

Exhibition Keynote Lecture

TIMOTHY WEIHS
Johns Hopkins University, US

"Driving Commercial Applications and Exploring Scientific Questions with Reactive Multilayer Foils"

See Keynote Lecture Page for Abstract

11:00 am – 12:00 pm
California Room

Exhibition Hall Opens Today
Town & Country/San Diego/Golden West
12:00 - 7:00 pm
Enjoy lunch in the Exhibition Hall 12:15 pm

Tuesday Afternoon, April 29, 2014

	Hard Coatings and Vapor Deposition Technology **Room: Royal Palm 1-3 - Session B1-4** **PVD Coatings and Technologies** **Moderators: A.N. Ranade**, The Boeing Company, US, **S. Weißmantel**, University of Applied Sciences Mittweida, Germany, **J.W. Lee**, Ming Chi University of Technology, Taiwan	**Advanced Materials for Modern Device Applications** **Room: Sunset - Session C4-1** **Thin Films for Energy Related Applications** **Moderators: K. Yu**, Lawrence Berkeley National Laboratory, US, **J. Partridge**, RMIT University, Australia
1:30 pm		**C4-1-1 Invited** Intermediate Band Materials for High Efficiency Solar Cells, **Y. OKADA**, The University of Tokyo
1:50 pm		Invited talk continued.
2:10 pm	**B1-4-3** Structural, Mechanical and Tribological Properties of VN Thin Films Fabricated by PVD, H. AHMAD AGHDAM, Ataturk University, Turkey, **I. EFEOGLU**, K.V. EZIRMIK, H. CICEK, M. TAHMASEBIAN MYANDOAB, Atatürk University, Turkey, Ö. BARAN, Erzincan University, Turkey	**C4-1-3** Growth of Cu_2ZnSnS_4 by Reactive Magnetron Co-sputtering, **P-A. CORMIER**, University of Mons, Belgium, G. GUISBIERS, Materia Nova Research Center, Belgium, O. LOZANO-GARCIA, S. LUCAS, University of Namur, Belgium, R. SNYDERS, University of Mons, Belgium
2:30 pm	**B1-4-4** Compressive Intrinsic Stresses in Thin Films are Caused by Atom Insertion into Grain Boundaries, **D. MAGNFÄLT**, IFM Linköping University, Sweden, A. FILLON, Groupe de Physique des Matériaux, University of Rouen, France, R. BOYD, U. HELMERSSON, K. SARAKINOS, IFM Linköping University, Sweden, G. ABADIAS, Pprime Institute - UPR CNRS 3346 - Université de Poitiers - ENSMA - France	**C4-1-4** Preparation of Cu_2ZnSnS_4 Thin Films Using Pulsed Electrodeposition and Sulfurization, **L.J. WANG**, J.-M. TING, National Cheng Kung University, Taiwan
2:50 pm	**B1-4-5** Model for Growth Stress in Polycrystalline Films: Comparison with Growth on Lithographically-patterned and Randomly-nucleated Films, **E. CHASON**, C.-H. CHEN, A. ENGWAL, Brown University, US, J.-W. SHIN, LAM Reserearch, US, S.J. HEARNE, Sandia National Laboratories, US, L.B. FREUND, University of Illinois at Urbana-Champaign, US	**C4-1-5** Solid-State Solar Cell-Based on $CH_3NH_3PbI_3$ Perovskite Sensitizer and Mesoporous Anatase TiO_2 Beads, **F. FIRDAUSI**, J.-M. TING, National Cheng Kung University, Taiwan
3:10 pm	**B1-4-6** Influence of Tantalum on Structure, Electrical Resistivity and Corrosion Behavior of Sputtered Molybdenum Films, **A. HOFER**, Montanuniversität Leoben, Austria, N. REINFRIED, PLANSEE SE, Business Unit Coating, Austria, G. MORI, C. MITTERER, Montanuniversität Leoben, Austria	**C4-1-6** Preparation of Inkjet-printed Titanium Monoxide as p-Type Absorber Layer for Photovoltaic Purpose, **T.T.N. NGUYEN**, Y.H. CHEN, J.L. HE, Feng Chia University, Taiwan
3:30 pm	**B1-4-7** The Fabrication and Property Evaluation of Zr-Ti-B-Si Thin Film Metallic Glass Materials, **Y.L. DENG**, J.W. LEE, Ming Chi University of Technology, Taiwan	**C4-1-7** Magnetron Sputtering Deposition of Pd-Ag Thin Film Membranes onto Tubular Ceramic Supports for Hydrogen Separation, A.I. PEREIRA, University of Minho, Campus Azurém, Portugal, P. PEREZ, A. MENDES, L.M. MADEIRA, University of Porto, Portugal, **C.J. TAVARES**, University of Minho, Campus Azurém, Portugal
3:50 pm	**B1-4-8** The Effect of Pulse and Bias DC Voltage on Crystallization of TiNi Shape Memory Thin Films Deposited by Unbalanced Magnetron Sputtering, **H. CICEK**, I. EFEOGLU, Atatürk University, Turkey, Ö. BARAN, Erzincan University, Turkey, Y. TOTIK, Atatürk University, Turkey	**C4-1-8** Structural Evolution of Bias Sputtered $LiNi_{0.5}Mn_{1.5}O_4$ Thin Film Cathodes for Lithium Ion Batteries, **S.-H. SU**, K.-F. CHIU, H.-J. LEU, Feng Chia University, Taiwan
4:10 pm	**B1-4-9** Influences of TMS Flow Rates on the Structure and Mechanical Properties of Cr-Si-C-N Thin Films Deposited by Pulsed DC Reactive Magnetron Sputtering, **D.H. KAO**, National Taiwan University of Science and Technology, Taiwan, J.W. LEE, Ming Chi University of Technology, Taiwan, C.J. WANG, National Taiwan University of Science and Technology (NTUST), Taiwan	**C4-1-9** CdSe Quantum Dots Decorated Doped and Pure α- Fe_2O_3 Thin Films for Hydrogen Production, **A. IKRAM**, S. SAHAI, S. RAI, S. DASS, R. SHRIVASTAV, V. SATSANGI, Dayalbagh Educational Institute, India
4:30 pm	**B1-4-10** Growth of Silicon Germanium Nanowires by Physical Vapor Deposition, K. MAHMOOD, **M. ASGHAR**, The Islamia University of Bahawalpur, Pakistan, A. ALI, GC University Faisalabad, Pakistan	
	Exhibition Hall Opens Today **Town & Country/San Diego/Golden West** **12:00 - 7:00 pm** **Enjoy lunch in the Exhibition Hall 12:15 pm** **Exhibition Reception-TC/SD/GW** **5:30-7:00 pm** **Reception drinks compliments of Plansee**	

Tuesday Afternoon, April 29, 2014

	Coatings for Biomedical and Healthcare Applications **Room: Sunrise - Session D2-2** **Coatings for Bio-corrosion, Tribo-corrosion, and Bio-tribology** **Moderators: J. Geringer**, Ecole Nationale Supérieure des Mines de Saint Etienne, France, **T. Shokuhfar**, Michigan Technological University, US	**Tribology & Mechanical Behavior of Coatings and Engineered Surfaces** **Room: California - Session E1-2** **Friction, Wear, and Lubrication: Effects and Modeling** **Moderators: M. Chandross**, Sandia National Laboratories, US, **O.L. Eryilmaz**, Argonne National Laboratory, US, **K. Polychronopoulou**, Khalifa University of Science, Technology & Research, UAE
1:30 pm		
1:50 pm		
2:10 pm	**D2-2-3 Invited** Discovering Nanotechnology and Picotechnology for Medical Applications, **T. WEBSTER**, Northeastern University, US	**E1-2-3** On the Effect of Substrate Structure on the Tribological Behavior of Coatings: an Orthogonal Design Study, **V. FRIDRICI**, J. YANG, P. KAPSA, LTDS - Ecole Centrale de Lyon, France
2:30 pm	Invited talk continued.	**E1-2-4** Investigation of Quaternary Metal Oxide Coatings for High Temperature Solid Lubrication, **V. AGEH**, H. MOHSENI, T. SCHARF, University of North Texas, US
2:50 pm	**D2-2-5** Improved Corrosion Resistance of Mg-Y-RE Alloy Coated with Niobium Nitride, **W.H. JIN**, G.S. WU, P.H. LI, P.K. CHU, City University of Hong Kong, Hong Kong Special Administrative Region of China	**E1-2-5** Wear Characteristics of Mixed Lubricious Oxide Coatings, **S. DIXIT**, Plasma Technology Inc., US, A. ERDEMIR, O.L. ERYILMAZ, Argonne National Lab, US, R. DIXIT, DRS Research, US
3:10 pm	**D2-2-6** Achieving Controlled Degradation and Better Biocompatibility of Magnesium by a Combination of Microarc Oxidation and Highly Textural Lamellar Mesostructured $Mg(OH)_2$ Coatings, **S. NELLAIAPPAN**, I.S. PARK, M.H. LEE, Chonbuk National University, Jeonju, Republic of Korea	**E1-2-6** Empirical Interaction Potentials for Transition Metal Dichalcogenides from Force Matching Algorithm and Ab Initio Simulation, **P. NICOLINI**, T. POLCAR, Czech Technical University in Prague, Czech Republic
3:30 pm	**D2-2-7** Improvement of Titanium Wear and Corrosion Resistance by Plasma Electrolytic Oxidation: Effects of Applied Voltage and Annealing Treatment, **C. LAURINDO**, R.D. TORRES, P. SOARES, Pontificia Universidade Católica do Paraná, Brazil, J. GILBERT, S. MALI, Syracuse University, NY, US	**E1-2-7 Invited** Local Friction of Rough Contact Interfaces with Rubbers using Contact Imaging Approaches, **A. CHATEAUMINOIS**, C. FRETIGNY, ESPCI / CNRS, Paris, France
3:50 pm	**D2-2-8** Microstructure And Physical Properties Of Thermal Spraying AZO Coatings, **M.S. LEU**, Material and Chemical Research Laboratories, Industrial Technology Research Institute, Taiwan	Invited talk continued.
4:10 pm	**D2-2-9 Invited** Significance of Corrosion and Tribocorrosion in Dentistry, **V. BARÃO**, University of Campinas (UNICAMP), Piracicaba Dental School, Brazil, M. MATHEW, Rush University Medical Center, US, L. FAVERANI, W. ASSUNÇÃO, Sao Paulo State University (UNESP), Brazil, J. YUAN, University of Illinois at Chicago, US, M.F. MESQUITA, University of Campinas (UNICAMP), Piracicaba Dental School, Brazil, C. SUKOTJO, University of Illinois at Chicago, US	**E1-2-9** The Role of Mechanical Property Mismatch Between Film and Substrate on the Tribology Behavior of (Ti,Al,Si)N Coated Systems, **X. HUANG**, T.M. SHAO, State Key Laboratory of Tribology, Tsinghua University, China
4:30 pm	Invited talk continued.	**E1-2-10** Stress Analysis of TiSiN Coatings Using Scratch Testing and Raman Spectroscopy, **J. RESTREPO**, Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico, E. CAMPS, Instituto Nacional de Investigaciones Nucleares, Mexico, S. MUHL, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico
4:50 pm		**E1-2-11** Tribology of Silica Nanoparticle-Reinforced Hydrophobic Sol-Gel Derived Composite Coatings, **D. BANERJEE**, A. KESSMAN, E. CHAMBERS, K. SIERROS, D. CAIRNS, West Virginia University, US
5:10 pm		**E1-2-12** Friction Effects During the Extrusion of Al Alloy Through Severe Plastic Deformation, **A. SAHAI**, K. HANSRAJ, Dayalbagh Educational Institute, Agra, India
	Exhibition Hall Opens Today **Town & Country/San Diego/Golden West** **12:00 -7:00 pm** **Enjoy lunch in the Exhibition Hall 12:15 pm**	**Exhibition Reception** **TC/SD/GW 5:30-7:00 pm** **Drinks compliments of Plansee**

Tuesday Afternoon, April 29, 2014

	New Horizons in Coatings and Thin Films Room: Royal Palm 4-6 - Session F2-2 High Power Impulse Magnetron Sputtering (HIPIMS) **Moderators: D. Lundin**, Université Paris-Sud 11, France, **S. Konstantinidis**, University of Mons, Belgium	Applications, Manufacturing, and Equipment Room: Tiki - Session G1 Innovations in Surface Coatings and Treatments **Moderators: M. Arndt,** OC Oerlikon Balzers AG, Liechtenstein, **C. Metzner**, Fraunhofer FEP, Germany
1:30 pm		
1:50 pm	**F2-2-2** HiPIMS Deposition of Titania Coatings for Photocatalytic Applications, **G. WEST**, Dalton Research Institute, Manchester Metropolitan University, UK, M. RATOVA, Queen's University, UK, P. KELLY, Dalton Research Institute, Manchester Metropolitan University, UK	
2:10 pm	**F2-2-3 Invited** Reactive HiPIMS of Oxides: Discharge Current Evolution and Hysteresis Behaviour, **T. KUBART**, Uppsala University, Angstrom Laboratory, Sweden, D. LUNDIN, Université Paris-Sud 11, France, U. HELMERSSON, Linköping University, IFM, Plasma and Coatings Physics, Sweden	**G1-3** Engineered Coatings for Machining High Temperature Alloys and Stainless Steel, **A. INSPEKTOR**, C. MCNERNY, M. ROWE, M. BEBLO, N. WAGGLE, Kennametal Incorporated, US
2:30 pm	Invited talk continued.	**G1-4** State-of-the-Art in Al_2O_3 Deposition by Industrial-Scale Dual Magnetron Sputtering, **D. DIECHLE**, V. SCHIER, Walter AG, Germany
2:50 pm	**F2-2-5** Chopped-HiPIMS for the Deposition of Films of Ti, TiN and Ti-Si-N, **P. BARKER**, J. PATSCHEIDER, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland	**G1-5 Invited** Coating Design at Work, **J. RECHBERGER**, Fraisa SA, Switzerland
3:10 pm	**F2-2-6** Cr and CrN Thin Films Deposited by HiPIMS-DOMS, **J.C. OLIVEIRA**, F. FERREIRA, R. SERRA, A. CAVALEIRO, SEG-CEMUC, University of Coimbra, Portugal	Invited talk continued.
3:30 pm	**F2-2-7** Effect of Synchronized Pulsed BIAS on the Properties of Reactive HiPIMS Sputtered Al-Cr-N Thin Films, **G MARK**, J. LOEFFLER, M. MARK, MELEC GmbH, Germany	**G1-7** A Novel Mathematical Approach to Surface Engineering Subject to Blistering, **M.H. NAZIR**, Z. KHAN, M. HADFIED, Bournemouth University, UK
3:50 pm	**F2-2-8** The Influence of Deposition Parameters on the Structure and Properties of Aluminum Nitride Coatings Deposited by High Power Impulse Magnetron, **C.T. CHANG**, Y.C. YANG, National Taipei University of Technology, Taiwan, J.W. LEE, Ming Chi University of Technology, Taiwan	**G1-8** Wettability Control of Nano-columnar DLC Coating by Electron Beam Post-Treatment, **T. AIZAWA**, Shibaura Institute of Technology, Japan, F. HOE, University Malaysia Technology, Malaysia
4:10 pm	**F2-2-9** Investigation of Negative Ions in Reactive HIPIMS Discharges Operating in Different Inert Gases, M. BOWES, The University of Liverpool, UK, **P. KELLY**, Surface Engineering Group, Manchester Metropolitan University, UK, J. BRADLEY, University of Liverpool, UK	
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Wednesday Morning, April 30, 2014

	Coatings for Use at High Temperatures **Room: Sunrise - Session A1-1** **Coatings to Resist High Temperature Oxidation, Corrosion and Fouling** **Moderators: M. Weaver**, The University of Alabama, US, **V. Kolarik**, Fraunhofer Institute for Chemical Technology ICT, Germany, **D. Litton**, Pratt & Whitney, US	**Hard Coatings and Vapor Deposition Technology** **Room: Royal Palm 1-3 - Session B4-1** **Properties and Characterization of Hard Coatings and Surfaces** **Moderators: C. Mulligan**, US Army ARDEC, Benet Laboratories, US, **J. Lin**, Southwest Research Institute, US, **U. Beck**, BAM Berlin, Germany
8:00 am	**A1-1-1** Modification of Aluminide Bond Coatings for EB-PVD TBCs with Pd and Pt Using a Novel CHC-PVD Method, **R. SWADZBA**, Institute for Ferrous Metallurgy, Poland, T. JUNG, Fraunhofer IST, Germany, U. SCHULZ, DLR - Deutsches Zentrum für Luft- und Raumfahrt, Germany, L. SWADZBA, M. HETMANCZYK, B. MENDALA, B. WITALA, Silesian University of Technology, Poland	**B4-1-1** Development of a Systematical Methodology for Predicting Coated Milling Tools' Efficiency Including its Qualification Based on a Comparison of PVD-Coatings Deposited by the DC- and HIPIMS-Process, M. BUSCH, F. KLOCKE, T. BERGS, **M. OTTERSBACH**, Fraunhofer Institute for Production Technology IPT, Germany, K.-D. BOUZAKIS, E. BOUZAKIS, Aristoteles University of Thessaloniki, Greece
8:20 am	**A1-1-2** Modeling of the Interdiffusion Between a γ- Ni-Al Alloy and a Pt Coating for Thermal Barrier Coating System Applications, **P. AUDIGIÉ**, A. ROUAIX-VANDE PUT, CIRIMAT, University of Toulouse, France, A. MALIÉ, S. HAMADI, Snecma, SAFRAN Group, France, D. MONCEAU, CIRIMAT, University of Toulouse, France	**B4-1-2** Origin of Compressive Stress in CVD TiB_2 Hard Coatings, **N. SCHALK**, C. MITTERER, J. KECKES, Montanuniversität Leoben, Austria, C. CZETTL, Ceratizit Austria GmbH, Austria, M. PENOY, C. MICHOTTE, Ceratizit Luxembourg S.àr.l., Luxembourg
8:40 am	**A1-1-3** Role of Boron on Oxidation Behavior of NiCrAlYHfTi Alloy in H_2O and CO_2 Environments, **K.A. UNOCIC**, B.A. PINT, Oak Ridge National Laboratory, US	**B4-1-3 WITHDRAWN** Effect of Zr on Thermal Stability and Oxidation Resistance of Cr-Al-N, **L. CHEN**, Central South University, China
9:00 am	**A1-1-4** Effect of Overaluminizing on Microstructure and High-temperature Degradation of a CoNiCrAlY Coating, **D. NAUMENKO**, A. JALOWICKA, Forschungszentrum Jülich GmbH, Germany, M. ERNSBERGER, R. HERZOG, MAN Diesel & Turbo SE, Germany, L. SINGHEISER, W.J. QUADAKKERS, Forschungszentrum Jülich GmbH, Germany	**B4-1-4** An In-situ Study of the Fracture Toughness and Cracking Behaviour of the CrAlN/Si_3N_4 Nanocomposite Coatings, **S. LIU**, C.E. DAVIS, University of Cambridge, UK, X. ZENG, Singapore Institute of Manufacturing Technology, Singapore, W. CLEGG, University of Cambridge, UK **STUDENT AWARD FINALIST**
9:20 am	**A1-1-5** Comparison of the High Temperature Oxidation Behavior of the Nano and Conventional NiCrAlY Coatings Developed by LVOF Process, **N. RANA**, R. JAYAGANTHAN, S. PRAKASH, Indian Institute of Technology Roorkee, India	**B4-1-5** Mechanical Properties and Cutting Performance of MT-TiCN Coated Carbide Tools as a Funtion of Carbon Content, **A. PASEUTH**, H. FUKUI, S. OKUNO, H. KANAOKA, Sumitomo Electric Hardmetal Corp., Japan, Y. OKADA, Motherson Techno Tools Ltd.
9:40 am	**A1-1-6** Hot Corrosion Behavior of MCrAlY Coatings Containing Ru, Mo and Ir, **K. YUAN**, R. LIN PENG, Linköping University, Sweden, X.H. LI, Siemens Industrial Turbomachinery AB, Sweden, S. JOHANSSON, Linköping University, Sweden, Y.D. WANG, University of Science and Technology, Sweden	**B4-1-6** Influence of Oxygen Impurities on Structural, Mechanical Properties and Age Hardening of Ti-Al-N, **H. RIEDL**, Christian Doppler Laboratory for Application Oriented Coating Development at Vienna University of Technology, Austria, A. VLASOVA, Vienna University of Technology, Austria, R. RACHBAUER, Oerlikon Balzers Coating AG, Liechtenstein, S. KOLOZSVÁRI, Plansee Composite Materials GmbH, Germany, J. PAULITSCH, P.H. MAYRHOFER, Vienna University of Technology, Austria
10:00 am	**A1-1-7 Invited** Low Temperature Hot Corrosion of Disk Alloys, **J. NESBITT**, S. DRAPER, A. MARTONE, R. MILLER, J. SMIALEK, NASA Glenn Research Center, US	**B4-1-7** Structure, Mechanical and Adhesion Properties of CuZr Metallic Glass and CuZrN Nitride Thin Films, F. CHALLALI, F. TETARD, LSPM-CNRS, Université Paris 13, Sorbonne Paris-Cité, France, G. ABADIAS, Pprime Institute - UPR CNRS 3346 - Université de Poitiers - ENSMA - France, L. BELLIARD, UPMC, Paris,France, T. CHAUVEAU, O. BRINZA, **P. DJEMIA**, LSPM-CNRS, Université Paris 13, Sorbonne Paris-Cité, France
10:20 am	Invited talk continued.	**B4-1-8** Evaluation of Fracture Toughness of ZrN Hard Coatings using Internal Energy Induced Cracking, **J.-H. HUANG**, Y.-H. CHEN, G.P. YU, National Tsing Hua University, Taiwan
10:40 am	**A1-1-9** Nano-Structured Coatings For Supercritical Steam Turbines Applications, **F. PEREZ**, M. MATO, M. LASANTA, G. ALCALA, S. CASTAÑEDA, Universidad Complutense de Madrid, Spain	**B4-1-9** Modified W-S Coatings for Reducing Friction in Rubber Seal Applications, **A. MANAIA**, Instituto Pedro Nunes, Portugal, A. CAVALEIRO, Coimbra University, Portugal, T. POLCAR, University of Southampton, UK
11:00 am	**A1-1-10** Determination of the Sources of Intrinsic Stress-state for ß-NiAl Diffusion Coatings under Thermo-cyclic Oxidizing Conditions, **C. OSKAY**, M. GALETZ, M. RUDOLPHI, M. SCHÜTZE, DECHEMA-Forschungsinstitut, Germany	**B4-1-10** Effect of Annealing Treatment on Sputtered Cobalt Sensing Response Toward Inorganic Phosphate Ion, **Z. ENDUT**, MIMOS Berhad, Malaysia, M. HAMDI, W.J. BASIRUN, University of Malaya, Malaysia, A.Z. ABDULLAH, N.A. RAIS, MIMOS Berhad, Malaysia
11:20 am	**A1-1-11** Oxidation Resistance of Low Velocity Oxy Fuel Sprayed Al_2O_3-13TiO_2 Coating on Nickel Based Superalloys at 800ºC, N.K. MISHRA, **S.B. MISHRA**, R. KUMAR, MNNIT Allahabad, India	**B4-1-11** Mechanical and Electrochemical Behaviour of TiN and TiCN Deposited on XC48 Steel Substrates by Magnetron Sputtering, **N. SAOULA**, Division des Milieux Ionisés et Lasers, CDTA, Algeria
11:40 am	**A1-1-12** Influence of Process Parameters on the Microstructure of Aluminide Coatings Obtained by VPA on Directionally Solidified NI Superalloy, **B. WITALA**, L. SWADZBA, M. HETMANCZYK, B. MENDALA, G. MOSKAL, Silesian University of Technology, Poland, R. SWADZBA, Institute for Ferrous Metallurgy, Poland, L. KOMENDERA, Subcarpathian Aviation Cluster, Poland	
	Exhibition Hall Closes Today **Town & Country/San Diego/Golden West** **Wednesday, 10:00 am-2:00 pm** **Enjoy lunch in the Exhibition Hall 12:15 pm**	

Wednesday Morning, April 30, 2014

	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 - Session B6	Advanced Materials for Modern Device Applications Room: Sunset - Session C4-2
	Coating Design and Architectures **Moderators: R. Daniel**, Montanuniversität Leoben, Austria, **S. Ulrich**, Karlsruhe Institute of Technology (KIT), Germany	**Thin Films for Energy Related Application** **Moderators: K. Yu**, Lawrence Berkeley National Laboratory, US, **J. Partridge**, RMIT University, Australia
8:00 am	**B6-1 Invited** Advances in Design and Architecture of TM-Al-N based Coatings for Severe Applications, **P.H. MAYRHOFER**, Vienna University of Technology, Austria	**C4-2-1** Study of Al_xO_{1-x} /Ti Thin-film System by Complex of Methods, A. NIKITENKOV, **N. NIKITENKOV**, Y. TYURIN, I. DUSHKIN, V. SYPCHENKO, O. VILHIVSKAYA, Tomsk Polytechnical University, Russian Federation
8:20 am	Invited talk continued.	**C4-2-2** Effect of Flow-channel Machining Condition on Coatings of AISI 1045 Steel Plate by Pack Chromization, **L.C. TSAI**, C.J. WANG, National Taiwan University of Science and Technology, Taiwan, C.T. YEH, M.D. GER, Chung Cheng Institute of Technology, National Defense University, Taiwan
8:40 am	**B6-3** Nonmetal Sublattice Population Induced Defect Structure in Transition Metal Aluminum Oxynitrides, K.P. SHAHA, H. RUEB, S. ROTERT, M. TO BABEN, D. MUSIC, **J. SCHNEIDER**, RWTH Aachen University, Germany	**C4-2-3 Invited** Zinc Oxide UV Photodetectors for use in Melanoma and Vitamin D Studies, **MW. ALLEN**, University of Canterbury, New Zealand
9:00 am	**B6-4** Theoretical Investigation of Phase Stability and Electronic Structure of Ordered and Disordered $Ti_{1-x}Mg_xN_y$ Alloys, **B. ALLING**, Linköping University, IFM, Thin Film Physics Division, Sweden	Invited talk continued.
9:20 am	**B6-5** Roads to Tougher Nanostructured Coatings for Cutting at Intermediate Temperatures, **M. MORSTEIN**, A. LÜMKEMANN, PLATIT AG, Switzerland, B. TORP, PLATIT Inc., US	**C4-2-5** Optimization of the Light Scattering Characteristics of Surface-textured AZO Films Prepared by Magnetron Sputtering, T. MINAMI, **T. MIYATA**, T. YAMANAKA, Kanazawa Inst. of Tech., Japan, J. NOMOTO, Kochi Univ. of Tech., Japan
9:40 am	**B6-6** Chemical and Structural Design Concepts for Increasing the Oxidation Resistance of Ti-Al-N based Coatings, **R. HOLLERWEGER**, Vienna University of Technology, Austria, D. HOLEC, Montanuniversität Leoben, Austria, M. ARNDT, R. RACHBAUER, Oerlikon Balzers Coating AG, Liechtenstein, P. POLCIK, Plansee Composite Mat. GmbH, Germany, J. PAULITSCH, P.H. MAYRHOFER, Vienna Univ. of Tech., Austria	**C4-2-6** Experimental and Theoretical Investigation of ScN-based Solid Solution for Thermoelectric Applications, **S. KERDSONGPANYA**, B. ALLING, P. EKLUND, Thin Film Physics Division, IFM, Linköping University, Sweden
10:00 am	**B6-7 Invited** Strategies for Knowledge-based Design of Thin Film Architecture at the Nanoscale, **K. SARAKINOS**, IFM Linköping University, Sweden	**C4-2-7** Processing and Characterization of Multilayer ZnO/Al doped ZnO Nanostrcutured Films, R. JAYAGANTHAN, IIT Roorkee, India, **A. RAHMAN**, NIT Srinagar, India
10:20 am	Invited talk continued.	**C4-2-8** Combinatorial Sputtering Exploration of Zn-Sn-O (ZTO) Composition Spreads, **S.Y. LI**, National Cheng Kung University, Taiwan, J.-M. TING, K.S. CHANG, National Central University, Taiwan
10:40 am	**B6-9** A Study of AlCr-based Coatings Deposited by Magnetron Sputtering Using Powder Metallurgical Targets, **S. KOLOZSVÁRI**, P. POLCIK, PLANSEE Composite Materials GmbH, Germany	**C4-2-9** Improved Thermal Stability of Bismuth Oxide Thin Films Presenting the Delta-cubic Phase, C.L. GOMEZ, O. DEPABLOS, P. SILVA-BERMUDEZ, S. MUHL, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de Mexico, Mexico, A. ZEINERT, Laboratoire de Physique de la Matière Condensée, Université de Picardie Jules Verne, France, E. CAMPS, Instituto Nacional de Investigaciones Nucleares de Mexico, Mexico, **S.E. RODIL**, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico
11:00 am	**B6-10 Invited** Assessment of the Mechanical Performance of Oxide Coatings on Stainless Steels and Titanium Alloys in Corrosive Environments, **D.F. BAHR**, Purdue University, S.K. LAWRENCE, Purdue University, US, D. ADAMS, N.R. MOODY, Sandia National Laboratories, US, M. PANG, K.R. MORASCH, Washington State University, US	**C4-2-10 WITHDRAWN** Effect of Substrate and Surfactant over the Crystallization, Growth and Luminescence of ZnO Coatings, **S. BRAHMA**, National Cheng Kung University, Taiwan, S.A. SHIVASHANKAR, Indian Institute of Science Bangalore, India, J.-M. TING, National Cheng Kung University, Taiwan
11:20 am	Invited talk continued.	**C4-2-11** Characteristics of Optoelectronic Properties of AZO/Au/AZO Multilayer Thin Films Prepared by RF Magnetron Sputtering and Ion Sputtering for Transparent Electrode, **C.H. CHU**, National Cheng Kung University, Taiwan, H.W. WU, Kun Shan University, Taiwan, J.L. HUANG, National Cheng Kung University, Taiwan
11:40 am	**B6-12** The Enhanced Photothermal Phenomena of SiO2-Ag and TiO2-Ag Multi-layered Thin Film Structures and its use for the Annealing of TaN-(Ag,Cu) Thin Film, J.H. HSIEH, **Y.T. SU**, Ming Chi University of Technology, Taiwan, C. LI, National Central University, Taiwan	**C4-2-12** Characterization of 1,4-Bis-(2-dimethylaminoethylamino)-9,10-anthraquinione Films Based Molecular Device by Thermal Evaporation Technique, **S. BHATIA**, Kanya Maha Vidyalaya, India, R.K. BEDI, Guru Nanak Dev University, India

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Wednesday Morning, April 30, 2014

	Tribology & Mechanical Behavior of Coatings and Engineered Surfaces **Room: California - Session E1-3** **Friction, Wear, and Lubrication: Effects and Modeling** **Moderators: M. Chandross**, Sandia National Laboratories, US, **O.L. Eryilmaz,** Argonne National Laboratory, US, **K. Polychronopoulou**, Khalifa University of Science, Technology & Research, UAE	**Topical Symposia** **Room: Tiki - Session TS3** **Energetic Materials and Micro-structures for Nanomanufacturing** **Moderators: D. Adams**, Sandia National Laboratories, US, **C. Rossi**, LAAS-CNRS, France
8:00 am	**E1-3-1** Load Dependence of the Tribological Properties of Silver Tantalate Coatings at Elevated Temperatures, **S.M. AOUADI**, D. STONE, C. PAKSUNCHAI, C. CHANTHARANGSI, University of North Texas, US, H. GAO, University of California Merced, US, T. SCHARF, University of North Texas, US, A. MARTINI, University of California Merced, US	**TS3-1 Invited** 2-Tetrazene Derivatives as New Energetic Materials, Synthesis, Characterization and Energetic Properties, **C. MIRÓ SABATÉ**, H. DELALU, Universite de Lyon, France
8:20 am	**E1-3-2** Development of a New Instrument for Complex Micro-scale Abrasion Test, **G. MONTESANTI**, M. RENZELLI, University of Rome "Roma Tre", Italy, C. DI CESARE, Scienzia Machinale Srl, Italy, E. BEMPORAD, University of Rome "Roma Tre", Italy	Invited talk continued.
8:40 am	**E1-3-3 Invited** Surface Films at Tribo-interface in Hydrogen Gas, **J. SUGIMURA**, Kyushu University, Japan	**TS3-3** Detonation in Vapor-deposited Explosive Films at the Micro-scale, **R. KNEPPER**, M. MARQUEZ, A. TAPPAN, Sandia National Laboratories, US
9:00 am	Invited talk continued.	**TS3-4** Engineered Microstructures of Binary Energetic Thermites by Additive Micro-manufacturing Methods: Fabrication, Characterization and Performance, **K. SULLIVAN**, C. ZHU, J. KUNTZ, E. DUOSS, A. GASH, C. SPADACCINI, Lawrence Livermore National Laboratory, US
9:20 am	**E1-3-5** Friction Behavior at the Nanoscale of Nitrided and Post-oxidized Plain Steel, M. FREISLEBEM, C. MENEZES, F. COSTI, P. FERREIRA, C. AGUZZOLI, I. BAUMVOL, **C. FIGUEROA**, Universidade de Caxias do Sul, Brazil	**TS3-5 Invited** Revealing the Reaction Dynamics and Phase Evolution in Self-propagating Reactive Nanolaminates using Movie Mode DTEM, **T. LAGRANGE**, Lawrence Livermore National Laboratory, US, D. ADAMS, R. REEVES, Sandia National Laboratories, US, B.W. REED, G.H. CAMPBELL, Lawrence Livermore National Laboratory, US
9:40 am	**E1-3-6** Hardfacing Using Low Cost Ferro-alloy Powder Mixtures by Submerged Arc Welding, R. ZAHIRI, R. SUNDARAMOORTHY, **C. SUBRAMANIAN**, Black Cat Blades Ltd., Canada	Invited talk continued.
10:00 am	**E1-3-7** 3-D FIB Serial Sectioning to Determine Solidification and Wear Mechanisms in Laser Deposited Metal-Ceramic Coatings, J.E. MOGONYE, H. MOHSENI, R. BANERJEE, **T. SCHARF**, University of North Texas, US	**TS3-7** Effect of Mixing Conditions on Reaction Propagation for Blade Cast Energetic Thin Films, **K. MEEKS**, J. CANO, Texas Tech University, US, M. PANTOYA, Texas Tech University. US, A. APBLETT, Sandia National Laboratories, US
10:20 am	**E1-3-8** Tribological Behaviour of CrN Coating in Lubricated Contact, **B. PODGORNIK**, M. SEDLAČEK, M. GODEC, Institute of Metals and Technology, Slovenia	**TS3-8** Reaction Instabilities In Cobalt/Aluminum Nanolaminates Made By Sputter Deposition, D. ADAMS, **R. REEVES**, Sandia National Laboratories, US
10:40 am	**E1-3-9** The Effect of Adhesion-mitigating Coatings on Rolled Aluminum Surface Quality, **O.A. GALI**, Uinveristy of Windsor, Canada, M. SHAFIEI, J.A. HUNTER, Novelis Global Research and Technology Center, US, A.R. RIAHI, University of Windsor, Canada	**TS3-9** Modelling Al-based Reactive Nanolaminates Growth: Dealing with Hyperthermal Trajectories through Combined DFT and Kinetic Monte Carlo Techniques, **A. ESTEVE**, LAAS-CNRS, France
11:00 am	**E1-3-10 Invited** Ab Initio Investigation of Atomistic Mechanisms in Solid and Boundary Lubrication, **RIGHI**, CNR - Istituto Nanoscienze S3, Universita' di Modena e Reggio Emilia via Campi, Italy	**TS3-10** Interface-layer Formation in Reactive Al-based Thin Films Studied by Spectroscopy, First Principle Calculation and Nanocalorimetry, **Y. LU**, University of Texas at Dallas, US, L. GLAVIER, C. ROSSI, A. ESTEVE, A. HEMERYCK, LAAS-CNRS, France, Y. CHABAL, University of Texas at Dallas, US
11:20 am	Invited talk continued.	**TS3-11** Spark Ignitable NiAl Ball Milled Powders and Use Thereof for Bonding Applications, A. KYRIAKOU, V. HADJISOFOKLEOUS, University of Cyprus, Cyprus, I.E. GUNDUZ, Purdue University, US, A. HADJIAFXENTI, T. KYRATSI, C.C. DOUMANIDIS, **C. REBHOLZ**, University of Cyprus, Cyprus
11:40 am	**E1-3-12** Effect of Nitrogen Injection Surface Layer on the Tribological Performance of M50 Steel Tribo-parts, **B. PENG**, The First Research Academy of China Aerospace Science and Technology Corporation, China, C. ZHANG, Harbin Institute of Technology, China, L. JIA, L. CHI, The First Research Academy of China Aerospace Science and Technology Corporation, China, L. WANG, Harbin Institute of Technology, China	**TS3-12** Reactions in Single Ball-milled Particles of Ni/Al System, **I.E. GUNDUZ**, BA. MASON, Purdue University, US, LJ. GROVEN, South Dakota School of Mines and Technology, US, S. SON, Purdue University, US
	Exhibition Hall Closes Today **Town & Country/San Diego/Golden West** **Wednesday, 10:00 am-2:00 pm** **Enjoy lunch in the Exhibition Hall 12:15 pm**	

Wednesday Afternoon, April 30, 2014

	Coatings for Use at High Temperatures **Room: Sunrise - Session A1-2** **Coatings to Resist High Temperature Oxidation, Corrosion and Fouling** **Moderators: M. Weaver**, The University of Alabama, US, **V. Kolarik**, Fraunhofer Institute for Chemical Technology ICT, Germany, **D. Litton**, Pratt & Whitney, US	**Hard Coatings and Vapor Deposition Technology** **Room: Royal Palm 1-3 - Session B4-2** **Properties and Characterization of Hard Coatings and Surfaces** **Moderators: C. Mulligan**, US Army ARDEC, Benet Laboratories, US, **J. Lin**, Southwest Research Institute, US, **U. Beck**, BAM Berlin, Germany
1:30 pm	**A1-2-1 Invited** Some Results About the Interactions Between Reactivity, Interdiffusion and Creep in Coated Thin Wall Superalloy Systems, **D. MONCEAU**, E. ANDRIEU, CIRIMAT laboratory, University of Toulouse, France, S. DRYEPONDT, CIRIMAT laboratory, University of Toulouse, France; present address: ORNL, US, A. RAFFAITIN, CIRIMAT laboratory, University of Toulouse, France; present address: AIRBUS, France, D. TEXIER, CIRIMAT laboratory, University of Toulouse, France; present address: ENSMA, France	
1:50 pm	Invited talk continued.	
2:10 pm	**A1-2-3** Characterization of the Gradient of Mechanical and Physical Properties Existing in β-NiAlPt Coated Ni-based Single Crystal Superalloy by using Ultrathin Specimens, **D. TEXIER**, E. ANDRIEU, CIRIMAT, France, S. SELEZNEFF, A. LONGUET, Snecma, SAFRAN Group, France, D. MONCEAU, CIRIMAT, France	**B4-2-3** Observation of Hardness and Fracture Toughness Enhancement in Fe/VC Multilayer Films with Coherent Interfaces, C. WANG, Northwestern Polytechnical University, China, J.M. PUREZA, Universidade do Estado de Santa Catarina, Brazil, **Y.W. CHUNG**, Northwestern University, US
2:30 pm	**A1-2-4** The Effect of a Cr Adhesion Layer on the Protective Behavior of Al_2O_3 Coatings Against Metal Dusting, E. URIBE-LAM, O. SALAS, D. MELO-MAXIMO, ITESM-CEM, Mexico, L. MELO-MAXIMO, IPN, Mexico, J. OSEGUERA, ITESM-CEM, Mexico, **R.D. TORRES**, PUCPR, Brazil, R. DE SOUZA, USP, Brazil	**B4-2-4 Invited** Using High Temperature Nanomechanics in Coating Design for Improved Wear Resistance in Extreme Frictional Environments, **B. BEAKE**, Micro Materials Ltd., UK, G. FOX-RABINOVICH, McMaster University, Canada
2:50 pm	**A1-2-5 Invited** The Use of Advanced Surface Analytical Techniques to Investigate Early Oxidation Stages of Aluminides, **P. MARCUS**, Chimie ParisTech (ENSCP), France	Invited talk continued.
3:10 pm	Invited talk continued.	**B4-2-6** In-situ X-Ray Scattering Study of the Cubic to Hexagonal Transformation of AlN in $Ti_{1-x}Al_xN$, **N. NORRBY**, L. ROGSTRÖM, Linköping University, Sweden, M. JOHANSSON-JÕESAAR, Seco Tools AB, Sweden, N. SCHELL, Helmholtz-Zentrum Geesthacht, Germany, M. ODÉN, Linköping University, Sweden
3:30 pm	**A1-2-7** Study of the Electrochemical Behaviour of Aluminized Steel, **B. LEMMENS**, Ghent University, Belgium, B. CORLU, J. DE STRYCKER, Arcelor Mittal Global R&D Gent, Belgium, I. DE GRAEVE, Vrije Universiteit Brussel, Belgium, K. VERBEKEN, Ghent University, Belgium	**B4-2-7** Microstructural Study of Thermal Spray Pseudo-alloy Coatings Using X-ray Diffraction (XRD), **E.A. LOPEZ COVALEDA**, Universidad Nacional de Colombia
3:50 pm	**A1-2-8** Effects of Ceramic Particle Size on Corrosion Behaviors of Cold Sprayed SiC_p/Al 5056 CComposited Coatings, **Y.Y. WANG**, B. NORMAND, N. MARY, Insa De Lyon, France, H. LIAO, UTBM, France	**B4-2-8** Characteristic Change of Hydrogen Permeation in Stainless Steel Plate by BN Coating, **M. TAMURA**, The University of Electro-Communications, Japan
4:10 pm	**A1-2-9** Corrosion Resistance of Ni Coatings on Steel Deposited with Electrolytic Plasma Processing, **A. SMITH**, E. MELETIS, University of Texas at Arlington, US	**B4-2-9** Influence of Modulation Period on Properties of TiN/Ta Multilayer Films, **H.F. SHANG**, T.M. SHAO, Tsinghua University, China
4:30 pm	**A1-2-10** Effects of Mg on Morphologies and Properties of Hot Dipped Zn-Mg Coatings, **C.Z. YAO**, S.L. TAY, T.P. ZHU, W. GAO, The University of Auckland, New Zealand	**B4-2-10** Characterization, Mechanical Properties, Wear and Scratch Test Resistance of Various Commercial and Lab-developed Electroless Nickel Deposits, V. VITRY, **F. DELAUNOIS**, University of Mons, Belgium
4:50 pm	**A1-2-11** Influence of Ruthenium as an Alloying Element on the Corrosion Behaviour of Laser Treated AISI 316-NiTi, **B.A. OBADELE**, M.L. LEPULE, P.A. OLUBAMBI, Tshwane University of Technology, South Africa	**B4-2-11** In-situ TiNi/Al_2O_3/Fe Functional Composite Coating Using Hybrid Centrifugal Assisted Combustion Synthesis, R. MAHMOODIAN, Centre of Advanced Manufacturing and Material Processing (AMMP), Malaysia, **M. HAMDI**, University of Malaya, Malaysia
5:10 pm	**A1-2-12** Microstructure, Mechanical and Anti-corrosion Property Evaluation of Iron-based Thin Film Metallic Glasses, **L.T. CHEN**, Y.C. YANG, National Taipei University of Technology, Taiwan, J.W. LEE, Ming Chi University of Technology, Taiwan	**B4-2-12** Properties of Hybrid Satellite/W(WC) and Colmonoy/W(WC) Coating Systems, L. VERNHES, Velan, Canada, **M. AZZI**, Notre Dame University-Louize, Lebanon, J.E. KLEMBERG-SAPIEHA, École Polytechnique de Montréal, Canada
	Exhibition Hall Closes Today **Town & Country/San Diego/Golden West** **Wednesday, 10:00 am-2:00 pm**	**Awards Convocation-5:45 pm** **Golden West Room** **Honorary Lecturer-Dr. Jindrich Musil** **"Advanced Hard Nanocomposite Coatings with Unique Properties"** **Awards Reception will follow the Convocation at 7:30 pm** **Poolside**

Wednesday Afternoon, April 30, 2014

	Advanced Materials for Modern Device Applications **Room: Sunset - Session C5-1** **Thin Films for Active Devices** **Moderator: F. Tasnadi,** Linköping University, Sweden	**Tribology & Mechanical Behavior of Coatings and Engineered Surfaces** **Room: California - Session E2-3** **Mechanical Properties and Adhesion** **Moderators: J. Michler**, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland, **R. Chromik**, McGill University, Canada, **D.F. Bahr**, Purdue University, US
1:30 pm	**C5-1-1 Invited** Recent Progress in Understanding Free-charge Carrier and Structural Properties of InN Thin Films, **V. DARAKCHIEVA**, Linköping University, IFM, Sweden	
1:50 pm	Invited talk continued.	**E2-3-2** High Temperature Creep of Gas Turbine Coatings, **J. DAVENPORT**, University of Cambridge, UK, M. HANCOCK, Rolls-Royce plc, UK, R. STEARN, W. CLEGG, University of Cambridge, UK
2:10 pm	**C5-1-3** Carrier Transport in Undoped CdO Films Grown by Atmospheric-pressure Chemical Vapor Deposition, **T. TERASAKO**, K. OHMAE, S. SHIRAKATA, Ehime University, Japan	**E2-3-3 Invited** High Temperature Yield Stress of Hard Coatings, **J.M. WHEELER**, R. RAGHAVAN, V. CHAWLA, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland, M. MORSTEIN, PLATIT AG, Switzerland, J. MICHLER, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland
2:30 pm	**C5-1-4 WITHDRAWN** Bipolar Resistive Switching in Zr-doped SiO_2 for RRAM Applications, **K.C. CHANG**, T.M. TSAI, T.C. CHANG, G.R. LIU, Y.C. PAN, National Sun Yat-Sen University, Taiwan, S.M. SZE, National Chiao Tung University, Taiwan	Invited talk continued.
2:50 pm	**C5-1-5** Investigating in Via-Contact-Type Amorphous Indium-Gallium-Zinc-Oxide Thin Film Transistors Two-Stage Rise Capacitance-Voltage Characteristics Degradation in Different Environment, **J.C. JHU**, T.C. CHANG, National Sun Yat-Sen University, Taiwan, G.W. CHANG, Y.H. TAI, National Chiao Tung University, Taiwan	**E2-3-5** Temperature Dependent Energy Loss and Internal Friction Measurement in Nanocrystalline Metal Thin Films, Y.-T. WANG, Y.-C. CHENG, F.-J. HSU, **M.-T. LIN**, National Chung Hsing University, Taiwan
3:10 pm	**C5-1-6 WITHDRAWN** Deposition and Characterization of Germanium Thin Films for Active Device Applications, H. MOHAMMED, M. DEBERRY, U. OBAHIAGBON, O. AKPA, **N. KORIVI**, K. DAS, Tuskegee University, US	**E2-3-6** Ni-Bi Composite Coatings Produced by Ionic Co-discharge Electrodeposition, **S.L. TAY**, C.Z. YAO, The University of Auckland, New Zealand, W. CHEN, Beijing Institute of Technology, China, W. GAO, The University y of Auckland, New Zealand
3:30 pm	**C5-1-7** Device Applications of Energetically Deposited Metal Oxide and Carbonaceous Thin Films, **J. PARTRIDGE**, E. MAYES, B. MURDOCH, M. KRACICA, RMIT University, Australia, S. ELZWAWI, MW. ALLEN, University of Canterbury, New Zealand, M. BILEK, University of Sydney, Australia, D. MCCULLOCH, RMIT University, Australia	**E2-3-7** Synthesis and Thermal Stability of Gold-Zinc Oxide Nano-Composite Thin Films for Electrical Contacts, **R.S. GOEKE**, J. MOGONYE, N. ARGIBAY, S.V. PRASAD, Sandia National Laboratories, US
3:50 pm	**C5-1-8** Bipolar Memristive Properties of TiO_2 Thin Film on Pt/p^{++}Si, S. GULLULU, T. KARACALI, **H. EFEOGLU**, Ataturk University, Turkey	**E2-3-8 Invited** In Situ Biaxial Mechanical Testing of Metallic Thin Films on Stretchable Substrate: Synchrotron Diffraction Versus Image Correlation Analyses, **P.O. RENAULT**, E. LE BOURHIS, R. GUILLOU, University of Poitiers, France, P. GOUDEAU, CNRS, France, D. FAURIE, University of Paris 13, France, G. GEANDIER, CNRS/Universite Lorraine, France, C. MOCUTA, D. THIAUDIERE, SOLEIL Synchrotron, France
4:10 pm	**C5-1-9** Transparent Conductive and Structural Characterization of Pulsed-laser-deposited ZnO and Sn-doped ZnO Films for Nanorods Growth, **W.C. HUNG**, M. CHEN, Minghsin University of Science and Technology, Taiwan	Invited talk continued.
4:30 pm	**C5-1-10** Improved Multiferrioc Properties of $Bi_{0.9-x}Sm_xLa_{0.1}FeO_3$/$Pb(Zr_{0.52}Ti_{0.48})O_3$ Multilayers Prepared by Pulsed Laser Deposition, **R. BARMAN**, D. KAUR, Indian Institute of Technology Roorkee, India	**E2-3-10** Effect of Plasma Spraying Parameters on Microstructure and Mechanical Properties of Titania-doped Yttria-stabilized Zirconia, **S. LISCANO**, L. GIL, UNEXPO, Venezuela (Bolivarian Republic of)
4:50 pm	**C5-1-11** Large Polarization in Lead Free Ferroelectric Thin Films Fabricated by Pulsed Laser Deposition, **Y. KOLEKAR**, University of Pune, India, A. BHAUMIK, Missouri State University, US, C.V. C. V. RAMANA, University of Texas at El Paso, US, K. GHOSH, Missouri State University, US	**E2-3-11** Effect of Plasma Nitriding Species on the Surface Properties of Tool Steels, **P. ABRAHA**, Meijo University, Japan, J. MIYAMOTO, Toba National College of Maritime Technology, Japan
5:10 pm	**C5-1-12 WITHDRAWN** Structural, Optical and Electrical Properties of Transparent p-NiO/n-FTO Hetero-junction, **D. TATAR**, Atatürk University, Turkey, F. BAKAN, Sabancı University, Turkey, K. CINAR, E.E. SUKUROGLU, Y. TOTIK, B. DUZGUN, Atatürk University, Turkey	
	Exhibition Hall Closes Today **Town & Country/San Diego/Golden West** **Wednesday, 10:00 am-2:00 pm**	**Awards Convocation-5:45 pm** **Golden West Room** **Honorary Lecturer-Dr. Jindrich Musil** **"Advanced Hard Nanocomposite Coatings with Unique Properties"** **Awards Reception will follow the Convocation at 7:30 pm** **Poolside**

Wednesday Afternoon, April 30, 2014

	New Horizons in Coatings and Thin Films **Room: Royal Palm 4-6 - Session F4** **New Oxynitride and Oxide-based Coatings** **Moderators: W. Kalss**, Oerlikon Balzers Coating AG, Liechtenstein, **M. Stüber,** Karlsruhe Institute of Technology, Germany	**Topical Symposia** **Room: Tiki - Session TS2-1** **Advanced Characterization of Coatings and Thin Films** **Moderators: M. Sebastiani**, University of Rome "Roma Tre", Italy, **R. Ghisleni**, EMPA (Swiss Federal Laboratories for Materials Science and Tech.), Switzerland
1:30 pm		**TS2-1-1** Synchrotron Nanodiffraction and X-TEM on Al-Ti-N based Hard Coatings with Different Morphologies, **M. BARTOSIK**, Vienna University of Technology, Austria, R. RACHBAUER, Oerlikon Balzers Coating AG, Liechtenstein, C. KRYWKA, University of Kiel and Helmholtz Zentrum Geesthacht, Germany, C.M. KOLLER, J. BERNARDI, Vienna University of Technology, Austria, J. KECKES, Montanuniversität Leoben, Austria, P.H. MAYRHOFER, Vienna University of Technology, Austria
1:50 pm	**F4-2** Effect of Oxygen Incorporation on the Structure and Elasticity of Ti-Al-N-O Coatings Synthesized by Cathodic Arc and High Power Pulsed Magnetron Sputtering, **M. HANS**, M. TO BABEN, D. MUSIC, J. EBENHÖCH, RWTH Aachen University, Germany, D. PRIMETZHOFER, Uppsala University, Sweden, D. KURAPOV, Oerlikon Balzers Coating AG, Liechtenstein, M. ARNDT, H. RUDIGIER, OC Oerlikon Balzers AG, Liechtenstein, J. SCHNEIDER, RWTH Aachen University, Germany	**TS2-1-2** Predictive Power of First-principles Calculations for the Electron Energy Loss Spectroscopy, **D. HOLEC**, Montanuniversität Leoben, Austria, L. ZHOU, P.H. MAYRHOFER, Vienna University of Technology, Austria
2:10 pm	**F4-3** Magnetron Sputtering of p-type $AgFeO_2$ Thin Films with the Delafossite Structure Using a Combinatorial Approach, **U. JANSSON**, F. MAO, T. NYBERG, T. THERSLEFF, Uppsala University, Sweden	**TS2-1-3** Local Lattice Strain as Stabilizing Factor of Metastable fcc-(Ti,Al)N in Nanoscaled TiN/(Ti,Al)N/AlN Multilayers, **U. RATAYSKI**, D. CHMELIK, C. WÜSTEFELD, F. HANZIG, M. MOTYLENKO, Institute of Materials Science , TU Bergakademie Freiberg, Germany, C. BAEHTZ, Helmholtz-Zentrum Dresden-Rossendorf, Germany, M. ŠÍMA, SHM s.r.o., Germany, D. RAFAJA, Institute of Materials Science , TU Bergakademie Freiberg, Germany
2:30 pm	**F4-4** Influence of Si Doping on Process Stability and Coating Properties During Arc Deposition of $(Al, Cr)_2O_3$, **L. LANDÄLV**, Linköping University, IFM, Thin Film Physics Division and Sandvik Coromant R&D, Sweden, E. GÖTHELID, M. AHLGREN, Sandvik Coromant R&D, Sweden, L. HULTMAN, B. ALLING, P. EKLUND, Linköping University, IFM, Thin Film Physics Division, Sweden	**TS2-1-4** Nucleation and Initial Growth of sp^2-BN Thin Films by Chemical Vapor Deposition, **M. CHUBAROV**, Linköping University, IFM, Thin Film Physics Division, Sweden, H. PEDERSEN, Linköping University, Sweden, Z. CZIGANY, Hungarian Academy of Sciences, Research Centre for Natural Sciences, Hungary, H. HÖGBERG, A. HENRY, Linköping University, IFM, Thin Film Physics Division, Sweden
2:50 pm	**F4-5 Invited** Synthesis-structure-property Relations of Al-oxide-based Coatings, **J. PAULITSCH**, C.M. KOLLER, Vienna University of Technology, Austria, R. RACHBAUER, J. RAMM, Oerlikon Balzers Coating AG, Liechtenstein, P. POLCIK, PLANSEE Composite Materials GmbH, Germany, D. HOLEC, Montanuniversität Leoben, Austria, P.H. MAYRHOFER, Vienna University of Technology, Austria	**TS2-1-5** Recent Advances in Glow Discharge Optical Emission Spectrometry GD-OES for Material Characterization, **P. HUNAULT**, C. MORIN, HORIBA Scientific, US, P. CHAPON, Horiba Jobin Yvon S.A.S., France
3:10 pm	Invited talk continued.	**TS2-1-6** New Insights into the Contribution of Auger Spectroscopy Towards Energy Applications: Auger Recent Performance Improvements, Complementarity with XPS and ToF-SIMS, "Imaging Cluster" Approach, **E. DE VITO**, S. JOUANNEAU, E. RADVANYI, W. PORCHER, A. BORDES, J.P. BARNES, CEA Grenoble, France, P. MARCUS, Chimie ParisTech (ENSCP), France
3:30 pm	**F4-7** Structure and Electronic Properties of $AlCrO_xN_{1-x}$ Thin Films Deposited by Reactive Magnetron Sputtering, **H. NAJAFI**, A. KARIMI, EPFL, Switzerland, M. MORSTEIN, PLATIT AG, Switzerland	**TS2-1-7 Invited** Microstructure Control of Metal Thin Films by Ion Irradiation, **R. SPOLENAK**, ETH Zurich, Switzerland
3:50 pm	**F4-8** Stoichiometry Gap in MF Sputtered CrON Thin Films, **M. RENZELLI**, M. SEBASTIANI, E. BEMPORAD, University of Rome "Roma Tre", Italy, H. KAPPL, M. FENKER, FEM Forschungsinstitut Edelmetalle & Metallchemie, Germany	Invited talk continued.
4:10 pm	**F4-9** Influence of the Power Supplied in the Optical Properties of ZrO_xN_y/ZrO_2, **J.E. ALFONSO**, M.J. PINZÓN, J.J. OLAYA, G. CUBILLOS, Universidad Nacional de Colombia Bogotá, Colombia	**TS2-1-9** A Novel Instrument and Methodology for the In-Situ Measurement of the Stress in Thin Films, **D.M. BROADWAY**, NASA Marshal Space Flight Center, US, M.O. OMOKANWAYE, Massachusetts Institute of Technology, US, B.D. RAMSEY, NASA Marshal Space Flight Center, US
4:30 pm	**F4-10** Influence of the Annealing in the Corrosion Resistance of $Bi_xTi_yO_z$ Coatings Deposited on Ti6Al4V, **M.J. PINZÓN**, J.E. ALFONSO, J.J. OLAYA, Universidad Nacional de Colombia Bogotá, Colombia	**TS2-1-10** New Approach for Tailoring Mechanical Properties and Residual Stress of a-C:H:W Coatings, **C. SCHMID**, TU Darmststadt, Physical Metallurgy, Germany, H. HETZNER, F. HILPERT, University of Erlangen-Nürnberg, Germany, K. DURST, TU Darmststadt, Physical Metallurgy, Germany
4:50 pm	**F4-11** Characterization of Microstructure and Basic Properties of Plasma Sprayed Oxides Coatings Modified by Submicrocrystalline Powders of Different Oxides, G. MOSKAL, Silesian University of Technology, Poland, **S. POLIS**, SUT, Poland	**TS2-1-11** Process Control of TiCN Thin Films Deposited by Cathodic Arc Evaporation with Combined Raman and Optical Emission Spectroscopy, **G. LEACH**, Simon Fraser University, Canada, M.H. SHIH, MingDao University, Taiwan, T. BURAI, Simon Fraser University, Canada, B.H. HSIAO, MingDao University, Taiwan, X.Z. ZHANG, A.S. SCHIFFER, Simon Fraser University, Canada, J.H. HUNG, Aurora Scientific Corp, Canada, D.Y. WANG, MingDao University, Taiwan
	Exhibition Hall Closes Today **Town & Country/San Diego/Golden West** **Wednesday, 10:00 am-2:00 pm**	**Awards Convocation-5:45 pm** **Golden West Room** **Honorary Lecturer-Dr. Jindrich Musil** **"Advanced Hard Nanocomposite Coatings with Unique Properties"** **Awards Reception will follow the Convocation at 7:30 pm** **Poolside**

Thursday Morning, May 1, 2014

	Coatings for Use at High Temperatures **Room: Sunrise - Session A1-3** **Coatings to Resist High Temperature Oxidation, Corrosion and Fouling** **Moderators: M. Weaver**, The University of Alabama, US, **V. Kolarik**, Fraunhofer Institute for Chemical Technology ICT, Germany, **D. Litton**, Pratt & Whitney, US	**Hard Coatings and Vapor Deposition Technology** **Room: Golden West - Session B2** **CVD Coatings and Technologies** **Moderators: E. Blanquet**, SIMaP CNRS/Grenoble INP/UJF, France, **M. Shiratani**, Kyushu University, Japan
8:00 am	**A1-3-1** High Temperature Oxidation Behavior of Al2O3/ Al Composite Coating on γ-TiAl, **Y. XU**, Nanjing University of Aeronautics and Astronautics, Q. MIAO, Nanjing University of Aeronautics and Astronauticsg, China, W. LIANG, X. YU, L. WANG, Q. JIANG, B. REN, J. YANG, Nanjing University of Aeronautics and Astronautics, China	**B2-1 Invited** Pulsed Direct Liquid Injection CVD: a High Potential Process for Advanced and Nanostructured Carbide and Nitride Coatings, **F. MAURY**, A. DOUARD, G. BOISSELIER, CIRIMAT, France, F. SCHUSTER, CEA, France
8:20 am	**A1-3-2** High-Temperature Oxidation of Al-Hf and Al-Hf-O Coatings, X. MAEDER, CSEM SA, Switzerland, M. DÖBELI, ETH Zurich, Switzerland, A. DOMMANN, EMPA, Switzerland, A. NEELS, CSEM SA, Switzerland, P. POLCIK, PLANSEE Composite Materials GmbH, Germany, H. RUDIGIER, B. WIDRIG, **J. RAMM**, Oerlikon Balzers Coating AG, Liechtenstein	Invited talk continued.
8:40 am	**A1-3-3** Hard Wear-resistant Mo-Si-B-(N) Coatings with Oxidation Resistance up to 1400^{0}C, **PH.V. KIRYUKHANTSEV-KORNEEV**, A. MEURISSE, A. BONDAREV, E.A. LEVASHOV, D.V. SHTANSKY, National University of Science and Technology "MISIS", Russian Federation	**B2-3** Niobium Nitride Thin Films Deposited by High Temperature Chemical Vapor Deposition, **F. MERCIER**, SIMaP CNRS/Grenoble INP/UJF, France, S. COINDEAU, CMTC-SIMaP, France, M. BENZ, SIMaP CNRS/Grenoble INP/UJF, France, A. CRISCI, T. ENCINAS, CMTC-SIMaP, France, G. RIADO, R. BOICHOT, A. MANTOUX, SIMaP CNRS/Grenoble INP/UJF, France, C. JIMENEZ, F. WEISS, LMGP CNRS/Grenoble INP, France, E. BLANQUET, M. PONS, SIMaP CNRS/Grenoble INP/UJF, France
9:00 am	**A1-3-4** On the Mechanisms and Mitigation of CMAS Attack on YSZ Thermal Barrier Coatings, K.-I. LEE, The University of Manchester, UK, **R. WU**, National Institute for Materials Science, Japan, P. XIAO, The University of Manchester, UK	**B2-4** Diamond Coatings for the Machining of Composite Materials used in Aerospace Industry, **B. MESIC**, M. FRANK, M. WODA, W. KOELKER, O. LEMMER, C. SCHIFFERS, CemeCon AG, Germany
9:20 am	**A1-3-5 Invited** On the Ways to Improve the Oxidation Resistance of the Nb-Si Composites System, **S. MATHIEU**, Université de Lorraine, France, S. KNITTEL, Snecma, SAFRAN Group, France, L. PORTEBOIS, Université de Lorraine, France, N. ADKINS, M. WICKINS, University of Birmingham, UK, C. SEEMÜLLER, M. HEILMAIER, Karlsruhe Institute of Technology (KIT), Germany, M. MULSER, Fraunhofer Institute for Manufacturing Technology and Advanced Materials, Germany, S. DRAWIN, Onera, France, R. BRAUN, DLR, Germany, M. VILASI, Université de Lorraine, France	**B2-5** CVD Titanium Aluminum Nitride Coatings for Cutting Applications, **D. STIENS**, T. MANNS, S. RUPPI, Walter AG, Germany
9:40 am	Invited talk continued.	**B2-6** Functionalization of Aluminium Nitride Grown by High Temperature Chemical Vapor Deposition, **M. PONS**, Grenoble Institute of Technology, France
10:00 am	**A1-3-7** Protection of Nb-Si Alloys by Diffusion Coatings Manufactured by the Halide Pack-cementation Technique: Influence of the Ti and Si Activities on the Coating Microstructure, **L. PORTEBOIS**, S. MATHIEU, M. VILASI, Université de Lorraine, France	**B2-7 Invited** Diagnostics of SiH4/H2 Plasma and Surface Reaction in Microcrystalline Silicon Deposition, **K. ISHIKAWA**, Y. ABE, A. FUKUSHIMA, Y. LU, S. KAWASHIMA, K. MIWA, K. TAKEDA, H. KONDO, M. SEKINE, M. HORI, Nagoya University, Japan
10:20 am	**A1-3-8** NiCrN Coatings for Forming and Moulding Applications, **P. NAVABPOUR**, H. SUN, K. COOKE, Teer Coatings Limited, Miba Coating Group, UK	Invited talk continued.
10:40 am	**A1-3-9** Chemical Inertness of Ta–Si–N Coatings with Lanthanum Borosilicate Glasses in Glass Molding Process, Y.I. CHEN, **Y.R. CHENG**, National Taiwan Ocean University, Taiwan, L.C. CHANG, Ming Chi University of Technology, Taiwan, Y.H. CHEN, Young Optics Inc., Taiwan	**B2-9** In-situ Measurements of Volume Fraction of cDusters in Films During Plasma CVD, **M. SHIRATANI**, S. TOKO, K. KOGA, N. ITAGAKI, H. SEO, Kyushu University, Japan
11:00 am	**A1-3-10** Control of Bon Coat Microstructure in HVOF Process for Thermal Barrier Coatings, **S. MYOUNG**, Z. LU, M. KIM, H.-S. KIM, Y. JUNG, Changwon National University, Republic of Korea	**B2-10** Microstructure and Wear Mechanisms of Texture-controlled CVD α-Al_2O_3 Coatings, R. M'SAOUBI, **T. LARSSON**, Seco Tools AB, Sweden
11:20 am	**A1-3-11** Multi-Component High-Entropy Alloy Coatings for Use in High Temperature Environments, **J. ALFANO**, M. WEAVER, The Univ. of Alabama, US	**B2-11** Grain Boundary Engineered α-Al_2O_3 Coatings, **S. RUPPI**, D. STIENS, T. MANNS, Walter AG, Germany
11:40 am	**A1-3-12** Performance of HVOF Sprayed Al_2O_3-CoCrAlTaY Coating on 12Cr-1Mo steel to Combat Hot Corrosion at 800°C, N. JEGADEESWARAN, RITM, India, M. RAMESH, NITK, Surathkal, India, **B. UDAYA**, NITK Surathkal, India	**B2-12** Growth Mechanism of Amorphous Phase Mixed α-Al2O3 Hard Coatings, **S. TATSUOKA**, K. SATO, N. IWASAKI, K. YAMAGUCHI, A. OSADA, Mitsubishi Materials Corporation, Japan
12:00 pm		**B2-13** Chemical Vapor Deposition of Epitaxial sp^2-Boron Nitride Thin Films, M. CHUBAROV, Linköping University, IFM, Thin Film Physics Division, Sweden, H. PEDERSEN, Linköping University, Sweden, H. HÖGBERG, **A. HENRY**, Linköping University, IFM, Thin Film Physics Division, Sweden
12:20 pm	**Elsevier Authors FTS: Focused Topic Session** **"How to Get Published"** **12:15-1:15 pm** **California Room**	**ICMCTF 2015 Planning Meeting** **12:00-12:45 pm** **Royal Palm 4-6**

Thursday Morning, May 1, 2014

	Hard Coatings and Vapor Deposition Technology **Room: Royal Palm 1-3 - Session B4-3** **Properties and Characterization of Hard Coatings and Surfaces** **Moderators: C. Mulligan**, US Army ARDEC, US, Benet Laboratories, **J. Lin**, Southwest Research Institute, US, **U. Beck**, BAM Berlin, Germany	**Advanced Materials for Modern Device Applications** **Room: Sunset - Session C5-2** **Thin Films for Active Devices** **Moderator: F. Tasnadi**, Linköping University, Sweden
8:00 am	**B4-3-1** Ion Beam Induced Damages on Metastable Nitride Coatings, **E. LEWIN**, Empa, Swiss Federal Laboratories for Material Science and Technology, Switzerland, J. PATSCHEIDER, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	**C5-2-1** Characteristics of PECVD SiO_xN_{1-x} for Resistive Memory Application, **F. ZHOU**, YF. CHANG, University of Texas at at Austin, US, B. FOWLER, Privatran LLC, US, J.C. LEE, University of Texas at at Austin, US
8:20 am	**B4-3-2** Residual Stress Gradients in α-Al_2O_3 Coatings Determined by Pencil X-ray Nanodiffraction: the Influence of Blasting Media, **M. TKADLETZ**, Materials Center Leoben Forschung GmbH, Austria, J. KECKES, N. SCHALK, Montanuniversität Leoben, Austria, C. CZETTL, CERATIZIT Austria GmbH, Austria, C. MITTERER, Montanuniversität Leoben, Austria	**C5-2-2** Investigation of Temperature-Dependent Asymmetric Degradation Behavior Induced by Hot Carrier Effect in Oxygen Ambiance in In-Ga-Zn-O Thin Film Transistor, **B.W. CHEN**, T.C. CHANG, National Sun Yat-Sen University, Taiwan
8:40 am	**B4-3-3** Investigation on Interfacial Adhesion of Ti-6Al-4V/Nitride Coatings, **L. JIN**, A.R. RIAHI, K. FAROKHZADEH, A. EDRISY, University of Windsor, Canada	**C5-2-3** Investigating Characteristics and Reliabilities of Dual Gate a-InGaZnO Thin Film Transistor with an Etch Stop Layer, **P.Y. LIAO**, T.C. CHANG, National Sun Yat-Sen University, Taiwan
9:00 am	**B4-3-4** High Resolution Electron Microscopy Structure Determination of the Metastable Cubic SiNx Phase, A. FALLQVIST, L. HULTMAN, **P. PERSSON**, Linköping University, IFM, Thin Film Physics Division, Sweden	**C5-2-4** Wide Band-gap $CuInAlS_2$ Thin Film and Its Application to UV Detectors, **D.C. PERNG**, National Cheng Kung University, Taiwan, T.T. KAO, National Kaohsiung First University of Science and Technology, Taiwan, R.P. CHANG, National Cheng Kung University, Taiwan
9:20 am	**B4-3-5** Phosphorus Content Effect on the Chemical Reaction and Mechanical Properties of the Sn/Ni-*x*P Metallurgical System, C.E. HO, **C.W. FAN**, C.H. YANG, L.H. HSU, Yuan-Ze University, Taiwan	**C5-2-5** Room Temperature Acetone Sensing of Sulfonated Copper Phthalocyanine (TsCuPc) Modified ZnO Films, **A. BAL**, Amritsar College of Engineering and Technology, India, M. KAHLON, DAV Institute of Engineering and Technology, India
9:40 am	**B4-3-6 Invited** Mechanical Property Characterization of Coatings and Surfaces within the Nano- and Micro-Scale, **T. CHUDOBA**, ASMEC Advanced Surface Mechanics GmbH, Germany	**C5-2-6 WITHDRAWN** Influence of Supercritical CO_2 Fluid Treatment on Resistive Switching Behaviors of Ti-doped SiO_2 Thin Film, **T.M. TSAI**, K.C. CHANG, T.C. CHANG, G.R. LIU, J.P. JIANG, National Sun Yat-Sen University, Taiwan, S.M. SZE, National Chiao Tung University, Taiwan
10:00 am	Invited talk continued.	**C5-2-7** Surface Decoration using Pd Nanoislands for YBCO Superconducting Thin Film using Pulsed Laser Deposition, **M. ERTUGRUL**, D. TATAR, E. SONMEZ, M.T. YURTCAN, Ataturk University, Turkey
10:20 am	**B4-3-8** Growth of 3C-SiC Films on Si Substrates by Vapor-Liquid-Solid Tri-phase Epitaxy, **H.Y. LEE**, Y.L. LIANG, J.L. HUANG, X.D. QI, National Cheng Kung University, Taiwan	**C5-2-8** Abnormal Temperature-dependent Floating-body Effect on Hot-carrier Degradation in PDSOI n-MOSFET, **K.J. LIU**, T.C. CHANG, National Sun Yat-Sen University, Taiwan
10:40 am	**B4-3-9** Effect of Zwitterioinic Surfactants on the Coating Efficiency and Properties of Electroless Ni-P Coatings, **R. MURALIRAJA**, R. ELANSEZHIAN, Pondicherry Engineering College, India	**C5-2-9** Anomalous V_t Shifts after PBTI Stress by Fast I-V Measurement in Input/Output High-k/Metal Gate Stack, **S.H. HO**, National Chiao Tung University, Taiwan, T.C. CHANG, National Sun Yat-Sen University, Taiwan
11:00 am	**B4-3-10** High-resolution Transmission Electron Microscopy of Hard Zr-B-C-N Films, **M. ZHANG**, J. JIANG, P. KROLL, University of Texas at Arlington, US, J. VLCEK, P. STEIDL, J. KOHOUT, R. CERSTVY, University of West Bohemia, Czech Republic, E. MELETIS, University of Texas at Arlington, US	**C5-2-10** Investigation of Carrier Transport Behavior in Amorphous In-Ga-Zn-O Thin Film Transistors, **T.Y. HSIEH**, T.C. CHANG, P.Y. LIAO, National Sun Yat-Sen University, Taiwan
11:20 am	**B4-3-11** Enhancement of Scratch Resistance and Hydrophobicity on Polycarbonate via a Multifunctional Hybrid O/I Coating, **N. LE BAIL**, Ecole Centrale de Lyon, France, B. TOURY, Université Claude Bernard Lyon 1, France	
	Elsevier Authors FTS: Focused Topic Session **"How to Get Published"** **12:15-1:15 pm** **California Room**	**ICMCTF 2015 Planning Meeting** **12:00-12:45 pm** **Royal Palm 4-6**

Thursday Morning, May 1, 2014

	Tribology & Mechanical Behavior of Coatings and Engineered Surfaces **Room: California - Session E3-1** **Tribology of Coatings for Automotive and Aerospace Applications** **Moderators: S. Dixit**, Plasma Technology Inc., US, **A. Gies**, Oerlikon Balzers Coating AG, Liechtenstein, **G. Doll**, University of Akron, US	**New Horizons in Coatings and Thin Films** **Room: Royal Palm 4-6 - Session F3** **New Boron, Boride and Boron Nitride Based Coatings** **Moderators: A. Inspektor**, Kennametal Incorporated, US, **A. Henry**, Linköping University, IFM, Thin Film Physics Division, Sweden
8:00 am	**E3-1-1** Boundary Lubrication of W-DLC Coatings – from Laboratory to Real Engine, **T. POLCAR**, University of Southampton, UK, M. EVARISTO, SEG-CEMUC, University of Coimbra, Portugal, P. MUTAFOV, Czech Technical University in Prague, Czech Republic, A. CAVALEIRO, SEG-CEMUC, University of Coimbra, Portugal	**F3-1 Invited** BN Nanotubes and Nanosheets and their Utilization for Structural and Medical Applications, **D.V. SHTANSKY**, A. MATVEEV, M. KOVALSKII, I. BATENINA, K. FAERSTEIN, A. STEINMAN, National University of Science and Technology "MISIS", Russian Federation, D.M. TANG, National Institute for Materials Science, (NIMS),Japan, Y. BANDO, M. YAMAGUCHI, D.V. GOLBERG, National Inst. for Mat. Science, (NIMS), Japan
8:20 am	**E3-1-2** Catalytic Cracking of Lubricating Oils to Extract DLC Boundary Films at Sliding Interfaces, **A. ERDEMIR**, O.L. ERYILMAZ, Argonne National Laboratory, US	Invited talk continued.
8:40 am	**E3-1-3** Lubricated Tribological Behavior of VN-Cu Coatings, **G. RAMIREZ**, O.L. ERYILMAZ, A. ERDEMIR, Argonne National Laboratory, US	**F3-3** Effect of Boron Potential in the Mechanical Properties of the Borided Layers Obtained by Boron Diffusion at the Surface of AISI 316L Stainless Steel, **E. HERNÁNDEZ-SÁNCHEZ**, Y. DOMÍNGUEZ-GALICIA, Instituto Politecnico Nacional-UPIBI, Mexico, J. HERNÁNDEZ-SÁNCHEZ, Instituto Politecnico Nacional, R. CARRERA-ESPINOZA, Instituto Politécnico Nacional-ESIME, Mexico, C. OROZCO-ÁLVAREZ, Instituto Politécnico Nacional-UPIBI, México
9:00 am	**E3-1-4 WITHDRAWN** Composite Coatings with Ceramic Matrix Including Nanomaterials as Solid Lubricants for Oil Free Automotive Applications, A.. POSMYK, J. MYALSKI, **B. HEKNER**, Silesian University of Technology, Poland	**F3-4** Thermal Radiative Properties and Behavior at Very High Temperatures of Pyrolytic Boron Nitride Coating on C/C Composites for the Heat Shield of Solar Probe Missions, **E. BRODU**, M. BALAT-PICHELIN, C. MORIN, J-L. SANS, PROMES-CNRS, France
9:20 am	**E3-1-5** DLC Coating to Lower Friction Loss of Piston Rings in Internal Combustion Engines, **R. LAMMERS**, M. KENNEDY, S. HOPPE, Federal-Mogul Corporation, Germany	**F3-5 Invited** Cubic Boron Nitride Coatings - Fundamental Aspects During Film Growth And Challenges In Industrial Utilization, **S. ULRICH**, J. YE, H. LEISTE, M. STUEBER, Karlsruhe Institute of Technology (KIT), Germany
9:40 am	**E3-1-6** Improving Adhesion of Diamond Like Carbon (DLC) and its Tribological Properties, **D. ROMAGNOLI**, STS srl, Italy	Invited talk continued.
10:00 am	**E3-1-7 Invited** Few Layer Graphene: The Next Solid Lubricant?, **A. SUMANT**, D. BERMAN, Center for Nanoscale Materials, Argonne National Laboratory, US, A. ERDEMIR, Energy Systems Division, Argonne National Laboratory, US	**F3-7** Methanol Wetting Enthalpy on Few-layer Graphene Decorated Hierarchical Carbon Foam for Thermal Cooling Applications, **R. PAUL**, DN. ZEMLYANOV, RN. REIFENBERGER, Purdue University, US, A.A. VOEVODIN, Air Force Research Laboratory, Materials and Manufacturing Directorate, T. FISHER, Purdue University, US
10:20 am	Invited talk continued.	
10:40 am	**E3-1-9** Gold-Ceramic Nanocomposite Thin Films: The New Gold Standard, **N. ARGIBAY**, R.S. GOEKE, S.V. PRASAD, C.C. BATTAILE, M.T. DUGGER, Sandia National Laboratories, US	
11:00 am	**E3-1-10 Withdrawn** Novel Nano-impact Techniques for Determining the Onset of Fracture in Brittle Films, **J.E. MOGONYE**, S.V. PRASAD, Sandia National Laboratories, US	
	Elsevier Authors FTS: Focused Topic Session **"How to Get Published"** **12:15-1:15 pm** **California Room**	**ICMCTF 2015 Planning Meeting** **12:00-12:45 pm** **Royal Palm 4-6**

Topical Symposia
Room: Tiki - Session TS2-2

Advanced Characterization of Coatings and Thin Films
Moderators: M. Sebastiani, University of Rome "Roma Tre", Italy, **R. Ghisleni**, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland

8:00 am	**TS2-2-1** Atomic Force Microscopy: A Powerful Tool for Ultrathin Metal/Polymer Assemblies Characterization, **D. SINISCALCO**, Université du Maine, France	
8:20 am	**TS2-2-2** Optimized Design of Surface Mechanical Testing Procedures, **G. FAVARO**, N. RANDALL, CSM Instruments, Switzerland, J. KOHL, University of San Diego, US, N. BIERWISCH, N. SCHWARZER, Saxonian Institute of Surface Mechanics, Germany	
8:40 am	**TS2-2-3 Invited** Deformation and Cracking of Hard Coatings, S. LIU, University of Cambridge, UK, J.M. WHEELER, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland, F. DI-GIOACCHINO, University of Cambridge, UK, X. ZENG, SIMTECH, Singapore, J. MICHLER, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland, **W. CLEGG**, University of Cambridge, UK	
9:00 am	Invited talk continued.	
9:20 am	**TS2-2-5** A Critical Comparison Between XRD and FIB Residual Stress Measurement Techniques in Thin Films, E. BEMPORAD, University of Rome "Roma Tre", Italy, M. BRISOTTO, L.E. DEPERO, **M. GELFI**, University of Brescia, Italy, A.M. KORSUNSKY, A. LUNT, University of Oxford, UK, M. SEBASTIANI, University of Rome "Roma Tre", Italy	
9:40 am	**TS2-2-6** From Interatomic Interaction Potentials via Einstein Field Equation Techniques to Time Dependent Contact Mechanics of Thin Films, **N. SCHWARZER**, Saxonian Institute of Surface Mechanics, Germany	
10:00 am	**TS2-2-7** Role of Activators on The Thermochemical Stability of Aluminide Coatings of Low Carbon Steel, B. AL-ANZI, Kuwait University, Kuwait, M. AL-NABHAN, Petrochemicals Industries Corporation, Kuwait, A.R. KHAN, **A. ALHAZZA**, Kuwait Institute for Scientific Research, Kuwait	
10:20 am	**TS2-2-8** Surface Topography Corrected Analysis of Indentation Tests, **M. FUCHS**, N. SCHWARZER, Saxonian Institute of Surface Mechanics, Germany	
10:40 am	**TS2-2-9** Electron Backscatter Diffraction Characterization of Blind Hole Fillings by Electrolytic Cu Deposition, **L.H. HSU**, C.E. HO, C.W. FAN, C.C. CNEN, M.K. LYU, Yuan-Ze University, Taiwan	
11:00 am	**TS2-2-10** Raman, Structural, Electronic and Optical Characteristics of Mo:ZnO and Mo:ZnO/Graphene Composite Films, **M.C. HSIEH**, H.S. KOO, Minghsin University of Science and Technology, Taiwan	
11:20 am	**TS2-2-11** Effect of Annealing Environment on the Optical, Electrical and Thermoelectric Properties of MBE Grown ZnO Thin Films, **K. MAHMOOD**, M. ASGHAR, The Islamia University of Bahawalpur, Pakistan, I. FERGUSON, M.A. HASAN, Y. RAJA, University of North Carolina, US, Y.A. XIE, Univ. of California, Los Angeles, US	
11:40 am	**TS2-2-12** Theoretical and Experimental Determination of the Cu Diffusivity in Molten Eutectic Sn–Ag System at 235 ° C– 280 ° C, C.E. HO, W.Z. HSIEH, C.S. LIU, **C.H. YANG**, Yuan-Ze University, Taiwan	
	Elsevier Authors FTS: Focused Topic Session **"How to Get Published"** **12:15-1:15 pm** **California Room**	**ICMCTF 2015 Planning Meeting** **12:00-12:45 pm** **Royal Palm 4-6**

Thursday Afternoon, May 1, 2014

	Coatings for Use at High Temperatures **Room: Sunrise - Session A2-1** **Thermal and Environmental Barrier Coatings** **Moderators: K.A. Unocic**, Oak Ridge National Laboratory, US, **V. Maurel**, Mines-ParisTech, France, **K. Lee,** Rolls Royce, US	**Hard Coatings and Vapor Deposition Technology** **Room: Royal Palm 1-3 - Session B4-4** **Properties and Characterization of Hard Coatings and Surfaces** **Moderators: C. Mulligan**, US Army ARDEC, US, Benet Laboratories, **J. Lin**, Southwest Research Institute, US, **U. Beck**, BAM Berlin, Germany
1:30 pm	**A2-1-1 Invited** Lifetime and Interaction of New Single and Double Layer EB-PVD Thermal Barrier Coatings with Volcanic Ash, **U. SCHULZ**, German Aerospace Center (DLR), Germany, A.U. MUNAWAR, University of Roma-Tre, Italy, P. MECHNICH, W. BRAUE, R. NARAPARAJU, German Aerospace Center (DLR), Germany	**B4-4-1** Nanostructural Analysis of Magnetron Sputtered HfAlN Thin Films Grown on MgO(001) by Atom Probe Tomography, **D. ENGBERG**, Linköping University, IFM, Thin Film Physics Division, Sweden, L. JOHNSON, Sandvik Coromant, Sweden, M. THUVANDER, Chalmers University of Technology, Department of Applied Physics, Sweden, L. HULTMAN, Linköping University, IFM, Thin Film Physics Division, Sweden
1:50 pm	Invited talk continued.	**B4-4-2** Investigations on the Diffusion Behaviour of Fe, Cr, and C in Arc Evaporated TiN- and CrN-based Coatings and Their Influence on the Thermal and Mechanical Properties, **C. SABITZER**, C. STEINKELLNER, B. LARRIEU, Vienna University of Technology, Austria, P. POLCIK, Plansee Composite Materials GmbH, Germany, M. ARNDT, R. RACHBAUER, Oerlikon Balzers Coating AG, Liechtenstein, J. PAULITSCH, P.H. MAYRHOFER, Vienna University of Technology, Austria
2:10 pm	**A2-1-3** Thermo-mechanical properties of calcium–magnesium alumino-silicate (CMAS) and CMAS infiltrated Electron Beam –Physical Vapor Deposited 7 wt. YSZ Thermal Barrier Coatings, **S. AHMADIAN**, E. JORDAN, University of Connecticut, US	**B4-4-3 Invited** Mechanical and Tribological Behavior of Nanocrystalline Ni-W Coatings: Importance of Grain Size and Grain Boundary State, **T. RUPERT**, University of California Irvine, US
2:30 pm	**A2-1-4 Invited** Mitigation of Deleterious Effects of Environmental Deposits on Thermal Barrier Coatings, **B. NAGARAJ**, General Electric Aviation, US	Invited talk continued.
2:50 pm	Invited talk continued.	**B4-4-5** Microstructure-Related Depth-Gradients of Mechanical Properties in Thin Nanocrystalline Films, **R. DANIEL**, Montanuniversität Leoben, Austria, A. RIEDL, Materials Center Leoben Forschung GmbH, Austria, T. SCHÖBERL, Montanuniversität Leoben, Austria, B. SARTORY, Materials Center Leoben Forschung GmbH, Austria, C. MITTERER, J. KECKES, Montanuniversität Leoben, Austria
3:10 pm	**A2-1-6** Degradation Study of 7 YSZ TBCs on Aero-engine Combustion Chamber Parts Due to Infiltration by Different CMAS Variants, **R. NARAPARAJU**, U. SHULZ, P. MECHNICH, DLR - Deutsches Zentrum für Luft- und Raumfahrt, Germany, P. DOEBBER, F. SEIDEL, MTU Maintance, Germany	**B4-4-6** Corrosion Resistance of Zirconium Oxynitride/Zirconia Thin Film Growth by Spray Pyrolysis-nitruration and DC Sputtering Magnetron Unbalance, G. CUBILLOS, **D. POSSO**, J.J. OLAYA, Universidad Nacional de Colombia Bogotá, Colombia
3:30 pm	**A2-1-7 Invited** Lifetime Influence on Different TBC Systems in Laboratory and in Practise, **W. STAMM**, Siemens Power Generation, Germany	**B4-4-7** Structural Characterization of NbAlN Coating Deposited on AISI D2 Steel by TRD Method, **E. ABAKAY**, S. SEN, U. SEN, Sakarya University, Turkey
3:50 pm	Invited talk continued.	**B4-4-8** Surface Hardening of IF Steel by Plasma Nitriding and Pre-shot Peening, A.P.A. MANFRIDINI, Universidade Federal de Minas Gerais, UFMG, Brazil, A.C. BOZZI, Universidade Federal do Espírito Santo, UFES, Brazil, J.C. AVELAR-BATISTA WILSON, Tecvac, Ltd., UK, **M.V. AUAD**, Auad Godoy Consultants, Brazil, C. GODOY, Universidade Federal de Minas Gerais, UFMG, Brazil
4:10 pm	**A2-1-9** Effect of Process Parameters on MCrAlY Bondcoat Roughness and Lifetime of APS-TBC Systems, W. NOWAK, **D. NAUMENKO**, Forschungszentrum Jülich GmbH, Germany, G. MOR, F. MOR, Flame Spray North America Inc., US, D.E. MACK, R. VASSEN, L. SINGHEISER, W.J. QUADAKKERS, Forschungszentrum Jülich GmbH, Germany	**B4-4-9** Influence of Cu Additions on the Mechanical and Wear Properties of NbN Coatings, **K.V. EZIRMIK**, S. ROUHI, Atatürk University, Turkey
4:30 pm	**A2-1-10 Invited** Protective Coatings for Gas Turbines, **NJ. SIMMS**, J. SUMNER, J.R. NICHOLLS, A. ENCINAS-OROPESA, Cranfield University, UK	
4:50 pm	Invited talk continued.	
5:10 pm	**A2-1-12** Study on Hot Corrosion Behavior of ZrO_2-Y_2O_3-Ta_2O_5 Thermal Barrier Coating in Turbine Simulated Environment, **M.H. HABIBI**, S. GUO, Louisiana State University, US	
	Elsevier Reviewer Workshop: **"How to Review a Paper"** **1:30-4:00 pm—Esquire Room** No Charge but **MUST** be pre-registered; please contact: J.Wijnen@elsevier.com	**Poster Session 5:00-7:00 pm** **Town & Country and San Diego Rooms** **Reception begins at 6:00 pm**

Thursday Afternoon, May 1, 2014

	Advanced Materials for Modern Device Applications **Room: Golden West - Session C3** **Advances in Electrode Materials for Modern Device Applications** **Moderators: T. Terasako**, Ehime University, Japan, **J.A. Zapien**, City University of Hong Kong, Hong Kong	**Tribology & Mechanical Behavior of Coatings and Engineered Surfaces** **Room: California - Session E3-2** **Tribology of Coatings for Automotive and Aerospace Applications** **Moderators: S. Dixit,** Plasma Technology Inc., US, **A. Gies**, Oerlikon Balzers Coating AG, Liechtenstein, **G. Doll**, University of Akron, US
1:30 pm	**C3-1** A Novel Hierarchical Aluminum-doped Zinc Oxide Thin Film for Flexible Thin-film Solar Cells, **X. HUANG**, F.Y. ZHANG, Xiamen University, China	**E3-2-1 Invited WITHDRAWN** Effect of Powder Manufacturing Methods on Aircraft Wear Coatings, **M. FRONING**, Boeing Research and Technology, US
1:50 pm	**C3-2** Evaluation of TiN-Coated Aluminum Electrodes for DC High Voltage Electron Guns, **M.A. MAMUN**, Old Dominion University, US, E. FORMAN, Thomas Jefferson National Accelerator Facility, US, R. TAUS, Loyola Marymount University, US, M. POELKER, Thomas Jefferson National Accelerator Facility, US, A.A. ELMUSTAFA, Old Dominion University, US	Invited talk continued.
2:10 pm	**C3-3** Effects of N_2O Addition During the Growth of ZnO Films using High-temperature H_2O Generated by a Catalytic Reaction, T. NAKAMURA, Y. OHASHI, N. YAMAGUCHI, E. NAGATOMI, T. KATO, Y. TAMAYAMA, **K. YASUI**, Nagaoka University of Technology, Japan	**E3-2-3** Solid Particle Erosion Resistant Nanolayered CrAlTiN and Multilayered CrAlTiN-AlTiN Coatings, **Q. YANG**, R. MCKELLAR, National Research Council, Canada
2:30 pm	**C3-4 WITHDRAWN** Conductivity and Morphology of Highly Textured In_2O_3(111) Films with Ultrathin In Seeding Layers, **C.C. YU**, K.S. YANG, National University of Kaohsiung, Taiwan	**E3-2-4** Microstructure and Properties of WC-Co(-Cr) HVOF Coatings Obtained from Standard, Superfine and Modified by Sub-microcrystalline Carbide Powders, K. SZYMAŃSKI, Silsian University of Technology, Poland, G. MOSKAL, **H. MYALSKA**, Silesian University of Technology, Poland
2:50 pm	**C3-5** Enhancement of Open-circuit Voltage on Organic Photovoltaic Devices by Al-doped TiO_2 Modifying Layer Produced by Sol-gel Method, R. VALASKI, C. ARANTES, C.A. ACHETE, Inmetro, Brazil, **M. CREMONA**, PUC-RIO, Brazil	**E3-2-5** Corrosion and Tribological Properties of Thick Diamond-like Carbon (DLC) Coatings Deposited using a Meshed-PIID Process, **R. WEI**, J. LIN, L. CASERES, V.Z. POENITZSCH, Southwest Research Institute, US
3:10 pm	**C3-6 Invited** Thermochromics and Electrochromics for Energy Efficient Fenestration, **C. GRANQVIST**, Uppsala University, Angstrom Laboratory, Sweden	**E3-2-6** MoSx/WC PVD Coatings for Harmonic Drive Gears in Space Applications Characterized by Vacuum Pin on Disc Tests and XPS, **C. GABLER**, AC²T research GmbH, Austria, A. MERSTALLINGER, Aerospace & Advanced Composites GmbH, Austria, M. JANSSON, Harmonic Drive AG, Germany, J.L. VIVIENTE, Tecnalia, Spain
3:30 pm	Invited talk continued.	**E3-2-7** Tribological Behaviour of the Non-Hydrogenated Diamond-like Carbon (DLC) Coatings Against Ti-6Al-4V: Effect of Surface Passivation by Alcohol, S. BHOWMICK, **A. BANERJI**, A. ALPAS, University of Windsor, Canada
3:50 pm	**C3-8** Degradation Mechanism of ZnO thin Film for TCO of Flexible a-Si:H PV Module due to Moisture, **J.-S. JEONG**, Korea Electronics Technology Institute, Republic of Korea	**E3-2-8 Invited** Diamond-like Carbon Nanocomposite Coatings to Mitigate Friction and Wear in Harsh Environments, **S.V. PRASAD**, J.E. MOGONYE, Sandia National Laboratories, US
4:10 pm	**C3-9** Growth Mechanism of Silver Chloride Nano Wires by Electrodeposition Route, **A.D. DERARDJA**, S.S.M. SEGHIR MECHOUAR, LaMSM, University of Batna, Algeria	Invited talk continued.
4:30 pm		**E3-2-10** Micro-scale Abrasion Behaviour of Electroless Ni-P-SiC Coating on Aluminium Alloy, M. FRANCO, **W. SHA**, S. MALINOV, Queen's University Belfast, UK
	Elsevier Reviewer Workshop: **"How to Review a Paper"** **1:30-4:00 pm—Esquire Room** No Charge but **MUST** be pre-registered; please contact: J.Wijnen@elsevier.com	**Poster Session 5:00-7:00 pm** **Town & Country and San Diego Rooms** **Reception begins at 6:00 pm**

Thursday Afternoon, May 1, 2014

	New Horizons in Coatings and Thin Films **Room: Royal Palm 4-6 - Session F6** **Thin Films and Coatings for Fuel Cells & Batteries** **Moderators: C. Ramana**, University of Texas at El Paso, US, **L. Lei,** Shanghai Jiaotong University, China	**Applications, Manufacturing, and Equipment** **Room: Tiki - Session G5** **Coatings, Pre-treatment, Post Treatment and Duplex Technology** **Moderators: T. Takahashi**, KCS Europe GmbH, Germany, **Y. Chang**, National Formosa University, Taiwan
1:30 pm	**F6-1 Invited** Surface Modification of Electrode Materials for Lithium-ion Batteries, **M. JULIEN**, Université Paris-6, France, A. MAUGER, UPMC, Paris, France, K. ZAGHIB, IREQ, Canada	**G5-1** Selective Wear Protection of Forging Dies through Localized Plasma Duplex Treatments, **H. PASCHKE**, M. WEBER, Fraunhofer IST, Germany, T. YILKIRAN, Institute of Forming Technology and Machines, Germany
1:50 pm	Invited talk continued.	**G5-2** The Boriding Process in CoCrMo Alloy: the Presence of Indentation Size Effect and Fracture Toughness on Cobalt Boride Coatings, I. CAMPOS-SILVA, D. BRAVO-BÁRCENAS, Instituto Politecnico Nacional, Mexico, H. CIMENOGLU, Istanbul Technical University, Turkey, U. FIGUEROA-LÓPEZ, ITESM-CEM, Mexico, **M. FLORES-JIMÉNEZ**, Instituto Politecnico Nacional, Mexico
2:10 pm	**F6-3** Experimental and Ab Initio Investigations on Textured Li-Mn-O Spinel Thin Film Cathodes, **J. FISCHER**, Karlsruhe Institute of Technology (KIT), Germany, D. MUSIC, RWTH Aachen University, Germany, T. BERGFELDT, C. ZIEBERT, S. ULRICH, H.J. SEIFERT, Karlsruhe Institute of Technology (KIT), Germany	**G5-3** Pre-treatment of Polymer Based Substrates and High Rate Deposition of Silicon Dioxide Films Using a New Dual Magnetron Plasma Source, **P. MORSE**, J. GERMAN, W. MEREDITH, D. CROWLEY, S. WILLIAMS, Sputtering Components Inc., US
2:30 pm	**F6-4** Production of Core–shell Copper/Tin/MWCNT Composite Electrodes for Li-ion Batteries, M. UYSAL, Sakarya University, Engineering Faculty, Turkey, T. CETINKAYA, Sakarya University, Turkey, **M. KARTAL**, Sakarya University, Engineering Faculty, Turkey, M. GULER, A. ALP, H. AKBULUT, Sakarya University, Turkey	**G5-4** Influence of Nitriding Parameters on the Tribological Properties and the Adhesion of Ti- and Cr-based Multilayer Designs, W. TILLMANN, **M. DILDROP**, T. SPRUTE, TU Dortmund University, Germany
2:50 pm	**F6-5** Influences of Feedstocks on the Processes and Microstructures of the Flame-sprayed SOFC Anode, **H.C. TSENG**, Y.C. YANG, National Taipei University of Technology, Taiwan	**G5-5** The Powder-Pack Nitriding Process: Growth Kinetics of Nitride layers on pure iron, I. CAMPOS-SILVA, Instituto Politecnico Nacional, Mexico, M. ORTIZ-DOMINGUEZ, Universidad Politecnica de Pachuca, Mexico, M. ELIAS-ESPINOSA, Itesm, Csf, Mexico, M. FLORES-JIMÉNEZ, L.F. JIMÉNEZ-TINOCO, **D. BRAVO-BÁRCENAS**, Instituto Politecnico Nacional, Mexico
3:10 pm	**F6-6** Li Ion Technology for Vehicle Electrification, **G. DADHEECH**, M. VERBRUGGE, General Motors Research and Development Center, US, S. SRIRAMULU, TIAX, Inc., US	**G5-6** Influence of Substrate Pre-treatments on Residual Stresses and Tribomechanical Properties of PVD Coatings, W. TILLMANN, **T. SPRUTE**, D. GRISALES, Technische Universität Dortmund, Germany
3:30 pm	Invited talk continued.	**G5-7 Invited** Improvement of Coating Performance by Combining Different PVD/PACVD Technologies and Surface Treatments, **M. EERDEN**, J. LANDSBERGEN, D. DOERWALD, M. HORSTINK, T. KRUG, IHI Hauzer Techno Coating BV, Netherlands Invited talk continued.
3:50 pm	**F6-8** Improvement on the Corrosion Behaviour and Surface Conductivity of Coblast Coatings by Pack Cementation, **A. OLADOYE**, J. CARTON, Dublin City University, Ireland, A. OLABI, University of the West of Scotland, UK	
4:10 pm		**G5-9** Effect of Mechanical Post-treatment Techniques on the Characteristics and Performance of Arc-evaporated AlTiN Coating in Dry Machining of Stainless Steel, A. SINGH, **S. GANGOPADHYAY**, National Institute of Technology Rourkela, India
	Elsevier Reviewer Workshop: **"How to Review a Paper"** **1:30-4:00 pm—Esquire Room** No Charge but **MUST** be pre-registered; please contact: J.Wijnen@elsevier.com	**Poster Session 5:00-7:00 pm** **Town & Country and San Diego Rooms** **Reception begins at 6:00 pm**

Thursday Afternoon, May 1, 2014

Topical Symposia
Room: Sunset - Session TS5

Plasma Diagnostics and Modeling
Moderators: A. Hecimovic, Ruhr Universität Bochum, Germany

1:30 pm	**TS5-1** Erosion Characteristics of AlCr Composite Cathodes in Cathodic Arc Plasma with Inert and Reactive Gas Atmospheres, **R. FRANZ**, Montanuniversität Leoben, Austria, P. POLCIK, PLANSEE Composite Materials GmbH, Germany, A. ANDERS, Lawrence Berkeley National Laboratory, US	
1:50 pm	**TS5-2** Plasma Characteristics of High Power Impulse Plasma Source (HiPIPS) For Low Temperature Diamond Growth, **V.Z. POENITZSCH**, R. WEI, J. LIN, K. COULTER, Southwest Research Institute, US	
2:10 pm	**TS5-3** Characterization of Transport of Sputtered Particles from Target to Substrate in Multiple Frequency Driven Discharges, **S. BIENHOLZ**, Ruhr-University Bochum, Germany, S. RIES, N. BIBINOV, P. AWAKOWICZ, Ruhr University Bochum, Germany	
2:30 pm	**TS5-4 Invited** Status and Challenges in Electrical Diagnostics of Processing Plasmas, **E. STAMATE**, Technical University of Denmark, Denmark	
2:50 pm	Invited talk continued.	
3:10 pm	**TS5-6** Study of Substrate Heating during Reactive Magnetron Sputtering, J. RESTREPO, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México,, Mexico, **J. CRUZ**, S. MUHL, S.E. RODIL, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico	
3:30 pm	**TS5-7 Invited** Simulation of Magnetron Discharges and Modeling Approaches Towards HiPIMS, **A. PFLUG**, M. SIEMERS, T. MELZIG, L. SCHÄFER, Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany, A. HECIMOVIC, T. DE LOS ARCOS, J. WINTER, Ruhr Universität Bochum, Germany	
3:50 pm	Invited talk continued.	
4:10 pm	**TS5-9** Time-resolved Plasma Diagnostics in Reactive High-power Impulse Magnetron Sputtering Discharges, N. BRITUN, M. PALMUCCI, R. SNYDERS, **S. KONSTANTINIDIS**, University of Mons, Belgium	
4:30 pm	**TS5-10** Measuring and Controlling the Plasma in Pulsed Laser Deposition of Thin Films, S. RAJENDIRAN, A. WEST, T. GANS, **E. WAGENAARS**, York Plasma Institute, University of York, UK	
4:50 pm	ROUND TABLE	

Elsevier Reviewer Workshop:
"How to Review a Paper"
1:30-4:00 pm—Esquire Room
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Poster Session 5:00-7:00 pm
Town & Country and San Diego Rooms
Reception begins at 6:00 pm

Coatings for Use at High Temperatures
Room: Town & Country and San Diego - Session AP

Symposium A Poster Session
5:00 pm

AP1

The Corrosion Resistance of Fe-W-Cr-Nb Alloy, AISI 1020, 420 Coatings Produced by Thermal Spray, **E.A. LOPEZ COVALEDA**, J.J. OLAYA, Universidad Nacional de Colombia, Colombia

AP2

Influence of Deposition Process Parameters on the Durability and Stresses in Films AlCrN, AlCrN Based and AlCrN/TiSiN, used in the Milling Machining of Super-duplex, **W. MATTES**, Centro Universitário Católica de Santa Catarina, Brasil, S. MARTINS, UFRN, Brasil, J. PAIVA JUNIOR, SENAI, Brasil

AP3

Galvanic Corrosion Resistance of a Magnesium Alloy AJ62 and Carbon Fibre Coupling Improved by Plasma Electrolytic Oxidation Process, **T. CHENG**, University of Windsor, Canada, S. CUI, University of Toronto, Canada, X. NIE, University of Windsor, Canada

AP6

Corrosion Inhibition of Mild Steel in Hydrochloric Acid Solution using Potassium Gluconate as Inhibitor, **O.L. AKANJI**, Tshwane University of Technology, South Africa

AP7

nc-TiN/a-SiN_x Thin Films Prepared by Means of High-Power Impulse and Pulsed–DC Magnetron Co-Sputtering, **M. ARAB POUR YAZDI**, IRTES-LERMPS-UTBM, France, F. LOMELLO, LRC CEA-IRTES-LERMPS-UTBM, France, F. SANCHETTE, LRC CEA-ICD LASMIS, Nogent International Center for CVD Innovation (Nicci), UTT Antenne de Nogent, France, F. SCHUSTER, CEA, France, A. BILLARD, IRTES-LERMPS-UTBM, France

AP8 Withdrawn

Isothermal Oxidation Behavior And Kinetics Of Thermal Barrier Coatings Produced By Cold Gas Dynamic Spray Technique, **K.M. DOLEKER**, A.C. KARAOĞLANLI, Bartın University, Turkey, A. TURK, Sakarya University, Turkey, I. OZDEMIR, Katip Celebi University, Turkey

AP9

Pulsed Laser Deposition and Properties of TiAlN Thin Films, E. CAMPS, **J. QUIÑONES-GALVAN**, National Institute for Nuclear Research, Mexico, S. MUHL, Universidad Nacional Autonoma de Mexico, E. GARCIA, Universidad Nacional Autónoma de Mexico, M. FLORES, Universidad de Guadalajara, Mexico

AP10

Diffusion Behaviour of NiAlRu Coatings on X750 Substrates, **L. FU**, M. WEAVER, The University of Alabama, US

AP11

High Temperature Oxidation of EB-PVD TBCs on Pt-diffused Single Crystal Ni Superalloy, **R. SWADZBA**, J. WIEDERMANN, Institute for Ferrous Metallurgy, Poland, T. JUNG, Fraunhofer IST, Germany, U. SCHULZ, DLR - Deutsches Zentrum für Luft- und Raumfahrt, Germany, L. SWADZBA, B. WITALA, Silesian University of Technology, Poland

AP12

Electric Arc Spray Coatings For The Naval Industry, **L. DIMATE**, J.J. OLAYA, J.E. ALFONSO, Universidad Nacional de Colombia Bogotá, Colombia

AP13

Effect of High-temperature Stress on the Hot-dipped Aluminide Mild Steel with NaCl Deposit, **C.Y. TUNG**, C.J. WANG, National Taiwan University of Science and Technology, Taiwan

AP14

Microstructure and Oxidation Resistance of Ti-B, Ti-B-N, and Ti-B-N-Si Films Deposited by High Power Impulse Magnetron Sputtering, **J. KIM**, J. JANG, E. AN, I.-W. PARK, D.-G. NAM, Korea Institute of Industrial Technology (KITECH), Busan, South Korea, Y. KIM, N. KANG, Pusan National University, South Korea, Y.-D. PARK, Dong-Eui University, South Korea

AP15

Laser Surface Aluminizing of SAE 4340 Steel, G. VASCONCELOS, **V. TELEGINSKI**, D. CHAGAS, R. BECKER, Institute for Advanced Studies, Brazil

AP16

Cyclic Oxidation Tests of Aluminide Coatings Produced by VPA Method on Directionally Solidified Ni Superalloy, **B. WITALA**, L. SWADZBA, M. HETMANCZYK, B. MENDALA, G. MOSKAL, Silesian University of Technology, Poland, R. SWADZBA, Institute for Ferrous Metallurgy, Poland, L. KOMENDERA, Subcarpathian Aviation Cluster, Poland

AP17

Oxidation Resistance of Titania-doped Yttria-stabilized Zirconia TBC Coatings, **S. LISCANO**, L. GIL, UNEXPO, Venezuela (Bolivarian Republic of)

AP18

Film Cooled Recession of SiC/SiC Ceramic Matrix Composites: Test Development, CFD Modeling and Experimental Observations, **D. ZHU**, B. SAKOWSKI, C. FISHER, NASA Glenn Research Center, US

AP20

In-situ Polymerization for Anti-corrosion Polyimide/Boron Nitride Hybrid Films with Different Polymer Configurations, **Y.C. HUANG**, W.T. WHANG, National Chiao Tung University, Taiwan

AP21

Characterization of Microstructure and Oxidation Resistance of Silicide Coatings on Mo, W and Nb, G. MOSKAL, **S. POLIS**, Silesian University of Technology, Poland

AP22

Experimental Study and Numerical Simulation of Thermal Barrier Coating Systems with Thermal Cycling, **J.G. ZHU**, W. CHEN, LIU, Jiangsu University, China, H.M. XIE, Tsinghua University, China

AP23

Hot Corrosion Studies of Thermal Sprayed Nanostructured Coatings Deposited by Mechanically Milled NiCrAlY Powder, **N. RANA**, R. JAYAGANTHAN, S. PRAKASH, Indian Institute of Technology Roorkee, India

Hard Coatings and Vapor Deposition Technology
Room: Town & Country and San Diego - Session BP

Symposium B Poster Session
5:00 pm

BP2

Investigation of Adhesion and Corrosion Properties of CrAlYN/CrY Multilayer Coatings Deposited by Unbalanced Magnetron Sputtering, M. TAHMASEBIAN MYANDOAB, I. EFEOGLU, K.V. EZIRMIK, E. ARSLAN, Y. TOTIK, **E.E. SUKUROGLU**, Atatürk University, Turkey, Ö. BARAN, Erzincan University, Turkey

BP3

DLAg and DLSiO Films with Good Tribological and Corrosion Resistance Properties for Aerospace Applications, **F.L.C. LUCAS**, Universidade do Vale do Paraíba, Brazil, P.A. RADI, S.F. FISSMER, Technologic Institute of Aeronautics, Brazil, P.M.S.C.M. LEITE, R.S. PESSOA, H.S. MACIEL, L.V. SANTOS, Universidade do Vale do Paraíba, Brazil

BP4

Production and Characterization of Niobium Carbide Coatings on Gray Cast Iron by Termorreactive Difussion/Deposition, **A.A. AMAYA A.**, O.E. PIAMBA TULCAN, J.J. OLAYA, Universidad Nacional de Colombia Bogotá, Colombia

BP5

Radiation Exposed Hydrogenated Amorphous Carbon Films: Microstructure and Wettability, K.C. HOFELMANN, M. PARTICHELLI, R.A.S. ZANON, Universidade do Estado de Santa Catarina, Brazil, C.A. ACHETE, InMetro - Instituto Nacional de Metrologia, Brazil, **J.M. PUREZA**, Universidade do Estado de Santa Catarina, Brazil, M.M. LACERDA, Universidade Federal do Rio de Janeiro, Brazil

BP6

Reactive and Non-reactive Deposition of Al-Cr-N Coatings using Metallic, Intermetallic, and Ceramic Target Material, **C. SABITZER**, Vienna University of Technology, Austria, S. KOLOZSVÁRI, Plansee Composite Materials GmbH, Germany, M. ARNDT, R. RACHBAUER, Oerlikon Balzers Coating AG, Liechtenstein, J. PAULITSCH, P.H. MAYRHOFER, Vienna University of Technology, Austria

BP7

Impact of Point Defects on Stability of $(Al_{1-x}Cr_x)_2O_3$ Phases from First Principles, **C.M. KOLLER**, Vienna University of Technology, Austria, J. RAMM, Oerlikon Balzers Coating AG, Liechtenstein, P. POLCIK, Plansee Composite Materials GmbH, Germany, D. HOLEC, Montanuniversität Leoben, Austria, J. PAULITSCH, P.H. MAYRHOFER, Vienna University of Technology, Austria

BP8

Synthesis and Characterization of Thin Films Doped with Cobalt by MOCVD, **N.E. MENDEZ LOZANO**, L.M. APATIGA CASTRO, Universidad Nacional Autonoma de Mexico, Mexico

BP9

Microstructure, Mechanical and Electrochemical Properties of Vanadium-Niobium Rich Carbide Layers Grown by TRD, **F. CASTILLEJO**, Universidad Santo Tomás Bogotá, Colombia, J.J. OLAYA, J.E. ALFONSO, Universidad Nacional de Colombia Bogotá, Colombia

BP10

Electrochemical and Tribological Properties of Cr-Nb Carbides produced by TRD Process., F. ALFONSO, Universidad Santo Tomas, Colombia, **J.J. OLAYA**, O. PIAMBA, Universidad Nacional de Colombia Bogotá, Colombia

BP12

Corrosion Protection Coatings with Atomic Layer Deposition, **E.M. HÄRKÖNEN**, University of Helsinki, Finland, S. TERVAKANGAS, J. KOLEHMAINEN, DIARC-Technology Inc., Finland, I. KOLEV, Hauzer Techno Coating B.V., The Netherlands, B. DÍAZ, J. SWIATOWSKA, V. MAURICE, A. SEYEUX, P. MARCUS, Chimie ParisTech (ENSCP), France, M. FENKER, FEM Forschungsinstitut Edelmetalle & Metallchemie, Germany, L. TÓTH, G. RÁDNOCZI, Research Centre for Natural Sciences HAS, Hungary, M. VEHKAMÄKI, M. RITALA, University of Helsinki, Finland

BP14

Investigation of Hysteresis Effect and Influence of Bias Voltage during Deposition of HPPMS Aluminum Oxide Coatings, K. BOBZIN, N. BAGCIVAN, **R.H. BRUGNARA**, S. BASTURK, RWTH Aachen University, Germany

BP15

Effect of Composition on Fracture Toughness of TiZrN Hard Coatings, **Y.F. CHEN**, J.-H. HUANG, National Tsing Hua University, Taiwan

BP16

Comparison of Corrosion Resistance of N-doped ZrO_2 Thin Films Deposited by HCD-IP and Grown by Heat Treating ZrN Thin Films in Vacuum, **S.A. CHOU**, J.-H. HUANG, National Tsing Hua University, Taiwan

BP17

Effect of Processing Parameters on Wear Resistance and Mechanical Properties of Thick TiN Film on D2 Steel Deposited by Unbalanced Magnetron Sputtering, **C.I. CHIU**, J.-H. HUANG, National Tsing Hua University, Taiwan

BP18

Effect of Substrate Bias on Structure and Mechanical Properties of Synthesis of (Ti, Zr)N Hard Coatings by DC Unbalanced Magnetron Sputtering, **H.A. CHEN**, G.P. YU, National Tsing Hua University, Taiwan

BP19

Effect of Temperature on Exchange Bias of $BiFeO_3$/FePt Bi-layer Films Epitaxial System Deposited by Radio-frequency Sputtering, **L.C. HUANG**, G.P. YU, National Tsing Hua University, Taiwan

BP20

Closed Drift Type Circular Ion Source, **J.-K. KIM**, K.-T. KIM, Y.-J. KANG, D.-G. KIM, S. LEE, Korea Institute of Materials Science, Korea

BP21

Mechanical Properties of CrSiN Coatings by Cathodic Arc Deposition with Different Arc Currents, **W.Y. HO**, Y.S. CHANG, B.Y. CHOU, C.L. LIN, MingDao University, Taiwan, C.S. HSU, Tatung University, Taiwan

BP22

Optical Properties Of Tetrahedral Amorphous Carbon Films And Their Potential For Lab-On-A- Chip, **K. GUENTHER**, University of Applied Sciences Mittweida, Germany, F. SONNTAG, Fraunhofer IWS, Germany, S. WEIßMANTEL, University of Applied Sciences Mittweida, Germany

BP23

Raman Study on Structural Changes of DLC Films Deposited on Curved Surfaces, **J. CHOI**, T. HATTA, T. KATO, The University of Tokyo, Japan

BP24

Effect of Amino Acid Additives on the Microstructure of Electrodeposited Nickel Films, **T. NAGAI**, K. HODOUCHI, H. MATSUBARA, Nagaoka University of Technology, Japan

BP25

Effect of Nb Content on Superelastic, Mechanical and Damping Properties of NiTi Shape Memory Thin Films, **N. KAUR**, D. KAUR, Indian Institute of Technology Roorkee, India

BP26

Mechanical Properties of TiAlSiN Coatings by Hybrid Process, **J.-H. YANG**, J.-I. JEONG, M.-A. SONG, J.-H. JUNG, Research Institute of Industrial Science and Technology, Republic of Korea

BP27

Electrochemical Characteristics of Heterostructural Nanolayer Tantalum Nitride Coatings, **F.B. WU**, K.Y. LIU, National United University, Taiwan

BP28

Ab Initio Studies on the Adsoprtion and Adhesive Transfer of Al and Fe to Nitride Coating Materials, **H. RIEDL**, Christian Doppler Laboratory for Application Oriented Coating Development at Vienna University of Technology, Austria, J. ZÁLEŠÁK, Montanuniversität Leoben, Austria, M. SOBIECH, Oerlikon Balzers Coating AG, Liechtenstein, P. POLCIK, Plansee Composite Materials GmbH, Germany, D. HOLEC, Montanuniversität Leoben, Austria, P.H. MAYRHOFER, Vienna University of Technology, Austria

BP29

Structure and Elastic Properties of Ternary Metal Nitride $Zr_{1-x}Ta_xN$ Alloys Thin films: Experimental Study and First-principles Calculations, **P. DJEMIA**, LSPM-CNRS, Université Paris 13, Sorbonne Paris-Cité, France, Q.-M. HU, Shenyang National Laboratory for Materials Science, China, M. BENHAMIDA, K. BOUAMAMA, Laboratoire Optoélectronique et Composants, Ferhat Abbas University, Algeria, L. BELLIARD, UPMC, Paris,France, G. ABADIAS, Pprime Institute - UPR CNRS 3346 - Université de Poitiers - ENSMA - France

BP30 WITHDRAWN

Morphological Transition of Fe Films on Si Substrates with an Fe_5Si_3 Intermediate Layer, **C.C. YU**, H. CHANG, National University of Kaohsiung, Taiwan, C.T. LIU, W.C. CHENG, National Taiwan University of Science and Technology, Taiwan, Y.D. YAO, National Pingtung University of Education, Taiwan

BP31

Electrical and Reliability Characteristics of HfO_2 Gate Dielectric Under Oxygen Treatment, Y.L. CHENG, **T.C. BO**, National Chi-Nan University, Taiwan

BP32

Effect of Ion Irradiation on NI Films Prepared on a Flexible Substrate Material Using Unbalanced Magnetron Sputtering Assisted by Inductively Coupled Plasma, **T. KODA**, H. TOYOTA, Hiroshima Institute of Technology, Japan

BP33

Effects of Deposition Conditions on ZNO Thin Film Prepared Using RF Magnetron Sputtering, **Y. TAKIGUCHI**, H. TOYOTA, Hiroshima Institute of Technology, Japan

BP34

Microstructure and Properties of Vanadium Nitride Hard Coating Prepared by Arc Ion Plating, **T. EOM**, M. YOON, B. SONG, C. YUN, S. SONG, TaeguTec, Republic of Korea, B. MIN, Yeungnam University, Republic of Korea

BP35

Selective Textured Deposition of Ti(C,N), **L. VON FIEANDT**, M. BOMAN, Uppsala University, Sweden, T. LARSSON, O. ALM, J. LAURIDSEN, Seco Tools AB, Sweden, J. PERSSON, E. LINDAHL, Sandvik Coromant R&D Materials and Processes, Sweden

BP36

Reduction of Coercivity in Graded X/FePt (X=CoPt, FePd, FePt) Thin Films with Perpendicular Anisotropy, **S.H. LIU**, Feng Chia University, Taiwan, S.N. HSIAO, National Synchrotron Radiation Research Center, Taiwan, S.K. CHEN, Feng Chia University, Taiwan, H.Y. LEE, National Synchrotron Radiation Research Center, Taiwan

BP37

Effect Of The Concentration Of V In Corrosion Resistance Of Vanadium Carbide Coatings Deposited By The Thermoreactive Deposition Diffusion Process (Trd), **A. ORJUELA**, J.E. ALFONSO, J.J. OLAYA, Universidad Nacional de Colombia Bogotá, Colombia

BP38

Thermal Effects On Steels At Laser Method Of Separation, **D. MANAS**, Tomas Bata University in Zlin, Czech Republic, M. MANAS, Tomas Bata University in Zlin, Faculty of Applied Informatics, Czech Republic, M. STANEK, M. OVSIK, Tomas Bata University in Zlin, Czech Republic

BP40

Production and Characterization of Vanadium Carbide Coatings on Gray Cast Iron by Termorreactive Diffusion / Deposition, A.A. AMAYA A., J.J. OLAYA, **O.E. PIAMBA TULCAN**, Universidad Nacional de Colombia Bogotá, Colombia

BP41

Effect of the Concentration Of Nb In Corrosion Resistance Of Niobium Carbide Coatings Deposited by the Thermoreactive Deposition Diffusion Process (TRD), A. ORJUELA, **R. RINCÓN**, Fundacion Universitaria Los Libertadores, Colombia, L. ARDILA, Universidad Nacional de Colombia Bogotá, Colombia

BP42

Characteristic of Multiferroic $BiFeO_3/LaNiO_3$ Superlattice Structures Prepared by RF Sputtering, **H.Y. LEE**, National Synchrotron Radiation Research Center, Taiwan, Y.T. LIU, National Chiao Tung University, Taiwan

BP43

Evaluation of the Erosion-corrosion of Nanocomposite (Fe, 25Cr, 5B, 6Mo, 15W, 3Mg, 4C, 12Ni, 2Si) Deposited on AISI-SAE 4340. Steel through Thermal Spray Arc, F.A. LAVERDE, **J.E. ALFONSO**, J.J. OLAYA, Universidad Nacional de Colombia Bogotá, Colombia

BP44

Morphological and Electrochemical Characterization of $V_XNb_YC_Z$ Coatings Produce by Thermo-reactive Diffusion, **S.A. CASTRO HERMOSA**, J.E. ALFONSO, J.J. OLAYA, Universidad Nacional de Colombia Bogotá, Colombia

BP45

Influence of Magnetron Sputtering Conditions on WTi and Ta Thin Films: Microstructure-stress-electrical Conductivity Relationship, **P.O. RENAULT**, E. LE BOURHIS, A. LE PRIOL, University of Poitiers, France, P. MULLER, Sofradir, France, H. SIK, SAGEM Défense Sécurité, France

BP46

Influence of Reducing Agent on Electroless (Ni-P) Coating Process and Optimization of Process Parameters using Taguchi Technique, **M. RAJARAMAN**, E. RASU, Pondicherry Engineering College, India

BP47

Mechanical and Tribological Properties of Nanocomposite Ti-B-N-Si Films Deposited by High Power Impulse Magnetron Sputtering, **J. JANG**, J. KIM, E. AN, I.-W. PARK, D.-G. NAM, Korea Institute of Industrial Technology (KITECH), Busan, South Korea, K.H. KIM, I. PARK, Pusan National University, South Korea

BP48

Structural Investigation of Y- and Hf-Doped TiAlSiCN Coatings, **PH.V. KIRYUKHANTSEV-KORNEEV**, K.A. KUPTSOV, A.N. SHEVEYKO, National University of Science and Technology "MISIS", Russian Federation, C. ROJAS, A. FERNANDEZ, Instituto de Ciencia de Materiales de Sevilla, Spain, D.V. SHTANSKY, National University of Science and Technology "MISIS", Russian Federation

BP50

Preparation and Characterization of (111)-oriented Ti1-xAlxN Thin Films on Monocrystalline Aluminium Nitride by Reactive Chemical Vapor Deposition, H. SHIMODA, **F. MERCIER**, S. LAY, E. BLANQUET, SIMaP CNRS/Grenoble INP/UJF, France

BP51

Microstructure and Mechanical Properties of Carbon/carbon Composites with the Fiber Surface Modification by Carbon Nanofibers, **J. CHEN**, L. HUANG, P. XIAO, X. XIONG, Central South University, China

BP52

Effect of the Interlayer Thickness on the Adhesion Property of the CrZrN Coatings Deposited on AISI H13 Steel, **K.-S. KIM**, H.-K. KIM, J.H. LA, S.-M. KIM, S.-Y. LEE, Korea Aerospace University, Korea

BP53

Effect of Gas Pressure and Exciting Voltage on the Plasma Stability of a Pulsed-DC Hollow Cathode Discharge, A. BENKENSTEIN, **K. BÖBEL**, MÜLLER, Robert Bosch GmbH, Germany, B. DZUR, Ilmenau University of Technology, Germany

BP55

Structure and Mechanical Properties of Ta Alloyed Cr-Al-N Coatings, **R. HOLLERWEGER**, L. ZHOU, Vienna University of Technology, Austria, D. HOLEC, Montanuniversität Leoben, Austria, R. RACHBAUER, Oerlikon Balzers Coating AG, Liechtenstein, P. POLCIK, Plansee Composite Materials GmbH, Germany, P.H. MAYRHOFER, Vienna University of Technology, Austria

BP56

Mechanical and Tribological Properties of TiAlSiN Nanocomposite Coatings Deposited by a High Power Impulse Magnetron Sputtering, **M.K. LEI**, B. WU, Y.G. LI, Z.L. WU, X.P. ZHU, Dalian University of Technology, China

BP57

Sputtered Thin Film Metallic Glass as Underlayer for Sn Whisker Mitigation, W. DIYATMIKA, **J.P. CHU**, Y. YEN, W.Z. CHANG, C. HSUEH, National Taiwan University of Science and Technology, Taiwan

BP58

Tribocorrosion Properties of Duplex *MAO/DLC* Coatings on Ti6Al4V Alloys, E.E. SUKUROGLU, **Y. TOTIK**, E. ARSLAN, I. EFEOGLU, Atatürk University, Turkey

BP59

Effect of Coating Thickness on the Silt Erosion Properties of Ternary Metal Nitride Thin Films prepared by Magnetron Sputtering, V. ARYA, BHEL R&D, India, **P. DUBEY**, R. CHANDRA, Indian Institute of Technology Roorkee, India

BP60

Fabrication and Characterization of Tungsten-Yttrium Coatings for Nuclear Reactor Applications, **G. MARTINEZ**, University of Texas at El Paso, US, C. RAMANA, University of Texas at El Paso

Thursday Afternoon Poster Sessions

Advanced Materials for Modern Device Applications
Room: Town & Country and San Diego - Session CP

Symposium C Poster Session
5:00 pm

CP1

Computational Investigations of Stress Evolution during Thin Film Growth, **X.X. YU**, W. LI, T. KAUB, G.B. THOMPSON, The University of Alabama, US

CP3

Effect of O_2 Plasma Treatment on Physical, Electrical, and Reliability Characteristics of Low Dielectric Constant Material, Y.L. CHENG, **B.H. LIN**, National Chi-Nan University, Taiwan

CP4

Gas Sensing of SnO_2 Nanoparticles and Pt/SnO_2 Nanoparticles by Thermal Decomposition Process, **S.C. WANG**, T.W. YANG, B.J. HUANG, Southern Taiwan University of Science and Technology, Taiwan

CP5

Ab Initio Evaluation of the Potential use of Sc-based III-Nitrides in Optoelectronics, S. ZHANG, University of Cambridge, UK, **D. HOLEC**, Montanuniversität Leoben, Austria, G. FU, C. HUMPHREYS, University of Cambridge, UK, P.H. MAYRHOFER, Vienna University of Technology, Austria, MA. MORAM, Imperial College London, UK

CP6

Field-enhanced Light Instability under Visible and Ultraviolet Light Irradiation on Amorphous In-Ga-Zn-O Thin Film Transistors, **K.J. LIU**, T.C. CHANG, T.Y. HSIEH, National Sun Yat-Sen University, Taiwan

CP7

Modifications in Structure and Properties of Nickel Oxide Films after Argon Ion Beam Bombardment, S.C. CHEN, C.K. WEN, Ming Chi University of Technology, Taiwan, **T.Y. KUO**, Institute of Materials Science and Engineering, National Taiwan University, Taiwan, C.S. WANG, Ming Chi University of Technology, Taiwan, H.C. LIN, Institute of Materials Science and Engineering, National Taiwan University, Taiwan

CP8

Characterization and Properties of NiO Films Produced by RF Magnetron Sputtering with Oxygen Ion Source Assistance, S.C. CHEN, **C.K. WEN**, Ming Chi University of Technology, Taiwan, T.Y. KUO, Institute of Materials Science and Engineering, National Taiwan University, Taiwan, W.C. PENG, Ming Chi University of Technology, Taiwan, H.C. LIN, Institute of Materials Science and Engineering, National Taiwan University, Taiwan

CP9

Temperature Dependent Obliquely Deposited Anti-contamination Coating of HfO_2 for Glass Insulators, **V. DAVE**, A. SANGER, H.O. GUPTA, R. CHANDRA, Indian Institute of Technology Roorkee, India

CP10

Resistive Switching Characteristics of Silicon Oxide Based RRAM with Titanium Doping, **T.M. TSAI**, K.C. CHANG, T.C. CHANG, G.R. LIU, J.P. JIANG, National Sun Yat-Sen University, Taiwan, S.M. SZE, National Chiao Tung University, Taiwan

CP11

Crystalline Structure of ZnO thin Films Grown on A-plane Sapphire Substrates Using High-temperature H_2O Produced by a Pt-catalyzed H_2-O_2 Reaction, Y. OHASHI, T. NAKAMURA, N. YAMAGUCHI, T. TAKEUCHI, Y. TAMAYAMA, **K. YASUI**, Nagaoka University of Technology, Japan

CP13

Effects of Thickness on the Characteristics of p-type Cu_2O Thin Film for all Oxide Solar Cell using Reactive Sputtering, Y.S. JUNG, H.W. CHOI, **K.H. KIM**, Gachon University, Republic of Korea

CP14

Characteristics of SiH4-containing Plasma Generated by ICP-CVD Mixed with H2, B2H6 and PH3, J.H. HSIEH, **H.S. LIN**, Ming Chi University of Technology, Taiwan, C. LI, National Central University, Taiwan

CP15

Low Contact Resistance Carbon Thin Films as Current Collectors for Lithium Ion Batteries, S.K. CHEN, K.-F. CHIU, S.-H. SU, S.H. LIU, K.-H. HOU, **C.-C. HSIAO**, Feng Chia University, Taiwan

CP16

Effects of Temperature on Instabilities Caused by Charge-trapping Phenomenon in Dual Gate Amorphous In-Ga-Zn-O Thin-film Transistors, **P.Y. LIAO**, T.C. CHANG, National Sun Yat-Sen University, Taiwan

CP17

Effects of Uniaxial Mechanical Strain on Amorphous In-Ga-Zn-O Thin Film Transistors Fabricated on Flexible Polyimide Substrates, **B.W. CHEN**, T.C. CHANG, National Sun Yat-Sen University, Taiwan

CP18

Correlation Between Temperature-dependent Carrier Transport Behavior and Self-heating Effect in Amorphous In-Ga-Zn-O Thin Film Transistors, **T.Y. HSIEH**, T.C. CHANG, P.Y. LIAO, National Sun Yat-Sen University, Taiwan

CP19

Effect of Selenization Temperature on the Formation of Cu(In,Ga)$(Se,S)_2$ Phtovoltaic Absorber by Selenization and Sulfurization of CuGa/In/Se Metal Precursors, J. KOO, S. LEE, **W.K. KIM**, Yeungnam University, Republic of Korea

CP20

Effect of the Sputtering Conditions of Co-sputtered Cu-In-Ga Precursors on Cu(InGa)Se_2 Photovoltaic Absorber Formation, **J. PARK**, W.K. KIM, Yeungnam University, Republic of Korea

CP21

Structural Characteristics and Properties of Gallium Nitride Thin Films Prepared by Radio Frequency Magnetron Sputtering, Y.K. CHO, **J.H. KIM**, Chungbuk National University, Republic of Korea

CP22

N_2O Plasma Treatment Suppression of Temperature-dependent Point Defect Formation in Amorphous Indium-Gallium-Zinc-Oxide Thin Film Transistors, **J.C. JHU**, National Chiao Tung University, Taiwan, T.C. CHANG, National Sun Yat-Sen University, Taiwan, G.W. CHANG, Y.H. TAI, National Chiao Tung University, Taiwan

CP23

Properties of CNTs/PEDOT:PSS (spin-coated) Thin Films as Flexible Transparent Electrodes, **B.J. KIM**, S.H. HAN, J.S. PARK, Hanyang University, Republic of Korea

CP24

Effects of Substrate Corona-pretreatment on Properties of Flexible Transparent CNT Electrodes, **S.H. HAN**, B.J. KIM, J.S. PARK, Hanyang University, Republic of Korea

CP25

Effects of Hot-pressing on Structural, Optical, and Electrical Properties of Silicon-incorporated Zinc Oxide Thin Films, **K.W. CHA**, S.H. LEE, W. KIM, J.S. PARK, Hanyang University, Republic of Korea

CP26

Effects of Air Exposure and Thermal Treatment on Properties of SZO Films and Characteristics of SZO-based Thin Film Transistors, **S.H. LEE**, K.W. CHA, W. KIM, J.S. PARK, Hanyang University, Republic of Korea

CP27 **WITHDRAWN**

Effect of Molecular Structure of the Starting Precursor Materials over the Crystallization, Growth and Luminescence of ZnO Coatings, **S. BRAHMA**, National Cheng Kung University, Taiwan, S.A. SHIVASHANKAR, Indian Institute of Science Bangalore, India, J.-M. TING, National Cheng Kung University, Taiwan

CP28

High Electrical Conductivity of Orientedly-assembled Sb_2Se_3 Nanostructured Films, H.C. CHANG, **T.H. CHEN**, K.S. KE, C.H. CHEN, National Chiao Tung University, Taiwan

CP29 **WITHDRAWN**

A Germanium/Silicon Heterojunction Field Effect Transistor Photodetector Fabricated on Silicon-on-insulator, H. MOHAMMED, M. DEBERRY, U. OBAHIAGBON, O. AKPA, M. AWAAH, **N. KORIVI**, K. DAS, Tuskegee University, US

CP34

Influence of Pre-metal / Post-metal Annealing on Reliability with High-k/Metal Gate Metal-oxide Semiconductor Field Effect Transistors, **Y.H. LU**, T.C. CHANG, National Sun Yat-Sen University, Taiwan

CP36

The Effect of Hydrogen Ion on Resistance Switching Characteristic of Hf-doped Silicon Oxide RRAM, **T.J. CHU**, T.C. CHANG, T.M. TSAI, K.C. CHANG, Y.E. SYU, M.C. CHEN, National Sun Yat-Sen University, Taiwan

CP37

Dynamic Gate-Induced-Drain-Leakage Stress Associated Hot Carrier Degradation in HfO_2/TiN n-channel Metal-Oxide-Semiconductor Field-Effect Transistors, **J.Y. TSAI**, T.C. CHANG, National Sun Yat-Sen University, Taiwan, C.E. CHEN, S.H. HO, National Chiao Tung University, Taiwan

CP38

Investigation of Hot Carrier Stress in p-channel Double Diffused Drain Metal-Oxide-Semiconductor Transistors with Different Shallow Trench Isolation Structures, **C.E. CHEN**, National Chiao Tung University, Taiwan, T.C. CHANG, National Sun Yat-Sen University, Taiwan, H.M. CHEN, National Chiao Tung University, Taiwan, B. YOU, National Sun Yat-Sen University, Taiwan, T.Y. TSENG, National Chiao Tung University, Taiwan

CP39

Anomalous Degradation Behaviors under Illuminated Gate Bias Stress in a-Si:H Thin Film Transistor, **M.Y. TSAI**, T.C. CHANG, A.K. CHU, T.Y. HSIEH, K.Y. LIN, National Sun Yat-Sen University, Taiwan

CP40

Investigation on Degradation Behavior with UV Light Treatment under Negative Bias Illumination Stress in a-InGaZnO Thin Film Transistor, **H.M. CHEN**, National Chiao Tung University, Taiwan, T.C. CHANG, M.Y. TSAI, National Sun Yat-Sen University, Taiwan, Y.H. TAI, National Chiao Tung University, Taiwan

CP41

Hydrolysis-Induced Abnormal On-Current Degradation and Current Crowding Behavior under Negative Gate Bias Stress in a-InGaZnO Thin Film Transistors, **K.H. LIU**, National Chiao Tung University, Taiwan, T.C. CHANG, M.C. CHEN, National Sun Yat-Sen University, Taiwan, W.C. CHOU, National Chiao Tung University, Taiwan

CP43

Effect of Annealing Temperature on the Optical, Electrical and Thermoelectric Properties of MOCVD Grown ZnO, **K. MAHMOOD**, M. ASGHAR, The Islamia University of Bahawalpur, Pakistan, L. NA, Y. RAJA, I. FERGUSON, University of North Carolina, US

CP44

One Step Synthesis of Cobalt Ferrites ($CoFe_2O_4$) Nanoparticles by Hydrothermal Method and Optical Properties, **A. AL-SHIHRI**, A. KALAM, King Khalid University, Saudi Arabia, G. DU, Zhejiang Normal University, China

CP45

Effect of Electron Beam Radiation on Electrical and Optical Properties of Multilayered Tin Oxide Thin Films, **K.I. MADDANI**, SDMCET, India, J.S. BHAT, Karnatak University, India

CP46

TiO_2:Nb Transparent Conductive Thin Films Treated by a Post Hot-wire Annealing in a Reducing H_2 Atmosphere, M.V. CASTRO, L. REBOUTA, P. ALPUIM, M.F. CERQUEIRA, University of Minho, Portugal, E. ALVES, N.P. BARRADAS, Ion Beam Laboratory (ITN), Portugal, **C.J. TAVARES**, University of Minho, Campus Azurém, Portugal

CP47

Thermo-mechanical Behavior of Die Attach Film on Flexible PCB Substrate for Multi Chip Package, **J.-O. BANG**, Sungkyunkwan University, Republoic of Korea, K.S. KIM, Sungkyunkwan University, Republic of Korea, Y.M. LEE, Samsung Electro-Mechanics Co., Republic of Korea, S.B. JUNG, Sungkyunkwan University, Republic of Korea

CP48

Optimization of n-Oxide Thin-film Formation in Heterojunction Solar Cells Using Thermally Oxidized p-Cu2O Sheets, **Y. NISHI**, T. MIYATA, T. MINAMI, Kanazawa Institute of Technology, Japan

CP49

Study on Aluminum Hot-dip Copper Process and the Interface Microstructure of Copper-clad Aluminum Bimetallic Material, **X. CHEN**, Georgia Institute of Technology, US, X. TANG, Z. WANG, X. HUI, University of Science and Technology Beijing, China, M. LI, Georgia Institute of Technology, US

Coatings for Biomedical and Healthcare Applications
Room: Town & Country and San Diego - Session DP

Symposium D Poster Session
5:00 pm

DP1

Biocompatibility and Antimicrobial Performance of TiZrCN Coatings, H.L. HUANG, China Medical University and Hospital, Taiwan, Y. CHANG, **Y.C. YANG**, National Formosa University, Taiwan, C.H. LAI, T.M. SHIEH, China Medical University and Hospital, Taiwan

DP2

Biocompatibility and Electrochemical Behavior of Nanotubular Anodized TiO2 Layer for Implant Applications, E. MUNDARAY, **L. GIL**, Universidad Nacional Experimental Politécnica (UNEXPO), Venezuela (Bolivarian Republic of), F. ALVAREZ, Fundación Instituto de Estudios Avanzados (IDEA), Venezuela (Bolivarian Republic of), L. HERNANDEZ, Universida Nacional Experimental Politécnica (UNEXPO), Venezuela (Bolivarian Republic of)

DP3

Low Temperature Pasteurization via High Density Plasma Oxidation, **T. AIZAWA**, Shibaura Institute of Technology, Japan, Y. SUGITA, YS-Electric Industry, Co. Ltd., Japan

DP4

Biomolecular Modification of Zirconia Surface for Enhenced Biocompatibility, S.K. HSU, H.C. HSU, Central Taiwan University of Science and Technology, Taiwan, W.F. HO, Da-Yeh University, Taiwan, K.H. LEE, **S.C. WU**, Central Taiwan University of Science and Technology, Taiwan

DP5

Surface Modification of Blood-contacting Biomaterials by Plasma-Polymerized Super-Hydrophobic Films, C.R. HSIAO, Feng Chia University, Taichung, Taiwan, C.W. LIN, Central Taiwan University of Science and Technology, Taiwan, C.M. CHOU, Taichung Veterans General Hospital, Taiwan, **C.J. CHUNG**, Central Taiwan University of Science and Technology, Taiwan, J.L. HE, Feng Chia University, Taiwan

DP6

Influence of Non-Photoresist Lithography on Cell Activity of Titanium, **J.-H. KANG**, M.-H. LEE, W.-S. SEO, Korea Institute of Ceramic Engineering and Technology, Korea, S.-W. LEE, Kyung Hee University, Korea, H.-J. CHOI, Yonsei University, Korea

DP7

Investigation of an a-TiC_x Film as the Interlayer of Fluorinated DLC on a Ti6Al4V Substrate- an Approach to the Anti-corrosive and Mechanical Properties, C.-C. CHOU, H.-Y. CHEN, **M.-K. HSU**, National Taiwan Ocean University, Taiwan, Republic of China

DP8

Effects of the Plasma Electrolytic Oxidation Method in the CaP Enriched Titanium Oxide Layer Physicochemical and Corrosion Properties, **C. LAURINDO**, R.D. TORRES, P. SOARES, Pontificia Universidade Católica do Paraná, Brazil, S. MALI, J. GILBERT, Syracuse University, NY

DP9

Silicon-substituted Hydroxyapatite Coating on Biomedical Ti-Nb-Zr Alloy Using Cyclic Electrochemical Deposition Method, **Y.H. JEONG**, W.A. BRANTLEY, The Ohio State University, US, H.C. CHOE, Chosun University, Korea

DP10

Nanotube Shape and Morphology Control of Ti-6Al-4V by Various Applied Potential for Drug Doping and Bioactive Materials Coating, **H.C. CHOE**, Chosun University, Republic of Korea

DP11

Electrochemically Hydroxyapatite-precipitated Nanotubular Ti-35Ta-xNb Alloys, **C.I. JO**, Chosun University, Korea, Republic of Korea, H.C. CHOE, Chosun University, Republic of Korea

DP12

Nanotube Formation Phenomena on Ti-25Nb-xZr Alloys with Zr Content and Applied Potential, **I.S.BYEON. BYEON**, H.C. CHOE, Chosun University, Republic of Korea

DP13

The Tribocorrosion of CoCrMo Alloys Coated with TiAlPtN/TiAlPt Multilayers, **M. FLORES**, Universidad de Guadalajara, Mexico, E. ANDRADE, Universidad Nacional Autónoma de México, Mexico, O. JIMENEZ, Universidad de Guadalajara, Mexico

DP14

Enhanced Corrosion Resistance and Hemocompatibility of Biomedical NiTi Alloy by Atmospheric-pressure Plasma Polymerized Fluorine-rich Coating, **P.H. LI**, City University of Hong Kong, Hong Kong Special Administrative Region of China, L.M. LI, City University of Hong Kong, China, W.H. WANG, The University of Hong Kong, China, W.H. JIN, City University of Hong Kong, China, X.M. LIU, Hubei University, China, K.W.K. YEUNG, The University of Hong Kong, China, P.K. CHU, City University of Hong Kong, Hong Kong Special Administrative Region of China

DP15

Enhanced Osteogenic Activity on Platform of Titanate Nanotube Arrays, **X.M. ZHANG**, L.M. LI, W.H. JIN, P.H. LI, City University of Hong Kong, Hong Kong Special Administrative Region of China, L.Z. ZHAO, The Fourth Military Medical University, China, K.F. HUO, Huazhong University of Science and Technology, China, P.K. CHU, City University of Hong Kong, Hong Kong Special Administrative Region of China

DP16

The Effect of PEO Process Parameters on the Tribocorrosion Properties of TiO_2 Coatings, E.E. SUKUROGLU, H. FARZI, Atatürk University, Turkey, **S. SUKUROGLU**, Gümüşhane University, Turkey, Y. TOTIK, E. ARSLAN, I. EFEOGLU, Atatürk University, Turkey

Tribology & Mechanical Behavior of Coatings and Engineered Surfaces

Room: Town & Country and San Diego - Session EP

Symposium E Poster Session

5:00 pm

EP1

Tribology of Hydrogenated and Hydrogen-free Diamond-like Carbon Coatings in Biofuel Systems at Elevated and at Higher Temperatures, **A. DORNER-REISEL**, R. LIEBERWIRTH, S. SVOBODA, University of Applied Sciences Schmalkalden, Germany, K. GÜNTHER, University of Applied Sciences Mittweida, Germany, C. HIMCINSCHI, Technische Universität Bergakademie Freiberg, Germany, S. WEIßMANTEL, University of Applied Sciences Mittweida, Germany, G. IRMER, Technische Universität Bergakademie Freiberg, Germany

EP2

Optimizing Wear and Hydrophobic Properties of Cr-N/Al-N Multilayer Coatings, **Y. YANG**, National Kaohsiung First University of Science and Technology, Taiwan

EP3

Microstructure and Properties of WC-Co-(Cr) Coatings Modified by Sub-microcrystalline Carbides Obtained by Different Methods of High Velocity Spray Process, K. SZYMAŃSKI, G. MOSKAL, **H. MYALSKA**, Silesian University of Technology, Poland

EP5

Thermo-mechanical Stability Analysis of Sputtered DCB on Al_2O_3 for Aerospace Hybrid Power Converter, **J.-S. JEONG**, Korea Electronics Technology Institute, Republic of Korea

EP6

Wear and Friction Behavior of Fe2B Layers Formed According to a Mathematical Model of the Growth Kinetics, **E.E. VERA CARDENAS**, M. ORTIZ-DOMINGUEZ, Universidad Politécnica de Pachuca, Mexico, R. LEWIS, University of Sheffield, UK, J.L. BERNAL PONCE, Universidad Politécnica de Pachuca, Mexico, F. NAVA LEANA, Universidad Politecnica de Pachuca, Mexico, M.A. FLORES-RENTERÍA, Universidad Politécnica de Pachuca, Mexico

EP7

Dimensioning Indentation and Scratch Tests for Thin Films, **M. FUCHS**, N. SCHWARZER, N. BIERWISCH, Saxonian Institute of Surface Mechanics, Germany

EP8

A Comparative Study About the Wear Resistance of Hard Coatings Obtained by Three Different Hardening Diffusion Processes at the Surface of AISI 4140 Steel, J. HERNÁNDEZ-SÁNCHEZ, **E. HERNÁNDEZ-SÁNCHEZ**, Instituto Politecnico Nacional, Mexico, Y. DOMÍNGUEZ-GALICIA, M.E. ROSALES PEÑA ALFARO, Instituto Politecnico Nacional-UPIBI, Mexico, J.J. CORONEL-HERNÁNDEZ, Universidad Autónoma de Querétaro, Mexico

EP9

The Corrosion Resistance and the Adhesion Strength of Double Layered Zn-Mg Thin Films, **J.H. LA**, K.S. KIM, S.-Y. LEE, Korea Aerospace University, Republic of Korea, J.J. LEE, Seoul National University, Republic of Korea, W.Y. JEUNG, Korean Institute of Science and Technology, Republic of Korea

EP10

Scratch and Wear Behavior of AlTiN/TiN Nanolayer Coatings, H. ÇALIŞKAN, Bartın University, Turkey, **M. PANJAN**, P. PANJAN, M. ČEKADA, Jozef Stefan Institute, Slovenia, A.C. KARAOĞLANLI, Bartın University, Turkey

EP11

The Friction and Wear Properties at Room Temperature and Vacuum Atmosphere of Ti/TiB_2/MoS_2 Graded-Composite Coatings Deposited by CFUBMS, Ö. BARAN, Erzincan University, Turkey, F. BIDEV, **H. CICEK**, Atatürk University, Turkey, L. KARA, Karadeniz Technical University, Turkey, I. EFEOGLU, Atatürk University, Turkey, T. KÜÇÜKÖMEROĞLU, Karadeniz Technical University, Turkey

EP12

Instrumented Indentation Hardness and Sliding Wear Characteristics of a Sequential Plasma Process of AISI 316L Austenitic Steel, after Pre-shot Peening, M.R. MENEZES, Universidade Federal de Minas Gerais, UFMG, Brazil, J.C. AVELAR-BATISTA WILSON, Tecvac, Ltd., UK, **M.V. AUAD**, Auad Godoy Consultants, Brazil, A.C. BOZZI, Universidade Federal de Espirito Santo, UFES, Brazil, C. GODOY, Universidade Federal de Minas Gerais, UFMG, Brazil

EP13

Tribological Properties of Solid Lubricant W-S-N Coatings, **P. MUTAFOV**, T. POLCAR, Czech Technical University in Prague, Czech Republic, M. EVARISTO, A. CAVALEIRO, SEG-CEMUC, University of Coimbra, Portugal

EP14

Characterisation of Amorphous Carbon Coatings for Tribological Applications in Challenging Environments, **J. COOPER**, University of Sheffield, UK, DA. STEWART, Rolls Royce, UK, A. LEYLAND, A. MATTHEWS, University of Sheffield, UK

EP15

Analysis of Sliding Wear Tests of Plasma Processed AISI 316L, M.C.S. DUARTE, Universidade Federal de Minas Gerais, UFMG, Brazil, A.C. BOZZI, Universidade Federal do Espírito Santo, UFES, Brazil, **C. GODOY**, Universidade Federal de Minas Gerais, UFMG, Brazil

EP16

Comparision of the Tribological Behavior of VN-Cu and MoN-Cu Coatings at High Temperature, G. RAMIREZ, **T.A.L. DE LIMA BURGO**, O.L. ERYILMAZ, A. ERDEMIR, Argonne National Laboratory, US

EP17

Microstructure Characterization and Mechanical Properties of Multicomponent CrAlSiTiVN Hard Coating, **Y. CHANG**, National Formosa University, Taiwan

EP18

Investigation of Hard Coatings with the Instrumented Indentation Test, **T. HAAS**, B. BINDER, G. BOSCH, H.P. VOLLMAR, Helmut Fischer GmbH, Germany

EP19 **WITHDRAWN**

Glassy Carbon Coatings Deposited on Hybrid Structure of Composite Materials, A.. POSMYK, J. MYALSKI, **B. HEKNER**, Silesian University of Technology, Poland

EP21

Tribological and Corrosion Properties of Ni/MWCNT Nanocomposites Produced by Pulse Electro Co-deposition, **M. KARTAL**, Sakarya University, Turkey, H. GUL, Duzce University, Gumusova Vocational School, Turkey, M. UYSAL, A. ALP, H. AKBULUT, Sakarya University, Turkey

EP22

Wear Behavior of CBN Coated Carbide Tools in Milling of Ti6Al4V Alloy, **H. ÇALIŞKAN**, B. KURŞUNCU, A.C. KARAOĞLANLI, Bartın University, Turkey

EP25

Reactively Sputtered Chromium Carbide/Carbon Glass-like Films for Sliding Electrical Contact Applications, **K. NYGREN**, Uppsala University, Sweden, M. SAMUELSSON, A. FLINK, H. LJUNGCRANTZ, Impact Coatings AB, Sweden, A.K. RUDOLPHI, U. JANSSON, Uppsala University, Sweden

EP26

Mechanical and Tribological Characterization of ZrN Coatings on Titanium Modified Austenitic Stainless Steel, **M.F. WANI**, National Institute of Technology Hazratbal, India

EP27

Application of a DLC-coating for Improving Hydrostatic Piston Shoe Bearing Performance under Boundary Lubrication Conditions, S.-M. KIM, S.-R. LEE, **S.-Y. LEE**, Y.S. HONG, C.-H. KIM, Korea Aerospace University, Korea

EP28

The Effect of Deposition Parameters on the Tribological Properties of TiAlCrNbN Thin Films, L. KARA, Karadeniz Technical University, Turkey, Ö. BARAN, Erzincan University, Turkey, T. KÜÇÜKÖMEROĞLU, Karadeniz Technical University, Turkey, **I. EFEOGLU**, Atatürk University, Turkey

EP29

Improvement of Fatigue Property of Magnesium Alloy by Coating Thin Film Metallic Glass, **C.H. CHANG**, J.P. CHU, National Taiwan University of Science and Technology (NTUST), Taiwan, P.K. LIAW, University of Tennessee, US

New Horizons in Coatings and Thin Films
Room: Town & Country and San Diego - Session FP

Symposium F Poster Session
5:00 pm

FP1

Preparation of *n*-ZnO and *p*-CuO Films and Their Heterojunctions by Chemical Bath Deposition Based Technique, **T. TERASAKO**, T. MURAKAMI, S. SHIRAKATA, Ehime University, Japan

FP2

Low Temperature Atomic Layer Deposition of ZnO Thin Films on Cellulose Nanofibers for low Cost Dye-Sensitized Solar Cells, **K.N. HA**, Korea Institute of Industrial Technology (KITECH), Korea, E. AN, Korea Institute of Industrial Technology (KITECH), Busan, South Korea, W.-J. LEE, Pusan National University, South Korea, I.-W. PARK, Korea Institute of Industrial Technology (KITECH), Busan, South Korea, S.-H. KWON, Y. PARK, Pusan National University, South Korea

FP3

Characterization of ZnO Nanotubes Grown by Supercritical CO_2 Fluid Mixed with Ethanol Solution, **K.C. CHANG**, T.M. TSAI, T.C. CHANG, G.R. LIU, H.C. HUANG, T.F. YOUNG, D.S. GAN, National Sun Yat-Sen University, Taiwan

FP4

High Power Impulse Magnetron Sputter Deposited IGZO on Flexible Substrate and its Thin-film Transistor Performance, **Y.H. CHEN**, R.C. KE, J.L. HE, Feng Chia University, Taiwan

FP5

Measurement of Ionized Metal Flux Fraction in HiPIMS by Retarding Field QCM Analyzer, **T. KUBART**, Uppsala University, Angstrom Laboratory, Sweden, M. CADA, Z. HUBICKA, Institute of Physics of the ASCR, v.v.i., Czech Republic

FP6

Improving the Absorption of Visible Light of Iron Silicide Thin Film by Pinhole Fabrication, **H.F. HSU**, Y.T. CHANG, G.Y. LI, National Chung Hsing University, Taiwan

FP7

Synthesis, Structure and Optical Properties of Tungsten Oxynitride Thin Films, **C. RAMANA**, A.J. MORENO-TARANGO, E. RUBIO, R. VEMURI, University of Texas at El Paso, US

FP8

Enhanced Exchange Bias and Mechanical Properties of Al Incorporated Ni–Mn–Sb Ferromagnetic Shape Memory Alloy Thin Flms, **R. BARMAN**, D. KAUR, Indian Institute of Technology Roorkee, India

FP9

Synthesis and Water Splitting Characterization of Ordered (Cu, Zn) Oxide Nanowire Arrays by PAM Template Assisted Method During Electrochemical Deposition, Y.M. SHEN, National Cheng Kung University, Taiwan, S.C. WANG, Southern Taiwan University, Taiwan, J.L. HUANG, **Y.H. CHEN**, National Cheng Kung University, Taiwan

FP11

Evaluation of the Nanomechanical Properties of Vanadium Thin Films Prepared by RF Magnetron Sputtering, M.A. MAMUN, K. ZHANG, H. BAUMGART, A.A. ELMUSTAFA, **D. NMINIBAPIEL**, Old Dominion University, US

FP12

Oriented Lanthanum Silicate Thin Film Electrolytes for IT-SOFCS, **J.C. OLIVEIRA**, M. MACATRÃO, A. CAVALEIRO, SEG-CEMUC, University of Coimbra, Portugal

FP13

Microstructure and Electronic Properties of Intrinsic and W-Doped Gallium Oxide Thin Films Made by Sputter-Deposition, C. RAMANA, University of Texas at El Paso, **E. RUBIO**, A. MIRANDA-GALLARDO, University of Texas at El Paso, US

FP14

Purification of Commercial CNT Sheet Material for Composite Fabrication, **A.R. HOPKINS**, H.A. KATZMAN, The Aerospace Corporation, US

FP15

Growth of Boron Nitride at High Temperature Chemical Vapor Deposition (Htcvd) Reactor Using Bcl3 and Nh3 as Precursors, N. COUDURIER, R. BOICHOT, F. MERCIER, **E. BLANQUET**, SIMaP CNRS/Grenoble INP/UJF, France, A. HENRY, Linköping University, IFM, Thin Film Physics Division, Sweden

FP16

Effect of Anodization Parameters on Ca-P Incorporated Nanotubes Properties, **P. SOARES**, Pontificia Universidade Católica do Paraná, Brazil, V. LESZCZAK, K. POPAT, Colorado State University, US

FP17

Current-Voltage Characteristics During High Power Impulse Magnetron Sputter Deposition of TiO_2, P.-H. LI, MingDao University, Taiwan, C. LIU, Fujian University of Technology, Fuzhou, China, J.-Y. JIAN, C.-M. YEH, C.L. CHANG, **W.-Y. WU**, MingDao University, Taiwan

FP18

Thickness Dependent Magnetic Properties of Co-sputter Deposited Ni-Mn-Al Heusler Alloy Hard Nanostructured Thin Films, A. MISHRA, R. CHANDRA, S. SRIVASTAVA, A. GEHLOT, P. DUBEY, D. KAUR, **S. CHAUHAN**, Indian Institute of Technology Roorkee, India

Applications, Manufacturing, and Equipment
Room: Town & Country and San Diego - Session GP

Symposium G Poster Session
5:00 pm

GP1

Fabrication and Characteristics of Ceramic/Ni-Cr-Mo Steel Coatings by Centrifugal Casting Process, H. KIM, Sejong University, Korea, K. OH, K. YI, S. KIM, S.M. Metal, Korea, **K. PARK**, Sejong University, Korea

GP2

Oxidation-induced Cu Coating on Steel Surface, N. LI, University of Science and Technology Liaoning, China, **W. SHA**, Queen's University Belfast, UK

GP3

Desk-top RF-DC Plasma Nitriding System for Automotive Steel Parts, **Y. SUGITA**, YS-Eletric Industry, Co. Ltd., Japan, T. AIZAWA, Shibaura Intitute of Technology, Japan, K. TSUKUI, E. NAKAYAMA, Yamanashi University, Japan

GP4

MicroporousN-doped Carbon Films Produced by Cold Atmospheric Plasma Jet and Compatibility with MC3T3-E1 Preosteoblasts, **L.M. LI**, X.M. ZHANG, M. ZHANG, P.H. LI, P.K. CHU, City University of Hong Kong, Hong Kong Special Administrative Region of China

Topical Symposia
Room: Town & Country and San Diego - Session TSP

Symposium TS Poster Session
5:00 pm

TSP-1

Characterization of 4H-SiC Grown by Thermal Evaporation System Using Single Boat, K. MAHMOOD, **M. ASGHAR**, The Islamia University of Bahawalpur, Pakistan, I. FERGUSON, R. TSU, University of North Carolina, US

TSP-2

Dye Sensitized Solar Cells of TiO_2 Nanotubes by Anodization with $TiCl_4$-ZnO Treatment, J.H. YANG, K.H. KIM, **H.W. CHOI**, Gachon University, Republic of Korea

TSP-3

Thermal Expansion and Elasticity of Metastable Cubic B1-AlN, **M. BARTOSIK**, Vienna University of Technology, Austria, D. HOLEC, Montanuniversität Leoben, Austria, M. TODT, Vienna University of Technology, Austria, J. TODT, Montanuniversität Leoben, Austria, F.G. RAMMERSTORFER, P.H. MAYRHOFER, Vienna University of Technology, Austria

TSP-4

The Synthesis of Ag/Pt Bimetallic Nanoparticles Supported on Carbon with Enhanced Electocatalytic Activity by Solution Plasma Process, **S.-M. KIM**, Korea Aerospace University, Republic of Korea, J.W. KIM, University of Incheon, Republic of Korea, S.-Y. LEE, Korea Aerospace University, Republic of Korea, J.J. LEE, Seoul National University, Republic of Korea, W.Y. JEUNG, Korean Institute of Science and Technology, Republic of Korea

TSP-5

Completely Topographically Corrected Scratch Test – Examples and How it has Been Done, **N. SCHWARZER**, N. BIERWISCH, Saxonian Institute of Surface Mechanics, Germany

TSP-7

Optical Properties of Multi layers MnO/Sb/MnO Thin Films Prepared by Electron-beam Evaporation Technique, **M. ALZAMIL**, King Saud University, Saudi Arabia

TSP-9

Reactor of Dielectric Barrier Discharge with Incidence in Liquid: One Efficient Tool for Extraction of Lignin, **F.S. MIRANDA**, F.L.C. LUCAS, E.D. SANTOS, University of Paraiba Valley (UNIVAP), Brazil, R.J. SILVA, Technological Institute of Aeronautics (ITA), Brazil, C. CARLI, S. RABELO, C. ROSSEL, J. PRADELLA, Brazilian Bioethanol Science and Technology Laboratory, Brazil, H.S. MACIEL, R.S. PESSOA, L.V. SANTOS, University of Paraiba Valley (UNIVAP), Brazil

TSP-10

Characteristics of Anticorrosion Layer of Silicon Oxide Films on Magnesium Alloys by Atmospheric Pressure Plasma Jet, **Y.L. KUO**, K.H. CHANG, J.Y. JIAN, National Taiwan University of Science and Technology (NTUST), Taiwan

TSP-11

Emerging Concepts for Large Scale Graphene Synthesis Towards Enhanced Electrochemical Applications, D. BROWNSON, C. BANKS, **P. KELLY**, Dalton Research Institute, Manchester Metropolitan University, UK

TSP-12

Fabrication of Core-shell Particles Having the Absorption-desorption Property for a Fluidized Bed Electrode, **E.H. KIM**, Y. JUNG, Changwon National University, Korea, J.-G. YEO, S.-C. YANG, J. CHOI, Korea Institute of Energy Research, Korea

TSP-13

Improving Oxidation Resistance and Fracture Strength of MgO-C Refractory Through Precursor Coating, **G.-H. CHO**, J. LI, E.H. KIM, Y. JUNG, Changwon National University, Republic of Korea, Y.-KI BYEUN, Technical Research Laboratories Pohang Research Lab, Republic of Korea

Friday Morning, May 2, 2014

	Coatings for Use at High Temperatures Room: Sunrise - Session A2-2 **Thermal and Environmental Barrier Coatings** **Moderators: K.A. Unocic**, Oak Ridge National Laboratory, US, **V. Maurel**, Mines-ParisTech, France, **K. Lee**, Rolls Royce, US	Hard Coatings and Vapor Deposition Technology Room: Golden West - Session B3 **Deposition Technologies for Diamond Like Coatings** **Moderators: K. Böbel**, Robert Bosch GmbH, Germany, **C. Engdahl**, Crystallume, US
8:00 am	**A2-2-1** Deposition and Properties of a High Temperature Thermal Barrier Coating Using The Solution Precursor Plasma Spray Process, **M. GELL**, E. JORDAN, J. ROTH, C. JIANG, University of Connecticut, US, J. WANG, B. NAIR, HiFunda LLC, US	**B3-1** The Chemical Functionalization of DLC to Create an Oleophobic and Hydrophobic Surface with High Thermal and Oxidative Stability, **D.A. SMITH**, SilcoTek Corporation, US
8:20 am	**A2-2-2** Feasability of Multilayer Sol-Gel Thermal Barrier Coating Sensor for Through-thickness Temperature Sensing and Interface Delamination Early Diagnostic, **E. COPIN**, T. SENTENAC, Y. LE MAOULT, Ecole Nationale Superieure des Mines - Albi, France, F. ANSART, CIRIMAT, University of Toulouse, France, P. LOURS, Ecole Nationale Superieure des Mines - Albi, France	**B3-2** Deposition of Diamond-like Carbon Films on Steel Surfaces by Enhanced Asymmetrical Bipolar Pulsed-DC PECVD Method and Acetylene as Precursor, G. CAPOTE, National University of Colombia, Colombia, E. CORAT, **V. TRAVA-AIROLDI**, Institute for Space Research, Brazil
8:40 am	**A2-2-3 Invited** Analysis of Possible Microstructures in Suspension Plasma Sprayed Deposits, **L. PAWLOWSKI**, P. SOKOLOWSKI, University of Limoges, France, S. KOZERSKI, Wroclaw University of Technology, Poland, A. DENOIRJEAN, University of Limoges, France	**B3-3 Invited** Developments of Amorphous Hydrogenated DLC Coatings for Automotive Applications, **M. KEUNECKE**, R. WITTORF, M. WEBER, I. BIALUCH, K. BEWILOGUA, G. BRAEUER, Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany
9:00 am	Invited talk continued.	Invited talk continued.
9:20 am	**A2-2-5** Slurry Based Thermal Barrier Coatings with Quasi-foam Structures from Sintered Micro-sized Hollow Alumina Spheres, **V. KOLARIK**, M. JUEZ LORENZO, R. ROUSSEL, V. KUCHENREUTHER, Fraunhofer ICT, Germany	**B3-5** A MF-AC Enhanced PECVD Technology for High Rate Deposition of DLC, H. TAMAGAKI, J. HAGA, H. ITO, **A. UMEDA**, Kobe Steel, Ltd., Japan
9:40 am	**A2-2-6** Characterization of Plasma Electrolytic Oxidized Coatings on Hot-dip Aluminized Carbon Steel, **F. CHANG**, National Taiwan University of Science and Technology (NTUST), Taiwan, J.W. LEE, Ming Chi University of Technology, Taiwan, C.J. WANG, National Taiwan University of Science and Technology (NTUST), Taiwan	**B3-6** Modifications of Closed Drift Ion Source for Various Surface Treatments from Etching to Coating, **S. LEE**, K.-T. KIM, Y.-J. KANG, D.-G. KIM, J.-K. KIM, Korea Institute of Materials Science, Korea
10:00 am	**A2-2-7** The Influence of Temperature Gradients on the Interaction of Molten Silicates with Thermal Barrier Coatings, **R.W. JACKSON**, E. ZALESKI, M.R. BEGLEY, C.G. LEVI, University of California, Santa Barbara, US	**B3-7 Withdrawn** Plasma Beam Deposition of Amorphous Carbon, **M.F. WEILER**, CCR TECHNOLOGY GmbH, Germany
10:20 am	**A2-2-8** The Effect of Cycle Frequency, H_2O and CO_2 on TBC Lifetime with NiCoCrAlYHfSi Bond Coatings, **M. LANCE**, K.A. UNOCIC, J. HAYNES, B.A. PINT, Oak Ridge National Laboratory, US	Invited talk continued.
10:40 am	**A2-2-9** Failure Characteristics And Mechanisms Of Eb-Pvd Tbcs With Pt-Modified Nial Bond Coat, L. ZHOU, S. MUKHERJEE, **Y.H. SOHN**, University of Central Florida, US	
11:00 am	**A2-2-10** Time and Temperature Dependent Mechanical Properties of Superalloy Bond Coat at Nanometer Length Scale, **K. RZEPIEJEWSKA-MALYSKA**, J. VIEREGGE, O.L. WARREN, S.A.S. SYED, Hysitron, Inc., US	
11:20 am	**A2-2-11** Development and Performance Evaluations of HfO2-Si Based Bond Coat Systems for Advanced Environmental Barrier Coatings, **D. ZHU**, NASA Glenn Research Center, US	
11:40 am	**A2-2-12 Withdrawn** Evaluation Of Hot Corrosion Resistance On Inconel 718 Superalloys Of Thermal Barrier Coatings, **K.M. DOLEKER**, A.C. KARAOĞLANLI, Bartın University, Turkey	
	2015 ICMCTF **April 20-24, 2015**	**2015 Abstract Submission Deadline** **October 1, 2014**
	Thank You & See You Next Year Party **Trellis Courtyard near Pool** **12:30-1:30 pm**	**Awards Nominations Deadline** **October 1, 2014**

Friday Morning, May 2, 2014

	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B4-5 **Properties and Characterization of Hard Coatings and Surfaces** **Moderators: C. Mulligan**, US Army ARDEC, Benet Laboratories, US, **J. Lin**, Southwest Research Institute, US, **U. Beck**, BAM Berlin, Germany	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 - Session B7 **Computational Design and Experimental Development of Functional Thin Films** **Moderators: B. Alling**, Linköping University, Thin Film Physics Division, Sweden, **D. Holec**, Montanuniversität Leoben, Austria
8:00 am	**B4-5-1** Bias Effect on Structure and Mechanical Properties of Magnetron Sputtered Nanocrystalline Zirconium Tungsten Nitride Thin Films, **P. DUBEY**, R. CHANDRA, Indian Institute of Technology Roorkee, India	**B7-1 Invited** Ab-initio Simulation of Vacancy Formation in $Ti_{0.5}Al_{0.5}N$ Alloy: From the Diverse Local Environments Towards Self-diffusion, **F. TASNÁDI**, I.A. ABRIKOSOV, Linköping University, IFM, Sweden, M. ODÉN, Linköping University, IFM, Nanostructured Materials, Sweden
8:20 am	**B4-5-2** Structural, Mechanical and Electronic Properties of 3d Transition Metal Nitrides in Cubic Zincblende, Rocksalt and Cesium Chloride Structures: a First-Principles Investigation, Z. LIU, X. ZHOU, **S. KHARE**, University of Toledo, US, D. GALL, Rensselaer Polytechnic Institute, US	Invited talk continued.
8:40 am	**B4-5-3** Local Residual Stress Measurement on Amorphous Plasma-sprayed Single-splats, **M. SEBASTIANI**, University of Rome "Roma Tre", Italy, G. BOLELLI, L. LUSVARGHI, University of Modena and Reggio Emilia, Italy, E. BEMPORAD, University of Rome "Roma Tre", Italy	**B7-3** Room-Temperature Plasticity in ZrC: Role of Crystal Anisotropy, S. KIANI, **S. KODAMBAKA**, C. RATSCH, University of California, Los Angeles, US, A. MINOR, University of California, Berkeley; National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, US, J.-M. YANG, University of California, Los Angeles, US
9:00 am	**B4-5-4** Oxidation Behavior of $TiC_{0.81}N_{0.48}$ Coating and $TiC_{0.61}N_{0.44}O_{0.15}$ Coating Deposited by Chemical Vapor Deposition, **L. ZHU**, Y.M. ZHANG, T. HU, Shanghai University, China, P. LEICHT, Y. LIU, Kennametal Incorporated, US	**B7-4** Ab Initio Guided Design of Corundum Type $(Al_{1-x-y}Cr_xM_y)_2O_3$ Thin Films, **C.M. KOLLER**, Vienna University of Technology, Austria, J. RAMM, Oerlikon Balzers Coating AG, Liechtenstein, S. KOLOZSVÁRI, Plansee Composite Materials GmbH, Germany, D. HOLEC, Montanuniversität Leoben, Austria, J. PAULITSCH, P.H. MAYRHOFER, Vienna University of Technology, Austria
9:20 am	**B4-5-5** Modulus and Compressive Stress Graded Ti-C Coating on Ti-6Al-4V Aerospace Alloy, **T.R. KAMALAKSHI HEMACHANDRAN**, M. RAO GOWRAVARAM, Indian Institute of Science, India	**B7-5 Invited** WITHDRAWN Accelerated Molecular Dynamics Simulation of Adatom Kinetics using SISYPHUS, **A. VAN DE WALLE**, Brown University, US, P. TIWARY, ETH Zurich, Switzerland
9:40 am	**B4-5-6** Analysis of the Coating Interface Mechanics, **C.Y. NIE**, L. GU, D. ZHENG, L. WANG, Harbin Institute of Technology, China	Invited talk continued.
10:00 am	**B4-5-7** Corrosion and Tribological Behaviour of Laser Surface Alloyed Aisi 1016 Mild Steel, **O. FATOBA**, Tshwane University of Technology, South Africa	**B7-7** Molecular Dynamics Study of the Growth of Various Crystalline Phases of Metal Oxides, **J. HOUSKA**, University of West Bohemia, Czech Republic, S. MRÁZ, J. SCHNEIDER, RWTH Aachen University, Germany
10:20 am		**B7-8** Lattice Ordering Effects on Toughness Enhancement in TiN and VN Thin Films Alloys, D. EDSTRÖM, D. SANGIOVANNI, **V. CHIRITA**, L. HULTMAN, Linköping University, IFM, Thin Film Physics Division, Sweden
10:40 am		**B7-9 Invited** A Computational Approach to Designing Boron Based Coatings, **H. EUCHNER**, J. PAULITSCH, P.H. MAYRHOFER, Vienna University of Technology, Austria
11:00 am		Invited talk continued.
11:20 am		**B7-11** Modeling the Thermo-Mechanical and Optical Properties of Solar Selective Coatings, **I. HERAS**, Abengoa, Spain
	2015 ICMCTF **April 20-24, 2015**	**2015 Abstract Submission Deadline** **October 1, 2014**
	Thank You & See You Next Year Party **Trellis Courtyard near Pool** **12:30-1:30 pm**	**Awards Nominations Deadline** **October 1, 2014**

Friday Morning, May 2, 2014

	Advanced Materials for Modern Device Applications **Room: Sunset - Session C2** **Novel Aspects in Thin Film Characterization and Data Modeling** **Moderators: J. Krueger**, BAM Berlin, Germany, **T. Hofmann**, University of Nebraska–Lincoln, US	**Applications, Manufacturing, and Equipment** **Room: Tiki - Session G6** **Advances in Industrial PVD & CVD Deposition Equipment** **Moderators: M. Ahlgren**, Sandvik Coromant, Swedin, **K. Bobzin**, RWTH Aachen University, Germany
8:00 am	**C2-1 Invited** Spectroscopic Ellipsometry Characterization in the Photovoltaic Device Configuration, **N.J. PODRAZA**, University of Toledo, US	**G6-1** Comparison of Plasma Characteristics of DC and Pulsed Arc Evaporation, **T. TAKAHASHI**, R. CREMER, KCS Europe GmbH, Germany, S. HIROTA, Kobe Steel Ltd., Japan
8:20 am	Invited talk continued.	**G6-2** Hybrid Coatings in Arc Systems: HI3 Process (HIPAC plus arc), Types of Nitriding Processes and DLC, **J. VETTER**, J. CRUMMENAUER, J. MUELLER, O. JARRY, Sulzer Metaplas GmbH, Germany
8:40 am	**C2-3** Broad Band Spectroscopic Ellipsometry Modelling of Metallic Structures using FDTD, **J.A. ZAPIEN**, Y. FOO, City University of Hong Kong, Hong Kong Special Administrative Region of China	**G6-3 Invited** Recent Developments in ALD Equipment and Processes, **M. RITALA**, University of Helsinki, Finland
9:00 am	**C2-4** Phase Stability and Intrinsic Growth Stresses in Ti/Nb Multilayered Thin Films, **L. WAN**, X.X. YU, G.B. THOMPSON, The University of Alabama, US	Invited talk continued.
9:20 am	**C2-5** Experimental and Simulation Studies of Compact Nitride Layers Growth During Plasma Nitriding of Pure Iron, **C. JIMENEZ**, C. LEÓN, J. OSEGUERA, F. CASTILLO, ITESM-CEM, Mexico	**G6-5** Integration of HiPIMS Equipment into an Industrial Coating Production for Cutting Tools, T. LEYENDECKER, O. LEMMER, W. KOELKER, **C. SCHIFFERS**, CemeCon AG, Germany
9:40 am	**C2-6 Invited** Metal-Dielectric Coatings and their Applications in Optical Instruments and Optical Microscopy - Optimizing Performance and New Developments, **H. NIEDERWALD**, Carl-Zeiss Jena GmbH, Germany	**G6-6** Replacement of Electroplating Produced in a Flexible Inline Production Platform, D. DRIESENAAR, **P. SEGERS**, J. LANDSBERGEN, I. KOLEV, J. CLABBERS, R. TIETEMA, T. KRUG, IHI Hauzer Techno Coating BV, Netherlands
10:00 am	Invited talk continued.	**G6-7** Mechanical and Tribological Property of Titanium Series Thick Coating Deposited by our Kobelco new PVD Machine, AIP-G60R, **S. TANIFUJI**, H. FUJII, H. NOMURA, Kobe Steel Ltd., Japan
	2015 ICMCTF **April 20-24, 2015**	**2015 Abstract Submission Deadline** **October 1, 2014**
	Thank You & See You Next Year Party **Trellis Courtyard near Pool** **12:30-1:30 pm**	**Awards Nominations Deadline** **October 1, 2014**

Topical Symposia
Room: California - Session TS6

Atmospheric Plasma Applications
Moderators: H. Barankova, Uppsala University, Sweden, **D. Dowling**, University College Dublin, Ireland

8:00 am	**TS6-1 Invited** Superhydrophobic Coating Deposition with Atmospheric rf Plasma, **S. KIM**, D. MARCHAND, Pennsylvania State University, US	
8:20 am	Invited talk continued.	
8:40 am	**TS6-3** Atmospheric Plasma Deposition of Thin Films for Aerospace Applications, **A.N. RANADE**, The Boeing Company, U.S.	
9:00 am	**TS6-4** Atmospheric Pressure Plasma Polymerization on PE to Increase Bone Cement Adhesion, **P. COOLS**, N. DE GEYTER, S. VAN VREKHEM, Ghent University, Belgium, A. VAN TONGEL, Ghent University Hospital, Belgium, P. DUBRUEL, Ghent University, Belgium, F. BARBERIS, Universita' degli Studi di Genova, Italy, R. MORENT, Ghent University, Belgium	
9:20 am	**TS6-5 Invited** Disinfection, Decontamination, and Nano-particle Production using a Pulsed Submerged Arc, N. PARKANSKY, **R.L. BOXMAN**, Tel Aviv University, Israel	
9:40 am	Invited talk continued.	
10:00 am	**TS6-7** Plasma Reforming of Ethanol, H. BARANKOVA, **L. BARDOS**, Uppsala University, Sweden	
10:20 am	**TS6-8** Growth of Multifunctional Nanocomposite Thin Films on Wood Substrates using Dielectric Barrier Discharges at Atmospheric-pressure, J. PROFILI, LAPLACE and U. Montréal, Canada, O. LEVASSEUR, **L. STAFFORD**, Université de Montréal, Canada, N. GHERARDI, CNRS-LAPLACE, Canada	
10:40 am	**TS6-9 Invited** Removal of Organic and Inorganic Coatings using Atmospheric Pressure Air Plasma, **P. YANCEY**, Atmospheric Plasma Solutions, Inc., US	
11:00 am	Invited talk continued.	
11:20 am	**TS6-11** Facile Synthesis of Pt-Pd Bimetallic Nanoparticles by Plasma Discharge in Liquid and their Electrocatalytic Activity Toward Methanol Oxidation in Alkaline Media, S.-M. KIM, A.-R. CHO, Korea Aerospace University, Korea, J.W. KIM, University of InCheon, Republic of Korea, **S.-Y. LEE**, Korea Aerospace University, Korea	
11:40 am	**TS6-12** An Atmospheric Pressure Inductively Coupled Plasma (AP-ICP) Torch for Anti-corrosive Silicon Carbide Coating of the Consumables for a 450 mm Wafer Etching Equipment, **Y. GLUKHOY**, A. RYABOY, T. KERZHNER, Nanocoating Plasma Systems, Inc., US	
	2015 ICMCTF **April 20-24, 2015**	**2015 Abstract Submission Deadline** **October 1, 2014**
	Thank You & See You Next Year Party **Trellis Courtyard near Pool** **12:30-1:30 pm**	**Awards Nominations Deadline** **October 1, 2014**