

Key to Session/Paper Numbers

- A** Coatings for Use at High Temperature
- B** Hard Coatings and Vapor Deposition Technology
- C** Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications
- D** Coatings for Biomedical and Healthcare Applications
- E** Tribology & Mechanical Behavior of Coatings and Engineered Surfaces
- F** New Horizons in Coatings and Thin Films
- G** Applications, Manufacturing, and Equipment
- PD** Post Deadline Discoveries and Innovations
- PL** Plenary Talk
- TS1** Surface Engineering for Thermal Transport, Storage and Harvesting
- TS2** Advanced Characterization of Coatings and Thin Films
- TS3** Energetic Materials and Micro-Structures for Nanomanufacturing
- TS4** Graphene and 2D Nanostructures

Presentation numbers are listed in the program as follows: Symposium letter first, followed by session number, followed by a dash, then a secondary section number for that session, and finally a number for the scheduled presentation. So E2-3-5 would be symposium E, session number 2, section number 3, paper number 5.

Symposium scheduling pointers:

- All morning sessions begin at 8:00 am except for Monday where the sessions begin at 10:00 am following the 8:00 am Plenary Session.
- Afternoon sessions on Monday and Thursday begin at 1:30 pm following the lunch break starting at 12:10 pm. Afternoon sessions on Tuesday and Wednesday begin at 1:50 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 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 will be the Dover. Please allow ample time for the test, preferably the day before the 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 are available for posting materials at approximately noon on Thursday, April 26. Prior to entering the Golden Ballroom, authors presenting a poster will check in at a table located in the 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 number, title, and presenting author will aid each presenter in locating the correct board where their poster is to be displayed. The board provided is approximately four feet by four feet. All poster materials **MUST** be posted by 4:50 pm. All presenters are required to be at their presentation during the entire session; this is in order to promote discussion and for the author to answer attendee questions. All poster materials will be discarded if not removed from the boards by 9:00 pm Thursday evening.

Monday Morning, April 23, 2012

Plenary Lecture
8:00-9:45
Golden Ballroom

Hard Coatings and Vapor Deposition Technology
Room: Royal Palm 4-6 - Session B1-1

PVD Coatings and Technologies
Moderators: P. Eklund, Linköping University, Sweden, J.H. Huang, National Tsing Hua University, Taiwan, J. Vetter, Sulzer Metaplas GmbH, Germany

10:00 am	<p>Plenary Lecture Session from 8:00 – 9:45</p> <p>Professor Peter Fratzl</p> <p>Director of the Max Planck Institute of Colloids and Interfaces, Potsdam, Germany</p> <p>Abstract:</p> <p>"How Interfaces Control the Mechanical Behavior of Biological Materials"</p> <p>Please see full abstract on the Plenary Session Page</p> <p>Golden Ballroom</p>	<p>B1-1-1 Properties of nanocrystalline Al-Cu-O films reactively sputtered by dc pulse dual magnetron, J. BLAZEK, J. MUSIL, P. STUPKA, R. CERSTVY, J. HOUSKA, University of West Bohemia, Czech Republic</p>
10:20 am		<p>B1-1-2 Reactive cathodic arc-evaporation of corundum structured crystalline (Al,Cr)₂O₃, J. PAULITSCH, Christian Doppler Laboratory for Application Oriented Coating Development at the Department Of Phys. Metal. And Mater. Testing, Montanuniversität, Austria, J. RAMM, M. LECHTHALER, OC Oerlikon Balzers AG, Liechtenstein, P. POLCIK, PLANSEE Composite Materials GmbH, Germany, M. POHLER, Christian Doppler Laboratory for Advanced Hard Coatings at the Dep. Of Phys. Metal. And Mater. Testing, Montanuniversität, Austria, D. HOLEC, P.H. MAYRHOFER, Montanuniversität Leoben, Austria</p>
10:40 am		<p>B1-1-3 Invited Wear mechanism of coated cutting tools and improvement of their cutting performance, T. ISHIKAWA, Hitachi Tool Engineering, Ltd., Japan</p>
11:00 am		<p>Invited talk continued.</p>
11:20 am		<p>B1-1-5 Phase Transformations in Face Centered Cubic (Al,Cr)₂O₃ Thin Films, KHATIBI, J. LU, J. JENSEN, P. EKLUND, L. HULTMAN, Linköping University, Sweden</p>
11:40 am		<p>B1-1-6 Influence of Fe-Impurities in AlCr-Targets on Arc Evaporation Process and Film Properties, M. MÜHLBACHER, R. FRANZ, Montanuniversität Leoben, Austria, M. LECHTHALER, OC Oerlikon Balzers AG, Liechtenstein, P. POLCIK, PLANSEE Composite Materials GmbH, Germany, C. MITTERER, Montanuniversität Leoben, Austria</p>
12:00 pm	<p>CSM Instruments Focused Topic Session: "Coating Quality Control Solutions" 12:15 – 1:15 pm in Pacific Salon 1-2</p>	

Monday Morning, April 23, 2012

Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications Room: Pacific Salon 3 - Session C1-1 Recent Advances in Optical Thin Films Moderators: K. Khajurivala, Janos Technology Incorporated, US, R. Sczupak, Reynard Corporation, US		Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications Room: Tiki Pavilion - Session C2-1/F4-1 Thin Films for Photovoltaics and Active Devices: Synthesis and Characterization Moderators: T. Terasako, Graduate School of Science and Engineering, Ehime University, Japan, M. Cremona, Pontificia Universidade Católica do Rio de Janeiro	
10:00 am	C1-1-1 Invited Manipulation of Photons by Photonic Crystals, S. NODA, T. ASANO, Kyoto University, Japan	10:00 am	C2-1/F4-1-1 The Degradation of Ti_xN_{1-x}/HfO_2 p-channel MOSFETs under Hot Carrier Stress, J.Y. TSAI, National Sun Yat-Sen University, Taiwan
10:20 am	Invited talk continued.	10:20 am	C2-1/F4-1-2 Investigation of Random Telegraph Signal with High-K/Metal Gate MOSFETs, C.E. CHEN, National Chiao Tung University, Taiwan
10:40 am	C1-1-3 Phase transformation, structures and properties of pure and carbon containing titania thin films annealed in air and in hydrogen, W.C. LEE, M. WONG, National Dong Hwa University, Taiwan	10:40 am	C2-1/F4-1-3 Enhancement of Resistive Switching Characteristics in SiO_2 -based RRAM by High Temperature Forming Process, Y.T. CHEN, National Sun Yat-Sen University, Taiwan
11:00 am	C1-1-4 Effect of Laser Power on the Microstructure and Photoluminescence of Silicon-rich Nitride Thin Films by Magnetron Sputtering, C.K. CHUNG, C.H. LI, T.S. CHEN, Y.T. LIN, National Cheng Kung University, Taiwan	11:00 am	C2-1/F4-1-4 The Impact of Strain on Gate-Induced Floating Body Effect for PD SOI p-MOSFETs, W.H. LO, T.C. CHANG, C.H. DAI, NSYSU, Taiwan
11:20 am	C1-1-5 Invited ZnO light-emitting diodes and laser diodes, X.W. SUN, Nanyang Technological University, Singapore	11:20 am	C2-1/F4-1-5 Invited Plasma deposited ZnO layers for thin film photovoltaics: synthesis, characterization and growth mechanism, M. CREATORE, Eindhoven University of Technology, Netherlands
11:40 am	Invited talk continued.	11:40 am	Invited talk continued.
12:00 pm	C1-1-7 The deposition of metal oxide coatings for electro-catalytic and photo-active applications by closed field unbalanced magnetron sputter ion plating, X. ZHANG, K. COOKE, Teer Coatings Limited, Miba Coating Group, UK, G. EITZINGER, High Tech Coatings GmbH, Miba Coating Group, Austria, J. HAMPSHIRE, Z. ZHANG, Teer Coatings Limited, Miba Coating Group, UK	CSM Instruments Focused Topic Session “Coating Quality Control Solutions” 12:15 – 1:15 pm Pacific Salon 1-2	

Monday Morning, April 23, 2012

Coatings for Biomedical and Healthcare Applications Room: Sunset - Session D1-1 Bioactive and Biocompatible Coatings and Surface Functionalization of Biomaterials Moderators: D.V. Shtansky, National University of Science and Technology "MISIS", Russian Federation, S. Rodil Posada, Universidad Nacional Autonoma de Mexico, Mexico		Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Pacific Salon 1-2 - Session E1-1 Friction Wear Lubrication Effects & Modeling Moderators: Lopez, CSIS-University Sevilla, S. Aouadi, Southern Illinois University, US, V. Fridrici, Ecole Centrale de Lyon, O.L. Eryilmaz, Argonne National Laboratory, US	
10:00 am	D1-1-1 The effect of the surface treatment of Ti alloy on the nanomechanical response of bone grown on Ti6Al4V in vitro, J. CHEN , MA. BIRCH, S.J. BULL, S. ROY, Newcastle University, UK	E1-1-1	Assessment of factors influencing the behaviour of MoS ₂ coatings by means of factorial design, J. YANG , V. FRIDRICI, PH. KAPSA, Ecole Centrale de Lyon, France
10:20 am	D1-1-2 A comparative study on bactericidal efficiency of nano structured pure TiO ₂ thin films and Al-TiO ₂ composite thin films, A.B. PANDA, Mesra, INDIA, SK. MAHAPATRA, P.K. BARHAI, I. BANERJEE , Birla Institute of Technology, India	E1-1-2	Application of the friction energy density approach to quantify the fretting wear endurance of DLC hard coatings: influence of temperature and frequency, S. FOUVRY , G. BLONDY, Ecole Centrale de Lyon, France
10:40 am	D1-1-3 Invited Surface Engineering and Modification of Biomaterials, P. CHU , City University of Hong Kong, Hong Kong Special Administrative Region of China	E1-1-3 Invited	Atomic-Scale Friction of Surfaces and Coatings, A. MARTINI , University of California, Merced, US
11:00 am	Invited talk continued.	E1-1-3 Invited	Invited talk continued.
11:20 am	D1-1-6 Surface modification of zirconia nanofiber coatings for biomedical applications, J. PIASCIC , B. STONER, RTI International, US, D. SURMAN, Kratos Analytical Inc., UK, A. CHAROENPANICH, E. LOBOA, North Carolina State University, US	E1-1-5	Imaging Dynamic of Polishing Technology for Digital Surfacing Of Ophthalmic Plastics, S. MEZGHANI , M. EL MANSORI, Arts et Métiers ParisTech, France
11:40 am	D1-1-7 Immobilization of pamidronates on the nanotube surface of titanium discs and their interaction with bone cells, Z.C. XING , T.H. KOO, Kyungpook National University, Republic of Korea, S. MOON, Y. JEONG, Korea Institute of Materials Science, Republic of Korea, I.K. KANG, Kyungpook National University, Republic of Korea	E1-1-6	A study on friction coefficient and wear coefficient of coated systems submitted to micro-scale abrasion tests, R. COZZA , Centro Universitário da FEI – Fundação Educacional Inaciana "Padre Sabóia de Medeiros", Brazil
12:00 pm	CSM Instruments Focused Topic Session: “Coating Quality Control Solutions” 12:15 – 1:15 pm in Pacific Salon 1-2		

Monday Morning, April 23, 2012

New Horizons in Coatings and Thin Films Room: Royal Palm 1-3 - Session F6-1		Advanced Characterization of Coatings and Thin Films Room: Sunrise - Session TS2-1	
Coatings for Compliant Substrates Moderators: B. Beake, Micro Materials Ltd, UK, R.M. Souza, Mechanical Engineering Department, Universidade de São Paulo		Advanced Characterization of Coatings and Thin Films Moderators: P. Schaaf, TU Ilmenau, Germany, F. Giuliani, Imperial College London - South Kensington Campus, UK, S. Korte, University of Erlangen-Nürnberg, Germany	
10:00 am	F6-1-1 Invited Deformation and Delamination in Polymer Metal Thin Film Structures, N.R. MOODY , E.D. REEDY, E. CORONA, D. ADAMS, Sandia National Laboratories, US, M. KENNEDY, Clemson University, US, M. CORDILL, Montanuniversität Leoben, Austria, J. YEAGER, Los Alamos National Laboratory, US, D. BAHR, Washington State University, US	10:00 am	TS2-1-1 Invited 3D Microstructure Analysis of Thin Films and Coatings in the Micro, Nano and Atomic Scale, F. MÜCKLICH , Saarland University and Materials Engineering Center, Germany
10:20 am	Invited talk continued.	10:20 am	Invited talk continued.
10:40 am	F6-1-3 Extracting mechanical properties of coatings on compliant substrates using nanoindentation, S.J. BULL , Newcastle University, UK	10:40 am	TS2-1-3 Atom probe tomography of self-organized nanostructuring in Zr-Al-N thin films, L. JOHNSON , N. GHAFLOOR, Linköping University, Sweden, M. THUVANDER, K. STILLER, Chalmers University of Technology, Sweden, M. ODÉN, L. HULTMAN, Linköping University, Sweden
11:00 am	F6-1-4 Organic ultrathin film adhesion on compliant substrate using scratch test technique, X. BODDAERT , Ecole Nationale Supérieure des Mines de Saint Etienne, France, G. COVAREL, Laboratoire de Physique et Mécanique Textiles, Université de Haute Alsace, France, B. BENSALID, M. MATTEI, P. BENABEN, J. BOIS, Ecole Nationale Supérieure des Mines de Saint Etienne, France	11:00 am	TS2-1-4 3D FIB/SEM imaging and 3D EBSD analysis of compressed MgO micropillars, M. RITTER , Hamburg University of Technology, Germany, S. KORTE, W.J. CLEGG, P.A. MIDGLEY, University of Cambridge, UK
11:20 am	F6-1-5 Flexibility and electrical stability of ITO-coated polyethylene terephthalate (PET) and polyethylene naphthalate (PEN) under monotonic and cyclic bending, G. POTOCZNY , S. ABELL, University of Birmingham, UK, K. SIERRAS, D. CAIRNS , West Virginia University, US, S. KUKUREKA, University of Birmingham, UK	11:20 am	TS2-1-5 Recent Advances in XPS for the Characterization of Thin Films, D. SURMAN , Kratos Analytical Inc., UK, C. BLOMFELD, A. ROBERTS, S. HUTTON, S. PAGE, Kratos Analytical Ltd., UK
11:40 am	F6-1-6 Compliant metallic electrodes for Electroactive Polymer Actuators, F. HABRARD , G. KOVACS, J. PATSCHEIDER , Empa, Switzerland	11:40 am	
12:00 pm	CSM Instruments Focused Topic Session: “Coating Quality Control Solutions” 12:15 – 1:15 pm in Pacific Salon 1-2		

Monday Afternoon, April 23, 2012

Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 Session B1-2/PVD Coatings and Technologies Moderators: P. Eklund, Linköping University, Sweden, J.H. Huang, National Tsing Hua University, Taiwan, J. Vetter, Sulzer Metaplas GmbH, Germany		Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications Room: Tiki Pavilion Session C2-2/F4-2 Thin Films for Photovoltaics and Active Devices: Synthesis and Characterization Moderators: T. Terasako, Graduate School of Science and Engineering, Ehime University, Japan, M. Cremona, Pontificia Universidade Católica do Rio de Janeiro	
1:30 pm	B1-2-1 Effect of vacuum arc plasma state on the property of nitride coatings deposited by conventional and new arc cathode., S. TANIFUJI , K. YAMAMOTO, H. FUJII, Y. KUROKAWA, Kobe Steel Ltd., Japan	C2-2/F4-2-1	Reactive Deposition of Aluminum-doped Zinc Oxide films using Asymmetric Linked Dual Rotatable Magnetron, M. AUDRONIS , V. BELLIDO-GONZALEZ, Gencoa Ltd, UK
1:50 pm	B1-2-2 Industrial-scale sputter deposition of Cr _{1-x} Al _x N coatings with various compositions from segmented Cr and Al targets, T. WEIRATHER , C. SABITZER, S. GRASSER, Montanuniversität Leoben, Austria, C. CZETTL, Ceratizit Austria GmbH, Austria, P. POLCIK, PLANSEE Composite Materials GmbH, Germany, M. KATHREIN, Ceratizit Austria GmbH, Austria, C. MITTERER, Montanuniversität Leoben, Austria	C2-2/F4-2-2	Influence of the Kind and Content of Doped Impurities on Impurity-Doped ZnO Transparent Electrode Applications in Thin-Film Solar Cells, J. NOMOTO, T. HIRANO, T. MIYATA, T. MINAMI, Kanazawa Institute of Technology, Japan
2:10 pm	B1-2-3 Invited Preparation of Superhard Tetrahedral Amorphous Carbon, Nano-crystalline Diamond and Cubic Boron Nitride Films with Low Internal Stress by Means of Excimer Laser Ablation and Annealing, S. WEISSMANTEL , G. REISSE, K. GUENTHER, R. BERTRAM, H. GRUETTNER, M. NIEHER, University of Applied Sciences Mittweida, Germany, D. ROST, Roth & Rau MicroSystems GmbH, Germany	C2-2/F4-2-3	Comparative physical properties of Ga-, In-, Zr- and Sn-doped ZnO semiconductor thin films fabricated via sol-gel method, C.Y. TSAY , W.C. LEE, S.S. LO, C.J. CHANG, C.K. LIN, Feng Chia University, Taiwan
2:30 pm	Invited talk continued.	C2-2/F4-2-4	Temperature Dependence of Electrical Properties of Ga-Doped ZnO Films Deposited by Ion-Plating with DC Arc Discharge, T. TERASAKO , Graduate School of Science and Engineering, Ehime University, Japan, H.-P. SONG, H. MAKINO, Kochi University of Technology, Japan, S. SHIRAKATA, Graduate School of Science and Engineering, Ehime University, Japan, T. YAMAMOTO, Kochi University of Technology, Japan
2:50 pm	B1-2-5 Ion-assisted epitaxial sputter-deposition and properties of metastable Zr _{1-x} Al _x N(001) (0.05 < x < 0.25) alloys, A. MEI , B.M. HOWE, University of Illinois at Urbana-Champaign, US, N. GHAFOR, M. ODEN, H. FAGER, E. BROITMAN, Linköping University, Sweden, M. SARDELA, University of Illinois at Urbana-Champaign, US, L. HULTMAN, Linköping University, Sweden, A. ROCKETT, J.E. GREENE, I. PETROV, University of Illinois at Urbana-Champaign, US	C2-2/F4-2-6	Doped Cadmium Oxide as a High Performance Transparent Conductive Oxide, R. MENDELSBERG, K.M. YU, Y. ZHU, D. SPEAKS, S. LIM, Lawrence Berkeley National Laboratory, US, S. ZHAO, University of California, Berkeley, US, J. REICHERTZ, S. MAO, W. WALUKIEWICZ, A. ANDERS, Lawrence Berkeley National Laboratory, US
3:10 pm	B1-2-6 The influence of deposited surface structures on mechanical properties, M.C. FUCHS , N. SCHWARZER, Saxonian Institute of Surface Mechanics, Germany	C2-2/F4-2-7 Invited	Current Status and Future Prospects of the CIGS PV Technology, S. NIKI , S. ISHIZUKA, H. KOMAKI, S. FURUE, K. MATSUBARA, H. SHIBATA, A. YAMADA, Research Center for Photovoltaic Technologies, AIST, Japan, N. TERADA, Kagoshima University, Japan, T. SAKURAI, K. AKIMOTO, Tsukuba University, Japan
3:30 pm	B1-2-7 High Rate Magnetron Sputtering of Chromium Coatings for Tribological Applications, K. NYGREN , Uppsala University, Angstrom Laboratory, Sweden, M. SAMUELSSON, Linköping University, Sweden, Å. KASSMAN-RUDOLPHI, Uppsala University, Angstrom Laboratory, Sweden, U. HELMERSSON, Linköping University, Sweden, U. JANSSON, Uppsala University, Angstrom Laboratory, Sweden	C2-2/F4-2-9	Reactive magnetron sputtering of precursors for CZTS solar cells, T. KUBART , T. ERICSON, J.J. SCRAGG, C. PLATZER-BJÖRKMAN, The Angstrom Laboratory, Uppsala University, Sweden
3:50 pm	B1-2-8 Behavior of DLC Coated Low-Alloy Steel under Tribo-Corrosion: Effect of Top Layer and Interlayer Variation, K. BOBZIN, N. BAGCIVAN, S. THEISS, R. WEIB , Surface Engineering Institute - RWTH Aachen University, Germany, U. DEPNER, T. TROßMANN, J. ELLERMEIER, M. OECHSNER, Institute for Materials Technology - TU Darmstadt, Germany	C2-2/F4-2-10	Investigation of resistive switching characteristic and mechanism on InGaO _x film, J.B. YANG , National Sun Yat-Sen University, Taiwan
4:10 pm	B1-2-9 Integration of the Larco®-technology for ta-C-coatings in an industrial hard material batch system, M. HOLZHERR , M. FALZ, T. SCHMIDT, VTD Vakuumtechnik Dresden GmbH, Germany, H.-J. SCHEIBE, M. LEONHARDT, C.-F. MEYER, Fraunhofer-Institut für Werkstoff- und Strahltechnik, IWS, Germany	C2-2/F4-2-11	Influence of forming process on resistance switching characteristics of In ₂ O ₃ /SiO ₂ bi-layer, J.J. HUANG , National Sun Yat-Sen University, Taiwan
4:30 pm	B1-2-10 Invited Ion-assisted PVD growth of carbon-transition metal nanocomposite thin films, G. ABRASONIS , Helmholtz-Zentrum Dresden-Rossendorf, Germany	C2-2/F4-2-12	Investigating the multiple high resistance states after ac and dc reset methods for resistance switching memory application, H.C. TSENG , National Sun Yat-Sen University, Taiwan
4:50 pm	Invited talk continued.		
5:10 pm	B1-2-12 The effect of hydrogen addition on the residual stress of cubic boron nitride film prepared by R.F. magnetron sputtering of B ₄ C target, J.K. PARK , J.-S. KO, W.-S. LEE, Y.J. BAIK, Korea Institute of Science and Technology, Republic of Korea	Welcome Mixer from 6:00 – 7:30 pm Golden Foyer and the Lion Fountain Patio Sponsored by Oerlikon Balzers	

Monday Afternoon, April 23, 2012

<p>Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications Room: Pacific Salon 3 - Session C3-1 Optical Characterization of Thin Films, Surfaces and Devices Moderators: J. Krueger, BAM Berlin, Germany, E. Schubert, University of Nebraska-Lincoln, US</p>		<p>Coatings for Biomedical and Healthcare Applications Room: Sunset - Session D3-1 Coatings for Mitigating Bio-Corrosion, Tribo-Corrosion and Bio-Fouling Moderators: Stack, University of Strathclyde, UK, M.T. Mathew, Rush University Medical Center, US</p>	
1:30 pm	<p>C3-1-1 Invited Terahertz Ellipsometry Materials Characterization, T. HOFMANN, University of Nebraska-Lincoln, US</p>	D3-1-1 Invited	<p>Significance of Tribocorrosion and Bio-Tribocorrosion in the Oral Environment: The Case of Dental Implants, L.A. ROCHA, Universidade do Minho, Departamento de Engenharia Mecânica, Campus de Azurém, Portugal</p>
1:50 pm	Invited talk continued.		Invited talk continued.
2:10 pm	<p>C3-1-3 Modeling the optical properties of 2D colloidal crystals, S. PORTAL-MARCO, E. CABRERA, University of Barcelona, Spain, J. FERRE-BORRULL, Rovira i Virgili University, Spain, O. ARTEAGA, New York University, E. PASCUAL, E. BERTRAN, University of Barcelona, Spain</p>	D3-1-3	<p>Surface modification using PVD to apply silver-copper-mixed layers, G. GOTZMANN, C. WETZEL, Fraunhofer Institut für Elektronenstrahl- und Plasmatechnik, Medizinische Applikationen, Germany, L. ACHENBACH, N. ÖZKUCUR, R.H. FUNK, Medizinische Fakultät, Institut für Anatomie, TU Dresden, Germany, C. WERNER, Leibniz-Institut für Polymerforschung Dresden e.V., Research Division Biofunctional Polymer Materials, Germany</p>
2:30 pm	<p>C3-1-4 Confocal 2D Photoluminescence Mapping of Porous Silicon, A. ABUSOGLU, T. KARACALI, H. EFEGLU, Ataturk University, Turkey</p>	D3-1-4	<p>Studies on Corrosion and Tribocorrosion Behaviour of Electrodeposited CoW-WC Nanocomposites, S.K. GHOSH, BARC, India, J.P. CELIS, KUL, Belgium</p>
2:50 pm	<p>C3-1-5 Structure, electronic properties and electron energy loss spectra of transition metal nitride films, L. KOUTSOKERAS, M. MATENOGLU, P. PATSALAS, University of Ioannina, Greece</p>	D3-1-5	<p>An Electrochemical Investigation of TMJ Implant Metal Alloys in a Synovial Fluid-Like Environment: The influence of pH variation, D. ROYHMAN, University of Illinois at Chicago, College of Dentistry, US, R. RADHAKRISHNAN, M.T. MATHEW, M. WIMMER, Rush University Medical Center, US, C. SUKOTJO, University of Illinois at Chicago, College of Dentistry, US</p>
3:10 pm	<p>C3-1-6 Fabrication and characterization of a V₂O₅/V/V₂O₅ multilayer thin films for uncooled microbolometers, D. KAUR, V. GOYAL, Indian Institute of Technology Roorkee, India</p>	D3-1-7 Invited	<p>Fretting corrosion with proteins: the role of organic coating about the synergistic mechanisms, J. GERINGER, J. PELLIER, B. FOREST, ENSM-SE, France, D. MACDONALD, CEST-PSU, US</p>
3:30 pm	<p>C3-1-7 Gaschromic Properties of IrO₂ Thin Films Grown by Pulsed Laser Deposition Technique, C.H. HSU, C.C. CHANG, Institute of Physics, Academia Sinica, Nankang, Taiwan, M.H. WEN, Institute of Physics, Academia Sinica, Nankang, Taiwan, Y.R. WU, Y.T. HSIEH, W.H. CHAO, Institute of Physics, Academia Sinica, Nankang, Taiwan, C.K. LIN, Feng Chia University, Taipei, Taiwan, M.J. WANG, M.K. WU, Institute of Physics, Academia Sinica, Nankang, Taiwan</p>		Invited talk continued.
3:50 pm	<p>C3-1-8 Formation of nanoscale pyramids on polycrystalline silicon by self-mask etching to improve the solar cell efficiency, H.H. LIN, W.H. CHEN, F.C.N. HONG, C.J. WANG, National Cheng Kung University, Taiwan</p>	D3-1-10	<p>Optimisation of Pulsed Bipolar Plasma Electrolytic Oxidation of Magnesium Alloy for Biological Applications, Y. GAO, A. YEROKHIN, A. MATTHEWS, University of Sheffield, UK</p>
4:10 pm	<p>C3-1-9 Production and Characterization of Copper Indium Disulfide Thin Film, Y.R. WU, C.C. CHANG, M.H. WEN, C.H. HSU, Y.T. HSIEH, W.H. CHAO, J.Y. LUO, M.K. WU, Institute of Physics, Academia Sinica, Nankang, Taiwan, H.S. KOO, Ming-Hsin University of Science and Technology, Taiwan</p>	D3-1-11	<p>Micro-textured CoCrMo Alloy for MoM joints: An Electrochemical Investigation, C. NAGELLI, M.T. MATHEW, Rush University Medical Center, US, RP. POURZAL, F. LIEDTKE, A. FISCHER, University of Duisburg-Essen, Germany, M. WIMMER, Rush University Medical Center, US</p>
4:30 pm	<p>C3-1-10 Invited Studying matter with laser driven x-ray sources, J. SPIELMANN, Institute of Optics and Quantumelectronics, Friedrich Schiller University Jena, Germany</p>	<p>Welcome Mixer from 6:00 – 7:30 pm Golden Foyer and the Lion Fountain Patio Sponsored by Oerlikon Balzers</p>	
4:50 pm	Invited talk continued.		
5:10 pm	<p>C3-1-12 Synthesizes of Mesoporous Tantalum Oxide Films by Sol-Gel Process for the Applications in All-Solid-State Electrochromic Devices, Z.Z. TSAI, C.L. WU, C.K. WANG, Department of Materials Science and Engineering, National Cheng Kung University, Taiwan, S.C. WANG, Department of Mechanical Engineering, Southern Taiwan University, Taiwan, J.L. HUANG, Department of Materials Science and Engineering, National Cheng Kung University, Taiwan</p>		
5:30 pm	<p>C3-1-13 Fabrication and characterization of ZnO/NiTi/ZnO multilayers for optoelectronic applications, D. KAUR, N. CHOUDHARY, Indian Institute of Technology Roorkee, India</p>	<p>VAMAS TWA 22 Annual General Meeting Mechanical Property Measurements of Thin Films and Coatings Royal Palm 1-3 from 5:30 – 6:30 pm</p>	

Monday Afternoon, April 23, 2012

<p>Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Pacific Salon 1-2 - Session E3-1/G2-1 Development, Characterization, and Tribology of Coatings for Automotive and Aerospace Applications Moderators: R. Evans, Timken Company, S. Dixit, Plasma Technology Inc., US, H. Rudigier, OC Oerlikon Balzers AG, Liechtenstein</p>		<p>New Horizons in Coatings and Thin Films Room: Royal Palm 1-3 - Session F1-1 Nanomaterials, Nanofabrication, and Diagnostics Moderators: Y. Gonzalvo, Hiden Analytical Ltd., S. Kodambaka, University of California, Los Angeles, US</p>	
1:30 pm	<p>E3-1/G2-1-1 The effective Indenter concept, its uses in measurement analysis and its extension into the time domain, N. SCHWARZER, N. BIERWISCH, SIO, Germany</p>	F1-1-1 Invited	<p>Diagnostics in Low Pressure Plasmas and Characterisation of Films Properties in HIPIMS Technology, A.P. EHIASARIAN, Sheffield Hallam University, UK</p>
1:50 pm	<p>E3-1/G2-1-2 Effect of BIAS and hydrogen on arc activated high ionization N₂-Ar plasma nitrided maraging steel grade 300, E. ALMANDOZ, J. FERNANDEZ, J.A. GARCIA, G.G. FUENTES, R.J. RODRIGUEZ, Asociacion de la Industria Navarra, Spain</p>	Invited talk continued.	
2:10 pm	<p>E3-1/G2-1-3 Invited Requirements for Broad Acceptance of DLC Coatings for Tribological Applications in the Commercial Aerospace Market, L. PINGREE, The Boeing Company, US</p>	F1-1-3	<p>Design of new coating materials for neutron detector applications, the example TM_{1-x}Gd_xN, B. ALLING, Linköping University, Sweden, C. HÖGLUND, R. HALL-WILTON, ESS, Sweden, L. HULTMAN, Linköping University, Sweden</p>
2:30 pm	Invited talk continued.	F1-1-4	<p>Hierarchical ZnO Nanorod array Films with Enhanced Photocatalytic Performance, C.J. CHANG, M.H. HSU, C.Y. TSAY, C.K. LIN, Feng Chia University, Taiwan</p>
2:50 pm	<p>E3-1/G2-1-5 Influence of HVOF spraying parameters on the wear resistance of Al-SiC composites coatings deposited on ZE41 magnesium alloy, A. LOPEZ, J. RAMS, B. TORRES, P. RODRIGO, M. CAMPO, Rey Juan Carlos University, Spain</p>	F1-1-5	<p>ZnO Nanostructures Synthesized by CO₂ Supercritical Fluid at Low-Temperature Treatment, K.C. CHANG, T.M. TSAI, T.C. CHANG, Y.E. SYU, H.C. HUANG, D.S. GAN, T.F. YOUNG, National Sun Yat-Sen University, Taiwan</p>
3:10 pm	<p>E3-1/G2-1-6 Influence of deposition process parameters on durability and residual stresses in highly oriented MoS₂ films, B. VIERNEUSEL, S. TREMMEL, S. WARTZACK, Friedrich-Alexander-University Erlangen-Nuremberg, Germany</p>	F1-1-6	<p>One-step hybrid pulse anodization for nanoporous anodic aluminum oxide synthesis of aluminum thin films sputtered on Si(100) substrate, C.K. CHUNG, M.W. LIAO, O.K. KHOR, H.C. CHANG, National Cheng Kung University, Taiwan</p>
3:30 pm	<p>E3-1/G2-1-8 Numerical analysis of the influence of film thickness and properties on the stress state of thin film-coated piston rings under contact loads., L.G.D.B.S. LIMA, L.C.S. NUNES, Universidade Federal Fluminense, Brazil, R.M. SOUZA, N.K. FUKUMASU, Universidade de São Paulo, Brazil, A. FERRARESE, Mahle Metal Leve S/A, Brazil</p>	F1-1-7	<p>Nanostructured mesoporous surfaces produced by phase separation in Al-Si thin films, P. MARTIN, A. BENDAVID, K-H. MULLER, L. RANDENIYA, CSIRO Materials Science and Engineering, Australia</p>
3:50 pm	<p>E3-1/G2-1-9 Numerical analysis of wear and failure zones of coated piston skirt and piston rings under scuffing conditions, N.K. FUKUMASU, University of São Paulo, Brazil, L.G.D.B.S. LIMA, Universidade Federal Fluminense, Brazil, A. FERRARESE, Mahle Metal Leve S/A, Brazil, R.M. SOUZA, University of São Paulo, Brazil</p>	F1-1-9 Invited	<p>Structural and Electronic Properties of Epitaxial Silicene, Y. YAMADA-TAKAMURA, JAIST, Japan</p>
4:10 pm	<p>E3-1/G2-1-10 Effect of chromium on the wear mechanisms of self-adaptive WSC-Cr sputtered coatings, T. POLCAR, University of Southampton, UK, F. GUSTAVSSON, Uppsala University, Angstrom Laboratory, Sweden, M. DANEK, Czech Technical University in Prague, Czech Republic, A. CAVALEIRO, University of Coimbra, Portugal</p>	Invited talk continued.	
4:30 pm	<p>E3-1/G2-1-11 Performance impact of honing dynamics on surface finish of precoated cylinder bores, M. EL MANSORI, Arts et Métiers ParisTech, France, B. GOELDEL, L. SABRI, Renault sas, France</p>	F1-1-11	<p>Carbon-Nanotube-Templated Metallic Microstructures for MEMS: Preparation and Characterization, R. HANSEN, Brigham Young University, US, R. BADGER, Utah Valley University, US, D. MCKENNA, B. JENSEN, R. VANFLEET, R. DAVIS, D. ALLRED, Brigham Young University, US</p>
4:50 pm	<p>E3-1/G2-1-12 Macroscopic simulation of the liner honing process, B. GOELDEL, Renault SAS, France, M. EL MANSORI, Arts et Métiers ParisTech, France, L. SABRI, Renault SAS, France</p>	F1-1-12	<p>Nanocomposite-based wear sensor materials for in-situ process control in cutting applications, S. ULRICH, C. KLEVER, H. LEISTE, K. SEEMANN, M. STUEBER, Karlsruhe Institute of Technology, Germany</p>
5:10 pm	<p>E3-1/G2-1-13 Fiction and adhesion of Si and F incorporating diamond-like carbon (DLC) coatings sliding against aluminum, F.G. SEN, X. MENG-BURANY, University of Windsor, Canada, M.J. LUKITSCH, Y. QI, General Motors Research and Development Center, US, A.T. ALPAS, University of Windsor, Canada</p>		
5:30 pm	<p>VAMAS TWA 22 Annual General Meeting Mechanical Property Measurements of Thin Films and Coatings Royal Palm 1-3 from 5:30 – 6:30 pm</p>		

Monday Afternoon, April 23, 2012

Advanced Characterization of Coatings and Thin Films

Room: Sunrise - Session TS2-2

Advanced Characterization of Coatings and Thin Films

Moderators: F. Giuliani, Imperial College London - South Kensington Campus, UK, S. Korte, University of Erlangen-Nürnberg, Germany, P. Schaaf, TU Ilmenau, Germany

1:30 pm	TS2-2-1 Testing of mechanical thin film properties by vibrating Micro-Electromechanical Systems (MEMS), P. SCHAAF, R. GRIESLER, J. KLAUS, M. STUBENRAUCH, K. TONISCH, J. PEZOLDT, S. MICHAEL, TU Ilmenau, Germany		
1:50 pm	TS2-2-2 A New FIB-DIC Material Removal Method for Poisson's Ratio and Residual Stress Measurement in thin films, M. SEBASTIANI, University of Rome "Roma Tre", Italy, E. BEMPORAD, F. CARASSITI, University of Rome "Roma Tre", Italy		
2:10 pm	TS2-2-3 Low temperature deformation in complex crystals, V. SCHNABEL, University of Cambridge, UK, S. KORTE, Gordon Laboratory, Department of Materials Science and Metallurgy, University of Cambridge, UK, C. WALTER, R. STEARN, W. CLEGG, University of Cambridge, UK		
2:30 pm	TS2-2-4 Carbon-Based Coating for Flexible Fabric Heater Prepared by Arc Ion Plating, C.C. HSU, C.M. CHEN, J.L. HE, Feng Chia University, Taiwan		
2:50 pm	TS2-2-5 Invited Kinetics of Thin Film Growth and Gas-Solid Reactions using <i>in situ</i> High-Temperature Scanning Tunneling Microscopy, S. KODAMBAKA, Y. MURATA, University of California, Los Angeles, US, V. PETROVA, I. PETROV, University of Illinois at Urbana-Champaign, US		
3:10 pm	Invited talk continued.		
3:30 pm	TS2-2-7 In-situ AFM studies of crack initiation in ultra-thin SiO _x films on polymer substrates., B. OZKAYA, University of Paderborn, Germany, S. STEVES, Ruhr Universität Bochum, Germany, C.N. LIU, O. OZCAN, University of Paderborn, Germany, P. AWAKOWICZ, Ruhr Universität Bochum, Germany, G. GRUNDMEIER, University of Paderborn, Germany		
3:50 pm	TS2-2-8 High Frequency Characterization of Screen-printed Silver Circuits with an Environmental Reliability Test, K.S. KIM, W.R. MYUNG, S.B. JUNG, Sungkyunkwan University, Republic of Korea		
4:10 pm	TS2-2-10 The Bipolar Resistance Switching Behavior with a Pt/CoSiO _x /TiN Structure of Nonvolatile Memory Device, Y.E. SYU, National Sun Yat-Sen University, Taiwan, G.W. CHANG, National Chiao Tung University, Taiwan		
4:30 pm	TS2-2-11 A low-temperature method to improve the performance of Ni: SiO ₂ - based nonvolatile memory by supercritical CO ₂ fluid, S.L. CHUANG, National Sun Yat-Sen University, Taiwan		
4:50 pm	TS2-2-12 Resistive switching characteristics induced by doping of Sn in SiO ₂ -based nonvolatile memory, T.M. TSAI, K.C. CHANG, T.C. CHANG, Y.E. SYU, D.S. GAN, National Sun Yat-Sen University, Taiwan		
5:10 pm	Welcome Mixer from 6:00 – 7:30 pm Golden Foyer and the Lion Fountain Patio Sponsored by Oerlikon Balzers		VAMAS TWA 22 Annual General Meeting Mechanical Property Measurements of Thin Films and Coatings Royal Palm 1-3 from 5:30 – 6:30 pm

Tuesday Morning, April 24, 2012

Exhibitors Keynote Lecture
9:40 – 10:40 am
Room: Golden Ballroom

Coatings for Use at High Temperature
Room: Sunrise - Session A2-1

Thermal and Environmental Barrier Coatings
Moderators: R. Wellman, Cranfield University, UK, D. Litton, Pratt & Whitney, US, R. Trice, Purdue University, US

8:00 am	<p>Exhibitors Keynote Session</p> <p>Professor Emeritus Roger De Gryse</p> <p>Ghent University, Belgium</p> <p>“Rotatable Magnetrons, Today and Tomorrow”</p> <p>See Keynote Lecture Page for abstract</p> <p>Golden Ballroom 9:40 – 10:40 am</p>	<p>A2-1-1 Progress in Measuring and Understanding the Delamination Toughness of Zirconia Coatings, E. DONOHUE, N. PHILIPS, M. BEGLEY, C.G. LEVI, University of California, Santa Barbara, US</p>
8:20 am		<p>A2-1-2 Monitoring Delamination of Thermal Barrier Coatings by Combined Photoluminescence Piezospectroscopy Imaging and Upconversion Luminescence Imaging Techniques, J.I. ELDRIDGE, NASA Glenn Research Center, US, B. HEEG, Lumium, Netherlands</p>
8:40 am		<p>A2-1-3 Invited The influence of transient thermal gradients and substrate constraint on the delamination of thermal barrier coatings, HUTCHINSON, School of Engineering and Applied Sciences, Harvard University, US</p> <p>Invited talk continued.</p>
9:00 am		
9:20 am		<p>A2-1-5 Raman Spectroscopy and Neutron scattering of Ferroelastic Switching in Ceria Stabilized Zirconia, A. BOLON, M. GENTLEMAN, Texas A&M University, US</p>
9:40 am		<p>A2-1-6 Thermo-mechanical properties of lanthanide added zirconia film deposited by EB PVD, Y.S. OH, K.H. KWAK, H.T. KIM, S.W. KIM, S.M. LEE, Korea Institute of Ceramic Engineering and Technology, Republic of Korea, B.K. JANG, National Institute for Materials Science, Japan</p>
10:00 am		<p>A2-1-7 Effect of post heat treatment on thermal durability of thermal barrier coatings in thermal fatigue tests, S. MYOUNG, H. KIM, M. KIM, S. LEE, Y. JUNG, Changwon National University, Republic of Korea, S. JUNG, T. WOO, Sung Il Co., Ltd. (SIM), Republic of Korea</p>
10:20 am		<p>A2-1-8 New Perspectives on the Phase Stability Challenge in Zirconia-based TBCs, J. KROGSTAD, S. KRÄMER, University of California, Santa Barbara, US, R. LECKIE, Los Alamos National Laboratory, US, M. LEPPLE, Karlsruhe Institute of Technology, Germany, Y. GAO, D. LIPKIN, GE Global Research, US, C.G. LEVI, University of California, Santa Barbara, US</p> <p>STUDENT AWARD FINALIST</p>
10:40 am		<p>A2-1-9 Invited Influence of the mechanical behaviour of the under layer in coating spallation, V. MAUREL, A. KOSTER, Mines-ParisTech, UMR CNRS 7633, France, L. RÉMY, Mines-ParisTech, UMR CNRS 7633, France</p> <p>Invited talk continued.</p>
11:00 am		
11:20 am		<p>A2-1-11 Inhibiting High Temperature Densification Through Multi-Phase TBCs, J.S. VAN SLUYTMAN, C.G. LEVI, University of California, Santa Barbara, US, V.K. TOLPYGO, Honeywell Aerospace, Phoenix, AZ, US</p>
11:40 am	<p>Exhibition opens in TC-Exhibit Hall 11:00 am to 7:00 pm</p>	

Tuesday Morning, April 24, 2012

Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 - Session B1-3 PVD Coatings and Technologies Moderators: P. Eklund, Linköping University, Sweden, J.H. Huang, National Tsing Hua University, Taiwan, J. Vetter, Sulzer Metaplas GmbH, Germany		Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B7-1 Computational Design and Experimental Development of Functional Thin Films Moderators: B. Alling, Linköping University, Sweden, A. Amassian, KAUST, P. Patsalas, University of Ioannina, D. Holec, Montanuniversität Leoben, Austria	
8:00 am	B1-3-1 Invited Preparation and characterization of anti-wear and anti-bacteria TaN-Cu, TaN-Ag, TaN(Ag,Cu) nanocomposite thin films, J.H. HSIEH, Ming Chi University of Technology, Taiwan	8:00 am	B7-1-1 Time domain effect on growth kinetics of thin silver films, D. MAGNFÄLT, Linköping University, IFM-Material Physics, Plasma and Coatings Physics Division, Sweden, G. ABADIAS, Université de Poitiers-CNRS-ENSMA, France, U. HELMERSSON, K. SARAKINOS, Linköping University, Sweden
8:20 am	Invited talk continued.	8:20 am	B7-1-2 Analysis of the particle velocity range for deposition and the optimum velocity of cold sprayed particles using smoothed particle hydrodynamics method, A.M. MANAP, T. OKABE, K. OGAWA, Tohoku University, Japan
8:40 am	B1-3-3 Effects of sputtering gas for the preparation of CN _x films by RF reactive sputtering, T.S. SHIROYA, Graduate School, Chiba Institute of Technology, Japan, Y. SAKAMOTO, Chiba Institute of Technology, Japan	8:40 am	B7-1-3 Invited Molecular Dynamics Studies of Grain Boundaries in Mazed-bicrystal Thin Films, M. ASTA, University of California, Berkeley; Lawrence Berkeley National Laboratory, US, D. OLMSTED, University of California, Berkeley, US, C. OPHUS, Lawrence Berkeley National Laboratory, US, T. RADETIC, Lawrence Berkeley National Laboratory, US; University of Belgrade, Serbia, U. DAHMEN, University of Belgrade, Serbia Invited talk continued.
9:00 am	B1-3-4 Zirconium carbonitrides: study of tribological properties with deposition parameters, J. BARRIGA, L. MENDIZABAL, U. RUIZ DE GOPEGUI, Tekniker, Spain	9:00 am	B7-1-5 A non-equilibrium thermodynamic model for the formation of a Cu-Sn intermetallics film on a Cu substrate, F.D. FISCHER, Montanuniversität Leoben, Austria, J. SVOBODA, Academy of Sciences, Czech Republic
9:20 am	B1-3-5 Comparison of sputter deposited WC coatings from alternative sources, H. ALAGOZ, E. UZUN, M. UGRAS, N. UDDIN, E. BENGU, Bilkent University, Turkey	9:20 am	B7-1-6 Epitaxially Grown V _x Mo _{1-x} N/MgO(001) Thin Films by Reactive Magnetron Sputtering, H. KINDLUND, J. LU, E. BROITMAN, J. BIRCH, Linköping University, Sweden, I. PETROV, J.E. GREENE, University of Illinois at Urbana-Champaign, US, L. HULTMAN, Linköping University, Sweden
9:40 am	B1-3-6 The influence of the magnetic field strength on the poisoning behavior of Tantalum, R. HOLLERWEGER, Montanuniversität Leoben, Austria, M. LECHTHALER, OC Oerlikon Balzers AG, Liechtenstein, P. POLCIK, PLANSEE Composite Materials GmbH, Germany, J. PAULITSCH, P.H. MAYRHOFER, Montanuniversität Leoben, Austria	9:40 am	B7-1-7 Atomistic study of crack formation in strained thin films, A. OILA, S.J. BULL, Newcastle University, UK
10:00 am	B1-3-8 Cavitation and abrasion resistance of Ti-Al-Y-N coatings prepared by the PIII&D technique from filtered vacuum-arc plasma, V. BELOUS, V. VASYLIEV, A. LUCHANINOV, V. MARININ, E. RESHETNYAK, V. STREL'NITSKIJ, National Science Center "Kharkov Institute of Physics and Technology", Ukraine, S. GOLTYVANYTSYA, V. GOLTYVANYTSYA, Real Ltd., Ukraine	10:00 am	B7-1-8 Classical Molecular Dynamics Studies of Initial Nucleation Kinetics during TiN Thin Films Growth, D. SANGIOVANNI, D. EDSTRÖM, V. CHIRITA, L. HULTMAN, Linköping University, Sweden, I. PETROV, J.E. GREENE, University of Illinois at Urbana-Champaign, US
10:20 am	B1-3-9 Synthesis and Tribological Properties of W _x N _y Coatings, H. ALAGOZ, M. UGRAS, E. UZUN, M.F. GENISEL, E. BENGU, Bilkent University, Turkey	10:20 am	B7-1-9 Do nitride alloys exhibit Vegard's-like linear behaviour?, D. HOLEC, P.H. MAYRHOFER, Montanuniversität Leoben, Austria
10:40 am	B1-3-10 Excellent thermal stability of Cu films containing insoluble Ru, RuN _x and ReN _x for advanced barrierless Cu metallization, W. DIYATMIKA, J. CHU, National Taiwan University of Science and Technology, Taiwan, C. LIN, Asia-Pacific Institute of Creativity, Taiwan	10:40 am	B7-1-10 Toughness Enhancement in Transition Metal Nitride Thin Films by Alloying and Valence Electron Concentration Tuning, D. SANGIOVANNI, V. CHIRITA, L. HULTMAN, Linköping University, Sweden STUDENT AWARD FINALIST
11:00 am	B1-3-11 Microstructural features and thermal stability of AlN:Ag and Al-Si-N:Ag nanostructured films, A. SIOZIOS, D. ANAGNOSTOPOULOS, P. PATSALAS, University of Ioannina, Greece	11:00 am	B7-1-11 Invited Bridging atomic structure with properties in III-Nitride heterostructures, KOMNINOU, Aristoteles University of Thessaloniki, Greece
11:20 am	B1-3-12 <i>Hard yet Tough Ceramic Coatings via Magnetron Sputtered Multilayers Nanocomposite and Polycrystalline Architecture.</i> , Y. WANG, S. ZHANG, Nanyang Technological University, Singapore, J.W. LEE, Ming Chi University of Technology, Taiwan, W. LEW, Nanyang Technological University, Singapore	11:20 am	Invited talk continued.
11:40 am	Exhibition opens in TC-Exhibit Hall 11:00 am to 7:00 pm		

Tuesday Morning, April 24, 2012

Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications Room: Tiki Pavilion - Session C2-3/F4-3 Thin Films for Photovoltaics and Active Devices: Synthesis and Characterization Moderators: T. Terasako, Graduate School of Science and Engineering, Ehime University, Japan, M. Cremona, Pontificia Universidade Católica do Rio de Janeiro, Brazil		Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications Room: Pacific Salon 3 - Session C4-1 Transparent Conductive Films: Inorganic Oxides, Organic Materials, Metals Moderators: P. Kelly, Manchester Metropolitan University, UK, S. Lim, Lawrence Berkeley National Laboratory, US	
8:00 am	C2-3/F4-3-1 The I-V transfer characteristics of a-IGZO TFTs deteriorated owing to the copper diffusion in the process of the source/drain metal, H.L. CHIU , Y.H. TAI, L.S. CHOU, C.M. LI, National Chiao Tung University, Taiwan	8:00 am	C4-1-1 ZnO films deposited from a filtered cathodic vacuum arc: characterization and device applications, J.G. PARTRIDGE , E.H. MAYES, M.R. FIELD, D.G. MCCULLOCH, RMIT University, Australia, H-S KIM, R. HEINHOLD, S. ELZWAWI, G.C. TURNER, R.J. REEVES, M.W. ALLEN, University of Canterbury, New Zealand
8:20 am	C2-3/F4-3-2 Light-accelerated instability mechanism depending on bias and environment in amorphous Indium-Gallium-Zinc-Oxide Thin Film Transistors, Y.C. CHEN , National Sun Yat-Sen University, Taiwan	8:20 am	C4-1-2 Filtered cathodic arc deposited ZnO:Al assisted by a high-flux low-energy constricted gas plasma source, S. LIM , R. MENDELSBERG, Lawrence Berkeley National Laboratory, US, N. FRIEDERICHSEN, RWTH Aachen University, Germany, Y.K. ZHU, Harbin Institute of Technology, China, K.M. YU, A. ANDERS, Lawrence Berkeley National Laboratory, US
8:40 am	C2-3/F4-3-3 Suppressed Temperature-dependent Sub-threshold Leakage Current of amorphous Indium-Gallium-Zinc-Oxide Thin Film Transistors by Nitrous Oxide Plasma Treatment, G.W. CHANG , National Chiao Tung University, Taiwan, Y.E. SYU, National Sun Yat-Sen University, Taiwan	8:40 am	C4-1-3 Invited The material challenges in oxide electronics: Recent progress in oxide films for electronic applications, B. SZYSZKA , Fraunhofer IST, Germany, C. ELSAESSER, Fhg-IWM, Germany, B. MALIC, JSI, Slovenia, G. KIRIAKIDIS, FORTH, Crete, L. PEREIRA, R. MARTINS, UNINOVA, Portugal, K. GEHRKE, Osram, Germany, N. YOUNG, Phillips Research, UK, V. LAMBERTINI, Fiat CRF, Italy, U. WEIMAR, EKUT, Germany
9:00 am	C2-3/F4-3-4 Investigating of Negative Bias Stress Induced Temperature-Dependence Degradation for InGaZnO TFTs under Dark and Light Illumination, M.C. CHEN , T.C. CHANG, S.Y. HUANG, M.H. WU, National Sun Yat-Sen University, Taiwan, K.H. YANG, University of Toronto, Canada, M.C. YANG, T.C. CHEN, F.Y. JIAN, National Sun Yat-Sen University, Taiwan	9:00 am	Invited talk continued.
9:20 am	C2-3/F4-3-5 Invited Optimising OLED devices for solid state lighting applications using optical spectroscopy, P. MONKMAN , Durham University, UK	9:20 am	C4-1-5 Enhanced stability performance for Ga-doped ZnO films by indium co-doping, H.-P. SONG , H. MAKINO, N. YAMAMOTO, T. YAMAMOTO, Research Institute, Kochi University of Technology, Japan
9:40 am	Invited talk continued.	9:40 am	C4-1-6 Temperature dependence of electrical properties in polycrystalline Ga-doped ZnO films deposited on oxide nanosheet seed layer, H. MAKINO , Kochi University of Technology, Japan, T. SHIBATA, National Institute for Materials Science, Japan, H.-P. SONG, N. YAMAMOTO, Kochi University of Technology, Japan, T. SASAKI, National Institute for Materials Science, Japan, T. YAMAMOTO, Kochi University of Technology, Japan
10:00 am	C2-3/F4-3-7 New rare-earth quinolate complexes for organic light-emitting devices, H. CAMARGO , M. CREMONA , Pontificia Universidade Católica do Rio de Janeiro, Brazil, T. PAOLINI, H. BRITO, Universidade de São Paulo, Brazil	10:00 am	C4-1-7 Optical and Electrical Characterization of Ga-doped ZnO Thin Films Grown by Atmospheric Spray Pyrolysis, K. YOSHINO , N. KAMIYA, M. OSHIMA, University of Miyazaki, Japan
10:20 am	C2-3/F4-3-8 Effect of the deposition process and substrate temperature on the microstructure defects and electrical conductivity of thin Mo films, H. KÖSTENBAUER , Plansee SE, Austria, D. RAFAJA, U. MÜHLE, G. SCHREIBER, TU Bergakademie Freiberg, Germany, M. KATHREIN, J. WINKLER, Plansee SE, Austria	10:20 am	C4-1-8 Investigation of different techniques for achieving optimal p-type doping in transparent conductive zinc oxide by a metal-nitride codoping approach, A. POPPLETON , M. BILEK, D. MCKENZIE, University of Sydney, Australia, S. LIM, Lawrence Berkeley National Laboratory, US, B. ABENDROTH, TU Bergakademie Freiberg, Germany
10:40 am	C2-3/F4-3-9 Study of the electrical performance of rf magnetron sputtered TiO ₂ source and CuO drain split gate transistor, S. GOPIKISHAN , P. LAHA, A.B. PANDA, P.K. BARHAI, Birla Institute of Technology, India, AK. DAS, Bhabha Atomic Research Center, India, I. BANERJEE, SK. MAHAPATRA , Birla Institute of Technology, India	10:40 am	C4-1-9 Invited Electrical Transport in ZnO and ZnMgO Films: A Comparison, K. ELLMER , A. BIKOWSKI, T. WELZEL, Helmholtz-Zentrum Berlin für Materialien und Energie, Germany
11:00 am	C2-3/F4-3-10 Characteristics and photocatalytic reactivity of TiO ₂ beads synthesized using a microwave-assisted hydrothermal method, W. WU , Y. TSOU, S. HUANG, MingDao University, Taiwan	11:00 am	Invited talk continued.
11:20 am	C2-3/F4-3-11 Effect of growth parameters and annealing on some properties of sputtered ZnO thin films, R. CHANDER , GPC Bhikhiwind, India	11:20 am	C4-1-11 Study of reactively Co-sputtered Sb-Sn oxide, G. DING , M. LE, F. HASSAN, Z. SUN, M. NGUGEN, Intermolecular Inc, US
11:40 am	Exhibition opens in TC-Exhibit Hall 11:00 am to 7:00 pm	11:40 am	C4-1-12 Investigation of p-type conducting Cu-Al-O mixtures, C. SCHULZ , C. BALMER, B. SZYSZKA, Fraunhofer IST, Germany

Tuesday Morning, April 24, 2012

Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Pacific Salon 1-2 - Session E1-2 Friction Wear Lubrication Effects & Modeling Moderators: Lopez, CSIS-University Sevilla, S. Aouadi, Southern Illinois University, US, V. Fridrici, Ecole Centrale de Lyon, O.L. Eryilmaz, Argonne National Laboratory, US		New Horizons in Coatings and Thin Films Room: Sunset - Session F2-1 High Power Impulse Magnetron Sputtering Moderators: D. Lundin, Université Paris-Sud 11, France, J. Sapiuha, Ecole Polytechnique de Montreal, Canada, R. Bandorf, Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany	
8:00 am	E1-2-1 Friction induced evolution of mechanical properties of engineered surfaces, T. LISKIEWICZ , J. KUBIAK, Leeds University, UK	8:00 am	F2-1-1 Invited Energetic aspects of thin film growth in HiPIMS and in other pulsed plasmas, L. MARTINU , J. CAPEK, M. HALA, O. ZABEIDA, J.E. KLEMBERG-SAPIEHA, École Polytechnique de Montréal, Canada Invited talk continued.
8:20 am	E1-2-2 Frictional Behavior of Silver Nano-pattern Fabricated by Thermal Dewetting, H.-J. KIM , D.E. KIM, Yonsei University, Republic of Korea	8:20 am	Invited talk continued.
8:40 am	E1-2-3 Scaling effects between micro- and macro-tribology for a Ti-MoS ₂ coating, P. STOYANOV , R. CHROMIK , H. STRAUSS, McGill University, Canada	8:40 am	F2-1-3 Unique Property of Our Brand New Technology Based On High Power Pulse Sputtering., S. HIROTA , K. YAMAMOTO, Kobe Steel Ltd., Japan, R. CREMER , KCS Europe GmbH, Germany
9:00 am	E1-2-4 Mechanisms responsible for compositional variations of films sputtered from a WS ₂ target, E. SARHAMMAR , J. SUNDBERG, H. NYBERG, Uppsala University, Angstrom Laboratory, Sweden, T. KUBART, The Angstrom Laboratory, Uppsala University, Sweden, S. JACOBSON, U. JANSSON, T. NYBERG, Uppsala University, Angstrom Laboratory, Sweden	9:00 am	F2-1-4 Influence of pulse shape and peak current on the resulting properties of Ti-Si-C composite films deposited by HIPIMS, R. BANDORF , M. SCHOLTALBERS, G. BRÄUER, Fraunhofer IST, Germany
9:20 am	E1-2-5 Tribological characteristics of carbon nitride synthesized using MW-PCVD, I. TANAKA , Graduate School, Chiba Institute of Technology, Japan, Y. SAKAMOTO, Chiba Institute of Technology, Japan	9:20 am	F2-1-5 Highly ionized carbon plasmas for the growth of diamond-like carbon thin films with magnetron sputtering, A. AJAZ , K. SARAKINOS, D. LUNDIN, U. HELMERSSON , Linköping University, Sweden
9:40 am	E1-2-6 The Role of Planar Defects in Achieving Low Friction and Wear in Lubricious Oxide Coatings, V. AGEH , H. MOHSENI, T. SCHARF, The University of North Texas, US	9:40 am	F2-1-6 Characterization of hard coatings deposited by HIPIMS system and their cutting performance, T. SASAKI , Hitachi Tool Engineering, Ltd., Japan
10:00 am	E1-2-7 Invited Structure and properties of nanocomposite DLC coatings on hard and soft substrates, J.T. DEHOSSON , University of Groningen, Netherlands	10:00 am	F2-1-7 Properties of Ti _{1-x} Al _x N films grown by HIPIMS and in hybrid HIPIMS-DCMS configuration: a comparative study, G. GRECZYNSKI , J. LU, J. JENSEN, Linköping University, Sweden, M. JOHANSSON, Seco Tools AB, Linköping University, Sweden, I. PETROV, J.E. GREENE, University of Illinois at Urbana-Champaign, US, W. KÖLKER, O. LEMMER, CemeCon AG, Germany, L. HULTMAN, Linköping University, Sweden
10:20 am	Invited talk continued.	10:20 am	F2-1-8 (Cr _{1-x} Al _x)N: A Comparison of Direct Current, Middle Frequency Pulsed and High Power Pulsed Magnetron Sputtering for Injection Molding Components, K. BOBZIN , N. BAGCIIVAN, S. THEISS , Surface Engineering Institute - RWTH Aachen University, Germany
10:40 am	E1-2-9 Synthesis and Tribological Behavior of MoS ₂ -Au Nanocomposite Films, R. GOEKE , Sandia National Laboratories, US, T. SCHARF, The University of North Texas, US, P. KOTULA, S. PRASAD, Sandia National Laboratories, US	10:40 am	F2-1-9 Structure evolution in TiAlCN/VCN nanoscale multilayer coatings deposited by reactive High Power Impulse Magnetron Sputtering technology., P. HOVSEPIAN , A. EHIAZARIAN, G. KAMATH, Sheffield Hallam University, UK, I. PETROV, University of Illinois at Urbana-Champaign, US
11:00 am	E1-2-10 Electrodeposited of gold-multiwalled carbon nanotube to improve lubrication of composite films, P.-A. GAY , Haute Ecole ARC Ingenierie, Switzerland	11:00 am	F2-1-10 Structure and properties of thick CrN/AlN multilayer coatings deposited by the hybrid modulated pulsed power and pulsed dc magnetron sputtering, J. LIN , Colorado School of Mines, US, W. SPROUL, Reactive Sputtering, Inc., US, Z. WU, M. LEI, Dalian University of Technology, China, J. MOORE, Colorado School of Mines, US
11:20 am	E1-2-11 A systematic study of suberlubricity potential of ta-C coatings, V. WEIHNACHT , S. MAKOWSKI, G. ENGLBERGER, A. LESON, Fraunhofer IWS, Germany	11:20 am	F2-1-11 The uniformity in thickness and microstructure of CrN films fabricated using plasma ion implantation-deposition based on high power pulsed magnetron sputtering, X.B. TIAN , Z.Z. WU, C.Z. GONG, Harbin Institute of Technology, China, P. CHU, City University of Hong Kong, Hong Kong Special Administrative Region of China
11:40 am	E1-2-12 The wear resistance of boride layers in the four-ball lubricant test, E. GARCIA-BUSTOS , M.A. FIGUEROA-GUADARRAMA, G.A. RODRIGUEZ-CASTRO , E. GALLARDO-HERNANDEZ, I. CAMPOS-SILVA, Instituto Politecnico Nacional, Mexico	11:40 am	F2-1-12 Characterization of chromium and chromium nitride obtained by DC and HiPIMS sputtering techniques, A. FERREC , IMN – Nantes, France, A. TRICOTEAUX, C. NIVOT, LMCPA-Maubuge, France, F. SCHUSTER , Laboratoire Commun MATPERF CEA-Mecachrome, France, M. GANCIU, National Institute for Laser, Plasma and Radiation Physics, Romania, P.-Y. JOUAN, A. DJOUADI, IMN – Nantes, France

Exhibition opens in TC-Exhibit Hall from 11:00 am to 7:00 pm

Tuesday Afternoon, April 24, 2012

	Coatings for Use at High Temperature Room: Sunrise - Session A2-2 Thermal and Environmental Barrier Coatings Moderators: R. Wellman, Cranfield University, UK, D. Litton, Pratt & Whitney, US, R. Trice, Purdue University, US	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 - Session B4-1 Properties and Characterization of Hard Coatings and Surfaces Moderators: J. Lin, Colorado School of Mines, US, C. Mulligan, U.S. Army ARDEC, Benet Laboratories, US, B. Zhao, Exxon Mobile, US
1:50 pm	A2-2-1 Invited Process and Equipment for Advanced Thermal Barrier Coating Systems, A. FEUERSTEIN , C. PETORAK, L. LI, T.A. TAYLOR, Praxair Surface Technologies, Inc., US	B4-1-1 Epitaxial growth of sputtered TiO ₂ films on α-Al ₂ O ₃ , C. MITTERER , Montanuniversität Leoben, Austria, M. MÜHLBACHER, Materials Center Leoben Forschung GmbH, Austria, C. WALTER, J. KECKES, Montanuniversität Leoben, Austria, M. POPOV, J. SPITALER, Materials Center Leoben Forschung GmbH, Austria, C. AMBROSCH-DRAXL, Montanuniversität Leoben, Austria
2:10 pm	Invited talk continued.	B4-1-2 Cu-dependent thermal transformations in hard Al-Cu-O coatings, P. ZEMAN , S. PROKSOVA, J. BLAZEK, R. CERSTVY, J. MUSIL, University of West Bohemia, Czech Republic
2:30 pm	A2-2-3 Calcium-Magnesium-Alumino-Silicate (CMAS) degradation of EB-PVD thermal barrier coatings: solubility of different oxides from ZrO ₂ -Y ₂ O ₃ and ZrO ₂ -Nd ₂ O ₃ systems in the molten model CMAS, N. CHELLAH , M.H. VIDAL-SÉTIF, Thermal and Environmental Barrier Coatings, France	B4-1-3 Invited Multicomponent nanostructured coatings with high thermal stability, corrosion-, oxidation resistance, and improved lubrication, D.V. SHTANSKY , K.A. KUPTSOV, National University of Science and Technology "MISIS", Russian Federation, P.H.V. KIRUYKHANTSEV-KORNEEV, A.N. SHEVEIKO, National University of Science and Technology "MISIS", Russian Federation, E.A. LEVASHOV, National University of Science and Technology "MISIS", Russian Federation
2:50 pm	A2-2-4 Bond Coat Cavitation under CMAS-Infiltrated TBCs, K. WESSELS , University of California, Santa Barbara, US, D. KONITZER, GE Aviation, US, C.G. LEVI, University of California, Santa Barbara, US	Invited talk continued.
3:10 pm	A2-2-5 Assessing the Delamination Behavior of CMAS Infiltrated TBCs under a Thermal Gradient, R.W. JACKSON , E. ZALESKI, C.G. LEVI, University of California, Santa Barbara, US	B4-1-5 Influence of residual stresses on the spinodal decomposition of metastable Ti _{1-x} Al _x N coatings, N. SCHALK , Materials Center Leoben Forschung GmbH, Austria, C. MITTERER, Montanuniversität Leoben, Austria, C. MICHOTTE, M. PENOY, Ceratizit Luxembourg S.à.r.l., Luxembourg
3:30 pm	A2-2-6 CMAS infiltration of YSZ thermal barrier coatings and potential protection measures, V. KUCHENREUTHER , V. KOLARIK, M. JUEZ LORENZO, Fraunhofer ICT, Germany, W. STAMM, Siemens Power Generation, Germany, H. FIETZEK, Fraunhofer ICT, Germany	B4-1-6 <i>In-situ</i> small angle X-ray scattering and phase field study on the microstructural evolution at isothermal annealing of TiAlN thin films, A. KNUTSSON , J. ULLBRAND, L. ROGSTRÖM, Linköping University, Sweden, J. ALMER, Advanced Photon Source, US, B. JANSSON, Seco Tools AB, Linköping University, Sweden, M. ODÉN, Linköping University, Sweden
3:50 pm	A2-2-7 Invited Overview of Environmental Barrier Coatings for Ceramic Matrix Composites, K. LEE , Rolls Royce, US	B4-1-7 Towards an Improved Stylus Geometry for the Scratch Test and Superficial Rockwell Hardness, G. FAVARO , CSM Instruments SA, Switzerland, N.M. JENNETT , National Physical Laboratory, UK
4:10 pm	Invited talk continued.	B4-1-8 Surface Characterization of Optimized TiSiN Coating Deposited Via A Combination of DC and RF Magnetron Sputtering, A.R.BUSHROA , ABDUL RAZAK , University of Malaya, Malaysia, T. ARIGA, Tokai University, Japan, S. SINGH, M. HAJI HASAN, University of Malaya, Malaysia, M.R. MUHAMMAD, Multimedia University, Malaysia
4:30 pm	A2-2-9 Progress In Depositing Solution Precursor Plasma Spray Thermal Barrier Coatings, M. GELL , E. JORDAN, J. ROTH, University of Connecticut, US	B4-1-9 Surface Analysis of TiAlON and CrAlN Coatings Deposited by Means of HPPMS, C. KUNZE , C. GNOTH, University of Paderborn, Germany, M. TO BABEN, S. THEISS, N. BAGCIVAN, K. BOBZIN, J. SCHNEIDER, RWTH Aachen University, Germany, G. GRUNDMEIER, University of Paderborn, Germany
4:50 pm	A2-2-10 Thermoelastic characteristics in thermal barrier coatings with graded layer between the top and bond coats, GO , S. MYOUNG, J. LEE, Y. JUNG, S. KIM, Changwon National University, Republic of Korea, U. PAIK, Hanyang University, Republic of Korea	B4-1-10 Nanoprobe measurements of anisotropy in thin-film nanocrystalline coatings, A. JANKOWSKI , H. AHMED, Texas Tech University, US
5:10 pm	A2-2-11 Invited Stability of Silicates for Environmental Barrier Coatings, E. OPILA , University of Virginia, US, N. JACOBSON, NASA Glenn Research Center, US	B4-1-11 TaSiN Thin Films: Si Influence on the Optical and Electrical Properties, G. RAMÍREZ , Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico, S.E. RODIL, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, México, S. MUHL, Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico, M. RIVERA, Instituto de Física - Universidad Nacional Autónoma de México, México, D. OEZER, R. SANJINES , EPFL, Switzerland
5:30 pm	Invited talk continued.	<h2 style="margin: 0;">Exhibits Reception</h2> <h3 style="margin: 0;">TC- Exhibit Hall 5:30 – 7:00 pm</h3>

Tuesday Afternoon, April 24, 2012

Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B7-2 Computational Design and Experimental Development of Functional Thin Films Moderators: B. Alling, Linköping University, Sweden, A. Amassian, KAUST, D. Holec, Montanuniversität Leoben, Austria, P. Patsalas, University of Ioannina, Greece		Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Pacific Salon 1-2 - Session E3-2/G2-2 Development, Characterization, and Tribology of Coatings for Automotive and Aerospace Applications Moderators: R. Evans, Timken Company, US, H. Rudigier, OC Oerlikon Balzers AG, Liechtenstein, S. Dixit, Plasma Technology Inc., US	
1:50 pm	B7-2-1 The effect of nitrogen content on stability and elastic properties of TiAlN studied by ab initio calculations and combinatorial reactive magnetron sputtering, M. TO BABEN , J. EMMERLICH, L. RAUMANN, J. SCHNEIDER, Materials Chemistry, RWTH Aachen university, Germany STUDENT AWARD FINALIST	E3-2/G2-2-1	<i>In situ</i> tribology of cold spray-deposited pure aluminum and Al-Al ₂ O ₃ composite coatings, J.M. SHOCKLEY , R. CHROMIK, H. STRAUSS, McGill University, Canada, E. IRISSOU, J.-G. LEGOUX, National Research Council, Canada
2:10 pm	B7-2-2 First principle molecular dynamics simulations of high temperature properties in transition metal nitrides, P. STENETEG , I. ABRIKOSOV, B. ALLING, Linköping University, Sweden	E3-2/G2-2-2	Thermal Spray Lubricious Oxide Coatings, S. DIXIT , Plasma Technology Inc., US, O.L. ERYILMAZ, A. ERDEMIR, Argonne National Laboratory, US
2:30 pm	B7-2-3 Invited Simulating the slow structural evolution of materials using Accelerated Molecular Dynamics, D. PEREZ , Los Alamos National Laboratory, US	E3-2/G2-2-3	Tribological properties of plasma sprayed AISi coatings reinforced by nano-diamond particles, M.D. BAO , Ningbo University of Technology, China, C. ZHANG, D. LAHIRI, A. ARGARWAL, Florida International University, US
2:50 pm	Invited talk continued.	E3-2/G2-2-4	High temperature abrasive systems, J. DAVENPORT , R. STEARN, University of Cambridge, UK, M. HANCOCK, Rolls Royce, US, W. CLEGG, University of Cambridge, UK
3:10 pm	B7-2-5 Stabilization of cubic AlN in TiN/AlN and CrN/AlN bi-layer systems by combined FEM and ab initio analysis, V. CHAWLA , D. HOLEC, P.H. MAYRHOFER, Montanuniversität Leoben, Austria	E3-2/G2-2-5 Invited	Customized Surface Technology for Innovative Automotive and Industrial Products, T. HOSENFELDT , Y. MUSAYEV, Schaeffler Technologies GmbH & Co. KG, Germany
3:30 pm	B7-2-6 Structural and elastic properties of polycrystalline Al _{1-x} Cr _x N alloys : multiscale computations versus experiments, T. PHAM , Institut P ⁺ - Université de Poitiers, France, K. BOUAMAMA, Ferhat Abbas University, Algeria, P. DJEMIA , University Paris 13, France, L. BELLARD, UPMC, France, D. FAURIE, University Paris 13, France, E. LE BOURHIS, P. GOUDEAU, Institut P ⁺ - Université de Poitiers, France	Invited talk continued.	
3:50 pm	B7-2-7 Theoretical spectroscopy investigation of hard TiN/SiNx interfaces, W. OLOVSSON , B. ALLING, L. HULTMAN, I. ABRIKOSOV, Linköping University, Sweden	E3-2/G2-2-7	Ultra-fast Synthesis of Superhard Borides: A Paradigm Shift in Surface Engineering for Tooling and Automotive Applications, A. ERDEMIR , O.L. ERYILMAZ, Argonne National Laboratory, US, S. TIMUR, Istanbul Technical University, Turkey, O. KAHEVCIOGLU, Argonne National Laboratory, US, G. KARTAL, Istanbul Technical University, Turkey, V. SISTA, Argonne National Laboratory, US
4:10 pm	B7-2-8 Elasticity in TiAlN alloys: the significant elastic anisotropy and the dependence on the SQS model, F. TASNÁDI , M. ODÉN, I. ABRIKOSOV, Linköping University, Sweden	E3-2/G2-2-8	A study on tribological behavior of arc-coated Ti-Al-N films on AISI 4340 alloy steel for automotive application, C. HSU , Tatung University, Taiwan, C. LIN , Feng Chia University, Taiwan, D.W. LAI, Tatung University, Taiwan, K. OU, Taipei Medical University, Taiwan
4:30 pm	B7-2-9 Improving thermal stability of hard coating films via a concept of multicomponent alloying., H. LIND , R. FORSÉN, B. ALLING, N. GHAFOR, F. TASNÁDI, M. JOHANSSON, I. ABRIKOSOV, M. ODÉN, Linköping University, Sweden	E3-2/G2-2-9	Predicting lifetime of silver and gold coating depending on their thickness, stress and environmental conditions, O.P. PERRINET , LTDS, France
4:50 pm	B7-2-10 Packing structure and optical properties of functionalized pentacene, U. SCHWINGENSCHLOGL , N. SINGH , Y. SAEED, KAUST, Saudi Arabia	E3-2/G2-2-10	Understanding durability of lubricant/DLC coating interface, L. AUSTIN , T. LISKIEWICZ, A. NEVILLE , Leeds University, UK, R. TIETEMA, Hauzer Techno Coating, BV, Switzerland
5:10 pm		E3-2/G2-2-11	From DLC to Si-DLC based layer systems with optimized properties for tribological applications, D. HOFMANN , S. KUNKEL, AMG Coating Technologies GmbH, Germany, K. BEWLOGUA, R. WITTORF, Fraunhofer IST, Germany
5:30 pm	<h1 style="margin: 0;">Exhibits Reception</h1> <h2 style="margin: 0;">TC- Exhibit Hall 5:30 – 7:00 pm</h2>		

Tuesday Afternoon, April 24, 2012

New Horizons in Coatings and Thin Films Room: Sunset - Session F2-2 High Power Impulse Magnetron Sputtering Moderators: R. Bandorf, Fraunhofer Institute for Surface Engineering and Thin Films IST, J. Sapiéha, Ecole Polytechnique de Montreal, D. Lundin, Université Paris-Sud 11, France		Applications, Manufacturing, and Equipment Room: Tiki Pavilion - Session G5-1 Coatings, Pre-Treatment, Post-Treatment and Duplex Technology Moderators: N. Baggivan, RWTH Aachen University, Germany, S. Brahmandam, Kennametal Incorporated, US	
1:50 pm	F2-2-1 HIPIMS Discharge Dynamics: Evolution and Origin of Plasma Instabilities, A. HECIMOVIC , Institut for Experimental Physics II, Research Department Plasma, Ruhr-Universität Bochum, Germany, T. DE LOS ARCOS, Ruhr Universität Bochum, Germany, V. SCHULZ-VON DER GATHEN, M. BÖKE, J. WINTER, Institut for Experimental Physics II, Research Department Plasma, Ruhr-Universität Bochum, Germany	G5-1-1	Invited Ion treatment and duplex coatings by arc plasma immersion surface engineering processes., V. GOROKHOVSKY , Vapor Technologies, Inc., US
2:10 pm	F2-2-2 Modes of operation in HiPIMS: Understand and optimize the discharge pulse, D. LUNDIN , C. VITELARU, Université Paris-Sud 11, France, N. BRENNING, Royal Institute of Technology, U. HELMERSSON, Linköping University, Sweden, T. MINEA, Université Paris-Sud 11, France	Invited talk continued.	
2:30 pm	F2-2-3 High-rate reactive deposition of multifunctional Ta-O-N films using high power impulse magnetron sputtering, J. VLCEK , J. REZEK, J. HOUSKA, R. CERSTVY, University of West Bohemia, Czech Republic	G5-1-3	Growth kinetics of electrochemical boriding of titanium, G. KARTAL , S. TIMUR, Istanbul Technical University, Turkey
2:50 pm	F2-2-4 Variation of high power pulsed / modulated pulsed power magnetron sputtering based on oscillatory voltage wave forms for the deposition of carbon and aluminum oxide coatings, W. SPROUL , Reactive Sputtering, Inc., US, J. LIN, Colorado School of Mines, US, B. ABRAHAM, Zond, Inc. / Zpulser, LLC, US, J. MOORE, Colorado School of Mines, US, R. CHISTYAKOV, Zond, Inc. / Zpulser, LLC, US	G5-1-4	Improvement of Electrical Properties of Silicon Oxide Film with Ultraviolet and Organic Gas Assisted Annealings, T. ITO , T. MATUMOTO, K. NISHIOKA, University of Miyazaki, Japan
3:10 pm	F2-2-5 The development and the application of a high power impulse inverted cylindrical magnetron sputtering system for the elaboration of nanomaterials on wires or fibers., A. CHOQUET , D. DUDAY, A. LEJARS, O. VOZNIY, T. WIRTZ, CRP Gabriel Lippmann, Luxembourg	G5-1-5	Enhancement of gas barrier properties of polypropylene by surface treatment before DLC coating, H. TASHIRO , A. HOTTA, Keio University, Japan
3:30 pm	F2-2-6 Invited Low pressure High Power Impulse Magnetron Sputtering systems for deposition of biomedical functional thin films, V. STRANAK , University of Greifswald, Germany, M. CADA, Z. HUBICKA, Academy of Sciences, Czech Republic, S. DRACHE, A.P. HERRENDORF, H. WULFF, R. HIPPLER, University of Greifswald, Germany	G5-1-6	Invited Cathodic Arc Plasma Treatment for Surface Alloying and Modification, M. URGEN , Istanbul Technical University, Turkey
3:50 pm	Invited talk continued.		Invited talk continued.
4:10 pm	F2-2-8 Material properties of Aluminum Metal (Titanium/Chromium) Nitride coatings deposited by High Power Impulse Magnetron Sputtering (HIPIMS ⁺) technology., F. PAPA , A. CAMPICHE, R. TIETEMA, T. KRUG, Hauzer Techno Coating, BV, Netherlands, T. SASAKI, T. ISHIKAWA, Hitachi Tool Engineering, Ltd., Japan	G5-1-8	Microstructure and tribological properties of laser textured PVD coatings on tool materials, M. ADAMIAK , Silesian University of Technology, Poland
4:30 pm	F2-2-10 On the Influence of superimposed MF and HPPMS/HIPIMS pulsed packages on the deposition rate and properties of TiN, J. ALAMI , Z. MARIC, INI Coatings Ltd., Germany, M. MALZER, M. FENKER, FEM Forschungsinstitut Edelmetalle & Metallchemie, Germany, M. MARK, J. LÖFFLER, E. PARRA MAZA, G. MARK, MELEC GmbH, Germany	G5-1-11	Evaluation of Electrochemical Boriding of Inconel alloys, V. SISTA , Argonne National Laboratory, US, O. KAHVECIOGLU, Istanbul Technical University, Turkey, G. KARTAL, Technical University of Istanbul, Turkey, Q.Z. ZENG, Xian Jiaotong University, China, O.L. ERYILMAZ, A. ERDEMIR, Argonne National Laboratory, US, S. TIMUR, Istanbul Technical University, Turkey
4:50 pm	F2-2-11 Angle-resolved energy flux measurements of a HIPIMS-powered rotating cylindrical magnetron in reactive and non-reactive atmosphere., S. KONSTANTINIDIS , University of Mons, Belgium, W. LEROY, Ghent University, Belgium, R. SNYDERS, University of Mons, Belgium, D. DEPLA, Ghent University, Belgium	G5-1-12	Electrochemical Boriding of Molybdenum, O. KAHVECIOGLU , Istanbul Technical University, Turkey, V. SISTA, O.L. ERYILMAZ, A. ERDEMIR, Argonne National Laboratory, US, S. TIMUR, Istanbul Technical University, Turkey
5:10 pm	Invited talk continued.		G5-1-13 Mechanical and Microstructural Characterization of Nitrided AISI 4140 steel with Electroless NiP Coating, R. TORRES , P. SOARES, Universidade Católica do Paraná, Brazil, M. SOARES, IFSC, R.M. SOUZA, Mechanical Engineering Department, Universidade de São Paulo, Brazil, P. SOUZA, Universidade Católica do Paraná, Brazil, C. LEPIESNSKI, UFPR, Brazil
5:30 pm	<h1 style="margin: 0;">Exhibits Reception</h1> <h2 style="margin: 0;">TC- Exhibit Hall 5:30 – 7:00 pm</h2>		

Wednesday Morning, April 25, 2012

Coatings for Use at High Temperature Room: Sunrise - Session A1-1 Coatings to Resist High Temperature Oxidation, Corrosion and Fouling Moderators: D. Naumenko, Forschungszentrum Jülich GmbH, Germany, L-G. Johansson, Chalmers University of Technology, Sweden, B. Hazel, Pratt and Whitney, US, J. Pérez, Universidad Complutense de Madrid, Spain		Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 - Session B4-2 Properties and Characterization of Hard Coatings and Surfaces Moderators: J. Lin, Colorado School of Mines, US, C. Mulligan, U.S. Army ARDEC, Benet Laboratories, US, B. Zhao, Exxon Mobile, US	
8:00 am	A1-1-1 Invited Hot corrosion of NiAl diffusion coatings by gaseous Na ₂ SO ₄ , K. STILLER , H. LAI, P. KNUTSSON, L-G. JOHANSSON, Chalmers University of Technology, Sweden	8:20 am	Invited talk continued.
8:40 am	A1-1-3 Early Stages during Exposure of Uncoated and Coated HK40 Steel to Carburing Atmospheres, D. MELO-MÁXIMO , TRAMES, S.A de C.V, Mexico, O. SALAS , J. OSEGUERA, Instituto Tecnológico y de Estudios Superiores de Monterrey-CEM, Mexico, R. REICHEL , Institut fuer Medizinische Physik und Biophysik Westfaelische Wilhelms-Universitaet, Germany	8:00 am	B4-2-1 Invited Design and plasma synthesis of tribological surfaces for titanium, A. LEYLAND , University of Sheffield, UK, G. CASSAR , University of Sheffield, UK; University of Malta, Malta, A. MATTHEWS , University of Sheffield, UK
9:00 am	A1-1-4 New results and improvements of the catalytical poisoning concept against metal dusting, C. GEERS , M. GALETZ , M. SCHÜTZE , Dechema e.V., Frankfurt am Main, Germany	8:20 am	Invited talk continued.
9:20 am	A1-1-5 Structural Evolution of Candidate Coatings for Protection against Corrosion at High Temperature, L. MELO , Instituto Politécnico Nacional, Mexico, O. SALAS , J. OSEGUERA, Instituto Tecnológico y de Estudios Superiores de Monterrey-CEM, Mexico, V. LOPEZ-HIRATA , Instituto Politécnico Nacional, Mexico, R. TORRES , Pontificia Universidade Católica do Paraná, Brazil, R.M. SOUZA , Universidade Federal de Sao Paulo, Brazil	8:40 am	B4-2-3 Study of the environment effect on the tribological behavior of TiN, TiAlN and CrN coatings deposited by Reactive Magnetron Sputtering, J.S. RESTREPO , S. MUHL, Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico, M.F. CANO , F. SEQUEDA , J.M. GONZALEZ , Universidad Del Valle, Colombia
9:40 am	A1-1-6 Invited Fundamental Approaches to Optimizing the Hot-Corrosion Resistance of Coatings, B. GLEESON , University of Pittsburgh, US, Z. TANG , Iowa State University, US	9:00 am	B4-2-4 Wear behaviour of plasma sprayed Cu-Ni coatings on Al7075, M.J. GHAZALI , Universiti Kebangsaan, Malaysia, E. MAT KAMAL , Universiti Teknikal Malaysia, S. ABDULLAH , J. SHENG , Universiti Kebangsaan, Malaysia
10:00 am	Invited talk continued.	9:20 am	B4-2-6 Abrasive wear properties of AlCrN, AlTiN and CrN coatings, J.L.M. MO , M.H. ZHU , Southwest Jiaotong University, China, A. LEYLAND , A. MATTHEWS , University of Sheffield, UK
10:20 am	A1-1-8 High temperature oxidation studies of Detonation-Gun sprayed NiCrAlY+0.4wt%CeO ₂ coating on Fe and Ni -Based Superalloys in air under cyclic condition at 900 °C, S. KAMAL , Sharda University, India, D. MUDGAL , R. JAYAGANTHAN , S. PRAKASH , I.I.T-Roorkee, India	9:40 am	B4-2-7 Annealing-induced structural and mechanical property changes of CVD-(Si)-B-C coatings, C. PALLIER , G. CHOLLON , P. WEISBECKER , F. TEYSSANDIER , LCTS-CNRS, France
10:40 am	A1-1-9 High temperature oxidation studies of D-gun sprayed Cr ₃ C ₂ -25(NiCr) and Cr ₃ C ₂ -25(NiCr) + 0.2wt%Zr coatings on Ni and Co based superalloys in air at 900 °C, D. MUDGAL , Indian Institute of Technology Roorkee, India, S. KAMAL , Sharda University, India, S. SINGH , S. PRAKASH , Indian Institute of Technology Roorkee, India	10:00 am	B4-2-8 Thermal evolution of thermal, electrical and optical properties of Ti-Al-N coatings, R. RACHBAUER , OC Oerlikon Balzers AG, Liechtenstein, J.J. GENGLER , Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, A. VOEVODIN , Air Force Research Laboratory, US, K. RESCH , Materials Science and Testing of Plastics, Montanuniversitaet Leoben, Austria, P.H. MAYRHOFER , Montanuniversität Leoben, Austria
11:00 am	A1-1-10 Oxidation behavior of Hf-modified aluminide coatings on Haynes-188 at 1050°C, Y. WANG , M. SUNESON , SIFCO Minneapolis, US	10:20 am	B4-2-9 Pressure and Temperature Effects on the Decomposition of Arc Evaporated Ti _{1-x} Al _x N Coatings During Metal Machining, N. NORRBY , M. JOHANSSON , Linköping University, Sweden, R. M'SAOUBI , Seco Tools AB., Sweden, M. ODÉN , Linköping University, Sweden
11:20 am		10:40 am	B4-2-10 Understanding the deformation kinetics of Ti _{1-x} Al _x N ceramics at moderately elevated temperatures, C. CIUREA , V. BHAKHRI , N. NI , Imperial College London - South Kensington Campus, UK, P.H. MAYRHOFER , Montanuniversität Leoben, Austria, F. GIULIANI , Imperial College London - South Kensington Campus, UK
11:40 am		11:00 am	B4-2-11 The Influence of Bias Voltage on Residual Stresses and Tribological Behavior of Ti/TiAlN and Cr/CrAlN Multilayer Systems, W. TILLMANN , T. SPRUTE , F. HOFFMANN , Technische Universität Dortmund, Germany
11:40 am		11:20 am	B4-2-12 The effect of Yttrium addition on TiAlN coating, L. ZHU , M. HU , Shanghai University, China, W. NI , Y. LIU , Kennametal Incorporated, US
Exhibition Closes today at 2:00 pm			

Wednesday Morning, April 25, 2012

Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B5-1 Hard and Multifunctional Nano-Structured Coatings Moderators: J. Paulitsch, Christian Doppler Laboratory for Application Oriented Coating Development at the Department of Physical Metallurgy and Materials Testing, Montanunivers. R. Sanjines, Ecole Polytechnique Fédérale de Lausanne, P. Zeman, University of West Bohemia, Czech Republic		Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Pacific Salon 1-2 - Session E1-3 Friction Wear Lubrication Effects & Modeling Moderators: Lopez, CSIS-University Sevilla, V. Fridrici, Ecole Centrale de Lyon, O.L. Eryilmaz, Argonne National Laboratory, US, S. Aouadi, Southern Illinois University, US	
8:00 am	B5-1-1 A study of microstructures and mechanical properties of cathodic arc deposited CrCN/ZrCN multilayer coatings, C.Y. TONG , J.W. LEE, Ming Chi University of Technology, Taiwan, S.H. HUANG, National Chiao Tung University, Taiwan, Y.B. LIN, C.C. KUO, Ming Chi University of Technology, Taiwan, T.E. HSIEH, Gigastorage Corporation, Taiwan, Y.C. CHAN, H.W. CHEN, J.G. DUH, National Tsing Hua University, Taiwan	8:20 am	B5-1-2 Effect of Zr content on structural, mechanical and phase transformation properties of magnetron sputtered TiNiZr shape memory alloy thin films, D. KAUR , N. KAUR , Indian Institute of Technology Roorkee, India
8:20 am	B5-1-2 Effect of Zr content on structural, mechanical and phase transformation properties of magnetron sputtered TiNiZr shape memory alloy thin films, D. KAUR , N. KAUR , Indian Institute of Technology Roorkee, India	8:40 am	B5-1-3 Self-Organized nano-Labyrinth Structure in Magnetron Sputtered Zr _{0.6} Al _{0.4} N(001) Thin Films on MgO(001), N. GHAFOR , L. JOHNSON, Linköping University, Sweden, D. KLENOV, FEI Company, B. ALLING, Linköping University, Sweden, I. PETROV, J.E. GREENE, University of Illinois at Urbana-Champaign, US, L. HULTMAN, M. ODÉN, Linköping University, Sweden
8:40 am	B5-1-3 Self-Organized nano-Labyrinth Structure in Magnetron Sputtered Zr _{0.6} Al _{0.4} N(001) Thin Films on MgO(001), N. GHAFOR , L. JOHNSON, Linköping University, Sweden, D. KLENOV, FEI Company, B. ALLING, Linköping University, Sweden, I. PETROV, J.E. GREENE, University of Illinois at Urbana-Champaign, US, L. HULTMAN, M. ODÉN, Linköping University, Sweden	9:00 am	B5-1-4 Wear/erosion behavior of TiN-based nanocomposite coatings on SS304 and a synchrotron radiation assisted coating failure investigation, Y. LI , Q. YANG, A. HIROSE, University of Saskatchewan, Canada, R. WEI, Southwest Research Institute, US
9:00 am	B5-1-4 Wear/erosion behavior of TiN-based nanocomposite coatings on SS304 and a synchrotron radiation assisted coating failure investigation, Y. LI , Q. YANG, A. HIROSE, University of Saskatchewan, Canada, R. WEI, Southwest Research Institute, US	9:20 am	B5-1-5 Invited Erosion Mechanisms of Hard Nanocomposite Coatings, E. BOUSSER , L. MARTINU, J.E. KLEMBERG-SAPIEHA, École Polytechnique de Montréal, Canada
9:20 am	B5-1-5 Invited Erosion Mechanisms of Hard Nanocomposite Coatings, E. BOUSSER , L. MARTINU, J.E. KLEMBERG-SAPIEHA, École Polytechnique de Montréal, Canada	9:40 am	Invited talk continued.
9:40 am	Invited talk continued.	10:00 am	B5-1-7 Effects of structure and phase transformation on fracture toughness and mechanical properties of CrN/AlN multilayers, M. SCHLÖGL , J. PAULITSCH, J. KECKES, C. KIRCHLECHNER, P.H. MAYRHOFER, Montanuniversität Leoben, Austria
10:00 am	B5-1-7 Effects of structure and phase transformation on fracture toughness and mechanical properties of CrN/AlN multilayers, M. SCHLÖGL , J. PAULITSCH, J. KECKES, C. KIRCHLECHNER, P.H. MAYRHOFER, Montanuniversität Leoben, Austria	10:20 am	B5-1-8 Nanoindentation and fatigue properties of magnetron sputtered AlN/NiTi multilayer thin films, D. KAUR , N. CHOUDHARY, Indian Institute of Technology Roorkee, India
10:20 am	B5-1-8 Nanoindentation and fatigue properties of magnetron sputtered AlN/NiTi multilayer thin films, D. KAUR , N. CHOUDHARY, Indian Institute of Technology Roorkee, India	10:40 am	B5-1-9 Hardness of CrAlSiN nanocomposite coatings at elevated temperatures, S. LIU , S. KORTE, Gordon Laboratory, Department of Materials Science and Metallurgy, University of Cambridge, UK, X.Z. DING, X.T. ZENG, Singapore Institute of Manufacturing Technology, Singapore, W. CLEGG, Gordon Laboratory, Department of Materials Science and Metallurgy, University of Cambridge, UK
10:40 am	B5-1-9 Hardness of CrAlSiN nanocomposite coatings at elevated temperatures, S. LIU , S. KORTE, Gordon Laboratory, Department of Materials Science and Metallurgy, University of Cambridge, UK, X.Z. DING, X.T. ZENG, Singapore Institute of Manufacturing Technology, Singapore, W. CLEGG, Gordon Laboratory, Department of Materials Science and Metallurgy, University of Cambridge, UK	11:00 am	B5-1-10 Hard nanocrystalline Zr-B-C-(N) films prepared by pulsed magnetron sputtering, J. KOHOUT , P. STEIDL, J. VLCEK, R. CERSTVY, University of West Bohemia, Czech Republic
11:00 am	B5-1-10 Hard nanocrystalline Zr-B-C-(N) films prepared by pulsed magnetron sputtering, J. KOHOUT , P. STEIDL, J. VLCEK, R. CERSTVY, University of West Bohemia, Czech Republic	11:20 am	B5-1-11 Magnetron co-sputtered hard and ductile TiB ₂ /Ni coatings, H. WANG , Anhui University of Technology, China, F. GE, Ningbo Institute of Materials Technology and Engineering, China, P. ZHU, S. LI, Anhui University of Technology, China, F. HUANG , Ningbo Institute of Materials Technology and Engineering, China
11:20 am	B5-1-11 Magnetron co-sputtered hard and ductile TiB ₂ /Ni coatings, H. WANG , Anhui University of Technology, China, F. GE, Ningbo Institute of Materials Technology and Engineering, China, P. ZHU, S. LI, Anhui University of Technology, China, F. HUANG , Ningbo Institute of Materials Technology and Engineering, China	11:40 am	B5-1-12 Comparative investigation of boride and boronitride hard coatings produced by magnetron sputtering of MeB _x (Me: Mo, Cr, Ti) SHS-targets, P. KIRYUKHANTSEV-KORNEEV , A. SHEVEYKO, National University of Science and Technology "MISIS", Russian Federation, B. MAVRIN, Institute of Spectroscopy of RAS, Russian Federation, E.A. LEVASHOV, D.V. SHTANSKY, National University of Science and Technology "MISIS", Russian Federation
11:40 am	B5-1-12 Comparative investigation of boride and boronitride hard coatings produced by magnetron sputtering of MeB _x (Me: Mo, Cr, Ti) SHS-targets, P. KIRYUKHANTSEV-KORNEEV , A. SHEVEYKO, National University of Science and Technology "MISIS", Russian Federation, B. MAVRIN, Institute of Spectroscopy of RAS, Russian Federation, E.A. LEVASHOV, D.V. SHTANSKY, National University of Science and Technology "MISIS", Russian Federation	8:00 am	E1-3-1 Invited Solid Lubrication Processes of Diamond-Like Carbon Coatings, J. FONTAINE , Ecole Centrale de Lyon, France
8:00 am	E1-3-1 Invited Solid Lubrication Processes of Diamond-Like Carbon Coatings, J. FONTAINE , Ecole Centrale de Lyon, France	8:20 am	Invited talk continued.
8:20 am	Invited talk continued.	8:40 am	E1-3-3 Tribological behaviour at high temperature of hard CrAlN coatings doped with Y or Zr, J.C. SÁNCHEZ-LÓPEZ , A. CONTRERAS, Instituto de Ciencia de Materiales de Sevilla, Spain, A. GARCÍA-LUIS, M. BRIZUELA, Tecnalia, Spain
8:40 am	E1-3-3 Tribological behaviour at high temperature of hard CrAlN coatings doped with Y or Zr, J.C. SÁNCHEZ-LÓPEZ , A. CONTRERAS, Instituto de Ciencia de Materiales de Sevilla, Spain, A. GARCÍA-LUIS, M. BRIZUELA, Tecnalia, Spain	9:00 am	E1-3-4 High Temperature Tribometer Investigations of Oxide Coatings Synthesized by Cathodic Arc Evaporation, G. FAVARO , CSM Instruments SA, Switzerland, N. BIERWISCH, Saxonian Institute of Surface Mechanics, Germany, N.X. RANDALL, CSM Instruments SA, Switzerland, J. RAMM, OC Oerlikon Balzers AG, Liechtenstein, N. SCHWARZER, Saxonian Institute of Surface Mechanics, Germany, B. WIDRIG, OC Oerlikon Balzers AG, Liechtenstein
9:00 am	E1-3-4 High Temperature Tribometer Investigations of Oxide Coatings Synthesized by Cathodic Arc Evaporation, G. FAVARO , CSM Instruments SA, Switzerland, N. BIERWISCH, Saxonian Institute of Surface Mechanics, Germany, N.X. RANDALL, CSM Instruments SA, Switzerland, J. RAMM, OC Oerlikon Balzers AG, Liechtenstein, N. SCHWARZER, Saxonian Institute of Surface Mechanics, Germany, B. WIDRIG, OC Oerlikon Balzers AG, Liechtenstein	9:20 am	E1-3-5 Adaptive Nitride Coatings With Lubricious Behavior From 25 to 1000 °C, S. AOUDI , S. STONE, A. HARBIN, Southern Illinois University, US, C. MURATORE, A. VOEVODIN, Air Force Research Laboratory, Thermal Sciences and Materials Branch, US
9:20 am	E1-3-5 Adaptive Nitride Coatings With Lubricious Behavior From 25 to 1000 °C, S. AOUDI , S. STONE, A. HARBIN, Southern Illinois University, US, C. MURATORE, A. VOEVODIN, Air Force Research Laboratory, Thermal Sciences and Materials Branch, US	9:40 am	E1-3-7 High temperature tribological properties of CrZrSiN coatings, D.J. KIM , J.Y. KIM, B.S. KIM, S.Y. LEE, Korea Aerospace University, Republic of Korea, J.J. LEE, Seoul National University, Republic of Korea
9:40 am	E1-3-7 High temperature tribological properties of CrZrSiN coatings, D.J. KIM , J.Y. KIM, B.S. KIM, S.Y. LEE, Korea Aerospace University, Republic of Korea, J.J. LEE, Seoul National University, Republic of Korea	10:00 am	E1-3-8 Mechanical and Tribological Properties of Ti-Si-C-N Nanocomposite Coatings Deposited using a Plasma Enhanced Magnetron Sputtering (PEMS) Process, A.M. ABD EL-RAHMAN , Sohag University, Egypt, R. WEI , Southwest Research Institute, US
10:00 am	E1-3-8 Mechanical and Tribological Properties of Ti-Si-C-N Nanocomposite Coatings Deposited using a Plasma Enhanced Magnetron Sputtering (PEMS) Process, A.M. ABD EL-RAHMAN , Sohag University, Egypt, R. WEI , Southwest Research Institute, US	10:20 am	E1-3-9 Invited Atomic Scale Origins of Friction in Metallic Contacts, M. CHANDROSS , S. CHENG, Sandia National Laboratories, US
10:20 am	E1-3-9 Invited Atomic Scale Origins of Friction in Metallic Contacts, M. CHANDROSS , S. CHENG, Sandia National Laboratories, US	10:40 am	Invited talk continued.
10:40 am	Invited talk continued.	11:00 am	E1-3-11 Tribological study of PVD and CVD coated tool surfaces sliding on PA-6, PET and PTFE polymer substrates, G.G. FUENTES , A. SCANO, J. OSÉS, J. RODRIGO, R.J. RODRÍGUEZ, Center of Advanced Surface Engineering - AIN, Spain, C. HARTL, Fachhochschule Köln, Germany, Y. QIN, University of Strathclyde, UK, J. HOUSDEN, Tecvac, UK
11:00 am	E1-3-11 Tribological study of PVD and CVD coated tool surfaces sliding on PA-6, PET and PTFE polymer substrates, G.G. FUENTES , A. SCANO, J. OSÉS, J. RODRIGO, R.J. RODRÍGUEZ, Center of Advanced Surface Engineering - AIN, Spain, C. HARTL, Fachhochschule Köln, Germany, Y. QIN, University of Strathclyde, UK, J. HOUSDEN, Tecvac, UK	11:20 am	E1-3-12 Au-ZnO Nanocomposite Coatings for Wear-Resistant Electrical Contacts, S. PRASAD , R. GOEKE, P. KOTULA, Sandia National Laboratories, US
11:20 am	E1-3-12 Au-ZnO Nanocomposite Coatings for Wear-Resistant Electrical Contacts, S. PRASAD , R. GOEKE, P. KOTULA, Sandia National Laboratories, US	11:40 am	E1-3-13 The Effect of Ag Content on Friction Behavior of MoN-Ag and Mo ₂ N-Ag Nanocomposite Coatings, K. EZIRMIK , Ataturk University, Turkey, O. ERYILMAZ, Argonne National Laboratory, US, K. KAZMANLI, Istanbul Technical University, Turkey, A. ERDEMIR, Argonne National Laboratory, US, M. ÜRGEN, Istanbul Technical University, Turkey
11:40 am	E1-3-13 The Effect of Ag Content on Friction Behavior of MoN-Ag and Mo ₂ N-Ag Nanocomposite Coatings, K. EZIRMIK , Ataturk University, Turkey, O. ERYILMAZ, Argonne National Laboratory, US, K. KAZMANLI, Istanbul Technical University, Turkey, A. ERDEMIR, Argonne National Laboratory, US, M. ÜRGEN, Istanbul Technical University, Turkey		

Wednesday Morning, April 25, 2012

Applications, Manufacturing, and Equipment Room: Tiki Pavilion - Session G1-1		Graphene and 2D Nanostructures Room: Sunset - Session TS4-1	
Innovations in Surface Coatings and Treatments Moderators: R. Cremer, KCS Europe GmbH, Germany, L. Bardos, Uppsala University, Sweden		Graphene and 2D Nanostructures Moderators: M. Chhowalla, Rutgers University, US, C. Teichert, Montanuniversität Leoben, Austria	
8:00 am	G1-1-1 Mathematical modeling of metal dusting during initial stages., F. CASTILLO-ARANGUREN, J. OSEGUERA-PEÑA, ITESM-CEM, Mexico	TS4-1-1 Invited Intercalation compounds and cluster superlattices: graphene based 2D composites, T. MICHELY, University of Cologne, Germany	
8:20 am	G1-1-2 A Dip soldering process for three dimensional integration, M. RAO, J.C. LUSTH, S.L. BURKETT, The University of Alabama, US	Invited talk continued.	
8:40 am	G1-1-3 Invited Coatings for Aerospace Applications, C. LEYENS, Technische Universität Dresden, Germany	TS4-1-3 Growth Kinetics of Monolayer and Multilayer Graphene on Pd(111), H.S. MOK, Y. MURATA, University of California, Los Angeles, US, S. NIE, N. BARTELT, K. MCCARTY, Sandia National Laboratories, US, S. KODAMBAKA, University of California, Los Angeles, US	
9:00 am	Invited talk continued.	TS4-1-4 Invited Self-assembled monolayer nanodielectrics for low-power graphene electronics, T. ANTHOPOULOS, F. COLLEAUX, C. MATTEVI, Imperial College London - South Kensington Campus, UK, M. CHHOWALLA, Rutgers University, US	
9:20 am	G1-1-5 Solid particle erosion resistance of thick coating deposited by new AIP (Arc Ion Plating) cathode., J. MUNEMASA, K. YAMAMOTO, H. FUJII, Kobe Steel Ltd., Japan, Y. IWAI, University of Fukui, Japan	Invited talk continued.	
9:40 am	G1-1-6 Combination of Hardness and Toughness of CVD HARDIDE Coatings Provides Enhanced Protection against Wear and Erosion., N. ZHUK, Hardide Plc, UK	TS4-1-6 Characterization of graphene on Cu and SiC surfaces, A. VOEVODIN, Air Force Research Laboratory, US, A. KUMAR, R. PAUL, D. ZEMLYANOV, D. ZAKHAROV, Purdue University, US, J. REMMERT, I. ALTFEDER, Air Force Research Laboratory, US, T.S. FISHER, Purdue University, US	
10:00 am	G1-1-7 Improvement of the adhesion force between DLC and polymers by CVD method with photografting polymerization, J. TAKAHASHI, A. HOTTA, Keio University, Japan	TS4-1-9 Rapid synthesis and in-situ nitrogen doping of few-layer graphene using microwave plasma chemical vapor deposition (MPCVD), A. KUMAR, Purdue University, US, A. VOEVODIN, Air Force Research Laboratory, US, R. PAUL, D. ZEMLYANOV, D. ZAKHAROV, Purdue University, US, J. REMMERT, I. ALTFEDER, Air Force Research Laboratory, US, T.S. FISHER, Purdue University, US	
10:20 am	G1-1-8 Electrophoretic deposition of carbon nanotube films on silicon substrates, A. SARKAR, D. HAH, Louisiana State University, US	TS4-1-10 Invited Soft Carbon Sheets: Synthesis, Processing and Applications in Organic Photovoltaics, J. HUANG, Northwestern University, US	
10:40 am	G1-1-9 Invited Implementation of Advanced Inorganic Coatings on Military Aircraft, B.D. SARTWELL, Department of Defense, US, G. KILCHENSTEIN, Office of Secretary of Defense, US, V. CHAMPAGNE, B. GABRIEL, Army Research Laboratory, US, M. DUFFLES, MDS Coating Technologies Corp., Canada	Invited talk continued.	
11:00 am	Invited talk continued.	TS4-1-12 Growth and characterization of dense CNT Forests on oxide-free copper foil surfaces for charge storage application, G. ATTHIPALLI, K. STRUNK, J. SOPCISAK, J. GRAY, University of Pittsburgh, US	
11:20 am	G1-1-11 The Wear behavior of Manganese Phosphate coatings applied to AISI D2 steel subjected to different heat treatments, s. SIVAKUMARAN, Sri Venkateswara College of Engineering, Pennalur, India, A. ALANGARAM, Sri Venkateswara College of Engineering, India	TS4-1-13 Growth of organic semiconductor films on graphene, G. HLAWACEK, F. KHOKHAR, R. VAN GASTEL, B. POELSEMA, H. ZANDVLIET, University of Twente, Netherlands, C. TEICHERT, Montanuniversität Leoben, Austria	
11:40 am	G1-1-12 Deposition of low melting point metals by Cold Dipping - Fluidized Bed Coating (CD - FBC), M. BARLETTA, Università degli Studi di Roma Tor Vergata, Italy, A. GISARIO, S. VENETTACI, Università degli Studi di Roma La Sapienza, Italy, S. VESCO, Università degli Studi di Roma Tor Vergata, Italy		
12:00 pm	<h2 style="margin: 0;">Exhibition Closes today at 2:00 pm</h2>		

Wednesday Afternoon, April 25, 2012

<p>Coatings for Use at High Temperature Room: Sunrise - Session A1-2 Coatings to Resist High Temperature Oxidation, Corrosion and Fouling Moderators: J. Pérez, Universidad Complutense de Madrid, Spain, B. Hazel, Pratt and Whitney, US, L-G. Johansson, Chalmers University of Technology, Sweden, D. Naumenko, Forschungszentrum Jülich GmbH, Germany</p>		<p>Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 - Session B4-3 Properties and Characterization of Hard Coatings and Surfaces Moderators: J. Lin, Colorado School of Mines, US, C. Mulligan, U.S. Army ARDEC, Benet Laboratories, US, B. Zhao, Exxon Mobile, US</p>	
1:50 pm	<p>A1-2-1 Microstructure degradation of simple, Pt- and Pt+Pd-modified aluminide coatings on CMSX-4 superalloy under cyclic oxidation conditions, R. SWADZBA, Silesian University of Technology, Poland</p>	B4-3-1	<p>Structure and composition of TiSiCN coatings synthesized by reactive arc evaporation: implications for cutting tool applications., E. GÖTHELID, L. LÖWENBERG, A. GENVALD, B. ERICSSON, M. AHLGREN, Sandvik Tooling, Sweden</p>
2:10 pm	<p>A1-2-2 Influence of vacuum parameters during heat treatment on surface composition of MCrAlY coatings, I. KELLER, D. NAUMENKO, L. SINGHEISER, W.J. QUADAKKERS, Forschungszentrum Jülich GmbH, Germany</p>	B4-3-2	<p>Influence of Process Parameters on the Properties of Low Temperature (Cr_{1-x}Al_x)N Coatings Deposited via Hybrid PVD DC-MSIP/HPPMS, K. BOBZIN, N. BAGCIVAN, M. EWERING, R.H. BRUGNARA, Surface Engineering Institute - RWTH Aachen University, Germany</p>
2:30 pm	<p>A1-2-3 Effect of Water Vapor on Thermally Grown Alumina Scales on Bond Coatings, K. UNOCIC, B. PINT, Oak Ridge National Laboratory, US</p>	B4-3-3 Invited	<p>Development of a new type micro slurry-jet erosion (MSE) test method for evaluation of surface strength of hard thin coatings, Y. IWAI, University of Fukui, Japan, T. MATSUBARA, Palmeco Co., Ltd, Japan, K. YAMAMOTO, Kobe Steel Ltd., Japan</p>
2:50 pm	<p>A1-2-4 Effect of Water Vapor on the 1100°C Oxidation Behavior of Plasma-Sprayed TBCs with HVOF NiCoCrAlX Bond Coats, J. HAYNES, B. PINT, Oak Ridge National Laboratory, US</p>		<p>Invited talk continued.</p>
3:10 pm	<p>A1-2-5 Invited High Temperature Oxidation of Mo(Si,Al)₂ Based Materials, M. HALVARSSON, A. INGEMARSSON, J.-E. SVENSSON, S. CANOVIC, A. JONSSON, A. HELLSTRÖM, L-G. JOHANSSON, Chalmers University of Technology, Sweden</p>	B4-3-5	<p>Investigation of structural ,mechanical and tribological properties of TiAlN/CrN multilayer films deposited by CFUBMS technique, C. LALOGLU, Turkey, Ö. BARAN, Erzincan University, Turkey, Y. TOTIK, İ. EFEGLU, Turkey</p>
3:30 pm	<p>Invited talk continued.</p>	B4-3-6	<p>The Phase Transition and Corrosion Resistance of ZrO₂(N) Thin Films on AISI 304 Stainless Steel Deposited by Ion Plating, J.H. HUANG, P.H. HUANG, G.P. YU, National Tsing Hua University, Taiwan</p>
3:50 pm	<p>A1-2-8 Microstructural damage criterion for Ni based single crystal superalloy coated with NiAlPt, P. SALLOT, V. MAUREL, L. RÉMY, Mines-ParisTech, France</p>	B4-3-7	<p>Synthesis and Characterization of Boron/Nitrogen Incorporated Diamond-Like-Carbon Thin Films, L.L. ZHANG, Y. LI, Y. TANG, Q. YANG, A. HIROSE, University of Saskatchewan, Canada</p>
4:10 pm	<p>A1-2-9 Compositional and Microstructural Changes in MCrAlY Coatings due to Interdiffusion with the Base Material, D. NAUMENKO, V. SHEMET, A. CHYRKIN, L. SINGHEISER, W.J. QUADAKKERS, Forschungszentrum Jülich GmbH, Germany</p>	B4-3-8	<p>Hardness Percolation in Plasma Enhanced Chemical Vapor Deposited a-SiC:H Thin Films, S. KING, Intel Corporation, US</p>
4:30 pm	<p>A1-2-10 Effects of Hf and Zr additions on the properties and oxidation resistance of β-NiAl+Cr overlay coatings, P. ALFANO, L. WEAVER, University of Alabama, US</p>	B4-3-9	<p>Tungsten-modified hydrogenated amorphous carbon coatings providing tailored friction properties, H. HETZNER, S. TREMMEL, S. WARTZACK, Friedrich-Alexander-University Erlangen-Nuremberg, Germany</p>
4:50 pm	<p>A1-2-11 The application of nanocrystalline NiCrAlY layer in thermal barrier coatings for industrial gas turbines, M.S. HUSSAIN, M. DAROONPARVAR, Universiti Teknologi, Malaysia</p>	B4-3-10	<p>Characterization of Plasma Electrolytic Oxidation (PEO) Coatings on 6082 Aluminium Alloy, A. JARVIS, A. YEROKHIN, University of Sheffield, UK, P. SHASHKOV, Cambridge Nanolytic, Ltd., UK, A. MATTHEWS, University of Sheffield, UK</p>
5:10 pm		B4-3-11	<p>The microstructure and mechanical properties of Cr-Si-Ti-Al-N coatings, Y.C. KUO, National Taiwan University of Science and Technology, Taiwan, J.W. LEE, C.J. WANG, Ming Chi University of Technology, Taiwan</p>
5:30 pm	<p>Bruker Nano Inc.: Focused Topic Session “Advanced 3-D Nano and Micro Scratch Testing of Thin Films with In-line Imaging” Today in Pacific Salon 1-2 4:30 – 5:30 pm</p>		
5:50 pm	<p>Awards Convocation -- 5:45 pm Golden Ballroom Honorary lecturer Sture Hogmark</p>		

Wednesday Afternoon, April 25, 2012

<p>Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B5-2 Hard and Multifunctional Nano-Structured Coatings Moderators: J. Paulitsch, Christian Doppler Laboratory for Application Oriented Coating Development at the Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, R. Sanjines, Ecole Polytechnique Fédérale de Lausanne, P. Zeman, University of West Bohemia, Czech Republic</p>		<p>Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Pacific Salon 1-2 - Session E4-1/G4-1 Coatings for Machining Advanced Materials and for use in Advanced Manufacturing Methods Moderators: M. Arndt, OC Oerlikon Balzers AG, Liechtenstein, X. Nie, University of Windsor, Canada</p>	
1:50 pm	<p>B5-2-1 Tribological properties of Cr_{0.65}Al_{0.35}N-Ag self-lubricating hard coatings from room temperature to 550 °C, C. MULLIGAN, U.S. Army ARDEC, Benet Laboratories, US, P. PAPI, Rensselaer Polytechnic Institute, J. LIN, W. SPROUL, Colorado School of Mines, US, D. GALL, Rensselaer Polytechnic Institute, US</p>	<p>E4-1/G4-1-1 Invited Development of Coating Technology Platforms for Wear Component Applications, I. SPITSBERG, S. BRAHMANDAM, D. SIDDLE, Kennametal Incorporated, US</p>	
2:10 pm	<p>B5-2-2 Invited Mechanical, tribological and thermal properties of sputtered a-C:H:N:Nb coatings, M. FENKER, H. KAPPL, FEM Forschungsinstitut Edelmetalle & Metallchemie, Germany</p>	<p>Invited talk continued.</p>	
2:30 pm	<p>Invited talk continued.</p>	<p>E4-1/G4-1-3 Oxygen Plasma Etching of Diamond-Like Carbon Coated Mold-Die for Micro-Texturing, T. AIZAWA, Shibaura Institute of Technology, Japan, T. AIZAWA, Mitsue Mold Engineering, Co. Ltd., Japan</p>	
2:50 pm	<p>B5-2-4 DLC-MoS₂ Composite Coatings by Hybrid Technique of Ion Beam Deposition and Sputtering, H. NIAKAN, J.A. SZPUNAR, Q. YANG, University of Saskatchewan, Canada</p>	<p>E4-1/G4-1-5 Tensile properties of magnetron sputtered aluminum-scandium and aluminum-zirconium freestanding thin films: a comparative study, J. KOVAC, H-R. STOCK, B. KÖHLER, H. BOMAS, H-W. ZOCH, Stiftung Institut fuer Werkstofftechnik Bremen, Germany</p>	
3:10 pm	<p>B5-2-5 Growth of Amorphous Hf-Al-Si-N Thin Films by DC Magnetron Sputtering, H. FAGER, Linköping University, IFM, Thin Film Physics Division, Sweden, A. MEI, University of Illinois at Urbana-Champaign, US, B.M. HOWE, Air Force Research Laboratory, US, J.E. GREENE, I. PETROV, University of Illinois at Urbana-Champaign, US, L. HULTMAN, Linköping University, IFM, Thin Film Physics Division, Sweden</p>	<p>E4-1/G4-1-6 Near frictionless based on W-S-X magnetron sputtering coatings for Micromouldings., A. MANAIA, M.T. VIEIRA, R. ALVES, Coimbra University, Portugal</p>	
3:30 pm	<p>B5-2-6 Nanocomposite coatings in the Al-Ge-N system: synthesis, structure and mechanical and optical properties, E. LEWIN, M. PARLINSKA-WOJTAN, J. PATSCHEIDER, Empa, Switzerland</p>	<p>E4-1/G4-1-7 Tribological contact analysis of a CrN coated surface under inclined impact-sliding wear tests against steel and WC balls, J.F. SU, X. NIE, H. HU, University of Windsor, Canada</p>	
3:50 pm	<p>B5-2-7 Shape- Recovery of Thin Film Metallic Glasses Upon Annealing, c. RULLYANI, C. LI, J. CHU, National Taiwan University of Science and Technology, Taiwan</p>	<p>E4-1/G4-1-8 PVD coating development for advanced metal cutting, J. KOHLSCHEEN, Kennametal, Essen, Germany</p>	
4:10 pm	<p>B5-2-8 Invited Thin Film Metallic Glasses: Unique Properties and Potential Applications, J. CHU, National Taiwan University of Science and Technology, Taiwan</p>		
4:30 pm	<p>Invited talk continued.</p>	<p>Bruker Nano Inc.: FTS Advanced 3-D Nano and Micro Scratch Testing of Thin Films with In-line Imaging, NORM GITIS, Bruker Nano Inc.</p>	
4:50 pm	<p>B5-2-10 Improving the corrosion resistance and hardness of TaN films by silicon addition, G. RAMÍREZ, S.E. RODIL, S. MUHL, G. GALICIA, Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico, E. CAMPS, L. ESCOBAR-ALARCÓN, Instituto Nacional de Investigaciones Nucleares de México, México, D. SOLIS-CASADOS, Universidad Autónoma del Estado de México - Centro de Investigación en Química Sustentable, Mexico</p>		
5:10 pm	<p>B5-2-11 Combinatorial studies of co-sputtered chromium-titanium oxide composite films, Y. SUN, J. CHANG, M. WONG, National Dong Hwa University, Taiwan</p>		
5:30 pm	<p>Bruker Nano Inc. : Focused Topic Session “Advanced 3-D Nano and Micro Scratch Testing of Thin Films with In-line Imaging” Today in Pacific Salon 1-2 4:30 – 5:30 pm</p>		
5:50 pm	<p>Awards Convocation -- 5:45 pm Golden Ballroom Honorary lecturer Sture Hogmark</p>		

Wednesday Afternoon, April 25, 2012

<p>Applications, Manufacturing, and Equipment Room: Tiki Pavilion - Session G3-1</p> <p>Atmospheric and Hybrid Plasma Technologies Moderators: H. Barankova, Uppsala University, Sweden, R. Gesche, Ferdinand Braun Institut, Germany</p>		<p>Surface Engineering for Thermal Transport, Storage and Harvesting Room: Sunset - Session TS1-1 Surface Engineering for Thermal Transport, Storage and Harvesting Moderators: B. Cola, Georgia Technical Institute, US, C. Muratore, Air Force Research Laboratory, Thermal Sciences and Materials Branch, US</p>	
1:50 pm	<p>G3-1-1 Atmospheric plasma-assisted deposition of antimicrobial coatings on textiles, M. FLEISCHMAN, V. RODRIGUEZ-SANTIAGO, L. PIEHLER, D. PAPPAS, US Army Research Laboratory, US, J. LEADORE, United States Army Research Laboratory, US</p>	TS1-1-1	<p>Textured CrN Thin Coatings Enhancing Heat Transfer in Nucleate Boiling Processes, E.M. SLOMSKI, M. OECHSNER, S. FISCHER, P. STEPHAN, H. SCHEERER, T. TROBMAN, Technische Universitat Darmstadt, Germany</p>
2:10 pm	<p>G3-1-2 Cold Atmospheric Plasma Inside Water, H. BARÁNKOVÁ, L. BARDOS, Uppsala University, Sweden</p>	TS1-1-2	<p>Effects of strain on thermal conductivity in amorphous thin films, M.T. ALAM, M.P. MANOHARAN, Penn State University, Mechanical & Nuclear Engineering Department, S.V. SHENOGIN, UES/Air Force Research Laboratory, Materials and Manufacturing Directorate, Thermal Sciences and Materials Branch, US, A. VOEVODIN, A.K. ROY, C. MURATORE, Air Force Research Laboratory, Materials and Manufacturing Directorate, Thermal Sciences and Materials Branch, US, M.D. HAQUE, Penn State University, Mechanical & Nuclear Engineering Department, US</p>
2:30 pm	<p>G3-1-3 Invited Deposition of DLC Films by Nanopulse plasma CVD at atmospheric pressure, N. OHTAKE, Tokyo Institute of Technology, Japan</p>	TS1-1-3	<p>Surface engineering for improved thermal transport at metal/carbon interfaces, S.V. SHENOGIN, UES/Air Force Research Laboratory, Materials and Manufacturing Directorate, Thermal Sciences and Materials Branch, US, J.J. GENGLER, Spectral Energies, LLC/Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, J.J. HU, J.E. BULTMAN, UDRI/Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, A.N. REED, A. VOEVODIN, A.K. ROY, C. MURATORE, Air Force Research Laboratory, Materials and Manufacturing Directorate, Thermal Sciences and Materials Branch, US</p>
2:50 pm	Invited talk continued.	TS1-1-4 Invited	<p>Heat flow across heterojunctions: Toward useful nanoscale thermal interface materials, T.S. FISHER, S.L. HODSON, A. KUMAR, Purdue University, US, A. VOEVODIN, Air Force Research Laboratory, US</p>
3:10 pm	<p>G3-1-5 A study of the interactive effects of hybrid current modes on the tribological properties of a PEO Plasma Electrolytic Oxidation coated AM60B Mg-alloys., R. HUSSEIN, D. NORTHWOOD, X. NIE, University of Windsor, Canada</p>		Invited talk continued.
3:30 pm	<p>G3-1-6 Insight into Plasma Discharge in PEO: <i>In-situ</i> Impedance Spectroscopy Study, A. YEROKHIN, C.-J. LIANG, University of Sheffield, UK, E. PARFENOV, Ufa State Aviation Technical University, Russian Federation, A. MATTHEWS, University of Sheffield, UK</p>	TS1-1-6	<p>Factorial increases in interfacial thermal conductance using a monolayer, P. O'BRIEN, S.V. SHENOGIN, J. LIU, M. YAMAGUCHI, P. KEBLINSKI, G. RAMANATH, Rensselaer Polytechnic Institute, US</p>
3:50 pm	<p>G3-1-7 Control of ion distribution functions in capacitive sputter sources, D. EREMIN, S. GALLIAN, D. SZEREMLEY, R.P. BRINKMANN, T. MUSSENBRÖCK, Ruhr Universität Bochum, Germany</p>	TS1-1-7	<p>Ruthenium organometallic complexes with photo-switchable wettability for boiling heat transfer applications, N. HUNTER, Air Force Research Laboratory, Materials and Manufacturing Directorate, Thermal Sciences and Materials Branch, US, B. TURNER, Universal Technology Corporation, US, R. GLAVIN, Air Force Research Laboratory, Materials and Manufacturing Directorate, Thermal Sciences and Materials Branch, US, M. JESPERSEN, University of Dayton Research Institute, US, M. CHECK, S. PUTNAM, Universal Technology Corporation, US, A. VOEVODIN, Air Force Research Laboratory, Materials and Manufacturing Directorate, Thermal Sciences and Materials Branch, US</p>
4:10 pm	<p>G3-1-8 Tandem of DBD and ICP RF Atmospheric Plasma Systems for Yttrium Oxide Nanocoating of Consumable Semiconductor Parts, Y. GLUKHOY, A. RYABOY, T. KERZHNER, Nanocoating Plasma Systems Inc., US</p>	TS1-1-8	<p>From hard coatings to thermoelectrics: effects of nanostructure on fundamental physical properties of transition metal nitride, oxide, and oxynitride thin film alloys, B.M. HOWE, Air Force Research Laboratory, US</p>
4:30 pm		TS1-1-9	<p>Modified Lithium Alanate for High-Capacity Thermal Energy Storage, A. AMAMA, Air Force Research Laboratory, US, J. GRANT, UDRI/Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, P. SHAMBERGER, A. VOEVODIN, Air Force Research Laboratory, US, T.S. FISHER, Purdue University, US</p>
4:50 pm		TS1-1-10	<p>Heat reduction of concentrator photovoltaic module using high radiation coating, K. NISHIOKA, Y. OTA, University of Miyazaki, Japan, K. TAMURA, K. ARAKI, Daido Steel Co., Ltd., Japan</p>
5:10 pm	<p>Bruker Nano Inc. : Focused Topic Session “Advanced 3-D Nano and Micro Scratch Testing of Thin Films with In-line Imaging” Today in Pacific Salon 1-2 from 4:30 – 5:30 pm</p>	<p>Awards Convocation -- 5:45 pm Golden Ballroom Honorary lecturer Sture Hogmark</p>	

Thursday Morning, April 26, 2012

<p>Coatings for Use at High Temperature Room: Sunrise - Session A1-3 Coatings to Resist High Temperature Oxidation, Corrosion and Fouling Moderators: D. Naumenko, Forschungszentrum Jülich GmbH, Germany, B. Hazel, Pratt and Whitney, US, F. Perez Trujillo, Universidad Complutense de Madrid, Spain, L-G. Johansson, Chalmers University of Technology, Sweden</p>		<p>Coatings for Use at High Temperature Room: Sunrise - Session A3-1/F8-1 Coatings for Fuel Cells & Batteries Moderators: G. Dadheech, General Motors, US, E. Yu, Newcastle University, UK</p>	
8:00 am	<p>A1-3-1 Invited Development of high-temperature oxidation resistant coatings by electrodeposition, X. PENG, Institute of Metal Research, Chinese Academy of Sciences, China</p>		
8:20 am	Invited talk continued.		
8:40 am	<p>A1-3-3 Producing high temperature multifunction coatings on the basis of micro-sized spherical aluminum particles, R. ROUSSEL, M. JUEZ LORENZO, V. KUCHENREUTHER, V. KOLARIK, Fraunhofer ICT, Germany</p>		
9:00 am	<p>A1-3-4 Thermal barrier coatings on γ-TiAl protected by the halogen effect, s. FRIEDLE, M. SCHÜTZE, Dechema e.V., Frankfurt am Main, Germany, N. NIEßEN, R. BRAUN, DLR - Deutsches Zentrum für Luft- und Raumfahrt, Germany</p>		
9:20 am	<p>A1-3-5 High Temperature Protection of Ferritic Steels by Nano-Structured Coatings: Supercritical Steam Turbines Applications, s. MATO, P. HIERRO, I. CASTAÑEDA, A. ALCALÁ, I. LASANTA, Universidad Complutense de Madrid, Spain, M. TEJERO, Universidad Complutense de Madrid, Spain, J. SÁNCHEZ, Instituto de Ciencia de Materiales de Sevilla, Spain, M. BRIZUELA, Tecnalia, Spain, J. PÉREZ, Universidad Complutense de Madrid, Spain</p>		
9:40 am			
10:00 am		<p>A3-1/F8-1-7 Invited Oxidation of SOFC Interconnects, M. UEDA, K. KAWAMURA, T. MARUYAMA, Tokyo Institute of Technology, Japan</p>	
10:20 am		Invited talk continued.	
10:40 am		<p>A3-1/F8-1-9 Microstructural Investigation of Co- and RE-nanocoatings on FeCr Steels, s. CANOVIC, J. FROITZHEIM, R. SACHITANAND, M. NIKUMAA, M. HALVARSSON, L-G. JOHANSSON, J.-E. SVENSSON, Chalmers University of Technology, Sweden</p>	
11:00 am		<p>A3-1/F8-1-10 Nafion membrane surface coated with self-assembly membrane containing nanometer-sized Pt-Sn particles to mitigate methanol crossover, C.H. LIN, National Chung Hsing University, Taiwan, C.H. WAN, MingDao University, Taiwan, M.T. LIN, W. WU, National Chung Hsing University, Taiwan</p>	
11:20 am		<p>A3-1/F8-1-11 Suppression of methanol crossover with self-assembly membrane containing Pt₃₅-Ru₆₅ catalyst particles coated on Nafion membrane surface, C.H. WAN, MingDao University, Taiwan, M.T. LIN, National Chung Hsing University, Taiwan, Y. JHENG, MingDao University, Taiwan</p>	
11:40 am		<p>A3-1/F8-1-12 Supercapacitance of Bamboo-Type Anodic Titania Nanotubes Array, Z. ENDUT, M.H. ABD SHUKOR, Center of Advanced Manufacturing and Material Processing, Malaysia, W.J. BASIRUN, University of Malaya, Malaysia</p>	
12:00 pm	<p>ELSEVIER FTS: How to Get Published Royal Palm 1-3, 12:15 – 1:15 pm</p>	<p>2013 ICMCTF Planning Meeting Pacific Salon 1-2, 12:00 – 1:15 pm All interested attendees are welcome</p>	

Thursday Morning, April 26, 2012

Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 - Session B2-1		Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B6-1	
CVD Coatings and Technologies Moderators: F. Maury, CIRIMAT, France, S. Ruppi, Walter AG, Germany		How them best! :)nd Architectures Moderators: C. Mitterer, Montanuniversität Leoben, Austria, M. Stueber, Karlsruhe Institute of Technology, Germany	
8:00 am	B2-1-1 AlTiN-CVD coatings - a new coating family for cast iron cutting with a high productivity, P. IMMICH, U. KRETZSCHMANN, U. SCHUNK, M. ROMMEL, LMT Fette Werkzeugtechnik, Germany, R. PITONAK, R. WEIBENBACHER, Böhlerit, Austria	B6-1-1 Invited Combinatorial Development of Transition Metal Nitride Thin Films for Wear Protection, R. CREMER, KCS Europe GmbH, Germany Invited talk continued.	
8:20 am	B2-1-2 C ₂ H ₆ as precursor for low pressure chemical vapour deposition of TiCNB hard coatings, C. CZETTL, Ceratizit Austria GmbH, Austria, C. MITTERER, Montanuniversität Leoben, Austria, M. PENOY, C. MICHOTTE, Ceratizit Luxembourg S.à.r.l., Luxembourg, M. KATHREIN, Ceratizit Austria GmbH, Austria		
8:40 am	B2-1-3 Invited The Effects of Microstructure and Thermal Stresses on the Hardness of CVD Deposited α -Al ₂ O ₃ and TiC _x N(1-x) Coatings, H. CHIEN, Carnegie Mellon University, US, Z. BAN, P. PRICHARD, Y. LIU, Kennametal Incorporated, US, S. ROHRER, Carnegie Mellon University, US	B6-1-3 Compositional and Structural Evolution of Sputtered Ti-Al-N Thin Films as a Function of the used Target, P.H. MAYRHOFER, B. GROSSMANN, R. RACHBAUER, OC Oerlikon Balzers AG, Liechtenstein, P. POLCIK, PLANSEE Composite Materials GmbH, Germany B6-1-4 Deposition of TiAlN based coatings combined with subsequent electron beam surface treatment, K. WEIGEL, M. KEUNECKE, K. BEWLOGUA, Fraunhofer IST, Germany, R. ZENKER, TU Bergakademie Freiberg; Zenker Consult, Germany, S. SCHMIED, TU Bergakademie Freiberg, Germany	
9:00 am	Invited talk continued.		
9:20 am	B2-1-5 3D EBSD analysis of CVD ceramics coatings, M. IGARASHI, A. OSADA, Mitsubishi Materials Corporation, Japan, C. SCHUH, Massachusetts Institute of Technology, US	B6-1-5 Influence of the plasma characteristic on the structure, properties and cutting performance of the (Ti,Al)N coatings deposited by cathodic arc evaporation, D. KURAPOV, S. KRASSNITZER, T. BACHMANN, J. HAGMANN, M. ARNDT, W. KALSS, H. RUDIGIER, OC Oerlikon Balzers AG, Liechtenstein B6-1-6 Effect of the interlayer coating architecture on the optimization of diamond deposition, A. POULON-QUINTIN, A. HODROJ, C. FAURE, L. TEULE-GAY, J-P. MANAUD, ICMCB-CNRS, France	
9:40 am	B2-1-6 TiSiN and TiSiCN hard coatings by CVD, I. ENDLER, M. HÖHN, J. SCHMIDT, S. SCHOLZ, M. HERRMANN, Fraunhofer IKTS, Germany, M. KNAUT, TU Dresden, Germany		
10:00 am	B2-1-7 High temperature chemical vapor deposition of highly crystallized and textured silicon on metals for solar conversion, O. GOURMALA, R. BENABOUD, G. CHICHIGNOUD, E. BLANQUET, C. JIMENEZ, B. DOISNEAU, K. ZAIDAT, M. PONS, Grenoble INP, France	B6-1-7 Invited Application Oriented Design of PVD-Coatings for Tools and Components, K. BOBZIN, Surface Engineering Institute - RWTH Aachen University, Germany, N. BAGCIVAN, RWTH Aachen University, Germany, M. EWERING, Surface Engineering Institute - RWTH Aachen University, Germany Invited talk continued.	
10:20 am	B2-1-8 In-line Deposition of Silicon-based Films by Hot-Wire Chemical vapor Deposition, L. SCHÄFER, T. HARI, M. HÖFER, A. LAUKART, Fraunhofer IST, Germany, D. BORCHERT, KEIPERT-COLBERG, Fraunhofer ISE, Germany, J. TRUBE, Leybold Optics GmbH, Germany		
10:40 am	B2-1-9 Oxidation Resistance of Graphene Coated Metal Films: A Protective Coating, PRAMODAKUMAR. NAYAK, CHAN-JUNG. HSU, National Cheng Kung University, Taiwan, S.C. WANG, Southern Taiwan University, Taiwan, JAMESC. SUNG, KINIK Company, Taiwan, JOW-LAY. HUANG, National Cheng Kung University, Taiwan	B6-1-9 Structural model for the spinodal decomposition of Nb-Si-N nanocomposites based on ellipsometric results., G. RAMÍREZ, S.E. RODIL, S. MUHL, Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico, M. RIVERA, Instituto de Física - Universidad Nacional Autónoma de México, México B6-1-10 Characterization of the tribological and abrasive wear behaviour of carbon fibre reinforced epoxy composites in contact with a diamond-like carbon layer, H.-J. SCHEIBE, Fraunhofer IWS, Germany, M. ANDRICH, W. HUFENBACH, K. KUNZE, Technische Universität Dresden, Germany, J. BIJWE, Indian Institute of Technology, India, A. LESON, M. LEONHARDT, Fraunhofer IWS, Germany	
11:00 am	B2-1-10 Highly chemically reactive AP-CVD coatings: Influence of the deposition parameters and application for thermally reversible interfacial bonding., M. MORENO-COURANJOU, A. MANAKHOV, N.D. BOSCHER, Centre de Recherche Public - Gabriel Lippmann, Luxembourg, J.J. PIREAUX, University of Namur (FUNDP), Belgium, A. CHOQUET, Centre de Recherche Public - Gabriel Lippmann, Luxembourg		
11:20 am	B2-1-11 Optical properties of the ZnO thin films grown on glass substrates using catalytically generated high-energy H ₂ O, E. NAGATOMI, S. SATOMOTO, M. TAHARA, T. KATO, K. YASUI, Nagaoka University of Technology, Japan	B6-1-11 Invited Direct current magnetron sputtering of ZrB ₂ from a compound target, H. HÖGBERG, Linköping University, Sweden Invited talk continued.	
11:40 am	B2-1-12 Efficiency of indium oxide with doped tin by thermal evaporation and their optoelectronic properties, K.Y. PAN, National Tsing Hua University, Taiwan, L.D. LIN, Chinese Culture University, Taiwan, L.W. CHANG, H.C. SHIH, National Tsing Hua University, Taiwan		
12:00 pm	2013 ICMCTF Planning Meeting Pacific Salon 1-2, 12:00 – 1:15 pm All interested attendees are welcome	ELSEVIER FTS: How to Get Published Royal Palm 1-3, 12:15 – 1:15 pm	

Thursday Morning, April 26, 2012

Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Tiki Pavilion - Session E2-1 Mechanical Properties and Adhesion Moderators: M.T. Lin, National Chung Hsing University, Taiwan, D. Bahr, Washington State University, US, R. Chromik, McGill University, Canada, W. Clegg, University of Cambridge, UK		Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Pacific Salon 1-2 - Session E4-2/G4-2 Coatings for Machining Advanced Materials and for use in Advanced Manufacturing Methods Moderators: M. Arndt, OC Oerlikon Balzers AG, Liechtenstein, X. Nie, University of Windsor, Canada	
8:00 am	E2-1-1 Strain hardening behavior in multilayer thin films, D. BAHR , RL. SCHOEPPNER, S. LAWRENCE, I. MASTORAKOS, H. ZBIB, Washington State University, US	8:00 am	E4-2/G4-2-1 New Coating Systems for Temperature Monitoring in Turning Processes, M. KIRSCHNER , K. PANTKE, D. BIERMANN, Institute of Machining Technology, Germany, J. HERPER, W. TILLMANN, Institute of Materials Engineering, Germany
8:20 am	E2-1-2 Adhesion of tetrahedral amorphous carbon (ta-C) coatings deposited on different substrates: Simulations and experimental verification, N. BIERWISCH, Saxonian Institute of Surface Mechanics, Germany, G. FAVARO, CSM Instruments SA, Switzerland, J. RAMM, OC Oerlikon Balzers AG, Liechtenstein, N. SCHWARZER, Saxonian Institute of Surface Mechanics, Germany, M. SOBIECH , B. WIDRIG, OC Oerlikon Balzers AG, Liechtenstein	8:20 am	E4-2/G4-2-2 Hybrid TiSiN, CrCx/a-C:H PVD Coatings Applied to Cutting Tools, w. HENDERER , F. XU, Kennametal Incorporated, US
8:40 am	E2-1-3 Invited Analysis on the stress transfer and the interfacial strength of carbon coatings on metallic substrate using in-situ tensile and nanobending experiments in SEM and Raman spectroscopy., K. DURST , University Erlangen-Nuernberg, Germany	8:40 am	E4-2/G4-2-3 Effect of the Cutting Edge Entry Impact Duration on the Coated Tool's Wear in Down and Up Milling, K.-D. BOUZAKIS , Aristoteles University of Thessaloniki; Fraunhofer Project Center Coating in Manufacturing, Greece, G. KATIRTZOGLU, E. BOUZAKIS, S. MAKRIMALLAKIS, G. MALIARIS, Aristoteles University of Thessaloniki; Fraunhofer Project Center Coatings in Manufacturing, Greece
9:00 am	Invited talk continued.	9:00 am	E4-2/G4-2-4 Cutting performance of PVD coatings during dry drilling of sustainable austempered ductile iron (ADI), A. MEENA , M. EL MANSORI, Arts et Métiers ParisTech, France
9:20 am	E2-1-5 Study of adhesion and cracking of TiO ₂ coatings on a Ti alloy using an impact-sliding testing instrument, X. NIE , University of Windsor, Canada	9:20 am	E4-2/G4-2-5 Invited Process design for the machining of high-strength steels, F. FELDERHOFF , Robert Bosch GmbH, Germany
9:40 am	E2-1-6 Influence of oxide film properties on the adhesion performance of epoxy-coated aluminium, Ö ÖZKANAT , Delft University of Technology, Netherlands; Materials innovation institute (M2i), Netherlands, J.M.C. MOL, J.H.W. DE WIT, Delft University of Technology, Netherlands, H. TERRYN, Vrije Universiteit Brussel, Materials innovation institute (M2i), Belgium	9:40 am	Invited talk continued.
10:00 am	E2-1-7 Adhesion and fatigue properties of TiB ₂ -MoS ₂ composite coatings deposited by closed-field unbalanced magnetron sputtering, F.B. BIDEV , Ö. BARAN, E. ARSLAN, Y. TOTIK, İ. EFEOGLU, Ataturk University, Turkey	10:00 am	E4-2/G4-2-7 A nanostructured cutting edge, J. RECHBERGER , J. MAUSHART, Fraisa SA, Switzerland
10:20 am	E2-1-8 Coating thickness and interlayer effects on CVD-diamond film adhesion to cobalt-cemented tungsten carbides, P. LU , The University of Alabama, US, H. GOMEZ, University of South Florida, US, X. XIAO, M.J. LUKITSCH, A. SACHDEV, General Motors, US, D. DURHAM, A. KUMAR, University of South Florida, US, K. CHOU, The University of Alabama, US	10:20 am	E4-2/G4-2-9 Application of thick PVD coating deposited by new AIP cathode SFC for machining of automotive component, K. YAMAMOTO , S. TANIFUJI, Kobe Steel Ltd., Japan, G. FOX-RABINOVICH, McMaster University, Canada
10:40 am	E2-1-9 On the effect of pressure induced change of Young's modulus, hardness and yield strength, N. SCHWARZER , Saxonian Institute of Surface Mechanics, Germany	10:40 am	E4-2/G4-2-10 Evaluation of the Abrasive Wear Resistance of Nitride, Oxynitride and Oxide PVD Coatings at High Temperatures, P. DESSARZIN , P. KARVANKOVA , M. MORSTEIN , Platit AG, Switzerland, J. NOHAVA, CSM Instruments SA, Switzerland
11:00 am	E2-1-10 Invited A review of claims for ultra hardness in nanocomposite coatings, A. FISCHER-CRIPPS , Fischer-Cripps Laboratories Pty Ltd, Australia	11:00 am	E4-2/G4-2-11 Application-oriented coating and post-treatment for high performance broad band drilling operations, T. MICHALKE , Oerlikon Balzers Germany GmbH, Germany, S. STEIN, M. ARNDT, OC Oerlikon Balzers AG, Liechtenstein
11:20 am	Invited talk continued.	11:20 am	
11:40 am	ELSEVIER FTS: How to Get Published Royal Palm 1-3, 12:15 – 1:15 pm	11:40 am	2013 ICMCTF Planning Meeting Pacific Salon 1-2, 12:00 – 1:15 pm All interested attendees are welcome

Thursday Morning, April 26, 2012

Energetic Materials and Micro-Structures for Nanomanufacturing

Room: Sunset - Session TS3-1

Energetic Materials and Micro-Structures for Nanomanufacturing

Moderators: C. Rebholz, University of Cyprus, Cyprus, C. Doumanidis, University of Cyprus, Cyprus, T. Ando, Northeastern University, US

8:00 am	TS3-1-1 Invited Recent Advances in Nanolaminate Energetic Materials, c. ROSSI , CNRS; LAAS, France	<h3 style="margin: 0;">ELSEVIER FTS:</h3> <h4 style="margin: 0;">How to Get Published</h4> <h4 style="margin: 0;">Royal Palm 1-3, 12:15 – 1:15 pm</h4>
8:20 am	Invited talk continued.	
8:40 am	TS3-1-3 Comparison of engineered nanocoatings on the combustion of aluminum and copper oxide nanothermites, E. COLLINS , M. PANTOYA , A. VIJAYASAI , T. DALLAS , Texas Tech University, US	
9:00 am	TS3-1-4 Study of the reactive dynamics of nanometric metallic multilayers using molecular dynamics : the Al-Ni system., O. POLITANO , F. BARAS , Université de Bourgogne - CNRS, France	
9:20 am	TS3-1-5 Invited Exothermic metal-metal multilayers: Pulsed laser ignition thresholds, reaction modes and effects of environment, D. ADAMS , R. REEVES , P. MCDONALD , D. JONES, JR. , M. RODRIGUEZ , Sandia National Laboratories, US	
9:40 am	Invited talk continued.	
10:00 am	TS3-1-7 Time-Resolved Emission Spectroscopy Of Electrically Heated Energetic Ni/Al Laminates, C. MORRIS , U.S. Army Research Laboratory, US, P. WILKINS , C. MAY , Lawrence Livermore National Laboratory, US, T. WEIHS , Johns Hopkins University, US	
10:20 am	TS3-1-8 Numerical simulations of self-propagating reactions and analysis of reacted microstructures in Ru/Al multilayers, K. WOLL , Functional Materials, Dept of Materials Science and Engineering, Saarland University, Germany, I. GUNDUZ , C. REBHOLZ , Dept. of Mechanical and Manufacturing Engineering, University of Cyprus, Cyprus, F. MÜCKLICH , Functional Materials, Dept of Materials Science and Engineering, Saarland University, Germany	
10:40 am	TS3-1-9 Fabrication, Characterization and Applications of Novel Nanoheater Structures, Z. GU , Q. CUI , J. CHEN , J. BUCKLEY , University of Massachusetts Lowell, US, T. ANDO , D. ERDENIZ , Northeastern University, US, P. WONG , Tufts University, US, C. REBHOLZ , A. HADJIAFXENTI , I. GUNDUZ , C. DOUMANIDIS , University of Cyprus, Cyprus	
11:00 am	TS3-1-10 Effect of Mechanical Activation on SHS and Structure Formation in Nanostructured Heterogeneous Reaction Systems, N. SHKODICH , VADCHENKO , ROGACHEV , SACHKOVA , Institute of Structural Macrokineitics and Materials Science RAS, Russia, NEDER , MAGERL , Institute of Crystallography and Structural Physics, University of Erlangen-Nürnberg, Germany	
11:20 am	<h3 style="margin: 0;">2013 ICMCTF Planning Meeting</h3> <h4 style="margin: 0;">Pacific Salon 1-2, 12:00 – 1:15 pm</h4> <p style="margin: 0;">All interested attendees are welcome</p>	
11:40 am		

Thursday Afternoon, April 26, 2012

<p>Coatings for Use at High Temperature Room: Sunrise - Session A3-2/F8-2</p> <p>Coatings for Fuel Cells & Batteries Moderators: E. Yu, Newcastle University, UK, G. Dadheech, General Motors, US</p>		<p>Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 - Session B2-2</p> <p>CVD Coatings and Technologies Moderators: S. Ruppi, Walter AG, Germany, F. Maury, CIRIMAT, France</p>		
1:30 pm	<p>A3-2/F8-2-1 A Study on the high temperature charge-discharge characteristics of Si-xAl thin film anode for Li-ion batteries, Y.T. SHIH, C.H. WU, F.Y. HUNG, T.S. LUI, L.H. CHEN, National Cheng Kung University, Taiwan</p>	<p>B2-2-1 Invited CVD – Opportunities and Challenges, H. HOLZSCHUH, SuCoTec AG, Switzerland</p>		
1:50 pm	<p>A3-2/F8-2-2 Pseudo-capacitive performance of the Manganese oxide/Carbon Nanocapsules (CNC) electrode by Sol-gel technique, C. LIN, C.H. WU, C.W. WANG, C.Y. CHEN, Feng Chia University, Taichung, Taiwan, LEE, National Cheng Kung University, Taiwan</p>	<p>Invited talk continued.</p>		
2:10 pm	<p>A3-2/F8-2-3 Invited Electrified Vehicles for Personal Transportation and the Critical Role of Surface Coatings for Lithium Ion Batteries, M. VERBRUGGE, X. XIAO, General Motors Research and Development Center, US, R. DESHPANDE, J. LI, Y.T. CHENG, University of Kentucky, US</p>	<p>B2-2-3 SiC coatings grown by liquid injection chemical vapor deposition using single source metalorganic precursors., G. BOISSELIER, F. MAURY, CIRIMAT, France, F. SCHUSTER, CEA, France</p>		
2:30 pm	<p>Invited talk continued.</p>	<p>B2-2-4 Multilayer Diamond Coatings: Theory, Implementation in Production and Results in different Applications, J.C. BAREISS, W. KOELKER, C. SCHIFFERS, M. WEIGAND, O. LEMMER, CemeCon AG, Germany</p>		
2:50 pm	<p>A3-2/F8-2-5 Comparison of corrosion behaviors between AISI 304 stainless steel and Ti substrate s coated with TiZrN/TiN thin films as bipolar plate for unitized regenerative fuel cell, M.T. LIN, National Chung Hsing University, Taiwan, C.H. WAN, MingDao University, Taiwan, W. WU, National Chung Hsing University, Taiwan</p>	<p>B2-2-5 Adhesion of the DLC film on iron based materials as a function of gradient interlayer properties, D. BAQUIÃO, G. FARIA, L. SILVA JUNIOR, Institute for Space Research, Brazil, L. BONETTI, Clorovale Diamantes S.A., Brazil, E. CORAT, V. TRAVA-AIROLDI, Institute for Space Research, Brazil</p>		
3:10 pm	<p>A3-2/F8-2-6 Progress towards, thin, cost-effective coatings for PEMFC metallic Bipolar Plates by closed field unbalanced magnetron sputter ion plating., H. SUN, K. COOKE, Teer Coatings Limited, Miba Coating Group, UK, G. EITZINGER, High Tech Coatings GmbH, Miba Coating Group, Austria, P. HAMILTON, B. POLLET, University of Birmingham, UK</p>	<p>B2-2-6 Effect of the carrier gas flow rate on boron-doped diamond synthesis using mode-conversion type microwave plasma CVD, H.S. SHIMOMURA, Y. SAKAMOTO, Chiba Institute of Technology, Japan</p>		
3:30 pm	<p>A3-2/F8-2-7 Silica-Based Hydrophilic Bipolar Plate Coatings for PEM Fuel Cells, G. DADHEECH, BLUNK, General Motors, US</p>	<p>B2-2-7 Low temperature chemical vapor deposition of boron-carbon films for use in neutron detectors, H. PEDERSEN, Linköping University, Sweden, C. HÖGLUND, European Spallation Source ESS AB/ Linköping University, Sweden, J. BIRCH, J. JENSEN, A. HENRY, Linköping University, Sweden</p>		
3:50 pm	<p>A3-2/F8-2-8 Surface morphology and catalyst activity of Sn-Pt nanoparticles coated on anodizing aluminum oxide, C.C. CHEN, C.L. CHEN, Y.S. LAI, National United University, Taiwan</p>	<p>B2-2-8 Synthesis of diamond/carbon nanotube composite thin films by chemical vapor deposition, L. YANG, Q. YANG, Y. LI, Y. TANG, C. ZHANG, L.L. ZHANG, University of Saskatchewan, Canada</p>		
4:10 pm		<p>B2-2-9 Effects of ammonia/acetylene mixtures on the properties of carbon films prepared by thermal chemical vapor deposition, L.H. LAI, S.T. SHIUE, National Chung Hsing University, Taiwan</p>		
4:30 pm		<p>B2-2-10 Hollow-Cathode Deposition of Thin Films Via Metal Hydride Formation and Decomposition, S. MUHL, Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico, . LOPEZ, IIM-UNAM, Mexico, Y. PENA-RODRIGUEZ, Autonomous University of Madrid, Spain</p>		
4:50 pm	<p style="text-align: center;">Poster Session 5:00 – 7:00 pm Golden Ballroom Reception begins at 6:00 pm</p>		<p style="text-align: center;">Oerlikon Leybold Vacuum Focused Topic Session Vacuum and Applications for Thin Film Coating Systems Pacific Salon 1-2 4:10-5:10 pm</p>	
5:10 pm				

Thursday Afternoon, April 26, 2012

<p>Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B6-2</p> <p>Coating Design and Architectures Moderators: C. Mitterer, Montanuniversität Leoben, Austria, M. Stüber, Karlsruhe Institute of Technology, Germany</p>		<p>Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications Room: Sunset - Session C5-1/F7-1</p> <p>Polarisation Phenomena in Thin Films and Devices Moderators: D. Holec, Montanuniversität Leoben, Austria, S. Moram, University of Cambridge, UK</p>	
1:30 pm	<p>B6-2-1 Invited A Knowledge-Based Approach for Optimized Coating Architecture, R. DANIEL, J. KECKES, C. MITTERER, Montanuniversität Leoben, Austria</p>	1:30 pm	<p>C5-1/F7-1-1 Invited Recent Advances in the Thin Film Electro-Acoustic Technology, I. KATARDJIEV, V. YANTCHEV, Uppsala University, Angstrom Laboratory, Sweden</p>
1:50 pm	Invited talk continued.	1:50 pm	Invited talk continued.
2:10 pm	<p>B6-2-3 Gradient chemical composition in layered pulsed reactive sputtered coatings for decorative purposes, A. CAVALEIRO, N.M.G. PARREIRA, University of Coimbra, Portugal, T. POLCAR, University of Southampton, UK, T. KUBART, Uppsala University, Angstrom Laboratory, Sweden, M. VASILEVSKIY, University of Minho, Portugal</p>	2:10 pm	<p>C5-1/F7-1-3 Asymmetric electrical properties for dual-gate InGaZnO TFT under gate bias and light illumination, T.C. CHEN, NSYSU, Taiwan</p>
2:30 pm	<p>B6-2-4 Investigation of the nucleation behavior of oxides synthesized by reactive arc evaporation from Al, Cr and Al-Cr targets, M. DÖBELI, ETH, Zürich, Switzerland, J. RAMM, H. RUDIGIER, OC Oerlikon Balzers AG, Liechtenstein, J. THOMAS, Leibniz-Institut für Festkörper- und Werkstofforschung, Germany, B. WIDRIG, OC Oerlikon Balzers AG, Liechtenstein</p>	2:30 pm	<p>C5-1/F7-1-4 A systematic <i>ab-initio</i> study of the piezoelectricity in wurtzite nitride alloys: ScAlN, ScGaN, ScInN, YAlN, YInN, C. THOLANDER, F. TASNÁDI, I. ABRIKOSOV, Linköping University, Sweden</p>
2:50 pm	<p>B6-2-5 Invited Phase stability of TiAlNO, M. TO BABEN, J. SCHNEIDER, Materials Chemistry, RWTH Aachen university, Germany</p>	2:50 pm	<p>C5-1/F7-1-5 Investigation of the bias illumination stress for an InGaZnO TFT with and without Al₂O₃ passivation layer, S.Y. HUANG, T.C. CHANG, National Sun Yat-Sen University, Taiwan</p>
3:10 pm	Invited talk continued.	3:10 pm	<p>C5-1/F7-1-6 Invited Control and Engineering of Spontaneous and Piezoelectric Polarisation in Nitride-based Nanostructures, E. O'REILLY, Tyndall National Institute; University College Cork, Ireland, S. SCHULZ, Tyndall National Institute, Ireland, M. CARO, Tyndall National Institute; University College Cork, Ireland</p>
3:30 pm	<p>B6-2-7 On the formation of cubic and corundum structured (Al,Cr)₂O₃ coatings synthesized by cathodic arc evaporation, H. NAJAFI, A. KARIMI, EPFL, Switzerland, P. DESSARZIN, M. MORSTEIN, Platit AG, Switzerland</p>	3:30 pm	Invited talk continued.
3:50 pm	<p>B6-2-8 Parametric Study on the Effect of Reactive Nitrogen on the Growth, Morphology and Optical Constants of ZrO_xN_y Thin Films, V. RAMANA, M. HERNANDEZ, University of Texas at El Paso, US, L. CAMPBELL, Air Force Research Laboratory, US</p>	3:50 pm	<p>C5-1/F7-1-8 Growth and characterization of magnetron sputtered wurtzite Y_xAl_{1-x}N thin films, A. ZUKAUSKAITE, G. WINGQVIST, C. THOLANDER, F. TASNÁDI, J. BIRCH, L. HULTMAN, Linköping University, Sweden</p>
4:10 pm	<p>B6-2-9 Stage-gate approach for the development of corrosion and erosion resistant PVD multilayer coatings, J. ELLERMEIER, U. DEPNER, T. TROßMANN, M. OECHSNER, Zentrum für Konstruktionswerkstoffe - TU Darmstadt, Germany, K. BOBZIN, N. BAGCIVAN, S. THEISS, R. WEIß, Surface Engineering Institute - RWTH Aachen University, Germany</p>	4:10 pm	<p>C5-1/F7-1-9 Investigating Degradation Behavior of InGaZnO Thin-Film Transistors induced by Charge-Trapping Effect under DC and AC Gate-Bias Stress, T.Y. HSIEH, T.C. CHANG, T.C. CHEN, M.Y. TSAI, Y.T. CHEN, National Sun Yat-Sen University, Taiwan, F.Y. JIAN, National Chiao Tung University, Taiwan, W.S. LU, National Sun Yat-Sen University, Taiwan</p>
4:30 pm	<p>B6-2-10 Biomimetics in thin film design – Enhanced properties by multilayer coatings and nanostructured surfaces, J.M. LACKNER, W. WALDHAUSER, Joanneum Research Forschungsges.m.b.H., Institute of Surface Technologies and Photonics, Functional Surfaces, Austria, L. MAJOR, Polish Academy of Sciences, Institute for Metallurgy and Materials Science, Poland, C. TEICHERT, Montanuniversität Leoben, Austria, P. HARTMANN, Joanneum Research Forschungsges.m.b.H., Institute of Surface Technologies and Photonics, Functional Surfaces, Austria</p>	4:30 pm	<p>C5-1/F7-1-10 Piezoelectric Response During Nanoindentation in Scandium Aluminum Nitride Alloy Thin Films, E. BROITMAN, A. ZUKAUSKAITE, G. WINGQVIST, P. SANDSTRÖM, L. HULTMAN, Linköping University, Sweden</p>
4:50 pm		4:50 pm	<p>C5-1/F7-1-11 Investigating the degradation behavior under Hot Carrier Stress for InGaZnO TFT with symmetric and asymmetric structure, M.Y. TSAI, NSYSU, Taiwan</p>
5:10 pm	<p>Poster Session 5:00 – 7:00 pm Golden Ballroom</p>		<p>Oerlikon Leybold Vacuum Focused Topic Session Vacuum and Applications for Thin Film Coating Systems Pacific Salon 1-2 from 4:10-5:10 pm</p>
5:30 pm	<p>Reception begins at 6:00 pm</p>		

Thursday Afternoon, April 26, 2012

<p>Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Tiki Pavilion - Session E2-2 Mechanical Properties and Adhesion Moderators: M.T. Lin, National Chung Hsing University, Taiwan, W. Clegg, University of Cambridge, R. Chromik, McGill University, D. Bahr, Washington State University, US</p>		<p>Post Deadline Discoveries and Innovations Room: Pacific Salon 1-2 - Session PD-1 Post Deadline Discoveries and Innovations Moderators: W. Kalss, OC Oerlikon Balzers AG, Liechtenstein, S. Ulrich, Karlsruhe Institute of Technology, Germany</p>	
1:30 pm	<p>E2-2-1 Micromechanical testing at up to 700 °C and in vacuum, s. KORTE, University of Erlangen-Nürnberg, Germany, L. SHIYU, R. STEARN, W. CLEGG, University of Cambridge, UK</p>	PD-1-1	<p>The Multi Beam Sputtering: a new thin film deposition approach, P. SORTAIS, T. LAMY, J. MÉDARD, Laboratoire de Physique Subatomique et Cosmologie de Grenoble (LPSC), France</p>
1:50 pm	<p>E2-2-2 Characterization of a self assembled monolayer using a MEMS tribogauge, A. VIJAYASAI, T. DALLAS, G. SIVAKUMAR, C. ANDERSON, R. GALE, G. RAMACHANDRAN, Texas Tech University, US</p>	PD-1-2	<p>Molecular dynamics simulation and experimental validation of nanoindentation measurements of silicon carbide coatings., A.-P. PRSKALO, Universität Stuttgart, Germany, S. ULRICH, Karlsruhe Institute of Technology, Germany, S. SCHMAUDER, J. LICHTENBERG, C. ZIEBERT, Kit, Iam-Awp, Germany</p>
2:10 pm	<p>E2-2-3 Invited In-situ SEM mechanical testing for adhesion energy mapping of multilayered Cu wiring structures in integrated circuits, s. KAMIYA, N. SHISHIDO, H. SATO, K. KOIWA, Nagoya Institute of Technology, JST CREST, Japan, M. OMIYA, Keio University, JST CREST, Japan, C. CHEN, Nagoya Institute of Technology, Japan, M. NISHIDA, Nagoya Institute of Technology, JST CREST, Japan, T. NAKAMURA, T.S. SUZUKI, Fujitsu Laboratories Limited, Japan, T. NOKUO, T. NAGASAWA, JEOL Limited, JST CREST, Japan</p>	PD-1-3	<p>Anatase TiO₂ Beads Having Ultra-fast Electron Diffusion Rates for use in Low Temperature Flexible Dye-sensitized Solar Cells, J.-M. TING, KE, National Cheng Kung University, Taiwan</p>
2:30 pm	<p>Invited talk continued.</p>	PD-1-4	<p>MOCVD nano-structured TiO₂ coatings for corrosion protection of stainless steels, H. HERRERA-HERNÁNDEZ, M. PALOMAR-PARDAVÉ, Universidad Autónoma Metropolitana- Azcapotzalco, Mexico, J.A. GALAVIZ-PÉREZ, J.R. VARGAS-GARCÍA, Departamento de Ingeniería, Metalúrgica, ESIQIE-IPN, Mexico</p>
2:50 pm	<p>E2-2-5 Preparation and Characterization of Super- and Ultrahard Nanocomposites, s. VEPREK, M. VEPREK-HEIJMAN, Technical University Munich, Germany, A.S. ARGON, Massachusetts Institute of Technology, US</p>	PD-1-5	<p>Improvement on the mechanical and corrosion properties of nanometric HfN/VN superlattices, P. PRIETO, Excellence Center for Novel Materials, CENM, Cali, Colombia, C.A. ESCOBAR, Universidad del Valle, Colombia, J.C. CAICEDO, Universidad del Valle, Colombia, W. APERADOR, Universidad Militar Nueva Granada, Colombia, J. ESTEVE, M.E. GOMEZ, Universitat de Barcelona, Spain</p>
3:10 pm	<p>E2-2-6 An expression to determine the Vickers indentation fracture toughness of Fe₂B layers obtained by the finite element method, A. MENESES-AMADOR, Instituto Politecnico Nacional, Mexico, I. CAMPOS-SILVA, SEPI ESIME Zacatenco, Mexico, J. MARTINEZ-TRINIDAD, Instituto Politecnico Nacional, Mexico, S. PANIER, Ecole des Mines de Douai, France, G.A. RODRIGUEZ-CASTRO, A. TORRES-HERNÁNDEZ, Instituto Politecnico Nacional, Mexico</p>	PD-1-6	<p>Characterization of High Temperature Instrumented Indentation System and Initial Results, D. JARDRET, Michalex, USA, M. FAJFROWSKI, Michalex, France</p>
3:30 pm	<p>E2-2-7 Mechanical properties of FeB and Fe₂B layers estimated by Berkovich nanoindentation on tool borided steels, G.A. RODRIGUEZ-CASTRO, Instituto Politecnico Nacional, Mexico, I. CAMPOS-SILVA, SEPI ESIME Zacatenco, Mexico, E. CHÁVEZ-GUTIÉRREZ, J. MARTINEZ-TRINIDAD, I. ARZATE-VÁZQUEZ, A. TORRES-HERNÁNDEZ, Instituto Politecnico Nacional, Mexico</p>		
3:50 pm	<p>E2-2-8 Measurement of Fracture Toughness on TiN thin film, A.N. WANG, G.P. YU, J.H. HUANG, National Tsing Hua University, Taiwan</p>	<p>Poster Session from 5:00 – 7:00 pm Golden Ballroom Reception begins at 6:00 pm</p>	
4:10 pm	<p>E2-2-9 Bi-phase Ceramic Composite through Interpenetrating Network, E.H. KIM, J. LEE, Y. JUNG, Changwon National University, Republic of Korea</p>	<p>Oerlikon Leybold Vacuum Focused Topic Session</p>	
4:30 pm	<p>E2-2-10 Invited Probing the origin and evolution of strength in small volumes with in situ TEM nanomechanical testing, A. MINOR, University of California, Berkeley; National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, US</p>	<p>Vacuum and Applications for Thin Film Coating Systems Pacific Salon 1-2 4:10-5:10 pm</p>	
4:50 pm	<p>Invited talk continued.</p>		

Thursday Afternoon Poster Sessions

Coatings for Use at High Temperature Room: Golden Ballroom - Session AP

Symposium A Poster Session

5:00 pm

AP-1

Contact Corrosion propriety between Carbon Fiber Reinforced Composite Materials and Typical Metal alloys in an aggressive environment, **Z.J. PENG**, University of Windsor, Canada, **Z.J. WANG**, Univeristy of Windsor, Canada, **X. NIE**, University of Windsor, Canada

AP-2

Influence of native oxide scales on the mechanical properties of polycrystalline nickel substrates, **M. TATAT**, **P. GADAUD**, **C. COUPEAU**, **X. MILHET**, Institut P², CNRS – ENSMA - Université de Poitiers – UPR 3346, France, **P. RENAULT**, Institut P² - Université de Poitiers, France, **J. BALMAIN**, Laboratoire d'Etude des Matériaux en Milieux Agressifs - Université de La Rochelle, France

AP-3

Evaluation of galvanic and corrosion behaviour of some commercial aluminium-based coatings deposited by various methods, **O. FASUBA**, **A. YEROKHIN**, **A. MATTHEWS**, **A. LEYLAND**, University of Sheffield, UK

AP-4

High Temperature Diffusion Barriers for InSb based IR Detector, **A. LE PRIOL**, **E. LE BOURHIS**, **P. RENAULT**, Institut P² - Université de Poitiers, France, **H. SIK**, **P. MULLER**, SAGEM Défense Sécurité, France

AP-5

Improvement on the mechanical and corrosion properties of nanometric HfN/VN superlattices, **P. PRIETO**, Excellence Center for Novel Materials, CENM, Colombia, **C. ESCOBAR**, **J. CAICEDO**, Thin Film Group, Universidad del Valle, Colombia, **W. APERADOR**, Ingeniería Mecatrónica, Universidad Militar Nueva Granada, Colombia, **J. ESTEVE**, Universitat de Barcelona, Spain, **M. GÓMEZ**, Thin Film Group, Universidad del Valle, Colombia

AP-6

Study of the effect of densification on the mechanical properties of porous coatings after nano-indentation, **X.J. LU**, **P. XIAO**, **H. LI**, **A. FOK**, The University of Manchester, UK

AP-8

Oxygen incorporation in Cr₂AiC, **M. TO BABEN**, **L. SHANG**, **J. EMMERLICH**, **J. SCHNEIDER**, Materials Chemistry, RWTH Aachen university, Germany

AP-9

Multicomponent Coatings in Cr-Al-Si-B-(N) System Produced by Magnetron Sputtering of Composite SHS-Targets, **P. KIRYUKHANTSEV-KORNEEV**, **YU. POGOZHEV**, **D.V. SHTANSKY**, National University of Science and Technology "MISIS", Russian Federation, **J. VLCEK**, University of West Bohemia, Czech Republic, **E.A. LEVASHOV**, National University of Science and Technology "MISIS", Russian Federation

AP-10

Performance of Advanced Turbocharger Alloys and Coatings at 850-950°C in Air with Water Vapor, **J. HAYNES**, **B. ARMSTRONG**, **B. PINT**, Oak Ridge National Laboratory, US

AP-11

Oxidation Behavior of Ni-Ru Films under Glass Hot Pressing, **C.K. CHANG**, **K.Y. LIU**, **Y.C. HSIAO**, **F.B. WU**, National United University, Taiwan

AP-12

Wear characteristics of Zr-Al-Ni based PVD nanocomposite thin films deposited on non-ferrous alloy substrates, **J. LAWAL**, **A. MATTHEWS**, **A. LEYLAND**, University of Sheffield, UK

AP-13

The microstructure, mechanical properties and oxidation resistance of CrAlSiN coatings, **Y.C. KUO**, National Taiwan University of Science and Technology, Taiwan, **J.W. LEE**, **C.J. WANG**, Ming Chi University of Technology, Taiwan

AP-14

Improvement of interface adhesion and thermal stability in thermal barrier coatings through plasma heat treatment, **S. MYOUNG**, **J. JANG**, **K. LEE**, **Z. LU**, **Y. JUNG**, **J. LEE**, Changwon National University, Republic of Korea, **U. PAIK**, Hanyang University, Republic of Korea

Coatings for Use at High Temperature Room: Golden Ballroom - Session AP

Symposium A Poster Session

5:00 pm

AP-15

On Machining of Hardened AISI D2 Steel with Coated Tools, **W. MATTES**, **C. VIANA**, Brazil

AP-16

Microstructure characterization of diffusion aluminide coatings obtained by gas phase aluminizing on direct solidification Ni base superalloys Rene 142 and Rene 108, **B.W. WITALA**, **L.S. SWADZBA**, Silesian University of Technology, Poland, **L.K. KOMENDERA**, AVIO Polska Sp. z o.o., Poland, **M.H. HETMANCZYK**, **B.M. MENDALA**, **R. SWADZBA**, **G.M. MOSKAL**, Silesian University of Technology, Poland

AP-17

Degradation and thickness evaluation of thermal barrier coatings using nondestructive 3D scanning method, **G.M. MOSKAL**, **R. SWADZBA**, **L.S. SWADZBA**, **M.H. HETMANCZYK**, **B.M. MENDALA**, **B.W. WITALA**, Silesian University of Technology, Poland

Thursday Afternoon Poster Sessions

Hard Coatings and Vapor Deposition Technology

Room: Golden Ballroom - Session BP

Symposium B Poster Session

5:00 pm

BP-1

Trends in elasticity of binary and ternary transition metal aluminium nitrides, P. WAGNER, Montanuniversität Leoben, Austria, M. FRIAK, Max-Planck-Institut für Iron Research, Germany, P.H. MAYRHOFER, D. HOLEC, Montanuniversität Leoben, Austria

BP-2

Investigation of the mechanical properties of ternary metal nitrides $TM_xMo_{1-x}N$ and $TM_xW_{1-x}N$ with $TM=Ti, Zr, V, Nb, Ta$ and Cr , K. BOUAMAMA, Ferhat Abbas University, Algeria, P. DJEMIA, D. FAURIE, University Paris 13, France, G. ABADIAS, Institut P' - Université de Poitiers, France

BP-3

Structural and elastic properties of ternary metal nitrides $Ti_xTa_{1-x}N$ alloys: first-principles calculations versus experiments, M. BENHAMIDA, Laboratoire Optoélectronique et Composants, Ferhat Abbas University, Algeria, K. BOUAMAMA, Ferhat Abbas University, Algeria, P. DJEMIA, University Paris 13, France, L. BELLARD, UPMC, France, D. FAURIE, University Paris 13, France, G. ABADIAS, Institut P' - Université de Poitiers, France

BP-4

Growth of Zirconium Oxide by Heat Treatment of Zirconium Nitride Film under Controlled Atmosphere and Vacuum, J.W. SHINE, G.P. YU, J.H. HUANG, National Tsing Hua University, Taiwan

BP-5

Microstructure and Characterization of Sputtered Ni-based Films Codeposited with Ru and P, K.Y. LIU, Y.C. HSIAO, C.K. CHANG, F.B. WU, National United University, Taiwan

BP-7

Optimizing the PVD TiN thin film coating's parameters on AL 7075-T6 alloy for higher coating adhesion and better surface quality, E. ZALNEZHAD, University of Malaya, Malaysia

BP-8

Analysis of damaging phenomena of coated cutting tools using hardened die steels, K. MORISHITA, Hitachi Tool Engineering, Ltd., Japan

BP-9

Annealing effects on nanostructure and mechanical properties of laminated Ta-Zr coatings, Y.I. CHEN, S.M. CHEN, National Taiwan Ocean University, Taiwan

BP-10

Influence of thickness on mechanical and corrosion properties of Ti-Si-N coatings on D2 steel by unbalanced magnetron sputtering, Y.K. CHENG, G.P. YU, J.H. HUANG, National Tsing Hua University, Taiwan

BP-11

Effect of Nitrogen Flow Rate on The Structure And Mechanical Properties of TiZrN Thin Films by Unbalanced Magnetron Sputtering, C.W. LU, J.H. HUANG, G.P. YU, National Tsing Hua University, Taiwan

BP-12

Ternary d- $Ti_xTa_{1-x}N$: An addition to superhard materials?, L. KOUTSOKERAS, University of Ioannina, Greece, A. SKARMOUTSOU, National Technical University of Athens, Greece, G. ABADIAS, University of Poitiers, France, P. PSYLLAKI, Technological Education Institute of Piraeus, Greece, C. CHARITIDIS, National Technical University of Athens, Greece, C. LEKKA, P. PATSALAS, University of Ioannina, Greece

BP-13

Paramagnetic centers in hard graphite-like amorphous carbon, A. VIANA, C. MARQUES, Universidade Estadual de Campinas, Brazil

BP-14

Effects of sputtering gases on the preparation of boron nitride films using RF sputtering, M. IMAMIYA, Graduate School, Chiba Institute of Technology, Japan, Y. SAKAMOTO, Chiba Institute of Technology, Japan

Hard Coatings and Vapor Deposition Technology

Room: Golden Ballroom - Session BP

Symposium B Poster Session

5:00 pm

BP-15

Influence of Silicon-doping on MSIP Al_2O_3 coatings, K. BOBZIN, Surface Engineering Institute - RWTH Aachen University, Germany, N. BAGCIVAN, RWTH Aachen University, Germany, M. EWERING, Surface Engineering Institute - RWTH Aachen University, Germany

BP-16

3-dimensional DLC coating on microgear by bipolar PBII &D and plasma analysis, W.S. PARK, J.H. CHOI, T. KATO, The University of Tokyo, Japan, W.S. LEE, Korea Institute of Industrial Technology, Republic of Korea

BP-17

Mechanical properties and oxidation resistance of TiSiN/CrAlN films synthesized by a cathodic arc deposition process, Y.Y. CHANG, National Formosa University, Taiwan, Y.Y. LIOU, MingDao University, Taiwan

BP-18

Structural, Mechanical and Tribological Properties of TiTaBN Composite Graded Coatings Deposited by CFUBMS Technique, Ö. BARAN, Erzincan University, Turkey, İ. EFEOGLU, Ataturk University, Turkey, B. PRAKASH, Lulea Technical University, Sweden

BP-19

Effect of Si⁺ kinetic energy on the physical properties of Ti-Si-N thin films deposited by RCBPLD, L. ESCOBAR-ALARCON, E. CAMPS, V. MEDINA, National Institute for Nuclear Research, Mexico, D. SOLIS-CASADOS, Autonomous University of Mexico State, Mexico, I. CAMPS, Mexican National Autonomous University, Mexico

BP-20

The Role of Aluminium for the Nanostructure and Mechanical Properties of Sputtered Ti-B Films, P. EPAMINONDA, University of Cyprus, Cyprus, K. POLYCHRONOPOULOU, Northwestern University, US, K. FADENBERGER, Robert Bosch GmbH, Germany, M. BAKER, University of Surrey, UK, P. GIBSON, Joint Research Centre, Italy, A. LEYLAND, A. MATTHEWS, University of Sheffield, UK, P.H. MAYRHOFER, Montanuniversität Leoben, Austria, C. REBHOLZ, University of Cyprus, Cyprus

BP-21

Microstructural characteristics of CrZrSiN coatings synthesized by unbalanced magnetron sputtering with CrZrSi segment targets, KIM, S.Y. LEE, Korea Aerospace University, Republic of Korea

BP-22

Synthesis and characterization of CrZrAlN coatings synthesized by unbalanced magnetron sputtering, J.Y. KIM, D.J. KIM, B.S. KIM, S.Y. LEE, Korea Aerospace University, Republic of Korea

BP-23

Mechanical Performance and Nanoscaled Deformation of Bias-Sputtered (AlCrTaTiZr)N_{Cy} Multi-component Coatings, S.Y. LIN, S.Y. CHANG, Y.C. HUANG, F.S. SHIEU, National Chung Hsing University, Taiwan

BP-24

Effects of Substrate Temperature and Bias-Voltage on Mechanical Properties and Oxidation Resistance of TiAlYN Films, N. HATTORI, Keio University, Japan, T. TAKAHASHI, Yungalay Corporation, Japan, M. NOBORISAKA, T. MORI, M. TAKAHASHI, T. SUZUKI, Keio University, Japan

BP-26

Characterization of laser ablation bismuth and iron oxide plasmas used for deposition of bismuth-iron-oxide thin films, E. CAMPS, D. CARDONA, L. ESCOBAR-ALARCON, National Institute for Nuclear Research, Mexico, S. E. RODIL, Mexican National Autonomous University, Mexico

BP-27

A study of W/DLC/WSC composite films fabricated by magnetron sputtering method, M. DAI, C. WEI, S. LIN, H. HOU, K. ZHOU, Guangdong General Research Institute of Industrial Technology, China

BP-28

Comparison of the wear characteristics of TiN Coating with Manganese Phosphate Coating, S. SIVAKUMARAN, A. ALANGARAM, Sri Venkateswara College of Engineering, India

Thursday Afternoon Poster Sessions

Hard Coatings and Vapor Deposition Technology

Room: Golden Ballroom - Session BP

Symposium B Poster Session

5:00 pm

BP-29

Exotic mechanical properties of Cu-doped nano-columnar DLC coating, s. **YUKAWA**, T. AIZAWA, Shibaura Institute of Technology, Japan

BP-30

A Fem Supported Method for the Fast Determination of Nanoindenter's Tip Geometrical Deviations, **K.-D. BOUZAKIS**, M. PAPPA, G. MALIARIS, MICHALIDIS, Aristoteles University of Thessaloniki; Fraunhofer Project Center Coatings in Manufacturing (PCCM), Greece

BP-31

An analysis of the effect of local environments on vacancy formation and diffusion energy barriers in $Ti_{0.5}Al_{0.5}N$ alloy, **F. TASNÁDI**, M. ODÉN, I. ABRIKOSOV, Linköping University, Sweden

BP-32

First-principles study of the local environment effects on surface diffusion in multicomponent nitrides, **C. THOLANDER**, F. TASNÁDI, B. ALLING, L. HULTMAN, Linköping University, Sweden

BP-33

Effects of electroless Ni and PVD-TiAlZrN duplex coatings on corrosion and erosion behavior of ductile iron, **C.H. HSU**, **K.H. HUANG**, Y.H. CHENG, Tatung University, Taiwan, C. LIN, Feng Chia University, Taiwan, K. OU, Taipei Medical University, Taiwan

BP-34

Microstructure and phase analysis of Cr-Mo-N composite film including different interlayer by hybrid PVD, **Y.S. OH**, Y.H. YANG, Korea Institute of Ceramic Engineering and Technology, Republic of Korea, I.W. LYO, Hyundai-Kia Motor Company, Korea, Republic of Korea, S.J. PARK, Hyundai Hysco, Korea, Republic of Korea

BP-35

Structure and properties of TiBCN coatings synthesized using unbalanced magnetron sputtering, **C.H. HSIEH**, C.H. TSAI, **W.Y. HO**, Department of Materials Science and Engineering, MingDao University, Taiwan, C.H. HSU, Department of Materials Science and Engineering, Tatung University, Taiwan, C.A. LIN, Department of Materials Science and Engineering, MingDao University, Taiwan, C.L. LIN, Department of Electro-Optical and Energy Engineering, MingDao University, Taiwan

BP-36

Low Temperature Plasma Nitriding of F51 Duplex Stainless Steel, **A. TSCHIPTSCHIN**, L.B. VARELA, University of São Paulo, Brazil, C. PINEDO, Heat Tech Technology for Heat Treatment and Surface Engineering Ltd, Brazil

BP-37

Residual stress on nanocomposite thin films using $\sin^2\Psi$ method, **G. RAMÍREZ**, S.E. RODIL, J.G. GONZÁLEZ-REYES, Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico

BP-38

Stress signature of an amorphous- to- crystalline transition into the β -phase during Ta thin film growth on Si., **A. FILLON**, J.J. COLIN, C. SZALA, A. MICHEL, **G. ABADIAS**, C. JAOUEN, Institut P¹ - Université de Poitiers, France

BP-39

Influence of Bias Voltage on Residual Stresses and Mechanical Properties of Multicomponent TiSiCrAlN Coatings, **Y.Y. CHANG**, National Formosa University, Taiwan, **C.Y. TSAI**, MingDao University, Taiwan

Hard Coatings and Vapor Deposition Technology

Room: Golden Ballroom - Session BP

Symposium B Poster Session

5:00 pm

BP-40

Effect of degree of ionization on preferred orientation and properties of TiN thin films deposited by high power impulse magnetron sputtering, **C.Y. CHEN**, G.P. YU, National Tsing Hua University, Taiwan, J.Y. WU, Institute of Nuclear Energy Research, Taiwan, J.H. HUANG, National Tsing Hua University, Taiwan

BP-41

Microstructures and mechanical properties of titanium carbide coating obtained by Thermo-reactive deposition process, **X.S. FAN**, Z.G. YANG, C. ZHANG, Tsinghua University, China

BP-42

Enhanced Glow Discharge Plasma Immersion Ion Implantation Using an Insulated Tube, **Q.Y. LU**, P. CHU, City University of Hong Kong, Hong Kong Special Administrative Region of China, L. H. LI, City University of Hong Kong; Beijing University of Aeronautics and Astronautics, Beijing, China, R. FU, City University of Hong Kong, Hong Kong Special Administrative Region of China

BP-43

Electrical transport properties in ZrN-SiN_x-ZrN structures investigated by I-V measurements, **D. OEZER**, C.S. SANDU, EPFL, Switzerland, **R. SANJINES**, Ecole Polytechnique Fédérale de Lausanne, Switzerland

Thursday Afternoon Poster Sessions

Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications

Room: Golden Ballroom - Session CP - Symposium C Poster Session - 5:00 pm
CP-1

Investigation on Physical Properties of CuInSe_2 Films Prepared by Pulsed Laser Deposition, **M.H. WEN**, J.Y. LUO, Y.T. HSIEH, C.C. CHANG, C.H. HSU, Y.R. WU, W.H. CHAO, M.K. WU, Institute of Physics, Academia Sinica, Nankang, Taiwan, H.S. KOO, Ming-Hsin University of Science and Technology, Taiwan

CP-2

Electro-optical properties and damp heat stability of Al-doped ZnO thin films prepared by laser induced high current pulsed arc deposition, **J.B. WU**, C.Y. CHEN, C.C. SHIH, J.J. CHANG, M.S. LEU, Material and Chemical Research Laboratories, Industrial Technology Research Institute, Taiwan, H.Y. TSENG, Y.C. LU, BeyondPV Co., Ltd, Taiwan

CP-3

Effect of Dopants and Thermal Treatment on Properties of Ga-Al-ZnO Thin Films Fabricated by Hetero Targets Sputtering System, **K.H. KIM**, Department of Electrical Engineering, Gachon University Republic of Korea, J.S. HONG, N. MATSUSHITA, Materials and Structures Laboratory, Tokyo Institute of Technology, Japan, H.W. CHOI, Department of Electrical Engineering, Gachon University, Korea

CP-4

Ellipsometry Study of a Reactively Sputtered Transparent Conductive Oxide(TCO), **G. DING**, M. LE, F. HASSAN, Z. SUN, M. NGUGEN, Intermolecular Inc, US

CP-5

Application-Specific Transparent Conductive Oxide Development using High Productivity Combinatorial Methods, **M.A. NGUYEN**, M. LE, Intermolecular Inc, US

CP-6

To Properties of Ga-Al doped ZnO films prepared on the polymer substrate, **K.H. KIM**, H.W. CHOI, **K.H. KIM**, Kyungwon University, Republic of Korea

CP-7

Charge trapping in indium zinc oxide thin film transistors with active channel fabricated by two-step deposition method, **W. KIM**, S.H. LEE, H.S. UHM, J.S. PARK, Hanyang University, Republic of Korea

CP-8

Fabrication and characterization of transparent thin film transistors with boron-doped silicon zinc oxide channel, **H.S. UHM**, **S.H. LEE**, W. KIM, J.S. PARK, Hanyang University, Republic of Korea

CP-9

Investigation on High-Performance Aluminum Zinc Tin Oxide Thin Film Transistors, **L.F. TENG**, P.T. LIU, **C.S. FUH**, National Chiao Tung University, Taiwan, Z.Z. LI, Ming-Hsin University of Science and Technology, Taiwan

CP-10

A Magnetization Study of Cobalt Oxide Films Deposited at Different Temperatures by Pulsed Injection MOCVD Using a β -Diketonate Complex of Cobalt as the Precursor, **L. APATIGA**, J. ESPINDOLA, N. MENDEZ, Universidad Nacional Autónoma de México - Centro de Física Aplicada y Tecnología Avanzada, Mexico

CP-11

Investigating the Illuminated Hot-Carrier Effect under DC and AC operations for InGaZnO Thin-Film Transistors, **T.Y. HSIEH**, T.C. CHANG, T.C. CHEN, M.Y. TSAI, Y.T. CHEN, National Sun Yat-Sen University, Taiwan, F.Y. JIAN, National Chiao Tung University, Taiwan

CP-12

High Supercapacitive Performance of Sol-Gel ZnO-Added Manganese Oxide Coatings, **C.-Y. CHEN**, C.-Y. CHIANG, Feng Chia University, Taiwan, S.-J. SHIH, National Taiwan University of Science and Technology, Taiwan, C.Y. TSAY, C.K. LIN, Feng Chia University, Taiwan

CP-13

Characterization of dye sensitized solar cells with growth of ZnO passivating layer by Electron-beam evaporation, **S.W. RHEE**, K.H. KIM, H.W. CHOI, Kyungwon University, Republic of Korea

CP-15

Preparation of $\text{Zn}_y\text{Cd}_{1-y}\text{S}$ thin film by chemical bath deposition and application for dye-sensitized solar cell, **C.C. CHANG**, Institute of Physics, Academia Sinica, Nankang, Taiwan, C.S. HSU, Feng Chia University, Taiwan, C.H. HSU, M.K. WU, Institute of Physics, Academia Sinica, Nankang, Taiwan, C.C. CHAN, Feng Chia University, Taiwan

Fundamentals and Technology of Multifunctional Thin Films: Towards Optoelectronic Device Applications

Room: Golden Ballroom - Session CP - Symposium C Poster Session - 5:00 pm
CP-16

Effect of Thermal Treatment on Physical and Electrical Properties of porogen-containing and porogen-free ultralow- k plasma-enhanced chemical vapor deposition dielectrics, **W.Y. CHUNG**, National Chi-Nan University, Taiwan, Y.M. CHANG, J.I.M. LEU, National Chiao Tung University, Taiwan, T.J. CHIU, Y.L. CHENG, National Chi-Nan University, Taiwan

CP-17

Effects of UV Light Treatment for Low- k $\text{SiO}_2(\text{-H})$ Ultra Thin Films Deposited by Using PEALD, **C.K. CHOI**, C.Y. KIM, J.W. KO, J.K. WOO, K.M. LEE, Jeju National University, Republic of Korea, W.Y. JEUNG, Korea Institute of Science and Technology, Republic of Korea

CP-18

The Impact of Heterojunction Formation Temperature on Obtainable Conversion Efficiency in n-ZnO/p- Cu_2O Solar Cells, **Y. NISHI**, T. MIYATA, T. MINAMI, Kanazawa Institute of Technology, Japan

CP-19

Effect of Thickness of Atomic Layer Deposition HfO_2 Film on Electrical and Reliability Performance, **Y.L. CHENG**, C.Y. HSIEH, Y.L. CHANG, National Chi-Nan University, Taiwan

CP-20

Growth, Structure and Optical Properties of 20%-Ti Doped WO_3 Thin Films, V. RAMANA, **G. BAGHMAR**, University of Texas at El Paso, US

CP-21

Gate Bias Dependence on Threshold Voltage Instability in $\text{HfO}_2/\text{Ti}_x\text{N}_{1-x}$ p-MOSFETs, **W.H. LO**, NSYSU, Taiwan, T.C. CHANG, National Sun Yat-Sen University, Taiwan, C.H. DAI, NSYSU, Taiwan

CP-22

Enhanced heating effect of SiO_2 -Ag and TiO_2 -Ag multi-layered and co-doped thin films, **J.H. HSIEH**, Y.T. SU, J.L. CHANG, S.J. LIU, Ming Chi University of Technology, Taiwan

CP-23

The Electrical Properties Correlated with Redistributed Deep States of a-Si:H TFTs on Flexible Substrates with Mechanical Bending, **M.H. LEE**, National Taiwan Normal University, Taiwan, **B.F. HSIEH**, National Chung Hsing University, Taiwan

CP-25

Effects of RF power on the properties of Si thin films deposited by an ICP CVD system with internal antennas, **J.H. HSIEH**, **YAN-LIANG LAI**, Ming Chi University of Technology, Taiwan, YUICHI. SETSUHARA, Osaka University, Japan

CP-27

The different radio-frequency powers on characteristics of boron-doped amorphous carbon films prepared by reactive radio-frequency chemical vapor deposition, **T.S. CHEN**, S.E. CHIOU, S.T. SHIUE, National Chung Hsing University, Taiwan

CP-28

InN/GaN Quantum Well Heterostructures: Structural Characteristics and Strain Induced Modifications of the Electronic Properties, -. KIOSEOGLU, KALESKI, Aristoteles University of Thessaloniki, Greece, KOMNINOU, Aristoteles University of Thessaloniki, Greece, **KARAKOSTAS**, Aristoteles University of Thessaloniki, Greece

CP-29

Optical properties of AlN:Ag and Al-Si-N:Ag nanostructured films and the effect of thermal annealing, **A. SIOZIOS**, E. LIDORIKIS, P. PATSALAS, University of Ioannina, Greece

CP-30

Investigation of photoluminescent characteristics and optical properties of thin film zinc silicate doped with manganese, **K.H. YOON**, **J.H. KIM**, Chungbuk National University, Republic of Korea

CP-31

Er:Si Silicide Formation and Temperature Dependence of Barrier Inhomogeneity, **H. EFEOGLU**, Turkey, Y. BABACAN, Erzinan University, Turkey

Thursday Afternoon Poster Sessions

Coatings for Biomedical and Healthcare Applications

Room: Golden Ballroom - Session DP

Symposium D Poster Session

5:00 pm

DP-1

Characterization and antibacterial performance of biocompatible Ti-Zn-O coatings deposited on titanium implants, M.T. TSAI, Hungkuang University, Taiwan, Y.Y. CHANG, National Formosa University, Taiwan, Y.C. CHEN, MingDao University, Taiwan, H.L. HUANG, J.T. HSU, China Medical University, Taichung, Taiwan

DP-2

Anti-bacterial Performance of Zirconia Coatings on Titanium Implants, H.L. HUANG, China Medical University, Taichung, Taiwan, Y.Y. CHANG, National Formosa University, Taiwan, J.C. WENG, Y.C. CHEN, MingDao University, Taiwan, C.H. LAI, T.M. SHIEH, China Medical University, Taichung, Taiwan

DP-3

Diffusion mechanism and Ag⁺ release kinetics on ZrCN - Ag NPs antimicrobial coatings, S. CALDERON V., Universidade do Minho, Dept. Fisica, Portugal, R. ESCOBAR GALINDO, Instituto de Ciencia de Materiales de Madrid (ICMM -CSIC), Spain, A. CAVALEIRO, University of Coimbra, Portugal, S. CARVALHO, Universidade do Minho, Dept. Fisica, Portugal

DP-4

Controlling the drug release from biocompatible polymers by changing plasma-treated area, K. HAGIWARA, Keio University, Japan, T. HASEBE, Toho University Sakura Medical center, Japan, R. ASAKAWA, Keio University, Japan, A. KAMIJO, Yokohama City University Hospital, Japan, T. SUZUKI, A. HOTTA, Keio University, Japan

DP-5

Ex-situ and in-situ techniques to study protein adsorption: fibrinogen and albumin adsorption on metal oxide thin films, P. SILVA-BERMEDEZ, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, México, M. RIVERA, Instituto de Física - Universidad Nacional Autónoma de México, México, S. MUHL, S.E. RODIL, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, México

DP-6

Biocompatibility of the Plasma-polymerized Para-xylene Films, C.M. CHOU, Feng Chia University; Taichung Veterans General Hospital, Taiwan, C.M. YEH, Taichung Hospital, Department of Health, Executive Yuan, Taiwan, C.J. CHUNG, Central Taiwan University of Science and Technology, Taiwan, J.L. HE, Feng Chia University, Taiwan

DP-7

Bioactive coating on anodized titanium substrate by a combination of micro-arc oxidation and electrophoretic deposition, P. SOARES, J.R. NEGRELLI, C.A.H. LAURINDO, Mechanical Engineering Department, Pontificia Universidade Catolica do Parana, Brazil, R. TORRES, Mechanical Engineering Department, Pontificia Universidade Católica do Paraná, Brazil

DP-10

Influence of Bipolar and Bipolar Voltage Modes on Corrosion Resistance of Cp-Ti Alloy coated by using Micro-arc Oxidation Process, E. DEMIRCI, Ataturk University, Turkey, E. ARSLAN, College of Erzurum, Turkey, V.K. EZIRMIK, Ataturk University, Turkey, Y. TOTIK, Turkey, İ. EFEOGLU, Ataturk University, Turkey

DP-11

Improvement of Corrosion Resistance and Biocompatibility of Ti-6Al-7Nb Alloy Using Electrochemical Anodization Treatment, H.H. HUANG, C.P. WU, Y.S. SUN, National Yang-Ming University, Taiwan

DP-12

Corrosion based failure of silicon containing interfaces in diamond-like carbon coated Co-Cr-Mo joint implants, K. THORWARTH, U. MÜLLER, Empa, Switzerland, G. THORWARTH, Synthes GmbH, Switzerland, M. STIEFEL, C. FLAUB, R. HAUERT, Empa, Switzerland

Coatings for Biomedical and Healthcare Applications

Room: Golden Ballroom - Session DP

Symposium D Poster Session

5:00 pm

DP-13

Tribocorrosion resistance of CoCrMo alloys coated with TiAlN/TiAl Multilayers in simulated body fluid, M. FLORES, G. ALEMÓN, A. ALEMÁN, Universidad de Guadalajara, Mexico, E. ANDRADE, UNAM, R. ESCOBAR, Instituto de Ciencia de Materiales de Madrid (ICMM - CSIC), Spain

DP-15

Electrochemical and Morphological Analysis on the Titanium Surface Modified by Shot Blasting and Anodic Oxidation Processes, E.M.S. SZESZ, Neoortho/Research Institute, Brazil, B.L. PEREIRA, C.E.B. MARINO, Universidade Federal do Paraná, Brazil, G.B. SOUZA, Universidade Estadual de Ponta Grossa, Brazil, P. SOARES, Pontificia Universidade Católica do Paraná, Brazil, N.K. KUROMOTO, Universidade Federal do Paraná, Brazil

DP-16

Morphological and mechanical characterization of the titanium anodic film obtained with a mixture of sulphuric and phosphoric acid under potentiostatic mode, A. ROSSETTO, S. BLUNK, Universidade Federal do Paraná, Brazil, C.E. FOERSTER, Universidade Estadual de Ponta Grossa, Brazil, P. SOARES, Pontificia Universidade Católica do Paraná, Brazil, B.L. PEREIRA, C. LEPIENSKI, N.K. KUROMOTO, Universidade Federal do Paraná, Brazil

DP-17

Investigation of Wear, Corrosion and Tribocorrosion Properties of AZ91 Mg Alloy Coated by Micro arc Oxidation Process in the Different Electrolyte Solution, E. DEMIRCI, Ataturk University, Turkey, E. ARSLAN, College of Erzurum, Turkey, V.K. EZIRMIK, Ataturk University, Turkey, O. BARAN, Erzincan University, Turkey, Y. TOTIK, Turkey, İ. EFEOGLU, YILDIZ, Ataturk University, Turkey

DP-18

Effect of Nitrogen Plasma Immersion Ion Implantation Treatment on Corrosion Resistance and Cell Responses of Biomedical Ti and Ti-6Al-4V Metals, H.H. HUANG, S. WANG, C.H. YANG, National Yang-Ming University, Taiwan, W.F. TSAI, C.F. AI, Institute of Nuclear Energy Research, Taiwan

Thursday Afternoon Poster Sessions

Tribology & Mechanical Behavior of Coatings and Engineered Surfaces

Room: Golden Ballroom - Session EP

Symposium E Poster Session

5:00 pm

EP-1

About the identification of generic tribological parameters, **M.C. FUCHS**, N. SCHWARZER, Saxonian Institute of Surface Mechanics, Germany

EP-2

Gradient of tribological and mechanical properties of diamond-like carbon films grown on Ti6Al4V alloy with different condition of interlayer preparation, **G. MARTINS**, Clorovale Diamantes S.A., Brazil, **C. SILVA**, **J. MACHADO**, **E. CORAT**, **V. TRAVA-AIROLDI**, Institute for Space Research, Brazil

EP-3

Synthesis and characterization of high flatness diamond-like carbon films deposited by filtered cathodic arc deposition, **D.Y. WANG**, **S.W. LIN**, **W.C. CHEN**, MingDao University, Taiwan

EP-4

Effect of oxygen and nitrogen content on mechanical and tribological properties of Mo-N-O thin films, **M. HROMADKA**, **P. NOVAK**, **J. MUSIL**, **R. CERSTVY**, **Z. SOUKUP**, University of West Bohemia, Czech Republic

EP-5

The effective Indenter concept applied to a comprehensive 3D infinitesimal wear model, **N. BIERWISCH**, **N. SCHWARZER**, Saxonian Institute of Surface Mechanics, Germany

EP-6

Mechanical Characterization of RF-DC Plasma Nitrided Tool Steels, **T. AIZAWA**, Shibaura Institute of Technology, Japan, **Y. SUGITA**, YS Electric Industry, Co. Ltd., Japan

EP-7

Patterned Film Effects on the Adhesion of Al/TiN Barrier using Fracture-Energy Based Finite Element Analysis, **C.C. LEE**, Department of Mechanical Engineering, Chung Yuan Christian University, Chungli, Taiwan, **C. S. WU**, Department of Mechanical Engineering, Chung Yuan Christian University, Taiwan, **B.F. HSIEH**, **S.T. CHANG**, Department of Electrical Engineering, National Chung Hsing University, Taiwan

EP-8

Cyclic Creep and Fatigue Testing of Nanocrystalline Copper Thin Films, **Y.T. WANG**, **C.J. TONG**, **W.T. TSENG**, **M.T. LIN**, National Chung Hsing University, Taiwan

EP-9

On the determination of coating toughness during nanoindentation, **J. CHEN**, Newcastle University, UK

EP-10

Scratch Test of Optimized TiSiN Coating Deposited Via A Combination of DC and RF Magnetron Sputtering, **A.R. BUSHROA**, **ABDUL RAZAK**, University of Malaya, Malaysia, **B. BEAKE**, Micro Materials Ltd, UK, **M. HAJI HASAN**, University of Malaya, Malaysia, **M.R. MUHAMMAD**, Multimedia University, Malaysia

EP-11

Evaluation of Adhesion of TiAlN/CrN Multilayer Coatings Deposited by CFUBMS, **H. ÇIÇEK**, Ataturk University, Turkey, **Ç. LALOĞLU**, Turkey, **Ö. BARAN**, Erzincan University, Turkey, **E. DEMIRCI**, **V. EZİRMİK**, **İ. EFEOĞLU**, Ataturk University, Turkey

EP-13

Adhesion tendency of polymers to hard coatings, **M. REBELO DE FIGUEIREDO**, **C. BERGMANN**, **C. GANSER**, **C. TEICHERT**, **C. MITTERER**, Montanuniversität Leoben, Austria

EP-14

Effect of Nitrogen content on the Microstructure and Residual Stress of Ternary Ta-Ti-N Thin Films Using Magnetron Sputtering, **C.K. CHUNG**, **Y.R. LU**, **T.S. CHEN**, **C.H. LI**, **Y.T. LIN**, National Cheng Kung University, Taiwan

EP-15

A study of microstructures and mechanical properties of cathodic arc deposited ZrSiN coatings with silane gas, **S.H. HUANG**, National Chiao Tung University, Taiwan, **T.C. TSENG**, **C.Y. TONG**, **Y.B. LIN**, **J.W. LEE**, Ming Chi University of Technology, Taiwan, **T.E. HSIEH**, Gigastorage Corporation, Taiwan, **J.G. DUH**, **H.W. CHEN**, National Tsing Hua University, Taiwan

Tribology & Mechanical Behavior of Coatings and Engineered Surfaces

Room: Golden Ballroom - Session EP

Symposium E Poster Session

5:00 pm

EP-16

Effect of micro-droplets and surface morphology on the local residual stress field in thin hard coatings, **E. BEMPORAD**, **M. SEBASTIANI**, **M. PICCOLI**, **F. CARASSITI**, University of Rome "Roma Tre", Italy

EP-17

Tribological Behaviour of Electrodeposited CoW-WC Nanocomposite Coatings, **S.K. GHOSH**, **A.K. SURI**, **BARC**, India, **J.P. CELIS**, **KUL**, Belgium

EP-18

Duplex coating of DLC films for Al and Al alloys, **Y. SAKAMOTO**, Chiba Institute of Technology, Japan

EP-20

The effect of grooved surface texture on friction-induced vibration and noise, **J.L.M. MO**, **H.L.D. DAN**, **G.X. CHEN**, **M.H. ZHU**, Southwest Jiaotong University, China, **T.M. SHAO**, Key Laboratory of Tribology, Tsinghua University, China, **Z.R. ZHOU**, Southwest Jiaotong University, China

EP-21

Adhesion enhancement of polymers by an intermediate layer through photografting polymerization, **J. TAKAHASHI**, **A. HOTTA**, Keio University, Japan

EP-22

Tool life and surface characterization of four commercial drills, **S. MUHL**, Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico, **D. GARCIA**, **A. FIGUEROA**, **SEPI**, ESIME-Zacatenco, Instituto Politécnico Nacional, Mexico

EP-23

Surface modification of cast iron substrates using radical nitriding, **I. SUGIURA**, Graduate School, Chiba Institute of Technology, Japan, **Y. SAKAMOTO**, Chiba Institute of Technology, Japan

EP-24

Mechanical and Tribological Properties of Duplex Stainless Steels Submitted to P13 Nitriding at Low Temperatures, **C.E. FOERSTER**, Universidade Estadual de Ponta Grossa, Brazil, **C. LEPIENSKI**, **S. BLUNK**, **A.M.C. OLIVEIRA**, Universidade Federal do Paraná, Brazil, **A. KOLITSCH**, Institute of Ion Beam Physics and Material Research, Germany

EP-26

Characterisation of TiCN and TiCN/ZrN Coatings for Cutting Tool Application, **P.C. SIOW**, **J. ABDUL GHANI**, **M.J. GHAZALI**, Universiti Kebangsaan, Malaysia, **T. RIA JAAFAR**, Advanced Materials Research Centre SIRIM Berhad, Malaysia, **C.H. CHE HARON**, Universiti Kebangsaan, Malaysia

EP-27

Quantification of tool coating effects on surface finish while dry cutting of glass/epoxy composite, **A. BEN-SOUSSIA**, **A. MKADDEM**, **M. EL MANSORI**, **A. MEENA**, Arts et Métiers ParisTech, France

Thursday Afternoon Poster Sessions

New Horizons in Coatings and Thin Films

Room: Golden Ballroom - Session FP

Symposium F Poster Session

5:00 pm

FP-1

Pseudocapacitive Performance of Vertical Copper Oxide Nanoflakes, Z. ENDUT, M.H. ABD SHUKOR, Center of Advanced Manufacturing and Material Processing, Malaysia, W.J. BASIRUN, University of Malaya, Malaysia

FP-2

Structural and Optical Properties of CdO Nanostructures Prepared by Atmospheric-pressure CVD, T. TERASAKO, T. FUJIWARA, Graduate School of Science and Engineering, Ehime University, Japan, Y. NAKATA, M. YAGI, Kagawa National College of Technology, Japan, S. SHIRAKATA, Graduate School of Science and Engineering, Ehime University, Japan

FP-3

Substrate texturing effect on the microstructural and electrochemical performance of the rf sputtered LiCoO₂ film cathodes, J. KUMAR, J. BABU, Sri Venkateswara University, Thin Films Laboratory, India, C. V. University of Texas at El Paso, US, O.M. HUSSAIN, Sri Venkateswara University, Thin Films Laboratory, India

FP-4

The Grain Evaluation and Electrochemical properties of RF sputtered LiMn₂O₄ thin films., J. BABU, J. KUMAR, O. MAHAMMAD, Sri Venkateswara University, Thin Films Laboratory, India, V. RAMANA, University of Texas at El Paso, US

FP-5

Electrochemical Properties of V₂O₅ Thin Films Grown on Flexible Substrates using Plasma Assisted Activated Reactive Evaporation, K. HARI KRISHNA, University of Calabria, Italy, O.M. HUSSAIN, Sri Venkateswara University, India

FP-6

Bismuth thin films deposited by DC Magnetron Sputtering for electrochemical analysis electrodes, S.E. RODIL, P. SILVA-BERMUDEZ, J. BARON, O. GARCIA-ZARCO, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de Mexico, México

FP-7

SnO₂-cored heteronanowires sheathed with metal shells and their application to gas sensors, H.W. KIM, Hanyang University, Republic of Korea

FP-8

Enhancement of electron-emission and long-term stability in tip-type carbon nanotube field emitters by lithium coating, H.B. CHANG, B.J. KIM, J.P. KIM, J.S. PARK, Hanyang University, Republic of Korea

FP-9

Electron emission properties of carbon nanotubes grown on polymer substrates with high absorbency, B.J. KIM, H.B. CHANG, J.S. PARK, Hanyang University, Republic of Korea

FP-10

Structure and Electronic Properties of Sputter-Deposited LiFePO₄ Thin Films, V. RAMANA, M. MARES, G. BAGHMAR, University of Texas at El Paso, US

FP-11

Development of thin film cathodes for lithium-ion batteries in the materials system Li-Mn-O by r.f. magnetron sputtering, J. FISCHER, C. ZIEBERT, C. ADELHELM, J. YE, M. RINKE, J. DESAIGUES, M. STÜBER, S. ULRICH, H. SEIFERT, Kit, lam-Awp, Germany

FP-12

The resistive switching characteristics in TaON films for nonvolatile memory applications, M.C. CHEN, T.C. CHANG, National Sun Yat-Sen University, Taiwan, Y.C. CHIU, National Chiao Tung University, Taiwan, S.C. CHEN, National Tsing Hua University, Taiwan, S.Y. HUANG, National Sun Yat-Sen University, Taiwan, S. SZE, National Chiao Tung University, Taiwan, F.S. YE (HUANG), National Tsing Hua University, Taiwan, M.J. TSAI, Indian Institute of Science Bangalore, India

New Horizons in Coatings and Thin Films

Room: Golden Ballroom - Session FP

Symposium F Poster Session

5:00 pm

FP-13

Switching mechanism transition induced by annealing treatment in ZnO/Ru/ZnO resistive memory, L.C. CHANG, Y.H. WEI, Ming Chi University of Technology, Taiwan, K.H. LIU, Chang Gung University, Taiwan

FP-14

Bismuth Oxide thin films grown by RF reactive magnetron sputtering, P. LUNCA POPA, P. EKLUND, Linköping University, Sweden

FP-15

Electromechanical reliability of ITO-coated polymer substrates after exposure to acrylic acid, K. BURROWS, University of Birmingham, UK, A. HOOVER, D. CAIRNS, K. SIERROS, West Virginia University, US, S. KUKUREKA, University of Birmingham, UK

FP-16

Observation of amorphous to crystalline phase transformation in Te substituted Sn-Sb-Se chalcogenide thin films for memory applications, R. CHANDER, R. THANGARAJ, GNDU, India

FP-17

Investigating the degradation behavior under Hot Carrier Stress for InGaZnO TFT with symmetric and asymmetric structure, M.Y. TSAI, NSYSU, Taiwan

FP-18

Investigating the Drain Bias stress of InGaZnO TFTs under Dark and Light Illumination for AMOLED application, S.Y. HUANG, T.C. CHANG, L.W. LIN, M.C. YANG, National Sun Yat-Sen University, Taiwan, K.H. YANG, University of Toronto, Canada, M.H. WU, M.C. CHEN, National Sun Yat-Sen University, Taiwan, F.Y. JIAN, National Tsing Hua University, Taiwan

FP-19

Properties of Ge · SiC nanodots / SiC stacked structure, Y. ANEZAKI, T. OOTANI, Nagaoka University of Technology, Japan, K. SATOU, Department of Electrical, Electronic and Information Engineering, Japan, T. KATO, Nagaoka University of Technology, Japan, A. KATO, Department of Electrical, Electronic and Information Engineering, Japan, K. YASUI, Nagaoka University of Technology, Japan

FP-20

Oxygen-Graded TiO_x (x=1.5-1.9) Produced by High Power Impulse Magnetron Sputtering and Its Thin Film Solar Cell Application, Y.H. CHEN, W.C. YAN, M.C. LAI, J.L. HE, Feng Chia University, Taiwan

FP-21

Time Evolution and the Gas Rarefaction of Long HiPIMS Pulses, C. HUO, KTH Royal Institute of Technology, Sweden, M.A. RAADU, Royal Institute of Technology, D. LUNDIN, Université Paris-Sud 11, France, J.T. GUDMUNDSSON, Shanghai Jiaotong University, China, A. ANDERS, Lawrence Berkeley National Laboratory, US, N. BRENNING, Royal Institute of Technology, Sweden

FP-22

Mass and energy spectrometry of a feedback controlled reactive Ti HIPIMS discharge in Ar/O₂, M. AUDRONIS, Gencoa Ltd, UK, Y. GONZALVO, Hiden Analytical Ltd., UK, V. BELLIDO-GONZALEZ, Gencoa Ltd, UK

Thursday Afternoon Poster Sessions

New Horizons in Coatings and Thin Films

Room: Golden Ballroom - Session FP

Symposium F Poster Session

5:00 pm

FP-23

Progress in BIPOLAR sputtering technology – new approach to process control and its applications, **W. GLAZEK**, A. KLIMCZAK, P. OZIMEK, P. ROZANSKI, Huettinger Electronic, Poland

FP-24

Effect of hydrogen addition on the residual stress of cubic boron nitride thin film deposited by UBM sputtering method, **J.-S. KO**, J.K. PARK, Korea Institute of Science and Technology, Republic of Korea, J.-Y. HUH, Unaffiliated, Y.J. BAIK, Korea Institute of Science and Technology, Republic of Korea

FP-25

Behavior of cubic boron nitride thin film formation according to the deposition pressure, **E.S. LEE**, J.K. PARK, Korea Institute of Science and Technology, Republic of Korea, T.Y. SEONG, Korea University, Republic of Korea, Y.J. BAIK, Korea Institute of Science and Technology, Republic of Korea

FP-26

Effect of moisture adsorption inside the chamber on the formation of cubic boron nitride thin film, **E.S. LEE**, **J.K. PARK**, Korea Institute of Science and Technology, Republic of Korea, T.Y. SEONG, Unaffiliated, Y.J. BAIK, Korea Institute of Science and Technology, Republic of Korea

FP-27

Precise modulation of pore diameter of porous anodic alumina templates by hybrid pulse periods at room temperature, **C.K. CHUNG**, **H.C. CHANG**, **S.L. LI**, **M.W. LIAO**, National Cheng Kung University, Taiwan

FP-28

Transparent Anti-fingerprint Protective Coatings Prepared by Duplex Plasma Polymerization, **S.W. CHANG**, Feng Chia University, Taiwan, **C.M. CHEN**, Feng Chia University; Plastic Industry Development Center, Taiwan, **J.L. HE**, Feng Chia University, Taiwan

Applications, Manufacturing, and Equipment

Room: Golden Ballroom - Session GP

Symposium G Poster Session

5:00 pm

GP-1

Effect of Pulse Frequency on Physical Properties of Diamond-Like Carbon Films Synthesized under Atmospheric Pressure, **T. SAKURAI**, M. NOBORISAKA, T. HIRAKO, T. SUZUKI, Keio University, Japan

GP-2

Monte Carlo simulation of energy and particle distributions in the molybdenum disulfide sputtering process, **B. VIERNEUSEL**, S. TREMMEL, S. WARTZACK, Friedrich-Alexander-University Erlangen-Nuremberg, Germany

GP-3

Temperature-induced abnormal sub-threshold leakage current in amorphous Indium-Gallium-Zinc-Oxide thin film transistors, **J.-C. JHU**, National Sun Yat-Sen University, Taiwan, **G.W. CHANG**, National Chiao Tung University, Taiwan, **Y.E. SYU**, National Sun Yat-Sen University, Taiwan

GP-4

Microstructural analysis of Zn-Sn interface with thin films based of Ta over Cu and Si substrates, **S. MEDRANO**, G. RAMIREZ, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Circuito Exterior s/n, CU, México D.F. 04510, México, **S.E. RODIL**, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, México, **S. MUHL**, Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Mexico, **G. GONZALEZ**, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Circuito Exterior s/n, CU, México D.F. 04510, México

GP-5

Characterization of Polysilazane Based Sod Films As Function of Process Temperature and Thin Barrier used, **G. GULLERI**, Micron Semiconductor Italia S.r.l., Italy, **F. FUMAGALLI**, Micron Semiconductor Italia S.r.l., Italy, **C. RICCI**, University of Cagliari, Physics Department, Italy

GP-6

A novel multilayer barrier film encapsulated plastics purely prepared by inductively coupled plasma chemical vapor deposition, **L.W. LAI**, **M.H. KO**, **K.W. LIN**, **J.T. CHEN**, **C.H. CHANG**, Industrial Technology Research Institute, Taiwan

GP-7

Surface modification using silane coupling agent for polypropylene with high gas barrier property, **H. TASHIRO**, A. HOTTA, Keio University, Japan

GP-8

Manufacturing of mode-conversion type microwave plasma CVD apparatus and applying for synthesis of carbon materials, **T. KAMESHIMA**, Graduate School, Chiba Institute of Technology, Japan, **H. TANAKA**, Shutech Co., Ltd., Japan, **Y. SAKAMOTO**, Chiba Institute of Technology, Japan

GP-9

A novel technique to suppress self sputtering of radio-frequency electrode in capacitively-coupled glow discharge, **X.B. TIAN**, **Y.H. MA**, **C.Z. GONG**, **S.Q. YANG**, Harbin Institute of Technology, China, **P. CHU**, City University of Hong Kong, Hong Kong Special Administrative Region of China

Thursday Afternoon Poster Sessions

Applications, Manufacturing, and Equipment

Room: Golden Ballroom - Session GP

Symposium G Poster Session

5:00 pm

GP-10

An experimental study on a large area multi-electrode discharge in the fabrication of microcrystalline thin film solar cell, **H. SEO**, S. LEE, Y. CHANG, Korea Advanced Institute of Science and Technology, Republic of Korea

GP-11

Advanced PVD coatings in a combination with a new intermetallic substrate for hobs - A major step forward in productivity, **P. IMMICH**, U. KRETZSCHMANN, U. SCHUNK, R. FISCHER, LMT Fette Werkzeugtechnik, Germany

GP-12

Adhesive-free gas adsorption joining of cycloolefin polymer film and glass sheet, **Y. TAGA**, Thin film research Center, Chubu University, Japan

GP-13

Silicon oxide permeation barrier coating of PET in microwave plasmas with arbitrary substrate bias, **S. STEVES**, Electrical Engineering and Plasma Technology, Ruhr-Universität Bochum, Germany, B. OEZKAYA, Technical and Macromolecular Chemistry, University of Paderborn, Germany, M. RUDOLPH, M. DEILMANN, Electrical Engineering and Plasma Technology, Ruhr-Universität Bochum, Germany, C.N. LIU, Technical and Macromolecular Chemistry, University of Paderborn, Germany, N. BIBINOV, Electrical Engineering and Plasma Technology, Ruhr-Universität Bochum, Germany, O. OZCAN, G. GRUNDMEIER, Technical and Macromolecular Chemistry, University of Paderborn, Germany, P. AWAKOWICZ, Electrical Engineering and Plasma Technology, Ruhr-Universität Bochum, Germany

GP-14

Fluidized Bed Machining (FBM) of thermally sprayed cobalt-chromium and chromium oxide coatings, **M. BARLETTA**, S. GUARINO, V. TAGLIAFERRI, F. TROVALUSCI, Università degli Studi di Roma Tor Vergata, Italy

Post Deadline Discoveries and Innovations

Room: Golden Ballroom - Session PDP

Post Deadline Discoveries and Innovations

Moderators: W. Kalss, OC Oerlikon Balzers AG, Liechtenstein, S. Ulrich, Karlsruhe Institute of Technology, Germany

5:00 pm

PDP-1

Oxidation resistance coatings of Ir-Zr and Ir by double glow plasma, **W.P. WU**, Z.F. CHEN, X.N. CONG, Nanjing University of Aeronautics and Astronautics, China

PDP-2

A comparative study on hot corrosion resistance of three types of thermal barrier coatings: YSZ, YSZ/normal Al_2O_3 and YSZ/nano Al_2O_3 , M. DAROONPARVAR, **M.S. HUSSAIN**, Universiti Teknologi, Malaysia

PDP-3

Determination of the local mechanical properties and residual stresses of an a-C:H coating system by nanoindentation and FIB milling, **C. SCHMID**, V. MAIER, SCHAUFLE, M. GÖKEN, University Erlangen-Nuremberg, Germany, K. DURST, University Erlangen-Nuermberg, Germany

PDP-4

A simple FIB milling technique for residual stress measurements on thermally cycled NiAl bond coats, **M. KROTTENTHALER**, C. SCHMID, R. WEBLER, J. SCHAUFLE, S. NEUMEIER, University Erlangen-Nuremberg, Germany, K. DURST, University Erlangen-Nuermberg, Germany, M. GÖKEN, University Erlangen-Nuremberg, Germany

PDP-5

In-Situ TEM Observations of Indenting Deformation and Fracture of Bone Nanopillars, **S.Y. CHANG**, Y.T. WANG, Y.C. HUANG, C.M. CHEN, National Chung Hsing University, Taiwan

PDP-6

In situ deposition and characterization of B-C-N films, **H. ALAGOZ**, M.F. GENISEL, E. BENGU, D. INAN, Bilkent University, Turkey

Thursday Afternoon Poster Sessions

Symposium TS Poster Session

Room: Golden Ballroom - Session TSP

TS Poster Session

5:00 pm

TSP-1

A route to strong p-doping of epitaxial graphene on SiC, U. SCHWINGENSCHLÖGL, Y.C. CHENG, N. SINGH, KAUST, Saudi Arabia

TSP-2

Nitrogen Introduced at Interface to Improve Resistance Switching Characteristics with SiGeO_x RRAM Device, Y.E. SYU, National Sun Yat-Sen University, Taiwan, G.W. CHANG, National Chiao Tung University, Taiwan

TSP-3

Electroluminescence of ZnO nanocrystal in sputtered ZnO-SiO₂ nanocomposite light-emitting devices, J.T. CHEN, National Cheng Kung University, Taiwan, W.C. LAI, J.K. SHEU, Y.Y. YANG, Unaffiliated

TSP-4

Sampling the local structure in γ -Al₂O₃ by XPS analysis of embedded Argon, M. PRENZEL, A. RASTGOO LAHROOD, A. KORTMANN, T. DE LOS ARCOS, A. VON KEUDELL, Ruhr Universität Bochum, Germany

TSP-5

Deposition, Microstructure and Mechanical Properties of Mo-doped CeO₂ Films Prepared by Pulsed Unbalanced Magnetron Sputtering, I.W. PARK, J. MOORE, J. LIN, Colorado School of Mines, US, D. HURLEY, M. KHAFIZOV, Idaho National Laboratory, US, A. EL-AZAB, Florida State University, Florida, US, T. ALLEN, C. YABLINSKY, M. GUPTA, University of Wisconsin, Wisconsin, J. GAN, Idaho National Laboratory, US, M. MANUEL, H. HENDERSON, B. VALDERRAMA, University of Florida, US

TSP-6

Effect of stress on the electrical bistability of poly N-vinylcarbazole films, J.C. WANG, Y.S. LAI, National United University, Taiwan

TSP-7

Thin Film Bond and Mass Density Measurements Using Fourier Transform Infrared Spectroscopy, S. KING, Intel Corporation, US

TSP-8

Ordered thin film materials with ultra-low thermal conductivity, C. MURATORE, Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, V. VARSHNEY, UTC/Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, J.J. GENGLER, Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, J.J. HU, UDRI/Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, T.S. SMITH, Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, J.E. BULTMAN, UDRI/Air Force Research Laboratory, Thermal Sciences and Materials Branch, US, A. VOEVODIN, Air Force Research Laboratory, Thermal Sciences and Materials Branch, US

TSP-9

Texture change and off-axis accommodation through film thickness in fcc structured nitrides, A. KARIMI, A. SHETTY, EPFL, Switzerland

Friday Morning, April 27, 2012

Hard Coatings and Vapor Deposition Technology Room: Royal Palm 4-6 - Session B3-1 Ion-Surface Interactions in Film Growth and Post-Growth Processes Moderators: S. Fairchild, Air Force Research Laboratory, US, K. Sarakinos, Linköping University, Sweden		Coatings for Biomedical and Healthcare Applications Room: Sunset - Session D2-1 Coatings for Biomedical Implants Moderators: R. Hauert, Empa, Switzerland, J. Piascik, RTI International, US	
8:00 am	B3-1-1 Tantalum Based Coatings Deposited by Pulsed DC Magnetron Sputtering and Highly Ionized Pulse Plasma Processes, J. BARRIGA, L. MENDIZABAL, U. RUIZ DE GOPEGUI, R. BAYON, Tekniker, Spain	D2-1-1 Invited Functional plasma polymer films engineered at the nanoscale for biomaterial applications, K. VASILEV, University of South Australia, Australia	
8:20 am	B3-1-2 Studies on plasma immersion ion implantation of nitrogen on titanium, K. R. M. RAO, Department of Engineering Chemistry, GITAM Institute of Technology, GITAM University, India, E. RICHTER, Institute of Ion Beam Physics for Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Germany, S. MUKHERJEE, FCIPT, Institute of Plasma Research, India, I. MANNA, Central Glass and Ceramic Research Institute, India	Invited talk continued.	
8:40 am	B3-1-3 Invited On the role of ions during reactive magnetron sputtering, D. DEPLA, Ghent University, Belgium	D2-1-3 Effect of the surface atom ordering on the protein adsorption, P. SILVA-BERMUDEZ, L. HUERTA, S.E. RODIL, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de Mexico, México	
9:00 am	Invited talk continued.	D2-1-4 Nanodiamond/DLC Composite Coating Deposited on Ti6Al4V for Orthopaedic Joint Applications, C. ZHANG, Q. YANG, Y. TANG, Y. LI, University of Saskatchewan, Canada	
9:20 am	B3-1-5 In situ characterization of plasma-surface interactions with a quartz crystal microbalance, C. CORBELLA, O. KREITER, S. GROSSE-KREUL, Ruhr Universität Bochum, Germany, D. MARINOV, Ecole Polytechnique, France, T. DE LOS ARCOS, A. VON KEUDELL, Ruhr Universität Bochum, Germany	D2-1-5 Effects of argon plasma treatment on controlling the drug release rate from biocompatible polymers, K. HAGIWARA, Keio University, Japan, T. HASEBE, Toho University Sakura Medical center, Japan, T. SUZUKI, A. HOTTA, Keio University, Japan	
9:40 am	B3-1-6 Compressive stress generation and atom incorporation during growth of low-mobility materials, G. ABADIAS, A. FILLON, A. MICHEL, C. JAOUEN, Institut P ² - Université de Poitiers, France	D2-1-6 In vitro biological response of plasma electrolytically oxidised and sprayed hydroxyapatite coatings on Ti6Al4V alloy, W. YEUNG, A. YEROKHIN, G. REILLY, A. MATTHEWS, University of Sheffield, UK	
10:00 am	B3-1-7 Variation of substrate biasing and temperature and their influence on the crystal orientation of γ -Al ₂ O ₃ films, M. PRENZEL, A. KORTMANN, A. VON KEUDELL, Ruhr Universität Bochum, Germany	D2-1-7 Biocompatibility and Anti-Microbial Properties of Silver Modified Amorphous Carbon Films, A. ALMAGUER-FLORES, Universidad Nacional Autónoma de México, Mexico, R. OLIVARES-NAVARRETE, Georgia Tech, US, G. RAMIREZ, Universidad Nacional Autónoma de México, Mexico, S.E. RODIL, Universidad Nacional Autónoma de Mexico, Mexico	
10:20 am	B3-1-8 High-Voltage Positive Nanopulse Assisted Hot-Filament CVD Diamond Growth, M. TAKASHIMA, N. OHTAKE, Tokyo Institute of Technology, Japan	D2-1-8 Corrosion Resistance and Biocompatibility of Titanium Coated with Tantalum Pentoxide, Y.S. SUN, H.H. HUANG, National Yang-Ming University, Taiwan	
10:40 am		D2-1-9 Mechanical Properties of Fluorinated DLC and Si Interlayer on a Ti Biomedical Alloy, C.C. CHOU, Y.Y. WU, National Taiwan Ocean University, Taiwan, J.W. LEE, Ming Chi University of Technology, Taiwan, J.C. HUANG, Tunghan University, Taiwan, C.H. YEH, Keelung Chang Gung Memorial Hospital, Taiwan	
11:00 am	2013 Abstract Submission Deadline October 1, 2012	2013 ICMCTF April 29 - May 3, 2013	
11:20 am	Thank You & See You Next Year Party, Trellis Courtyard near pool 12:30 – 1:30 pm	Awards Nominations Deadline October 1, 2012	

Friday Morning, April 27, 2012

Tribology & Mechanical Behavior of Coatings and Engineered Surfaces Room: Tiki Pavilion - Session E2-3 Mechanical Properties and Adhesion Moderators: M.T. Lin, National Chung Hsing University, Taiwan, D. Bahr, Washington State University, US, R. Chromik, McGill University		New Horizons in Coatings and Thin Films Room: Royal Palm 1-3 - Session F3-1 New Boron, Boride and Boron Nitride Based Coatings Moderators: H. Högberg, Linköping University, A. Inspektor, Kennametal Incorporated, US	
8:00 am	E2-3-1 Mechanical properties evaluation of the magnetron sputtered Zr-based metallic glass thin films, C.Y. CHUNG , Ming Chi University of Technology, Taiwan, H.W. CHEN, J.G. DUH, National Tsing Hua University, Taiwan, J.W. LEE, Ming Chi University of Technology, Taiwan		F3-1-1 Invited Quantum-mechanically guided materials design of boron-based hard coatings, J. EMMERLICH , D. MUSIC, Materials Chemistry, RWTH Aachen university, Germany, J. SCHNEIDER, RWTH Aachen University, Germany
8:20 am	E2-3-2 Microstructure and mechanical properties of copper-tin shape memory alloy thin films deposited from an anionic liquid electrolyte, N. MOHARRAMI , S. GHOSH, S. ROY, S.J. BULL, Newcastle University, UK		Invited talk continued.
8:40 am	E2-3-3 Invited Precipitation and Fatigue in Ni-Ti-Zr Shape Memory Alloy Thin Films by Combinatorial nanoCalorimetry, J. VLASSAK , Harvard University, US		F3-1-3 Hard and lubricious Ti-B-C-N nanocomposite coatings via magnetron sputtering, F.J. LI , S. ZHANG, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore, B. LI, Central Iron and Steel Research Institute, China
9:00 am	Invited talk continued.		F3-1-4 Microstructural of study of cubic boron nitride thin film deposited by UBM method with hydrogen addition, J.-S. KO , J.K. PARK, Korea Institute of Science and Technology, Republic of Korea, J.-Y. HUH, Unaffiliated, Y.J. BAIK, Korea Institute of Science and Technology, Republic of Korea
9:20 am	E2-3-5 Investigation of the elastic-plastic properties of thin films on polyimide substrate under controlled biaxial deformation, S. DJAZIRI, Institut P ² - Université de Poitiers, France, D. FAURIE , LSPM-CNRS, Université Paris13, France, P. RENAULT, E. LE BOURHIS, Institut P ² - Université de Poitiers, France, G. GEANDIER, Institut Jean Lamour, France, C. MOCUTA, D. THIAUDIÈRE, SOLEIL Synchrotron, France, P. GOUDEAU, Institut P ² - Université de Poitiers, France		F3-1-5 Effect of deposition temperature of cubic boron nitride thin film deposited by UBM method with nanocrystalline diamond buffer layer, E.S. LEE , J.K. PARK, Korea Institute of Science and Technology, Republic of Korea, T.Y. SEONG, Unaffiliated, Y.J. BAIK, Korea Institute of Science and Technology, Republic of Korea
9:40 am	E2-3-6 Heat treating effects on the microstructure and mechanical properties of Ti-Cr-B-N thin films, L.W. HO, J.W. LEE , Ming Chi University of Technology, Taiwan, H.W. CHEN, J.G. DUH, National Tsing Hua University, Taiwan		F3-1-6 Microwave-assisted surface synthesis of amorphous and crystalline boron-carbon-nitrogen foams for thermal physisorption applications, R. PAUL , Birk Nanotechnology Center, Purdue University, US, A. VOEVODIN, Birk Nanotechnology Center, Purdue University; Materials and Manufacturing Directorate, Air Force Research Laboratory, US, A. AMAMA, S. GANGULI, A.K. ROY, Air Force Research Laboratory, Materials and Manufacturing Directorate, US, T.S. FISHER, Birk nanotechnology Center, Purdue University; Air Force Research Laboratory, Materials and Manufacturing Directorate, US, J.J. HU, University of Dayton Research Institute/Air Force Research Laboratory, US
10:00 am	E2-3-7 Innovative nanomechanical testing for coating optimisation in severe applications - experiments and modelling, B. BEAKE , Micro Materials Ltd, UK, N. SCHWARZER, SJO, Germany, M. DAVIES, Micro Materials Ltd, UK, W. HELLE, LOT Oriol, T. LISKIEWICZ, Leeds University, UK		F3-1-7 B ₄ C thin films for neutron detection, C. HÖGLUND , European Spallation Source ESS AB/ Linköping University, Sweden, J. BIRCH, Linköping University, Sweden, K. ANDERSEN, European Spallation Source ESS AB, Sweden, T. BIGAULT, J.-C. BUFFET, J. CORREA, P. VAN ESCH, B. GUERARD, Institute Laue Langevin, France, R. HALL-WILTON, European Spallation Source ESS AB, Sweden, J. JENSEN, Linköping University, Sweden, A. KHAPLANOV, European Spallation Source ESS AB, Sweden; Institute Laue Langevin, France, F. PISCITELLI, Institute Laue Langevin, France, C. VETTIER, European Synchrotron Radiation Facility ESRF, France, W. VOLLENBERG, CERN, Switzerland, L. HULTMAN, Linköping University, Sweden
10:20 am	E2-3-8 A new method to measure mechanical properties of very thin top layers (<100nm), G.G. GUILLONNEAU , J.L. LOUBET, S.B. BEC, G. KERMOUCHE, Ecole Centrale de Lyon, France	2013 Abstract Submission Deadline October 1, 2012	
10:40 am	E2-3-9 Invited Extending Thin-Film Mechanical-Property Measurement Techniques for New Applications, N. BARBOSA , L. LIEW, D. READ, National Institute of Standards and Technology, US	2013 Awards Nominations Deadline October 1, 2012	
11:00 am	Invited talk continued.	Thank You & See You Next Year Party Trellis Courtyard near pool 12:30 – 1:30 pm	
11:20 am	E2-3-11 Atomic Force Microscopy for Nanoscale Mechanical Mapping, B. PITTENGER , C. SU, S. MINNE, Bruker-Nano Inc., AFM Unit, US	2013 ICMCTF April 29 - May 3, 2013	

Friday Morning, April 27, 2012

Applications, Manufacturing, and Equipment

Room: Sunrise - Session G6-1

Advances in Industrial PVD & CVD Deposition Equipment

Moderators: M. Rodmar, Sandvik Tooling, Sweden, K. Bobzin, Surface Engineering Institute - RWTH Aachen University, Germany

8:00 am	G6-1-1 Invited Source Technologies for Amorphous Carbon Hard Coatings, R. P. WELTY, Magplas Technik LLC, US	<p style="text-align: center;">Elsevier Workshop: Reviewing and Refereeing Manuscripts 8:30 am – 1:00 pm Towne Room in the Meeting House</p> <p style="text-align: center;">Limited seating is still available for this complimentary workshop! (registration is required) Information about this workshop and how to register is found on the ICMCTF web site http://www2.avs.org/conferences/icmctf on the Focused Topics SessionTab(FTS).</p> <p style="text-align: center;">Or, for additional information as well as registration for this "Refereeing and Reviewing" workshop, please contact Jan Willem Wijnen publisher of several Elsevier journals : j.wijnen@elsevier.com</p>
8:20 am	Invited talk continued.	
8:40 am	G6-1-3 Broadening the application range of HiPIMS coatings in industrial cutting operations, W. KOELKER, O. LEMMER, C. SCHIFFERS, S. BOLZ, CemeCon AG, Germany	
9:00 am	G6-1-4 Technical challenges and solutions for scaling up of High Power Impulse Magnetron Sputtering (HIPIMS) technologies., J. LANDSBERGEN, F. PAPA, R. TIETEMA, M. EERDEN, T. KRUG, Hauzer Techno Coating, BV, Netherlands	
9:20 am	G6-1-5 S3p™ the HIPIMS approach of Oerlikon Balzers, s. KRASSNITZER, M. LECHTHALER, H. RUDIGIER, OC Oerlikon Balzers AG, Liechtenstein	
9:40 am	G6-1-6 Hybrid - PVD coatings: arc evaporation combined with HIPAC, J. VETTER, J. MUELLER, G. ERKENS, Sulzer Metaplas GmbH, Germany	
10:00 am	G6-1-7 Towards uniform coating on complex geometries by PVD techniques, T. TAKAHASHI, R. CREMER, P. JASCHINSKI, KCS Europe GmbH, Germany, K. YAMAMOTO, S. HIROTA, Kobe Steel Ltd., Japan	
10:20 am	G6-1-8 LPPS hybrid Technologies: New Thermal Spray Processes for new emerging Energy Applications, H.-M. HOEHLE, Sulzer Metco Europe GmbH, Germany, M. GINDRAT, A. BARTH, Sulzer Metco AG (Switzerland), Switzerland	
10:40 am	G6-1-9 Development of metal strip cooling equipment for demands of high-rate vacuum coating, J.-P. HEINB, P. LANG, Fraunhofer FEP, Germany	
11:00 am	G6-1-10 Multiple frequency coupled plasmas for enhanced control of PVD processes, S. BIENHOLZ, E. SEMMLER, P. AWAKOWICZ, Ruhr-Universität Bochum, Germany	
11:20 am	2013 Abstract Submission Deadline October 1, 2012	2013 ICMCTF April 29 - May 3, 2013
11:40 am	Thank You & See You Next Year Party, Trellis Courtyard near pool 12:30 – 1:30 pm	Awards Nominations Deadline October 1, 2012