Technical Sessions
Key to Session/Paper Numbers

A Coatings for Use at High Temperature

B Hard Coatings and Vapor Deposition Technology

C Optical Thin Films

D Carbon and Nitride Materials: Synthesis-Structure-Property Relationships

E Tribology and Mechanical Behavior of Coatings and Thin Films

F Advances in Characterization of Coatings & Thin Films

G Applications, Manufacturing, and Equipment

H New Horizons in Coatings and Thin Films

TS1 Coatings for Aerospace Applications

TS2 Coatings for Fuel Cells

TS3 Bioengineered Surfaces and Interfaces

TS4 Nanostructured Thin Film Assemblies and Composites

Program Numbers are listed with the symposium letter first, the session number second, and the number of the paper last (i.e., A1-1-1 = Symposium A, session 1 denotes the half day session in which the talk is being presented, morning or afternoon, and the paper number slot is -1). Sessions sponsored by two divisions are labeled with both acronyms (i.e., C2/E5, E5/C2).

SYMPOSIUM SCHEDULE POINTERS:

- All morning sessions begin at 8:00 am (except Monday, when the sessions begin at 10:00 am following the 8:00 am Plenary Session).
- All afternoon sessions begin at 1:30 pm, following the lunch break that starts at 12:10 pm.
- Invited speakers, (marked invited in the program) have 40 minutes; contributed speakers have a 20-minute limit.

IF YOU ARE MAKING AN ORAL PRESENTATION:

All technical session rooms are equipped with computers, LCD projectors, screens, laser pointers and microphones. Please test your presentation materials to be certain they are compatible with the equipment being provided in the technical sessions. The Presenter's Preview Room is located in the Dover Room near the Tiki Pavilion. Please allow ample time for this; preferably the day before you are scheduled to present – not immediately before your talk. The hours are Sunday, 3:30 - 6:30 pm and Monday – Thursday, 8:00 am - 5:30 pm.

Monday Morning, April 23, 2007

	Coatings for Use at High Temperature Room: Sunrise - Session A1 Coatings to Resist High Temperature Oxidation and Wear Moderators: B.A. Pint, Oak Ridge National Laboratory, D. Monceau, University of Toulouse - CIRIMAT Laboratory, B. Gleeson, Iowa State University	Hard Coatings and Vapor Deposition Technology Room: Golden West - Session B5-1 Properties and Characterization of Hard Coatings and Surfaces Moderators: D. Gall, Rensselaer Polytechnic Institute, G.C.A.M Janssen, TU Delft, A. Korenyi-Both, Tribologix Inc.
10:00 am	A1-1 Invited An Overview of MCrAlY Coatings for Oxidation Resistance and as TBC Bond Coats, R.C. TUCKER, JR., The Tucker Group, LLC	B5-1-1 Invited Control of Micro- and Nanostructure in Transition Metal Nitrides, I. PETROV, Frederick-Seitz Materials Research Laboratory and University of Illinois
10:20 am	Invited talk continued.	Invited talk continued.
10:40 am	A1-3 MCrAlY-Base Multilayer Coatings Fabricated by Sparks Plasma Sintering (SPS), C. ESTOURNES, Cirimat - Ups, France, D. OQUAB, D. MONCEAU, Cirimat - Inpt, France	B5-1-3 Growth and Physical Properties of Epitaxial and Nanocrystalline $Hf_{1-x}Al_xN$ Layers, B. HOWE, University of Illinois at Urbana-Champaign and Air Force Research Laboratory/MLBT, C. MURATORE, A.A. VOEVODIN, Air Force Research Laboratory, I. PETROV, Frederick-Seitz Materials Research Laboratory and University of Illinois (Student Award Winner)
11:00 am	A1-4 Temperature Dependance of Phase Relationships in Different Types of MCrAlY-Coatings, J. TOSCANO, Forschungszentrum Juelich GmbH, Germany, A. GILL, AGH University of Science and Techology, Poland, T. HÜTTEL, E. WESSEL, D. NAUMENKO, L. SINGHEISER, W.J. QUADAKKERS, Forschungszentrum Juelich GmbH, Germany	B5-1-4 TEM Investigation of TiAlN/CrN Multilayer Hard Coatings Prepared by Magnetron Sputtering, M. PANJAN, S. STURM, M. CEKADA, P. PANJAN, Jozef Stefan Institute, Slovenia
11:20 am		B5-1-5 Phase Stabilities of $Ti_{1-x}Al_xN$ and $Cr_{1-x}Al_xN$, P.H. MAYRHOFER, Montanuniversität Leoben, Austria, D. MUSIC, J.M. SCHNEIDER, RWTH Aachen University, Germany

Monday Morning, April 23, 2007

	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B8 In-Situ Characterization and Modelling of PVD Processes Moderator: T. Nyberg, Uppsala University	Optical Thin Films Room: California - Session C2/E5 Mechanical Characteristics of Optical Films Moderators: P. Warren, European Technical Centre of Montreal, J. E. Klemberg-Sapieha, Ecole Polytechnique
10:00 am	B8-1 Invited Computer Simulation of Magnetron Sputtering - Experience from the Industry, S. KADLEC, Staccato Consulting, Czech Republic	C2/E5-1 Invited Loading Rate Effects on the Fracture Behaviour of Solar Control Coatings During Nanoindentation, J. CHEN, S.J. BULL, Newcastle University, United Kingdom
10:20 am	Invited talk continued.	Invited talk continued.
10:40 am	B8-3 Modelling and the Sputter Deposition of Coatings onto Spherical Capsules, A.F. JANKOWSKI, J.P. HAYES, Lawrence Livermore National Laboratory	C2/E5-3 Invited Multiscale Modelling of the Mechanical Properties of Thin Films, R. SMITH, E. MCGEE, S.D. KENNY, Loughborough University, United Kingdom, A. RICHTER, University of Applied Science, Wildau, Germany
11:00 am	B8-4 Diminution of Film Property Homogeneity Owing to the Cross Magnetron Effect: Reactive Sputtering of Indium Tin Oxide (ITO) as an Example, F. RICHTER, H. KUPFER, R. KLEINHEMPEL, T. DUNGER, T. WELZEL, Chemnitz University of Technology, Germany	Invited talk continued.
11:20 am	B8-5 Absolute Argon Excited-State Population Measurements from Emission Spectroscopy in an Inverted Cylindrical Magnetron Plasma, P. LIPKA, Harvey Mudd College, M.H. GORDON, D. BHAT, S. MENSAH, University of Arkansas	C2/E5-5 Near-Interfacial Delamination Failures Observed in Ion Beam Sputtered Ta_2O_5/SiO_2 Multilayer Stacks, M. GRIGONIS, W. HEBENSTREIT, M.K. TILSCH, JDSU
11:40 am		C2/E5-6 Optical and Mechanical Properties of Transparent Conducting and Semiconducting $Al_xCoCrCuFeNi$ Oxide Films, T.K. CHEN, M.S. WONG, National Dong Hwa University, Taiwan Tutorial: Nano-Indentation of Thin Films 12:15-1:15 pm

Monday Morning, April 23, 2007

	Advances in Characterization of Coatings & Thin Films Room: Sunset - Session F1-1 Advanced Characterization / General Topics Moderators: H.J. Steffen, Mannheim Univ. of Applied Sciences, C. Scheu, University of Leoben	Applications, Manufacturing, and Equipment Room: Royal Palm 4-6 - Session G7 Advances in Industrial Deposition Equipment and Metrology for Coatings and Thin Films Moderators: B. Torp, Platit Scandinavia, R. Aharonov, IonBond, LLC.
10:00 am	F1-1-1 Invited Interpretation of Reflection Electron Energy Spectra: From the Dielectric Description to Hydrogen Quantification at Surfaces, F. YUBERO, ICMSE (CSIC-Univ. Sevilla), Spain	G7-1 New Instruments for Routine Quality Control of Hard Coating Mechanical Properties, N.X. RANDALL, CSM Instruments, Switzerland
10:20 am	Invited talk continued.	G7-2 Advances in Industrial PVD-Systems Based on Vacuum Arc Evaporation, Sputtering and Its Combinations, J. VETTER, G. ERKENS, J. CRUMMENAUER, V. VON DER HEIDE, Metaplas Ionon, Germany
10:40 am	F1-1-3 Characterization of Crystalline Nanostructures by Electron Energy Loss Spectroscopy, H.J. STEFFEN, Hochschule Mannheim, Germany	G7-3 Invited Substrate Table Systems for industrial PVD Production, S.E. ESSER, 4pvd, Germany
11:00 am	F1-1-4 Characterization of Organic Monolayers on the Surface of Aluminum in the Process of Thermal Treatment, N. HIRANI, Interm Student, NGTC, Novelis Inc., Canada, D. CHVEDOV, Surface Scientist/Project Leader, Canada, J. HUNTER, Technical Leader, , NGTC, Novelis Inc., Canada	Invited talk continued.
11:20 am	F1-1-5 FTIR Spectroscopy: IRRAS and Microspectroscopy, a Tool to Investigate Thermally Grown Oxide Scales, B. LEFEZ, Lastsm Upres-Ea 1290, France, J. LOPITAUX, B. HANNOYER, Universite de Rouen, France, M.P. BACOS, Office National d'Etudes et de Recherches Aerospatiales (ONERA), France	G7-5 Innovative Equipment for the Production of Oxide and Nitride Based Coatings for Industrial Production, W. KALSS, J. RAMM, J. GWEHENBERGER, S. KRASSNITZER, O. GSTOEHL, OC Oerlikon Balzers Ltd, Liechtenstein
11:40 am		G7-6 Rotating Arc PVD Cathodes - Five Years of Dependable High Performance, M. MORSTEIN, O. CODDET, A. LÜMKEMANN, T. CSELLE, Platit AG, Switzerland, B. TORP, Platit Scandinavia, Denmark, M. JILEK, M. RUZICKA, Pivot a. s., Czech Republic

New Horizons in Coatings and Thin Films
Room: Tiki Pavilion - Session H4-1
The Atomistics of Thin Film Growth: Computational and Experimental Studies
Moderators: D. Music, RWTH Aachen University, S.V. Khare, The University of Toledo

10:00 am	H4-1-1 Invited Kinetic Measurements During the Nucleation and Growth of Si and Ge Nanowires, F. ROSS, S. KODAMABAKA, J. TERSOFF, M.C. REUTER, J.B. HANNON, R.M. TROMP, IBM T.J. Watson Research Center	
10:20 am	Invited talk continued.	
10:40 am	H4-1-3 Invited Exploring Magnetic Nanostructures by Spin Polarized Low Energy Electron Microscopy, A. SCHMID, Lawrence Berkeley National Laboratory	
11:00 am	Invited talk continued.	

Monday Afternoon, April 23, 2007

	Coatings for Use at High Temperature Room: Sunrise - Session A1-1 Coatings to Resist High Temperature Oxidation and Wear Moderators: B.A. Pint, Oak Ridge National Laboratory, D. Monceau, University of Toulouse - CIRIMAT Laboratory, B. Gleeson, Iowa State University	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B2-1 Arc and E-Beam Coatings and Technologies Moderators: A. Anders, Lawrence Berkeley National Laboratory, H. Gekonde, IonBond, LLC
1:30 pm	A1-1-5 Creep in α-Al_2O_3 Thermally Grown on β-NiAl and NiAlPt Alloys, B.W. VEAL, A.P. PAULIKAS, Argonne National Laboratory, B. GLEESON, Iowa State University, P.Y. HOU, Lawrence Berkeley National Laboratory	B2-1-1 Invited Bonding Network in Filtered-Arc-Deposited Carbon Films: Simulation and Characterization, R. GAGO, Univ. Autónoma de Madrid, Spain, I. JIMENEZ, Consejo Superior de Invest. Científicas, Spain, M. VINNICHENKO, Forschung. Rossendorf, Germany, A.YU. BELOV, Technische Universität Dresden, Germany, H.U. JÄGER, Forschungszentrum Rossendorf, Germany
1:50 pm	A1-1-6 Confocal Photo-Stimulated Microspectroscopy: A Technique to Map Residual Stresses in Thermally Grown Oxides in 3D, D.B. HOVIS, A.H. HEUER, Case Western Reserve University	Invited talk continued.
2:10 pm	A1-1-9 Gas Phase Aluminizing of Nickel Alloys with Hydrogen Chloride, J. KOHLSCHEEN, H.R. STOCK, Stiftung Institut für Werkstofftechnik, Germany	B2-1-3 Filling Trenches on a SiO_2 Substrate with Cu Using a Hot Refractory Anode Vacuum Arc, I.I. BEILIS, D. GRACH, A. SHASHURIN, R.L. BOXMAN, Tel-Aviv University, Israel
2:30 pm	A1-1-10 Development of Internal Porosity in Platinum-Aluminide Coatings During Cyclic Oxidation, V.K. TOLPYGO, University of California, Santa Barbara	B2-1-4 Venetian Blind Filter System for Arc-Evaporation - Deposition of Nearly Droplet Free Hard and Wear Resistant Coatings for Cutting Tools, S. HARRIS, Guhring Australia, F.-R. WEBER, Konrad Friedrichs GmbH & Co. KG, Kulmbach Germany
2:50 pm	A1-1-11 Examination of the Platinum Effect on the Oxidation Behavior of Nickel-Aluminide Coatings, P.Y. HOU, Lawrence Berkeley National Laboratory, V.K. TOLPYGO, University of California, Santa Barbara	B2-1-5 Control of Film Composition Using Multiple Cathodes in a High Current Pulsed Arc: Synthesis of MAX Phase Alloys and Ti/C Multilayers, J. ROSEN, L. RYVES, P.O. PERSSON, D. MCKENZIE, M.M.M. BILEK, The University of Sydney, Australia
3:10 pm	A1-1-12 Effects of γ-Ni+γ'-Ni_3Al-Based Coating Composition on Oxidation Behavior and Superalloy Compatibility, T.I. IZUMI, N.M. MU, L.Z. ZHANG, B. GLEESON, Iowa State University	B2-1-6 High Temperature Phase Changes and Oxidation Behavior of Cr-Si-N Coatings, L. CASTALDI, ETH and EMPA, Switzerland, D. KURAPOV, A. REITER, OC Oerlikon Balzers Coating AG, Liechtenstein, V. SHKLOVER, ETH, Switzerland, P. SCHWALLER, J. PATSCHEIDER, EMPA, Switzerland
3:30 pm	A1-1-13 Synthesis and Oxidation Performance of Al-Modified γ+γ' Bond Coatings on Ni-Based Superalloys, J.P. STACY, Y. ZHANG, Tennessee Technological University, B.A. PINT, J.A. HAYNES, Oak Ridge National Laboratory, B.T. HAZEL, B.A. NAGARAJ, GE Aircraft Engines	B2-1-7 Deposition of Superhard CrAlSiN Thin Films by Cathodic Arc Plasma Deposition, S.K. KIM, P.V. VINH, University of Ulsan, Korea, D.B. LEE, Sungkyunkwan University, Korea, Y.H. KIM, J.Y. LEE, Korea Advanced Institute of Science and Technology, Korea
3:50 pm		B2-1-8 Characterization of Quaternary Cr Based Nitride Films Synthesized by Cathodic Arc Method, H. HASEGAWA, Okayama University, Japan, T. SATO, Keio University, Japan, K. OHASHI, S. TSUKAMOTO, Okayama University, Japan, T. SUZUKI, Keio University, Japan
4:10 pm		B2-1-9 Syntheses and Mechanical Properties of Cr-Mo-Si-N Coatings by a Hybrid Coating System, S.G. HONG, Pusan National University, Korea, D.-W. SHIN, Gyeongsang National Uuniversity, Korea, K.H. KIM, Pusan National University, Korea

Monday Afternoon, April 23, 2007

	Hard Coatings and Vapor Deposition Technology Room: Golden West - Session B5-2 Properties and Characterization of Hard Coatings and Surfaces Moderators: D. Gall, Rensselaer Polytechnic Institute, G.C.A.M Janssen, TU Delft., A. Korenyi-Both, Tribologix Inc.	Tribology & Mechanical Behavior of Coatings and Thin Films Room: California - Session E1-1 Friction and Wear of Coatings: Lubrication, Surface Effects and Modelling Moderators: J. Fontaine, Ecole Centrale de Lyon, J.R. Lince, The Aerospace Corporation
1:30 pm	B5-2-1 Invited Industrial Perspective on Characterization of Hard Coatings for Cutting Tool Applications, Y. TANAKA, K. SATO, Mitsubishi Materials Corporation, Japan, N. ICHIMIYA, Mitsubishi Materials Kobe Tools Corporation, Japan	E1-1-1 Improvement of the Slurry Erosion Resistance of an Austenitic Stainless Steel with Combinations of Surface Treatments: Nitriding and TiN Coating, A.A.C. RECCO, D.M. LÓPEZ, Univ. of São Paulo, Brazil, A.F. BEVILAQUA, Univ. of Mackenzie, Brazil, F.B. DA SILVA, A.P. TSCHIPTSCHIN, Univ. of São Paulo, Brazil
1:50 pm	Invited talk continued.	E1-1-2 The Critical Conditions for Tribo-Demagnetization of Magnetic Layered Disk in Sliding Contact Against Head, J. LIU, D. DIAO, Xi'an JiaoTong University, China
2:10 pm	B5-2-3 Properties and Cutting Performance of AlTiCrN/TiSiCN Bilayer Coatings Deposited by Cathodic Arc Ion Plating, S. IMAMURA, H. FUKUI, A. SHIBATA, N. OMORI, Sumitomo Electric Hardmetal Corp., Japan, M. SETOYAMA, Sumitomo Electric Industries, Ltd., Japan	E1-1-3 Novel Tribological Systems Using Shape Memory Alloys and Thin Films, Y. ZHANG, Michigan State University, Y.T. CHENG, General Motors Research and Development Center, D.S. GRUMMOM, Michigan State University (Studen Award Winner)
2:30 pm	B5-2-4 Effect of Film Deposition Time on the Mechanical Properties and Cutting Performance of Coated Tools, K.-D. BOUZAKIS, G. SKORDATIS, N. MICHAILIDIS, Aristoteles University of Thessaloniki, Greece, G. ERKENS, Metaplas Ionon, Germany	E1-1-4 Invited Low Earth Orbit Space Environmental Effects on MoS_2/DLC Lubrication Films, M. TAGAWA, K. YOKOTA, Kobe University, Japan, K. MATSUMOTO, Japan Aerospace Exploration Agency, Japan, M. BELIN, Ecole Centrale de Lyon, France
2:50 pm	B5-2-5 A Study on the Microstructures and Mechanical Properties of Pulsed DC Reactive Magnetron Sputtered Cr-Si-N Nanocomposite Coatings, J.-W. LEE, Y.C. CHANG, Tung Nan Institute of Technology, Taiwan	Invited talk continued.
3:10 pm	B5-2-6 Cracking and Failure Behaviour of Nitride Coatings, J.S. COLLIGON, Manchester Metropolitan University, United Kingdom, B.D. BEAKE, Micro Materials Ltd., United Kingdom, V.M. VISHNYAKOV, Manchester Metropolitan University, United Kingdom, R. VALIZADEH, Manchester Metropolitan University, Untied Kingdom	E1-1-6 Growth, Structure and High Temperature Friction Behavior of Titanium Doped Tungsten Disulphide Films, A. RAJENDRAN, T.W. SCHARF, The University of North Texas
3:30 pm	B5-2-7 Abrasive Wear of Textured-Controlled CVD Al_2O_3 Coatings, M. FALLQVIST, M. OLSSON, Dalarna University, Sweden, S. RUPPI, SECO Tools, Sweden	E1-1-7 Mechanical and Tribological Properties of CrAlN-Ag Self Lubricating Films, P. BASNYAT, S.M. AOUADI, B. LUSTER, S. STADLER, Z. KERTZMAN, Southern Illinois University, Carbondale, S.R. MISHRA, J. XU, University of Memphis
3:50 pm	B5-2-8 Low Temperature Alumina Coatings by AC Inverted Magnetron Sputtering Technique, A. ARYASOMAYAJULA, D. BHAT, M.H. GORDON, University of Arkansas, S. SINGH, R. KISHORE, National Physical Laboratory, India	E1-1-8 Synthesis of a Rhenium Based High Temperature Tribological Coating System, C.C. BAKER, North Carolina State University, A.A. VOEVODIN, Air Force Research Laboratory
4:10 pm	B5-2-9 Characterization of DLC Coatings Deposited by Large Area Filtered Arc Deposition Technique, V. GOROKHOVSKY, Y.H. CHENG, C. BOWMAN, Arcomac Surf. Eng., LLC, A.A. VOEVODIN, C. HUNTER, Air Force RL, C. MURATORE, Y. KANG, UTC Corp., J.J. HU, Montana St. Univ., R. SMITH, H. CHEN, W. PRIYANTHA, UTC Corp.	E1-1-9 High Temperature Tribological Behavior of Sputtered NbN_x Thin Films, G.A. FONTALVO, V. TERZIYSKA, University of Leoben, Austria, C. MITTERER, Montanuniversität Leoben, Austria
4:30 pm	B5-2-10 Effect of Humidity on Lubricated Fullerene-Like Carbon Nitride Overcoats, E. BROITMAN, V.V. PUSHKAREV, A. GELLMAN, Carnegie Mellon University, A. FURLAN, N.T. SON, L. HULTMAN, Linköping University, Sweden	E1-1-10 Nanocomposite Coatings Demonstrating Adaptive Lubrication Over Multiple Thermal Cycles from 25-700°C, C. MURATORE, J.J. HU, UTC Inc./Air Force Research Laboratory, A.A. VOEVODIN, Air Force Research Laboratory
4:50 pm		E1-1-12 Studies on the Thin Film Characteristics of Zirconium-Based Metallic Glass with Slight Addition of Silicon Using Magnetron Sputtering Process, C.W. CHU, I-Shou University, MIRDC, Taiwan
	Quo Vadimus Forum 5:00-6:00 pm	Tutorial: VAMAS – TWA 22 5:30-6:30 pm

Monday Afternoon, April 23, 2007

	Advances in Characterization of Coatings & Thin Films Room: Sunset - Session F1-2 Advanced Characterization / General Topics Moderators: H.J. Steffen, Mannheim Univ. of Applied Sciences, C. Scheu, University of Leoben	Applications, Manufacturing, and Equipment Room: Royal Palm 4-6 - Session G5 Large Area Production Coatings, Plasma Cleaning and Pre-Treatment of Large Surfaces Moderators: Chr. Metzner, Fraunhofer Institute FEP Dresden, Y.J. Kwak, POSCO
1:30 pm	F1-2-1 SAXS Analysis of Graphitic Amorphous Carbon, M.H. OLIVEIRA JR, P.F. BARBIERI, I.C.L. TORRIANI, F.C. MARQUES, Universidade Estadual de Campinas, Brazil	G5-1 Invited Status of Industrial PVD on Metal Strips for Optical Purposes, D. PEROS, H. KUESTER, Alanod Aluminium-Veredlung GmbH & Co. KG, Germany
1:50 pm	F1-2-3 Invited Three-Dimensional Atom Mapping of Thin Films with Atom Probe Tomography, T. KELLY, Imago Scientific Instruments Corporation	Invited talk continued.
2:10 pm	Invited talk continued.	G5-3 Sputter Processes for Large Area Coating - Examples of Current Developments, G. BRAEUER, Fraunhofer Institutes FEP & IST, Germany, T. JUNG, Fraunhofer-Institute IST, Germany, V. KIRCHHOFF, E. SCHULTHEIß, Fraunhofer Institutes FEP & IST, Germany, B. SZYSZKA, Fraunhofer-Institute IST, Germany
2:30 pm	F1-2-5 Analysis of Multilayer Biaxially Oriented Polypropylene (BOPP) Films Using the Technique of Nano-TA (Nanoscale Probe Based Thermal Analysis), N. GOTZEN, G. VAN ASSCHE, Vrije Universtiatet, Belgium, W.K. KING, Georgia Tech, K. KJOLLER, R. SHETTY, Anasys Instruments	G5-4 Electro-Magnetic Levitation: A New Technology for High Rate Physical Vapour Deposition of Coatings onto Metallic Strip, L. BAPTISTE, G. GLEIJM, N. VAN LANDSCHOO, Corus Research, Netherlands, J. PRIEDE, Coventry University, United Kingdom, J.S. VAN WESTRUM, CP3 Metrec B.V., Netherlands
2:50 pm	F1-2-6 Characterization of Plasma Sprayed TiB_2 Coatings with XRD, XPS and SEM, J. LIU, G. MERTENS, P.T. JONES, J. ELSEN, B. BLANPAIN, P. WOLLANTS, Katholieke Universiteit Leuven, Belgium	G5-5 Utilization of Cold-Cathode EB Guns for High-Rate PVD - State of the Art and Future Perspectives, G. MATTAUSCH, F.H. ROEGNER, P. FEINAEUGLE, R. BARTEL, Fraunhofer Institute FEP Dresden, Germany
3:10 pm	F1-2-7 Application of RF-GD-OES to the Analysis of Metallurgical Thin Films, O. HIRSCH, P. HUNAULT, P. CHAPON, C. TAUZIEDE, HORIBA Jobin Yvon, France, T. NAKAMURA, HORIBA, Japan	G5-6 In-Line Analyzing of Layers with High Precision by X-Ray Fluorescence, J. PILTZ, Amtec GmbH, Germany
3:30 pm	F1-2-8 Analysing of Thin Film Nanoindentation Data via Internetportal - The State of Realisation, N. SCHWARZER, M.C. FUCHS, L. GEIDEL, N. BIERWISCH, Saxonian Institute of Surface Mechanics SIO, Germany	G5-7 Large Area PVD Coating of Metal Strips and Sheets - New Trends and Developments in Europe, CHR. METZNER, Fraunhofer Institute FEP Dresden, Germany
3:50 pm	F1-2-10 A Study on Microstructural Evolution in Nanocrystalline TiN Thin Films, V. CHAWLA, R. JAYAGANTHAN, R. CHANDRA, IIT Roorkee, India	G5-8 Study of 2 inch Al_2O_3 Substrate's Pattern by Imprinting Process, H.H. KIM, S.K. YANG, S.G. LEE, B.H. O, E.L. LEE, S.G. PARK, Inha University, Korea
4:10 pm	F1-2-11 Non Destructive Nano-Mechanical Characterization of Thin Films, N. GITIS, M. VINOGRADOV, I. HERMANN, V. KHOSLA, CETR	

New Horizons in Coatings and Thin Films
Room: Tiki Pavilion - Session H4-2
The Atomistics of Thin Film Growth: Computational and Experimental Studies
Moderators: D. Music, RWTH Aachen University, S.V. Khare, The University of Toledo

1:30 pm	H4-2-1 Invited Emergence of Macroscopic Structure from Atomistic Processes in Thin Film Growth, K. ROBBIE, C. ELLIOTT, T. BROWN, C. BUZEA, Queen's University, Canada	
1:50 pm	Invited talk continued.	
2:10 pm	H4-2-3 Ta Nanopillar Arrays Grown by Glancing Angle Deposition, C.M. ZHOU, D. GALL, Rensselaer Polytechnic Institute (Student Award Winner)	
2:30 pm	H4-2-4 Kinetics of Compound Layer Formation During Microwave Post-Discharge Nitriding, J. OSEGUERA, ITESM-CEM, Mexico, F. CASTILLO, ITESM, Mexico, A. FRAGUELA, BUAP, Mexico, J.A. GOMEZ, UFRO, Chile	
2:50 pm	H4-2-9 Kinetic Pathways Leading to Layer-by-Layer Growth from Hyperthermal Atoms: a Multibillion Time Step Molecular Dynamics Study, D. ADAMOVIC, V. CHIRITA, E.P. MÜNGER, L. HULTMAN, Linköping University, Sweden, J.E. GREENE, Frederick Seitz Materials Research Laboratory	
3:10 pm	H4-2-7 Invited First Principles Predictions on Structures, Properties, and Dynamics of Coatings and Thin Films, W.A. GODDARD, California Institute of Technology	
3:30 pm	Invited talk continued.	
3:50 pm	H4-2-10 Mathematical Simulation of Atomic Nitrogen Transport in a Microwave Post-Discharge, J.A. SANCHEZ, L. MORA, Huracan CFD, J. OSEGUERA, ITESM-CEM, Mexico	

Tuesday Morning, April 24, 2007

	Coatings for Use at High Temperature Room: Sunrise - Session A1-2 Coatings to Resist High Temperature Oxidation and Wear Moderators: B.A. Pint, Oak Ridge National Laboratory, D. Monceau, University of Toulouse - CIRIMAT Laboratory, B. Gleeson, Iowa State University	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B2-2 Arc and E-Beam Coatings and Technologies Moderators: A. Anders, Lawrence Berkeley National Laboratory, H. Gekonde, IonBond, LLC
8:00 am	A1-2-1 Invited Formation of Novel Diffusion Barrier Coatings and their Influence on the Oxidation Behavior of Coated Heat Resistant Alloys, T. NARITA, Hokkaido University	B2-2-1 Invited Large Area Filtered Plasma Deposition Technology and its Applications., V. GOROKHOVSKY, Arcomac Surface Engineering, LLC
8:20 am	Invited talk continued.	Invited talk continued.
8:40 am	A1-2-4 Long-Term Testing of Aluminide Coatings on Fe-Base Alloys, B.A. PINT, Oak Ridge National Laboratory, Y. ZHANG, Tennessee Technological University, I.G. WRIGHT, Oak Ridge National Laboratory	B2-2-3 Types of Cathodic Vacuum Arc Sources and its Application Potential, J. VETTER, Sulzer Metaplas Ionon, Germany, O. ZIMMER, V. WEIHNACHT, H.J. SCHEIBE, Fraunhofer Institute for Material and Beam Technology, Germany
9:00 am	A1-2-5 Investigation of High Temperature Oxidation Properties of Pack Aluminized High Entropy Alloy at 1100°C, Y.C. CHANG, J.-W. LEE, J.S. YANG, Tung Nan Institute of Technology, Taiwan, J.H. LAI, W.J. WANG, Industrial Technology Research Institute, Taiwan	B2-2-4 Large Area Vacuum Arc Deposition by Multi-Source Flux Mixing, D.M. LIPKIN, S.A. WEAVER, W.T. CARTER, R. DIDOMIZIO, GE Global Research
9:20 am	BREAK	BREAK
9:40 am	A1-2-7 Oxidation Behavior of Multi-Component $(Ti\text{-}Al\text{-}Cr\text{-}Si\text{-}V)_xN_y$ Nitride Coatings at Elevated Temperature, C.-H. LIN, J.G. DUH, National Tsing-Hua University, Taiwan	
10:00 am	A1-2-9 Towards the Understanding of Wear Mechanisms for Alumina Coatings in Metal Cutting Operations., I. REINECK, M. COLLIN, Sandvik Tooling AB, Sweden, K. BACK, D. TRINH, H. HÖGBERG, L. HULTMAN, Linköping University, Sweden	Session TS4-1
10:20 am	A1-2-10 Triboactive Materials for Dry High-Speed Sliding Applications up to 800°C, W.O. WOYDT, BAM, Germany	
10:40 am	A1-2-11 Oxidation Behavior of Chromium Nitride and Chromium Aluminum Nitride Thin Films by DSC and TG Analysis, J. LIN, J.J. MOORE, B. MISHRA, Colorado School of Mines	

Tuesday Morning, April 24, 2007

	Hard Coatings and Vapor Deposition Technology Room: Golden West - Session B5-3 Properties and Characterization of Hard Coatings and Surfaces Moderators: D. Gall, Rensselaer Polytechnic Institute, G.C.A.M Janssen, Tu Delft, A. Korenyi-Both, Tribologix Inc.	Optical Thin Films Room: Tiki Pavilion - Session C3-1 Optical Thin Films for Active Devices and Microsystems Moderators: M. Cremona, Pontificia Universidade Catolica T. Yamamoto, Kochi University of Technology
8:00 am	B5-3-1 Invited Stress, Interfacial Effects and Mechanical Properties of Nanoscale Multilayered Coatings, G. ABADIAS, Universite de Poitiers, France, S.M. DUB, NAS of Ukraine, C. TROMAS, C. JAOUEN, A. MICHEL, Universite de Poitiers, France	C3-1-1 Invited Transparent Conducting Oxide Films for Thin Film Silicon Photovoltaics, W. BEYER, Forschungszentrum Jülich GmbH, Germany, J. HUEPKES, H. STIEBIG, Forschungszentrum Jülich IPV, Germany
8:20 am	Invited talk continued.	Invited talk continued.
8:40 am	B5-3-3 Stress Gradients in TiN Coatings, R. MACHUNZE, G.C.A.M JANSSEN, Delft University of Technology, Netherlands	C3-1-3 Post-Deposition Annealing Effect on the Characteristics of Highly Transparent and Conducting ZnO-SnO_2 Thin Films Deposited by Filtered Vacuum Arc Deposition, E. ÇETINÖRGÜ, Tel Aviv University, Israel, S. GOLDSMITH, R.L. BOXMAN, Tel-Aviv University, Israel (Student Award Winner)
9:00 am	B5-3-6 The Effect of Cu Content on the Microstructures, Mechanical and Antibacterial Properties of CrCuN Nanocomposite Coatings Deposited by Pulsed DC Reactive Magnetron Sputtering, Y.C. KUO, C.J. WANG, Natl. Taiwan Univ. of Sci. & Tech., Taiwan, J.-W. LEE, Y.J. CHANG, Tung Nan Inst. of Tech.	C3-1-4 Properties of Highly Oriented ZnO Nanowires Grown by Hydrothermal Method, T.-Y. TSENG, National Chiao-Tung University, Taiwan, S.-N. BAI, Chienkuo Technology University, Taiwan, H.-H. TSAI, National Chiao-Tung University, Taiwan
9:20 am	B5-3-7 Thermal Stability and Oxidation Behaviour of CrAlN Coatings, I. AZKONA, METAL ESTALKI, S. L., Spain, J.A. GARCIA, M.J. DIAZ, R. MARTINEZ, R.J. RODRIGUEZ, Asociacion de la Industria Navarra (AIN), Spain	C3-1-5 Optical Properties of Zinc Oxide Films Grown by Atmospheric-Pressure Chemical Vapor Deposition Using Zn and H_2O as Source Materials, T. TERASAKO, Ehime University, Japan, M. YAGI, Takuma National College of Technology, Japan, M. ISHIZAKI, Y. SENDA, H. MATSUURA, S. SHIRAKATA, Ehime University, Japan
9:40 am	B5-3-8 Erosion Resistance of BC and CrN Coatings, R.A. SAILER, K. MATTSON, D.L. SCHULZ, North Dakota State University	C3-1-6 Electroluminescence of Zinc Oxide Films Prepared via Polymeric Precursor and via Sol-gel Method., S.A.M. LIMA, Instituto de Quimica - UNESP, Brazil, M. CREMONA, PUC-Rio, Brazil, C. LEGNANI, W.G. QUIRINO, Inmetro, Brazil, M.R. DAVOLOS, Instituto de Quimica - UNESP, Brazil
10:00 am	B5-3-9 Synthesis and Characterisation of Cr-B-N Coatings Deposited by Cathodic Arc Plasma Deposition, K. POLYCHRONOPOULOU, Univ. of Cyprus, J. NEIDHARDT, M. KOKONOU, C. REBHOLZ, B. SARTORY, R. KAINDL, R. TESSADRI, M.A. BAKER, M. O'SULLIVAN, A. REITER, C. MITTERER	C3-1-7 Luminescence Enhancement by an In_2O_3 Buffer Layer Inserted for the $ZnGa_2O_4$ Phosphor Screen, S.-H. YANG, C.-Y. LU, National Kaohsiung University of Applied Sciences, Taiwan, S.-J. CHANG, National Cheng Kung University, Taiwan
10:20 am	B5-3-10 Synthesis and Characterization of Zr(N,O) Thin Films on AISI 304 Stainless Steel by Ion Plating, J.-H. HUANG, Z.-E TSAI, G.-P. YU, National Tsing Hua University, Taiwan	C3-1-8 Optical Characterizations of Complete TFT-LCD Display Devices by Phase Modulated Spectroscopic Ellipsometry, M. GAILLET, HORIBA Jobin Yvon, France, L. YAN, E. TEBOUL, HORIBA Jobin Yvon (USA)
10:40 am	B5-3-11 Fatigue and Corrosion-Fatigue Performance of a SAE Q&T 4340 Steel Coated with a Ti/TiAlN/WC/C Film, Deposited by Arc Enhanced Magnetron Sputtering, C.J. VILLALOBOS-GUTIÉRREZ, A. PIÑEIRO-JIMÉNEZ, J.G. LA BARBERA-SOSA, M.H. STAIA, E.S. PUCHI-CABRERA, Univ. Central de Venezuela	C3-1-9 Studies on Electrochromic Smart Windows Based on Titanium Doped WO_3 Thin Films, A. KARUPPASAMY, A. SUBRAHMANYAM, Indian Institute Of Technology Madras, India

Tuesday Morning, April 24, 2007

	Tribology & Mechanical Behavior of Coatings and Thin Films Room: California - Session E1-2 Friction and Wear of Coatings: Lubrication, Surface Effects and Modelling Moderators: J. Fontaine, Ecole Centrale de Lyon, J.R. Lince, The Aerospace Corporation	Advances in Characterization of Coatings & Thin Films Room: Sunset - Session F4 Applications of Analytical Electron Microscopy Moderators: J. Tao, Oak Ridge National Laboratory, P. Persson, Linköping University
8:00 am	E1-2-1 The Inclined Impact Test, an Efficient Method to Characterize Cohesion and Adhesion Properties of Coatings, Deposited on Bearing Rings, K.-D. BOUZAKIS, A. ASIMAKOPOULOS, M. BATSIOLAS, Aristoteles University of Thessaloniki, Greece, G. ERKENS, Metaplas Ionon, Germany	F4-1 Invited Probing Thin Layers and Interfaces Using Electron Energy-Loss Spectroscopy, D.W. MCCOMB, B.A. SHOLLOCK, Imperial College London, United Kingdom
8:20 am	E1-2-4 Invited Friction and Wear of Coatings - a Review and View into Future, K. HOLMBERG, VTT Technical Research Centre of Finland	Invited talk continued.
8:40 am	Invited talk continued.	F4-3 Invited Complex Oxide Characterization in the Aberration Corrected STEM, M. VARELA, J. TAO, A. LUPINI, S. PENNYCOOK, Oak Ridge National Laboratory, W. LUO, S.T. PANTELIDES, Vanderbilt University, J. GARCIA-BARRIOCANAL, C. LEON, J. SANTAMARIA, Complutense University, Spain
9:00 am	E1-2-6 Fretting Wear of TiN and VC PVD Coatings Under Variable Environmental Conditions, R. RYBIAK, S. FOUVRY, Ecole Centrale de Lyon, France, B. WENDLER, Technical University of Lodz, Poland	Invited talk continued.
9:20 am	E1-2-7 Tribological and Mechanical Properties of CrN / TaN Heterostructure Thin Film, Y.J. KIM, H.Y. LEE, T.J. BYUN, K.S. KIM, J.G. HAN, Y.H. SHIN, Y.Z. LEE, SungKyunKwan University, Korea	F4-6 Complex Nano-Scale Phase Separation: the Origin of Colossal Magnetoresistance Effect, J. TAO, ORNL, D. NIEBIESKIKWIAT, UIUC, W. LUO, Vanderbilt Univ., M. VARELA, ORNL, L.J. WU, Y.M. ZHU, Brookhaven NL, M.B. SALAMON, UIUC, S.T. PANTELIDES, Vanderbilt Univ. J.M. ZUO, UIUC, S. PENNYCOOK, ORNL
9:40 am	E1-2-8 The Influence of Bias Voltage on Structure and Mechanical/Tribological Properties of Arc Evaporated Ti-Al-V-N, M. PFEILER, Materials Center Leoben Forschung G.m.b.H., Austria, K. KUTSCHEJ, Montanuniversität Leoben, Austria, M. PENOY, C. MICHOTTE, CERATIZIT Luxembourg S.á.r.l., Mamer, Germany, C. MITTERER, University of Leoben, Austria, M. KATHREIN, CERATIZIT Austria G.m.b.H., Austria	F4-7 Invited TEM Sample Preparation Challenges for a New Generation of Microscopes, S. WALCK, South Bay Technology, Inc., Z. RADI, Technoorg-Linda, Hungary, A. BARNA, Hungarian Academy of Science, Hungary, J. LEHMAN, NXP Semiconductors, Inc., C.C. BROADBRIDGE, C. TIRRELL, M. ENJALRAN, Connecticut State University
10:00 am	E1-2-9 Adhesion of AA 5182 Aluminum Sheet to Nitrided and DLC Coatings at 420°C, A.R. RIAHI, A.T. ALPAS, University of Windsor, Canada	Invited talk continued.
10:20 am	E1-2-10 Influence of Contact Conditions on Tribological Behaviour of DLC Coatings, B. PODGORNIK, M. SEDLACEK, J. VIZINTIN, University of Ljubljana, Slovenia	F4-9 Invited Advanced Spectrum Imaging Techniques for Electron Microscopy, R.D. TWESTEN, Gatan, Inc.
10:40 am	E1-2-11 Influence of the Normal Load on the Tribological Behaviour of Graphite Powders, M. SCHMITT, K. JRADI, S. BISTAC, Institut de Chimie des Surfaces et Interfaces, France	Invited talk continued.
11:00 am		F4-11 Characterization of Adhesion Between Non-Hydrogenated DLC Coatings and Aluminum by Focused Ion Beam Microscopy, X. MENG-BURANY, A.T. ALPAS, University of Windsor, Canada

Tuesday Morning, April 24, 2007

	Applications, Manufacturing, and Equipment Room: Royal Palm 4-6 - Session G1-1 Innovations in Surface Coatings and Treatments Moderators: R. Wei, Soutwest Research Inst., P.Eh. Hovsepian, Sheffield Hallam Univ., A. Schuetze, ACREE Tech., Inc.	Nanostructured Thin Film Assemblies and Composites Room: Royal Palm 1-3 - Session TS4-1 Nanostructured Thin Film Assemblies and Composites Moderators: G. Radhakrishnan, The Aerospace Corporation, G. Ramanath, Rensselaer Polytechnic Institute
8:00 am	G1-1-1 Invited Industrial Production of PVD Coatings for Tools and Components, T. KRUG, R. TIETEMA, Hauzer Techno Coating BV, Netherlands	Session B2-2
8:20 am	Invited talk continued.	
8:40 am	G1-1-3 RF Plasma Enhanced Cylindrical Magnetron Sputter Deposition, R. WEI, Soutwest Research Institute, S.L. LEE, Army Benet Lab	
9:00 am	G1-1-4 Room-Temperature Industrially-Scaled Pulsed Laser Deposition of Coatings for Wear-Protection, Low-Friction, Decorative and Biocompatible Applications, W. WALDHAUSER, J.M. LACKNER, M. KAHN, R. BERGHAUSER, D. HUFNAGEL, Laser Center Leoben, Austria	
9:20 am	G1-1-5 Sputter Power on the Antibacterial Capabilities and Microstructure of ZrAlNiCuSiB Thin Films on 304 Stainless Steel, P.T. CHIANG, J.Y. YU, G.J. CHEN, Y.H. SHIH, C.W. CHU, J.S.C. JANG, I-Shou University, Taiwan	
9:40 am	G1-1-6 Fatigue Properties of Micro Arc Oxidation Coatings on Al Alloy, N. WASEKAR, N. RAVI, G. SUNDARARAJAN, International Advanced Research Centre for Powder Metallurgy and New Materials, India	BREAK
10:00 am	G1-1-7 Fe-Al Formation On the Surface of 45 Carbon Steel by Plasma Alumizing, Z. YAO, P. ZHANG, Z. XU, Nanjing University of Aeronautics and Astronautics, China	TS4-1-7 Invited New, Engineered Thin Film Structures for Advanced Nanotech Applications, S. JIN, A.I. GAPIN, H. CHEN, University of California, San Diego
10:20 am	G1-1-8 Thermal Sprayed Coatings of Aluminium Matrix Composites with sol-gel Silica Coated SiC Particles on Steels, J. RAMS, M. CAMPO, B. TORRES, A. UREÑA, Rey Juan Carlos University, Spain	Invited talk continued.
10:40 am	G1-1-9 Invited Present Status in Double Glow Plasma Surface Metallurgy Research, Z. XU, Nanjing University of Aeronautics and Astronautics, China, Z. HE, Taiyuan University of Technology, China, P. ZHANG, Nanjing University of Aeronautics and Astronautics, China	TS4-1-11 Understanding of the Barrier and Release Properties of Thin Model HDFD/Ag-Plasma Polymer Nanocomposite Films, X. WANG, G. GRUNDMEIER, Max-Planck-Institute for Iron Research, Germany
11:00 am	Invited talk continued.	TS4-1-13 Deposition of In Situ Structured DLC-Coatings, S. MEIER, M. KOENIG, C. HORMANN, Fraunhofer-IWM, Freiburg, Germany
11:20 am		TS4-1-12 Magnetron Sputtered Graded Nanostructured TiNi Shape Memory Thin Films, A. KUMAR, P. SINGH, A.K. CHAWLA, R. CHANDRA, D. KAUR, IIT Roorkee, India

Tuesday Afternoon, April 24, 2007

	Coatings for Use at High Temperature Room: Sunrise - Session A2 Coatings for Use in Harsh Environments Moderators: D.M. Lipkin, GE Global Research, M. Schütze, DECHEMA	Hard Coatings and Vapor Deposition Technology Room: Golden West - Session B1-1 Sputtering Coatings and Technologies Moderators: F. Richter, Chemnitz University of Technology, C. Rebholz, University of Cyprus
1:30 pm	A2-1 Invited The Performance of Coating Systems Under Aggressive Deposits in Industrial Gas Turbines, J.R. NICHOLLS, A. ENCINAS-OROPESA, N.J. SIMMS, Cranfield University, United Kingdom	B1-1-1 Invited Sputter Deposited Reactive Multilayer Foils and their Use as Novel Heat Sources for Joining Materials, Such as Sputter Targets to Backing Plates, T.P. WEIHS, Reactive NanoTechnologies and Johns Hopkins University
1:50 pm	Invited talk continued.	Invited talk continued.
2:10 pm	A2-3 Hot Corrosion Evaluation of Various Ni-Based Diffusion Aluminide Coatings, V. DEODESHMUKH, B. GLEESON, Iowa State University	B1-1-3 Effect of Substrate Orientation on Film Properties using AC Reactive Magnetron Sputtering, S. PULUGURTHA, D. BHAT, M.H. GORDON, J. SHULTZ, J. LAPAIRO, University of Arkansas
2:30 pm	A2-4 Hot Corrosion Behavior of HVOF Sprayed Ni-5Al Coatings on Ni and Fe-based Superalloys, R.A MAHESH, R. JAYAGANTHAN, S. PRAKASH, IIT Roorkee, India	B1-1-4 Current-Voltage Characteristics of the Novel High-Power Density Magnetron, D.G. TEER, A.A. GORUPPA, Teer Coatings Ltd., United Kingdom
2:50 pm	A2-5 Invited High Temperature Chlorine Corrosion as a Result of Incineration of Contaminated Fuel - Reasons, Mechanisms and Solutions, R. WARNECKE, C. DEUERLING, GKS-Gemeinschaftskraftwerk Schweinfurt GmbH, Germany, F. HAIDER, S. HORN, University of Augsburg, Germany, J. MAGUHN, GSF, Germany, V. MUELLER, GKS-Gemeinschaftskraftwerk Schweinfurt GmbH, Germany, H. NORDSIECK, BIFA, Germany, B.	B1-1-5 Determining Substrate Temperature in PVD Processes by AC Inverted Cylindrical Magnetron Sputtering, A.N. CLOUD, M.H. GORDON, D. BHAT, A. ARYASOMAYAJULA, University of Arkansas
3:10 pm	Invited talk continued.	B1-1-6 Characterization of Niobium Oxide Films Deposited by High Target Utilization Sputter Sources, R. CHOW, A.D. ELLIS, JR., Lawrence Livermore National Laboratory
3:30 pm	BREAK	B1-1-7 High Rate Deposition of Sputtered Carbon Coatings, S.K. FIELD, A.A. GORUPPA, D.G. TEER, Teer Coatings Ltd., United Kingdom
3:50 pm	A2-8 Coatings for Corrosion Protection of Gasifier Components, J. PEREZ-MARIANO, K.H. LAU, E. ALVAREZ, R. MALHOTRA, G. KRISHNAN, A. SANJURJO, SRI International, Menlo Park	B1-1-8 Fabrication and Characterization of the Ni-P-Based Multicomponet Coatings, F.B. WU, National United University, Taiwan, J.G. DUH, National Tsing Hua University, Taiwan
4:10 pm	A2-10 Invited FeAl-Coatings as Corrosion Protection in Waste and Biomass Fired Electric Stations, M. SPIEGEL, Max Planck Institute for Iron Research, Germany, R. WARNECKE, GKS-Gemeinschaftskraftwerk Schweinfurt GmbH, Germany	B1-1-9 Microstructure Evolution and Dielectric Peroperties of $Ba_{0.7}Sr_{0.3}TiO_3$ Parallel Plate Capacitor with Cr Interlayer, C.-C. HO, B.-S. CHIOU, National Chiao-Tung University, Taiwan, L.-C. CHANG, Huafan University, Taiwan
4:30 pm	Invited talk continued.	B1-1-10 Structure and Mechanical Properties of WC-DLC Multilayer Coatings, B.R. PUJADA, G.C.A.M JANSSEN, Delft University of Technology, Netherlands
4:50 pm	A2-12 Comparison of Phase Transformations in Cryomilled and Unmilled Ni-343 Powder Investigated by Differential Thermal Analysis, F. TANG, K. MA, L. AJDELSZTAJN, A. MAICH, J. SCHOENUNG, University of California	B1-1-11 Experimental Tests in the Hot Extrusion of Aluminum using Plasma Sputtering Coating on the Bearing Surface of Dies with Different Geometry, A. LONTOS, Frederick Institute of Technology, Cyprus, K.-D. BOUZAKIS, Aristoteles University of Thessaloniki, Greece, G. DEMOSTHENOUSL, Frederick Institute of Technology, Cyprus

Tuesday Afternoon, April 24, 2007

	Optical Thin Films Room: Tiki Pavilion - Session C3-2 Optical Thin Films for Active Devices and Microsystems Moderators: M. Cremona, Pontificia Universidade Catolica T. Yamamoto, Kochi University of Technology	Tribology & Mechanical Behavior of Coatings and Thin Films Room: California - Session E1-3 Friction and Wear of Coatings: Lubrication, Surface Effects and Modelling Moderators: J. Fontaine, Ecole Centrale de Lyon, J.R. Lince, The Aerospace Corporation
1:30 pm	C3-2-1 Invited Substitution of Impurity-Doped ZnO Thin Films for ITO in Transparent Electrode Applications, T. MINAMI, T. MIYATA, Kanazawa Institute of Technology, Japan	E1-3-1 Fretting Wear of Soft Noble Coatings for Electrical Application, P.J. JEDRZEJCZYK, S. FOUVRY, Ecole Centrale de Lyon, France
1:50 pm	Invited talk continued.	E1-3-2 Melt Lubrication of Sliding Electrical Contacts, P.Y. HSIEH, G. GHOSH, M.E. FINE, Y.W. CHUNG, J. WANG, Northwestern University
2:10 pm	C3-2-3 Microwave Shielding Properties of Ga-Doped ZnO Films Prepared by Reactive Plasma Deposition, S. KISHIMOTO, T. YAMADA, A. MIYAKE, H. MAKINO, T. ARIMITSU, T. MORIZANE, T. YAMAMOTO, Kochi University of Technology, Japan	E1-3-3 Characterization and Modeling of the Wear and Subsurface Microstructure Evolution of Metal Single Crystal Surfaces, C.C. BATTAILE, S.V. PRASAD, J.R. MICHAEL, P.G. KOTULA, Sandia National Laboratories
2:30 pm	C3-2-4 Structural, Electrical and Optical Properties of Sputter Deposited Ag-Doped ZnO Films, D.R. SAHU, J.-L. HUANG, National Cheng-Kung University, Taiwan	E1-3-4 Invited Thermally Activated Friction: Macroscopic Evidence, W.G. SAWYER, M.A. HAMILTON, University of Florida
2:50 pm	C3-2-6 AZO Transparent Conducting Thin Films Deposited by Magnetron Sputtering using Targets Prepared Under Various Conditions, T. KUBOI, T. MIYATA, T. MINAMI, Kanazawa Institute of Technology, Japan	Invited talk continued.
3:10 pm	C3-2-7 Room Temperature Synthesis of Highly Oriented Nanocrystalline Anatase TiO_2 Thin Films by DC Magnetron Sputtering, P. SINGH, A. KUMAR, D. KAUR, IIT Roorkee, India	E1-3-6 Study on the Mechanical Properties of CNT Film Produced by Surface Decomposition of SiC, Y. TSUKIYAMA, T. TOKOROYAMA, Nagoya University, Japan, M. KUSUNOKI, Japan Fine Ceramics Center, Japan, H. USAMI, Meijo University, Japan, N. UMEHARA, Nagoya University, Japan
3:30 pm		E1-3-7 Evaluation of Wettability, Mechanical, Tribological Properties of Super Hydrophobic Coatings Based on Organic-Inorganic Hybrid Coatings, R.P. AYALASOMAYAJULA, S. SANTUCCI, University of L'Aquila, Italy, D. DI CLAUDIO, CASTI, CNR-INFM Regional Laboratory, Italy
3:50 pm		E1-3-8 Improvement of Lubrication by Surface Microtexturation using Ultrashort Laser Pulses, L. MOURIER, D. MAZUYER, Ecole Centrale de Lyon, France, A.A LUBRECHT, INSA Lyon, France, C. DONNET, Université Jean Monnet and University Institute of France
4:10 pm		E1-3-9 Application of Nanodispersive Alumina in Antiwear Ni-P Composite Layers, D. OZIMINA, M. MADEJ, Kielce University of Technology, Poland, I. PIWONSKI, University of Lodz, Poland
4:30 pm		E1-3-10 Friction and Wear of Titania and Alumina Ceramic Overcoats Under Unlubricated and Boundary Lubricated Conditions, X. LI, M.L. WEAVER, The University of Alabama
4:50 pm		E1-3-11 Influence of Coatings on Oil-Out Performance of Rolling Bearings, J.W. EICHLER, A. MATTHEWS, A. LEYLAND, University of Sheffield, United Kingdom, G.L. DOLL, Timken Research

Tuesday Afternoon, April 24, 2007

	Advances in Characterization of Coatings & Thin Films Room: Sunset - Session F3/E1 Nanotribology Instrumentation and Diagnostics Moderators: S.T. Patton, University of Dayton Research Institute, A.P. Malshe, University of Arkansas	Applications, Manufacturing, and Equipment Room: Royal Palm 4-6 - Session G1-2 Innovations in Surface Coatings and Treatments Moderators: R. Wei, Soutwest Research Inst., P.Eh. Hovsepian, Sheffield Hallam Univ., A. Schuetze, ACREE Tech., Inc.
1:30 pm	F3/E1-1 Invited Tribological and Electrical Behavior of Coatings for Microstystems, M.T. DUGGER, Sandia National Laboratories	G1-2-1 Optimisation of the Ni-P Electroless Plating on Aluminium Silicon Carbide for Electronic Packaging, A. UREÑA, M.V. UTRILLA, J. RAMS, M. FERRER, Rey Juan Carlos University, Spain
1:50 pm	Invited talk continued.	G1-2-2 Characterization and Mechanical Properties of Electroless Ni-P-ZrO_2 Coatings, P. GAY, Institute Microtechology of Surfaces, Switzerland, L.J.M. LIMAT, University of Besancon, France, P.A. STEINMANN, University of Applied Sciences, China, J. PAGETTI, University of Besancon, France
2:10 pm	F3/E1-3 Nano-Channel Topography for Reduction of Adhesive and Friction Forces, R.A. SINGH, D.C. PHAM, E.-S. YOON, Korea Institute of Science and Technology, Korea, H.E. JEONG, K.Y. SUH, Seoul National University, Korea	G1-2-3 Evaluation of Chemical Mechanical Polishing for Fabrication of Tunable Photonic Crystals, S.H. NG, Singapore Institute of Manufacturing Technology, Singapore, W. CHENG, F. CHOLLET, D.L. BUTLER, Nanyang Technological University, Singapore
2:30 pm	F3/E1-4 Lubrication of RF MEMS Switches using Nanoparticle Fluids, S.T. PATTON, University of Dayton Research Institute, S. DIAMANTI, R. VAIA, A.A. VOEVODIN, Air Force Research Laboratory	BREAK
2:50 pm	F3/E1-5 Ionic Liquids as Lubricants for Macro and Micro Scale Devises, B.S. PHILLIPS, Air Force Research Laboratory, J. NAINAPARAMPIL, UES, K.C. EAPEN, UDRI, A.A. VOEVODIN, J.H. SANDERS, Air Force Research Laboratory	Session G3
3:10 pm	F3/E1-6 Invited Tip-Based Simulations of Nanotribology of Self-Assembled Monolayers, M. CHANDROSS, Sandia National Laboratories, C.D. LORENZ, Iowa State University, M.J. STEVENS, G.S. GREST, Sandia National Laboratories	
3:30 pm	Invited talk continued.	
3:50 pm	F3/E1-8 Tribological and Mechanical Properties of HfB2/Hf-B-N Multilayers on the Nanoscale, A. CHATTERJEE, University of Illinois Urbana Champaign, S. JAYARAMAN, Intel Corp., J.E GERBI, N. KUMAR, J.R. ABELSON, University of Illinois Urbana Champaign, J.P. CHEVALIER, Centre d'Etudes Chimie-Metallurgie, France, P. BELLON, University of Illinois Urbana Champaign	
4:10 pm	F3/E1-9 Characterization of Antistiction Layer for Nanoimprint Lithography (NIL) by Vapor SAM, J.G. PARK, K.C. KIM, N.G. CHA, J.Y. KIM, Hanyang University, Korea	

Tuesday Afternoon, April 24, 2007

	Applications, Manufacturing, and Equipment Room: Royal Palm 4-6 - Session G3 Atmospheric Plasma, Hollow Cathode, and Hybrid Plasma Processing Moderators: L. Bardos, Uppsala University, H. Baránková, Uppsala University	Nanostructured Thin Film Assemblies and Composites Room: Royal Palm 1-3 - Session TS4-2 Nanostructured Thin Film Assemblies and Composites Moderators: G. Radhakrishnan, The Aerospace Corporation, G. Ramanath, Rensselaer Polytechnic Institute
1:30 pm	Session G3	TS4-2-1 Correlation Between Properties and Microstructure in Si-O-N Nanostructured Coatings Obtained by Magnetron Sputtering, V. GODINHO, C. FERNANDEZ-RAMOS, T.C. ROJAS, Instituto de Ciencia de Materiales de Sevilla, Spain, M.P. DELPLANCKEOGLETREE, Universitat Libre de Bruxelles, Belgium, A. FERNANDEZ, Instituto de Ciencia de Materiales de Sevilla, Spain
1:50 pm		TS4-2-2 Nanocrystalline Manganese Oxide Films Prepared by Sol-Gel Process for Supercapacitor Application, C.-K. LIN, K.-H. CHUANG, C.-Y. LIN, C.-Y. TSAY, C.-Y. CHEN, Feng Chia University, Taiwan
2:10 pm		TS4-2-3 Characterization of Spray Pyrolyzed Manganese Oxide Powders Deposited by Electrophoretic Deposition Technique, C.-Y. CHEN, Y.-R. LYU, Feng Chia University, Taiwan, C.Y. SU, National Taipei University of Technology, Taiwan, H.-M. LIN, Tatung University, Taiwan, C.-K. LIN, Feng Chia University, Taiwan
2:30 pm	BREAK	TS4-2-4 Invited Assembly and Optoelectronic Properties of Carbon Nanotube Films, R. MARTEL, Université de Montréal, Canada
2:50 pm	G3-5 Invited Synthesis of Vertically-Oriented Single-Walled Carbon Nanotubes in Highly Collisional Plasma Sheath, T. NOZAKI, K. OKAZAKI, Tokyo Institute of Technology, Japan	Invited talk continued.
3:10 pm	Invited talk continued.	TS4-2-6 Alignment and Organization of Single-Walled Carbon Nanotubes, A.R. HOPKINS, R.A. LIPELES, The Aerospace Corporation
3:30 pm	G3-7 Atmospheric Pressure Plasma CVD of Silicon Nitride Films for Solar Cells, C.C AMATO-WIERDA, S. HU, University of New Hampshire, Y. WAN, P.S. RAGHAVAN, C. CHARTIER, C. KHATTAK, GT Solar, Inc.	TS4-2-7 Characteristics of Nonvolatile SONOS-TFT Memory with Nanowire Channels Strucutre, S.C. CHEN, National Tsing Hua University, Taiwan, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, P.-T. LIU, Y.C. WU, S.M. SZE, Y.C. CHANG, National Chiao Tung University, Taiwan, C.H. LIEN, National Tsing Hua University, Taiwan
3:50 pm	G3-8 Scaling up Quantities in Hollow Cathode Discharges with the Invariant Parameter, V.H. BAGGIO-SCHEID, J.W. NERI, General-Command of Aerospace Technology, Brazil	TS4-2-8 Formation of the Stacking Ni-Silicide Nanocrystals by Using a Co-Mixed Target for Nonvolatile Memory Application, W.-R. CHEN, National Chiao Tung University, Taiwan, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, P.-T. LIU, C.-H. TU, C.-Y. CHANG, National Chiao Tung University, Taiwan, F.-W. CHI, S.-W. TSAO, National Sun Yat-Sen University, Taiwan
4:10 pm	G3-9 Comparison of Pulsed DC and RF Hollow Cathode Depositions of CrN Films, L. BARDOS, H. BARÁNKOVÁ, Uppsala University, Sweden	

Wednesday Morning, April 25, 2007

	Coatings for Use at High Temperature Room: Sunrise - Session A3-1 Thermal Barrier Coatings Moderators: R. Mevrel, ONERA, C.G. Levi, University of California, Santa Barbara, K. Murphy, Howmet Castings	Hard Coatings and Vapor Deposition Technology Room: Golden West - Session B1-2 Sputtering Coatings and Technologies Moderators: F. Richter, Chemnitz University of Technology, C. Rebholz, University of Cyprus
8:00 am	A3-1-1 Invited Thermal Barrier Coatings for Gas Turbine Engines: Lessons Learned and Challenges Ahead, R. DAROLIA, GE Aviation	B1-2-1 Pulsed DC Titanium Nitride Coatings for Improved Tribological Performance and Tool Life, P.J. KELLY, Manchester Metropolitan Univ., UK, T. VOM BRAUCKE, Swinburne Univ. of Tech., Australia, Z. LIU, Manchester Metro. Univ., UK, R.D. ARNELL, Univ. of Central Lancashire, UK, E.D. DOYLE, Swinburne Univ. of Tech., Australia
8:20 am	Invited talk continued.	B1-2-2 Mechanical Characterization of CrN and WN Coatings Prepared by Pulsed DC Magnatron Sputtering, Y.Z. TSAI, J.G. DUH, National Tsing-Hua University, Taiwan
8:40 am	A3-1-3 Invited Mechanisms Affecting the Durability of Thermal Barrier Systems, A. EVANS, University of California, Santa Barbara	B1-2-3 High-Performance Ceramics Based on Cr-Al-Si-O Compounds by High Ionization Pulsed Sputtering Technique (H.I.P.®), R. CREMER, S. KYRSTA, M. ALUNOVIC, CemeCon AG, Germany
9:00 am	Invited talk continued.	B1-2-5 The Influence of Nitrogen Additions on the Nanostructure and Properties of Sputtered Ti-Al-B Films, C. REBHOLZ, Univ. of Cyprus, MA MONCLUS, Natl. Physics Lab, UK, M.A. BAKER, Univ. of Surrey, UK, P.N. GIBSON, Joint Research Centre, Italy, P.H. MAYRHOFER, Montanuniversität Leoben, Austria, A. LEYLAND, A. MATTHEWS, Univ. of Sheffield, UK
9:20 am	A3-1-5 Adhesion Energy of a YPSZ EBPVD Layer in Two Thermal Barrier Coating Systems, P.-Y. THÉRY, M. POULAIN, ONERA, France, M. DUPEUX, M. BRACCINI, LTPCM, France	B1-2-6 Development of Reactively Sputtered AlN Thin Films for High Temperature Online Stress Monitoring, S. BHATTACHARYYA, J.J. MOORE, Colorado School of Mines, S.S.N. BHARADWAJA, S. TROLIER-MCKINSTRY, Pennsylvania State University
9:40 am	BREAK	B1-2-7 Effects of Sputtering Conditions on Mo Bottom-Electrode Layer and Its Influence on the Subsequently Sputtered AlN Piezoelectric Thin Film, J.S. CHERNG, T.Y. CHEN, C.M. LIN, Mingchi University of Technology, Taiwan
10:00 am	A3-1-7 Numerical Performance Assessment of TBC Microstructures Subject to Foreign Object Damage, M.W. CROWELL, A.G. EVANS, R.M. MCMEEKING, University of California, Santa Barbara	B1-2-8 Electrical Characterisation of AlCuMo Thin Films Prepared by DC Magnetron Sputtering, M. BIRKETT, J. BROOKER, TT Electronics Welwyn Components Limited, United Kingdom, R. PENLINGTON, A. WILSON, K. TAN, Northumbria University, United Kingdom
10:20 am	A3-1-8 Investigation of the Role of Ferroelasticity on the Toughness of Tetragonal (t') Yttria-Stablized Zirconia, C. MERCER, J.R. WILLIAMS, D.R. CLARKE, A.G. EVANS, University of California, Santa Barbara	B1-2-9 Investigation of Electrochromic Properties of Tungsten Oxide Films Prepared by Reactive Magnetron Sputtering, H.-H. LU, National Chin-Yi Institute of Technology, Taiwan
10:40 am	A3-1-9 Thermo-Mechanical Properties of Thermal Barrier Coatings Subject to CMAS (Calcium-Magnesium-Alumino-Silicate) Penetration, S. FAULHABER, S. KRAEMER, V. LUGHI, D.R. CLARKE, C.G. LEVI, University of California, Santa Barbara, J.W. HUTCHINSON, Harvard University, A.G. EVANS, University of California, Santa Barbara	B1-2-10 Thermal Stability of Sputtered W-Si-N Coatings, K. FADENBERGER, C. REBHOLZ, University of Cyprus, M.A. BAKER, University of Surrey, United Kingdom, R. DANIEL, University of Leoben, Austria, J. MUSIL, University of West Bohemia, Czech Republic, P.H. MAYRHOFER, C. MITTERER, University of Leoben, Austria
11:00 am	A3-1-10 Mechanism Governing Inhibition of CMAS Melt Infiltration Into Gadolinium Zirconate TBCs, S. KRAEMER, R. LECKIE, J. YANG, C.G. LEVI, University of California, Santa Barbara	B1-2-11 Sheet Resistance Effect of the Flexible ITO/PET Substrate on the Electrochromic Performance of Deposited WO_3 Layer, Y.L. YAN, P.C. CHEN, Y.F. LAN, J.L. HE, Feng Chia University, Taiwan
11:20 am	A3-1-11 CMAS Degradation of Environmental Barrier Coatings, K.M. GRANT, S. KRÄMER, J.P.A. LÖFVANDER, C.G. LEVI, University of California, Santa Barbara	
		Tutorial: NSF – SBIR 12:15-1:15 pm

Wednesday Morning, April 25, 2007

	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B4 Laser-Assisted and Ion Beam Coatings and Technologies Moderators: S. Weissmantel, University of Applied Sciences, C. Muratore, UTC/Air Force Research Laboratory	Carbon and Nitride Matlerials: Synthesis-Structure-Property Relationships Room: Sunset - Session D1 Boron Nitride, Carbon Nitride and Group-III Nitride Materials Moderators: S. Ulrich, Forschungszentrum Karlsruhe, A. Djurisic, University of Hong Kong
8:00 am	B4-1 Invited Ion and Laser Beam Assisted Deposition and Modification of Multilayered Coatings, C. BUNDESMANN, J. DIENELT, F. FROST, J.W. GERLACH, T. HÖCHE, H. NEUMANN, D. RUTHE, F. SCHOLZE, E. SCHUBERT, K. ZIMMER, B. RAUSCHENBACH, Institut für Oberflächenmodifizierung e.V., Germany	D1-1 Invited Deposition of Thick Cubic Boron Nitride Films - Mechanisms and Concepts, W. KULISCH, Joint Research Center, Italy
8:20 am	Invited talk continued.	Invited talk continued.
8:40 am	B4-3 Plasma Diagnostics of Laser Ablation, Magnetron Sputtering, and Cathodic Arc using In Situ Optical Spectroscopy, J.G. JONES, Air Force Research Laboratory, C. MURATORE, UTC/Air Force Research Laboratory, A.R. WAITE, A.A. VOEVODIN, Air Force Research Laboratory	D1-3 Investigation of Wurtizitic (B,Al)N Films Prepared on Polycrystalline Diamond, J.H. SONG, J.-L. HUANG, National Cheng-Kung University, Taiwan, H.-H. LU, National Chin-Yi Institute of Technology, Taiwan, J.C. SUNG, Kinik Company, Taiwan
9:00 am	B4-4 A Correlation Between Field Emission Properties and Increasing Crystallinity in Lanthanum Monosulfide (LaS) Thin Films, S.B. FAIRCHILD, Air Force Research Laboratory, P.T. MURRAY, University of Dayton, D.J. LOCKWOOD, X. WU, D. POITRAS, Institute for Microstructural Sciences, NRC, Canada, V. SEMET, V.T. BINH, University of Lyon, France, M. CAHAY, University of Cincinnati	D1-4 Preparation of Carbon Nitride using Microwave Plasma CVD, Y. SAKAMOTO, Chiba Institute of Technology, Japan
9:20 am	B4-5 Investigation of MoS_2/Metal Solid-Lubricant Thin Film Coatings Deposited by High-Power Ion Beam Ablation[1], T.J. RENK, S.V. PRASAD, Sandia National Laboratories	D1-5 The Effect of Nitrogen Atoms Included in CN_x Coating on Friction Sliding Against Si_3N_4 Ball in Nitrogen Gas, T. TOKOROYAMA, Nagoya University, Japan, M. GOTO, Ube National College of Technology, Japan, F. HONDA, Toyota Technological Institute, Japan, N. UMEHARA, Nagoya University, Japan
9:40 am	B4-6 Synthesis of Nanoparticle Coatings by Through Thin Film Ablation, P.T. MURRAY, E. SHIN, University of Dayton, L. DOSSER, K. BAILEY, Mound Laser and Photonics Center	D1-6 Plasma Processing in Carbon Containing Atmosphere for Possible Treatment of Wind Turbine Components, M. ZLATANOVIC, Faculty of Electrical Engineering, Serbia, N. POPOVIC, Nuclear Science Institute Vin, Belgrade, Serbia
10:00 am	B4-7 Hybrid Technology Hard Coating - Electron Beam Surface Hardening, R. ZENKER, G. SACHER, A. BUCHWALDER, TU Bergakademie/IWT, Germany, J. LIEBICH, Ionbond Sachsen/Germany, A. REITER, OC Oerlikon Balzers Coating AG, Liechtenstein, R. HAESSLER, BTC, Chemnitz, Germany	D1-7 Invited 1D III-Nitride Nanomaterials - Superb Photoconductivity and Luminescence, K.H. CHEN, R.S. CHEN, Academia Sinica, Taiwan, H.Y. CHEN, L.C. CHEN, National Taiwan University, Taiwan, S. CHATTOPADHYAY, National Chung Hsing University, Taiwan
10:20 am	B4-8 Fluorine Laser Irradiation of Cubic Boron Nitride Films: Influence on Internal Stress and Microstructure, G. REISSE, F. HAEHNEL, D. ROST, S. WEISSMANTEL, University of Applied Sciences Mittweida, Germany	Invited talk continued.
10:40 am	B4-9 Microstructuring of Superhard Pulsed Laser Deposited ta-C Films Using Excimer and Femtosecond Laser Pulses, S. WEISSMANTEL, R. BOETTCHER, A. ENGEL, M. NIEHER, G. REISSE, D. ROST, E. WEISSMANTEL, University of Applied Sciences Mittweida, Germany	D1-9 Invited Structural and Electrical Characterization of Laser Debonded AlGaN/GaN HEMTs, C. SURYA, K.K. LEUNG, C.P. CHAN, M. PILKUHN, K.H. PANG, The Hong Kong Polytechnic University, Hong Kong
11:00 am	B4-10 Synthesis and Tribological Characterization of Mo -(W)- S -Se- (TE) Composite Coatings by Pulsed Laser Deposition, J.J. HU, UTC Inc./Air Force Research Laboratory ((AFRL / MLBT), J. ZABINSKI, J.E. BULTMAN, J.H. SANDERS, A.A. VOEVODIN, Air Force Research Laboratory / MLBT	Invited talk continued.
11:20 am		D1-11 Double-Crystal X-Ray Topography of Free-Standing HVPE Grown n-Type GaN and High Resolution PL Studies, N.A. MAHADIK, George Mason University, S.B. QADRI, US Naval Research Laboratory, M. MURTHY, M.V. RAO, George Mason University, J.A. FREITAS, US Naval Research Laboratory, J. KIM, Korea University, Korea
11:40 am		D1-12 GaN Nanowires - Influence of the Starting Material on Nanowire Growth, K.H. TAM, A.B. DJURISIC, Y.F. HSU, University of Hong Kong

Wednesday Morning, April 25, 2007

	Tribology & Mechanical Behavior of Coatings & Thin Films Room: California - Session E2-1 Mechanical Properties and Adhesion Moderators: Y.T. Cheng, Purdue University, N.M. Jennett, National Physical Laboratory, M.M. Stack, University of Strathclyde	Applications, Manufacturing, and Equipment Room: Royal Palm 4-6 - Session G6 Surface Pre-Treatment, Coating Post-Treatment & Duplex Technology Moderators: K. Bobzin, RWTH Aachen University, A. Leyland, University of Sheffield
8:00 am	E2-1-1 Centrifuge Technology: A Promising Tool for the Determination of Adhesion and Mechanical Properties!, U. BECK, G. REINERS, Federal Institute for Materials Research and Testing (BAM), Germany, D. LERCHE, L.U.M. GmbH, Germany	G6-1 Invited Manipulation of Coating and Subsurface Properties in Reconditioning of Carbide Cutting Tools, F. KLOCKE, T. SCHROEDER, E. BOUZAKIS, A. KLEIN, RWTH Aachen University, Germany
8:20 am	E2-1-2 Invited Comparison Between the Progressive Load Scratch Test and the Mercedes Test and the Effect of the Rockwell Indenter Tip Geometry on the Progressive Load Scratch Test, G. FAVARO, CSM Instruments, Switzerland, M. MORSTEIN, Platit AG, Switzerland, R. CONSIGLIO, N. CONTE, N.X. RANDALL, CSM Instruments, Switzerland	Invited talk continued.
8:40 am	I nvited talk continued.	G6-3 Mechanical Pre- and Post-Treatment of PVD-coated Cutting Tools, T. MICHALKE, F. MUMME, F. JUNGBLUT, Oerlikon Balzers Coating Germany GmbH, Germany
9:00 am	E2-1-5 The Effect of the H/E Ratio on the Adherence of TiN And TiC Coatings Deposited on an AISI H13 Tool Steel, A.A.C. RECCO, University of São Paulo, Brazil, I.C. OLIVEIRA, M. MASSI, H.S. MACIEL, Instituto Tecnológico de Aeronáutica, Brazil, A.P. TSCHIPTSCHIN, University of São Paulo, Brazil	G6-4 Accelerated Drill Testing Lifetime Response of Coated and Uncoated HSS Jobber Drills to Deep Cryogenic Treatment, Applied at Various Stages of Manufacture, S.J. DOWEY, Surface Technology Coatings, Australia, E. THOMPSON, T. VOM BRAUCKE, E.D. DOYLE, Swinburne University of Technology, Australia
9:20 am	E2-1-6 Adhesion Energy of Cu/Polyimide Interface in Flexible Printed Circuits, S. KAMIYA, H. FURUTA, Nagoya Institute of Technology, Japan, M. OMIYA, Tokyo Institute of Technology, Japan	G6-5 Study on the Effects of MF- and Plasmabooster Etching on the Adhesion of High Performance Coatings, R. CREMER, M. ALUNOVIC, H.G. FUß, CemeCon AG, Germany, A. ATISER, J.M. SCHNEIDER, RWTH Aachen University, Germany
9:40 am	E2-1-7 Controlling the Adhesion Between Diamond-Like Carbon (DLC) Film and High-Density Polyethylene (HDPE) Substrates, T. HOSHIDA, D. TSUBONE, K. TAKADA, Keio University, Japan, H. KODAMA, Kanagawa Academy of Sci. & Tech., Japan, T. HASEBE, Tachikawa Hospital & Keio Univ., Japan, A. KAMIJO, The Univ. of Tokyo Hospital, Japan, T. SUZUKI, A. HOTTA, Keio Univ., Japan	G6-6 Invited Influence of Edge Preparation on the Performance of Coated Cutting Tools, T. CSELLE, M. MORSTEIN, C. BUECHEL, O. CODDET, Platit AG, Switzerland, M. RUZICKA, M. SIMA, Pivot a. s., Czech Republic, S. REICH, P. PREISS, GFE, Germany
10:00 am	E2-1-8 Effect of Substrate Plasticity on the Buckling Phenomenon of Coated Materials, F. FOUCHER, C. COUPEAU, J. COLIN, A. CIMETIERE, J. GRILHE, LMP-CNRS, Poitiers University, France	Invited talk continued.
10:20 am	E2-1-9 Finite Element Analysis of Radial and Tangential Stresses Developed During the Indentation of Coated Steels, T. PACHLER, R.M. SOUZA, A.P. TSCHIPTSCHIN, University of São Paulo, Brazil	G6-8 Pre-Coating Cutting Edge Preparation of Machining Tools by Abrasive Water Jet Blasting, K. WEINERT, University of Dortmund, Germany, D. KOETTER, Rothe Erde GmbH Lippstadt, Germany, I. TERWEY, University of Dortmund, Germany
10:40 am		G6-9 Invited Surface Treatment of Cutting Tools: The Importance of Pre- and Post-Treatment., G. HAKANSSON, Ionbond Sweden AB, Sweden, C. SCHUNK, Ionbond Coburg, Germany
11:00 am		Invited talk continued.
11:20 am		G6-12 Hardness Consideration of NiTi and NiTiAl Thin Films for Various Annealing Temperatures, K.-T. LIU, J.G. DUH, National Tsing-Hua University, Taiwan

Wednesday Morning, April 25, 2007

New Horizons in Coatings and Thin Films
Room: Tiki Pavilion - Session H1
Novel Film Synthesis Strategies for the Next Generation of Devices
Moderator: R. Martel, Université de Montréal

8:00 am	H1-1 Invited Piezoelectric Quantum Structures for Full Spectrum Light Emitters, C. WETZEL, Rensselaer Polytechnic Institute	
8:20 am	Invited talk continued.	
8:40 am	H1-3 Synthesis and Characterization of Ferroelectric Properties of $Ce_2Ti_2O_7$ Thin Film, W.S. KIM, J.-K. YANG, C.-K. LEE, H.-H. PARK, Yonsei University, Korea	
9:00 am	H1-4 Physical Properties and Preparation of $SrBi_2Ta_2O_9$ Ferroelectric Films by Pyrolysis and Thermal Annealing, H.K. KU, National Cheng-Kung University, Taiwan, H.S. KOO, Ming-Hsin University, Taiwan	
9:20 am	H1-5 Stable Resistive Switching Behaviors of Sputter Deposited V-doped $SrZrO_3$ Thin Films, C.-C. LIN, J.-S. YU, C.-C. LIN, National Chiao Tung University, Taiwan, C.-H. LIN, Winbond Electronics Corporation, Taiwan, T.-Y. TSENG, National Chiao Tung University, Taiwan	
9:40 am	H1-6 Optimization of the Geometry of the MEMS Electrothermal Actuator to Maximize In-Plane Tip Deflection, E.S. KOLESAR, B. LEAST, J. TIPPEY, T. HTUN, Texas Christian University	
10:00 am	H1-7 Invited Novel Strategies for Low Temperature CVD of Advanced Materials, J.R. ABELSON, Frederick Seitz Materials Research Laboratory and University of Illinois Urbana Champaign	
10:20 am	Invited talk continued.	
10:40 am	H1-9 Joining using Self Propagating High Temperature Synthesis (SHS) of Multilayered Ni/Ti Thin Film Ribbons, J.J. MOORE, M. BAI, Colorado School of Mines, D.P. ADAMS, Sandia National Labs	
11:00 am	H1-10 Chemical Vapour Deposition Routes to Gold / Semiconductor Nanocomposite Thin Films, R.G. PALGRAVE, I.P. PARKIN, University College London, United Kingdom	
11:20 am	H1-11 Hydrogen Sensing Characteristics of Electrodeposited WO_3 Thin Film Gasochromic Sensor Activated by Pt Catalyst, W.-J. SHIU, C.-C. CHAN, J.-S. PENG, C.-C. CHANG, Feng Chia University, Taiwan	

Wednesday Afternoon, April 25, 2007

	Coatings for Use at High Temperature Room: Sunrise - Session A3-2 Thermal Barrier Coatings Moderators: R. Mevrel, ONERA, C.G. Levi, University of California, Santa Barbara, K. Murphy, Howmet Castings	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B7 Max Phases and other Nanolaminated Coatings Moderator: U. Jansson, Uppsala University
1:30 pm	A3-2-1 Invited Damage Mechanisms, Life Prediction, and Development of TBCs for Turbine Airfoil, T. STRANGMAN, D. RAYBOULD, A. JAMEEL, W. BAKER, Honeywell Corporation	B7-1 Invited Elastic Properties and Electronic Structure of Nanolaminates, D. MUSIC, J.M. SCHNEIDER, RWTH Aachen University, Germany
1:50 pm	Invited talk continued.	Invited talk continued.
2:10 pm	A3-2-3 Invited Cracking and Delamination Behavior in EB-PVD Thermal Barrier Coating Under Thermo-Mechanical Fatigue Condition, Y. KAGAWA, University of Tokyo, Japan	B7-3 An Investigation of MAX Phases by Thin Film Combinatorial Methods, T.H. SCABAROZI, Drexel University, J.D. HETTINGER, W.M. TAMBUSSI, Rowan University, M.W. BARSOUM, Drexel University, S.E. LOFLAND, Rowan University
2:30 pm	Invited talk continued.	B7-4 Synthesis and Characterization of MAX-Phase Thin Films in the V-Ge/Si-C Systems by DC Magnetron Sputtering, O. WILHELMSSON, Uppsala University, Sweden, P. EKLUND, H. HÖGBERG, L. HULTMAN, Linköping University, Sweden, U. JANSSON, Uppsala University, Sweden
2:50 pm	BREAK	B7-5 Nucleation and Growth of Magnetron Sputtered M_2AlN (M: Ti, V, Cr) MAX Phase Thin Films, M. BECKERS, C. HÖGLUND, Linköping University, Sweden, N. SCHELL, ROBL-CRG at ESRF, Grenoble, France, L. HULTMAN, Linköping University, Sweden
3:10 pm	A3-2-7 Design and Manufacturing of a Novel Bondcoat System for TBC, Oxidation and Thermal Cycling Behaviour, M. CARLIN, Cranfield University, United Kingdom, F. BOURLIER, Snecma, France, J.R. NICHOLLS, Cranfield University, United Kingdom	B7-6 Invited Properties of MAX Phases, Characterisations and First Principle Prediction, G. HUG, ONERA-CNRS, France
3:30 pm	A3-2-8 Effect of Composition and Pre-Treatment Procedures on Oxidation of Vacuum Plasma Sprayed MCrAlY Bondcoats for Thermal Barrier Coatings, M. SUBANOVIC, E. WESSEL, L. NIEWOLAK, D. NAUMENKO, L. SINGHEISER, W.J. QUADAKKERS, Forschungszentrum Jülich GmbH, Germany	Invited talk continued.
3:50 pm	A3-2-9 Cyclic Thermogravimetry of TBC System, A. VANDE-PUT, D. OQUAB, D. MONCEAU, University of Toulouse - CIRIMAT Laboratory, France	B7-8 Microstructural Investigation of Thermally Sprayed MAX Phase Coatings, M. SONESTEDT, Chalmers Univ. of Tech., Sweden, J. FRODELIUS, Linköping Univ.,S. BJÖRKLUND, Univ. West, J.-P. PALMQUIST, R&D Kanthal AB, H. HÖGBERG, L. HULTMAN, Linköping Univ., K. STILLER, Chalmers Univ. of Tech.
4:10 pm	A3-2-10 A High Temperature Instrumented Microindentation Probe to Investigate the Mechanical Behaviour of (Ni,Pt)Al Alloys, B. PASSILLY, A. VILLEMIANE, P. KANOUTE, R. MEVREL, ONERA, France	B7-9 Reactive Chemical Vapor Deposition of Ti_3SiC_2 Layers on SiC Substrates, S. JACQUES, H. FAKIH, O. DEZELLUS, M.-P. BERTHET, F. BOSSELET, M. SACERDOTE-PERONNET, J.-C. VIALA, University of Lyon, France
4:30 pm	A3-2-11 Compatibility of Mixed Zone Constituents (YAG, YAP,$YCrO_3$) with a Chromia-Enriched TGO Phase During the Late Stage of TBC Lifetime, W. BRAUE, P. MECHNICH, K. FRITSCHER, German Aerospace Center (DLR), Germany	B7-10 Effect of N Stoichiometry and Sc Alloying on the Growth and Properties of Quaternary Ti:Sc-Al-N MAX Phase Thin Films, C. HÖGLUND, M. BECKERS, J. BIRCH, L. HULTMAN, Linköping University, Sweden
4:50 pm	A3-2-12 Oxidation Behaviour of Gamma Titanium Aluminides with EB-PVD Thermal Barrier Coatings Exposed to Air at 900°C, R. BRAUN, M. FRÖHLICH, W. BRAUE, German Aerospace Center (DLR), Germany, C. LEYENS, Technical University of Brandenburg at Cottbus, Germany	
5:10 pm	A3-2-13 Measuring and Modeling the Bond Coat Aluminum Depletion Kinetics, D. RENUSCH, M. SCHUETZE, Karl-Winnacker-Institut der DECHEMA e.V., Germany	
	AWARDS CONVOCATION Golden West Room 5:30-7:00 pm	AWARDS CONVOCATION Golden West Room 5:30-7:00 pm

Wednesday Afternoon, April 25, 2007

	Carbon and Nitride Materials: Synthesis-Structure-Property Relationships Room: Sunset - Session D2-1 Diamond and Diamond-Like Carbon Materials Moderators: H.J. Scheibe, Fraunhofer Inst. for Matl. & Beam Tech. Y. Koga, Natl. Institute of Advanced Industrial Science and Technology	Tribology & Mechanical Behavior of Coatings & Thin Films Room: California - Session E2-2 Mechanical Properties and Adhesion Moderators: Y.T. Cheng, Purdue University, N.M. Jennett, National Physical Laboratory, M.M. Stack, University of Strathclyde
1:30 pm	D2-1-1 Invited The Technology and the Applications of DLC-Si Coating, H. TACHIKAWA, K. NAKANISHI, H. MORI, Y. TSUCHIYA, S. IGARASHI, T. ISEKI, Toyota Central Research & Development Laboratories Inc., Japan	E2-2-1 Invited Diffusion-Multiple Approach to Alloy and Coating Development, J.-C. ZHAO, GE Global Research
1:50 pm	Invited talk continued.	Invited talk continued.
2:10 pm	D2-1-3 DLC Film Properties Obtained by Low Cost and Modified Pulsed-DC Discharge, V.J. TRAVA-AIROLDI, L.F. BONETTI, L.V. SANTOS, G.C. RODRIGUES, Instituto Nacional de Pesquisas Espaciais INPE, Brazil, E.J. CORAT, São José dos Campos, Brazil	E2-2-3 Microstructure and Mechanical Properties of Zr-Cu Based Thin Films Deposited by Pulsed Magnetron Sputtering, O. JIMENEZ, A. LEYLAND, M. AUDRONIS, A. MATTHEWS, University of Sheffield, United Kingdom, M.A. BAKER, University of Surrey, United Kingdom
2:30 pm	D2-1-4 Characterization of Diamond-Like Carbon Coatings Prepared by Pulsed Bias Cathodic Vacuum Arc Deposition, J.-B. WU, J.-J. CHANG, Industrial Technology Research Institute, Taiwan, M.-Y. LI, National Nano Device Laboratories, Taiwan, M.S. LEU, A.-K. LI, Industrial Technology Research Institute, Taiwan	E2-2-5 Study of the Evolution of the Mechanical Properties of a Silicon Single Crystal after Femtosecond Laser Irradiation, S. VALETTE, Ecole Centrale de Lyon, France, S. BENAYOUN, P. KAPSA, Lab. de Tribologie et Dyn. des Syst.,R. FILLIT, Ecole des Mines de St.-Etienne, E. AUDOUARD, Lab. de Traitement du Signal et Instru.
2:50 pm	D2-1-5 Reactive Magnetron Sputter Processes for Preparation of DLC Based Coatings in Large Scale Batch Coaters, K. BEWILOGUA, H. THOMSEN, K. WEIGEL, R. WITTORF, Fraunhofer IST, Germany, D. HOFMANN, S. KUNKEL, W.D. MÜNZ, SVS Vacuum Coating Technologies, Germany, H. RICHTER SR., Y. YAMAZAKI, Richter	E2-2-6 Evaluation of PVD Coatings used in Aluminum Die Casting, S. MYERS, J. LIN, Colorado School of Mines, P. REID, Ried and Associates, LLC, B. MISHRA, J.J. MOORE, Colorado School of Mines
3:10 pm	D2-1-6 Synthesis of Functional Amorphous Carbon Films Under Atmospheric Pressure for Food Package, H. KODAMA, S. SUEMITSU, Kanagawa Academy of Science and Technology, Japan, M. NAKAYA, A. SHIRAKURA, Kirin Brewery, Japan, A. HOTTA, T. SUZUKI, Keio University, Japan	E2-2-7 Invited Structural and Mechanical Characterization of Biomaterials - Lessons from Nature, X. LI, University of South Carolina
3:30 pm	D2-1-7 Structure and Properties of Ag-Incorporated DLC Films Prepared by a Hybrid Ion Beam Deposition System, H.W. CHOI, Korea Institute of Science and Technology & Seoul Natl. Univ, Korea, J.-H. CHOI, K.-R. LEE, J.-P. AHN, Korea Institute of Science and Technology, Korea, K.H. OH, Seoul Natl. Univ., Korea	Invited talk continued.
3:50 pm	D2-1-8 Micro- and Nano-Crystalline Diamond Coatings on the Advance for Abrasive Materials, O. LEMMER, R. CREMER, M. ALUNOVIC, CemeCon AG, Germany	E2-2-10 Tribological Properties of Nanoscale Multilayer TiAlN/SiN Coating Deposited by Reactive Direct Current Magnetron Sputtering, M. SAKURAI, T. TOIHARA, M. WANG, Osg Corporation, Japan, W. KUROSAKA, S. MIYAKE, Nippon Institute of Technology, Japan
4:10 pm	D2-1-9 Tribological Properties of DLC Films With Different Hydrogen Content in Ambient Air and Vacuum, D. TABAYASHI, M. MIYANAGA, Sumitomo Electric Industries, LTD., Japan, Y. UTSUMI, Nippon ITF, Inc., Japan, K. ODA, Sumitomo Electric Industries, LTD., Japan, H. OHARA, Nippon ITF, Inc., Japan	E2-2-9 Thermal Stabilities and Fracture Characteristics of Aged ZrAlN/TiN Heterostructure Film and ZrTiAlN Nano-Composite Film by Using Indentation Methods, S. BAEK, Sungkyunkwan University, Korea
4:30 pm	D2-1-10 Tribological Behavior of Diamond-Like Carbon Films in Aqueous Environment, J.-W. YI, S.-J. PARK, K.-R. LEE, Korea Institute of Science and Technology, Korea, S.-S. KIM, Kyungpook University, Korea	E2-2-11 Nanoindentation Study of Nanocrystalline TiN Thin Films, V. CHAWLA, Indian Institute of Technology Roorkee, R. JAYAGANTHAN, R. CHANDRA, Indian Institute of Technology Roorkee, INDIA
	AWARDS CONVOCATION Golden West Room 5:30-7:00 pm	AWARDS CONVOCATION Golden West Room 5:30-7:00 pm

Wednesday Afternoon, April 25, 2007

	Advances in Characterization of Coatings & Thin Films Room: Royal Palm 4-6 - Session F2 In Situ Characterization Moderators: M. Beckers, Linköping University, G. Dehm, Austrian Academy of Sciences	New Horizons in Coatings and Thin Films Room: Tiki Pavilion - Session H3 Corrosion-Resistant Coatings: New Approaches, Techniques and Materials Moderators: A.L. Yerokhin, The University of Sheffield, E. Meletis, University of Texas at Arlington
1:30 pm	F2-1 Invited Local Strains in Micro and Nanostructures using Synchrotron Radiation, O. THOMAS, Universite Paul Cezanne, France	H3-1 Characterisation of Corrosion Resistant Coatings Produced on Ti by Plasma Electrolytic Oxidation, R.H.U. KHAN, A.L. YEROKHIN, A. PILKINGTON, A. MATTHEWS, University of Sheffield, United Kingdom
1:50 pm	Invited talk continued.	H3-2 Oxidation and Hot Corrosion Behavior of Detonation Gun Sprayed Cr_3C_2-NiCr Coatings on Ni and Fe-Based Superalloys, S KAMAL, R. JAYAGANTHAN, S. PRAKASH, IIT Roorkee, India
2:10 pm	F2-3 Mechanical Behaviour and Micro Structural Evolution of ZrO_2 Thin Films Subjected to an External Tensile Loading at High Temperatures, B. BENALI, M. HERBST GHYSEL, Université Paris-Sud, France, I. GALLET, CNRS, France, M. IGNAT, INP Grenoble, France, A.M. HUNTZ, M. ANDRIEUX, Université Paris-Sud, CNRS, France	H3-3 Invited Application of Advanced Electrochemical Techniques to Evaluate the Corrosion Performance of Coatings, R. AKID, Sheffield Hallam University, United Kingdom
2:30 pm	F2-4 Activation Characterization of Non-Evaporable TiZrV Getter Films by Synchrotron Radiation Photoemission Spectroscopy, C.-C. LI, J.-L. HUANG, National Cheng-Kung University, Taiwan, R.-J. LIN, Intellectual Property Exchange Limited, Taiwan, D.-F. LII, Cheng Shiu University, Taiwan	Invited talk continued.
2:50 pm	F2-5 Characterization and Modelling of the Elastic Properties of Nano-Structured Thin Films, E. LE BOURHIS, P.O. RENAULT, PH. GOUDEAU, B. GIRAULT, G. GEANDIER, P. VILLAIN, P. GUERIN, Université de Poitiers, France, O. CASTELNAU, R. CHIRON, CNRS, France, D. THIAUDIERE, SOLEIL, France	H3-5 Effects of Plasma Assisted Electrolytic Treatments on Corrosion Resistance of High Strength Steels, A.L. YEROKHIN, D. PATEL, A. PILKINGTON, A. MATTHEWS, University of Sheffield, United Kingdom
3:10 pm	F2-7 Spectroscopic Ellipsometry Study of Silver Thin FIlms Deposited by High Power Pusled Magnetron Sputtering, J. LI, S.R. KIRKPATRICK, University of Nebraska-Lincoln, D.M. MIHUTE, University of Nebraska -Lincoln, S.L. ROHDE, University of Nebraska-Lincoln	H3-6 Plasma Deposition of Siloxane Based Coatings at Atmospheric Pressure for Corrosion Protection of Galvanized Steel, R. DAMS, B. VERHEYDE, S. PAULUSSEN, R. REGO, D. VANGENEUGDEN, VITO Belgium, J. BARDON, J. BOUR, H. AUBRIET, D. RUCH, Centre de Recherche Public Henri Tudor (CRPHT), Luxembourg
3:30 pm	F2-8 Arc Deposition of Amorphous Carbon and Ti/C Multilayers Studied with In-Situ Ellipsometry, L. RYVES, P.O. PERSSON, The University of Sydney, Australia, M. JAMES, Bragg Institute, Australian Nuclear Science & Technology Organisation, Australia, J.E. BRADBY, Australian National University, Australia, M.M.M. BILEK, The University of Sydney, Australia	H3-7 Process Structure Properties Relationship During Formation of CrN and AlN Layers on H13 Steel, A. ROJO, J. ACOSTA, O. SALAS, ITESM, Mexico, J. OSEGUERA, ITESM-CEM, Mexico
3:50 pm	F2-9 Mechanical Characterization of Multilayer Nitride Coatings, K. RZEPIEJEWSKA-MALYSKA, J. MICHLER, EMPA, Switzerland, H. WRZESINSKA, Institute of Electron Technology, Poland	H3-9 The Effect of Shot Peening on the Corrosion Performance of PEO Coated Al Alloys, D.T. ASQUITH, A.L. YEROKHIN, A. MATTHEWS, J.R. YATES, University of Sheffield, United Kingdom
4:10 pm	F2-10 Deformation of Ti_3SiC_2 MAX Phase Material using High Temperature Nanoindentation and In-Situ Deformation within TEM, F. GIULIANI, Linköping Univ., Sweden, J. EMMERLICH, RWTH Aachen University,L. JOHNSON, Linköping Univ., W.J. CLEGG, Univ. of Cambridge, L. HULTMAN, Linköping Univ.	H3-10 In Vitro Corrosion Behavior of AZ91 Magnesium Alloy Treated by Metal Ion Implantation in Artificial Physiological Fluids, C.L. LIU, City University of Hong Kong, Y. XIN, Tsinghua University, China, X. TIAN, Harbin Institute of Technology, China, P.K. CHU, City University of Hong Kong
4:30 pm	F2-11 Novel In-Situ Characterization of Micro-Scale Wear Behavior, R. WHEELER, J. HU, UES, Inc., A.A. VOEVODIN, J. ZABINSKI, Air Force Research Laboratory	H3-11 EIS Characterization of Alumina Coatings Produced by Frequency Swept Pulsed PEO, E.V. PARFENOV, Ufa State University for Aviation Engineering, Russia, A.L. YEROKHIN, A. MATTHEWS, University of Sheffield, United Kingdom
	AWARDS CONVOCATION Golden West Room 5:30-7:00 pm	AWARDS CONVOCATION Golden West Room 5:30-7:00 pm

Wednesday Afternoon, April 25, 2007

Coatings for Aerospace Applications
Room: Golden West - Session TS1
Coatings for Aerospace Applications
Moderators: J.H. Sanders, Headquarters Air Force Materials Command
G.L. Doll, Timken Technology Center

1:30 pm	TS1-6 Invited Research Experience on Performance of Coated Gears and Bearings, T.L. KRANTZ, Army Research Laboratory	
1:50 pm	Invited talk continued.	
2:10 pm	TS1-3 Investigation of Abradable Seal Coating Performance using Scratch Testing, X. MA, A. MATTHEWS, University of Sheffield, United Kingdom	
2:30 pm	TS1-4 Friction Coefficient Studies on Hold-Down Systems for Space Mechanisms, L.V. SANTOS, Inst. Nacl. de Pesquisas Espaciais INPE , Brazil, P.A. RADI, L.F. BONETTI, Inst. Nacl. de Pesquisas Espaciais INPE & Inst. Tech. da Aeronautica ITA, G.C. RODRIGUES, V.J. TRAVA-AIROLDI, Inst. Nacl. de Pesquisas Espaciais INPE	
2:50 pm	TS1-5 SiC and BC Permanent Pretreatments for Mg-Rich Primers, D.L. SCHULZ, R.A. SAILER, D. BATTOCCHI, B.J. CHISHOLM, North Dakota State University	
3:10 pm	TS1-1 Invited Surface Engineering in the Gas Turbine - Current and Future State, D.S. RICKERBY, Rolls-Royce plc.	
3:30 pm	Invited talk continued.	
3:50 pm	TS1-8 Fretting Wear-Resistant, Micro-Arc Oxidation Coatings for Aluminum and Titanium Alloy Bearings, K. CHOPPY, R.F. KOVAR, M. CUSHMAN, Infoscitex Corporation	
4:10 pm	TS1-9 High Temperature PFPAE Lubricant Corrosion Performance of Dual Segment Nanostructured TiCrN + BCN Cermet Coatings for Hybrid Metal Ceramic Bearing Systems, C. BOWMAN, V. GOROKHOVSKY, Arcomac Surface Engineering, LLC	
4:30 pm	TS1-10 Double Glow Plasma Surface Copperized Burn-Resistant Titanium Alloy, P. ZHANG, J. TAO, Z. YAO, Z. XU, Nanjing University of Aeronautics and Astronautics, China	
	AWARDS CONVOCATION Golden West Room 5:30-7:00 pm	AWARDS RECEPTION Regency Ballroom 7:30 pm

Thursday Morning, April 26, 2007

	Coatings for Use at High Temperature Room: Sunrise - Session A3-3 Thermal Barrier Coatings Moderators: R. Mevrel, ONERA, C.G. Levi, University of California, Santa Barbara, K. Murphy, Howmet Castings	Hard Coatings and Vapor Deposition Technology Room: Royal Palm 1-3 - Session B3 CVD Coatings and Technologies Moderators: A. Sanjurjo, SRI International, M. Pons, INP Grenoble
8:00 am	A3-3-1 Invited Luminescence Sensing of Temperatures in Thermal Barrier Coatings, D.R. CLARKE, University of California, Santa Barbara	B3-1 Enhancement of Coating Adhesion by WC Single-Phase Interfacial Layer for Cemented Carbide Based Coated Cutting Insert, H. HOMMA, E. NAKAMURA, S. TSUCHIYA, A. OSADA, Mitsubishi Materials Corporation Central Research Institute Naka Research Center, Japan
8:20 am	Invited talk continued.	B3-2 Influence of Growth Texture on the Wear Properties of CVD α-Al_2O_3 Coatings, S. RUPPI, B. HOGRELIUS, Seco Tools AB, Sweden
8:40 am	A3-3-3 Invited Studies of TBC Ageing by Photothermal Techniques, F. CERNUSCHI, Cesi Ricerca, Italy, S. MARINETTI, P.G. BISON, E. GRINZATO, CNR-ITC, Italy, L. LORENZONI, A. FIGARI, Cesi Ricerca, Italy	B3-3 Invited Chemical Vapor Deposition of Thin Films and Coatings: Evaluation and Process Modeling, C. BERNARD, NPG-CNRS-UJF, Domaine Universitaire, France
9:00 am	Invited talk continued.	Invited talk continued.
9:20 am	A3-3-5 Durable APS Sensor Coatings for Remote High Temperature Detection, D.E. MACK, Forschungszentrum Jülich GmbH, Germay, R. VASSEN, Forschungszentrum Jülich GmbH, Germany, J.P. FEIST, S. SEEFELDT, Southside Thermal Sciences (STS) Ltd., United Kingdom, S. OMAR, Southside Thermal Sciences (STS) Ltd., London, U.K.	B3-6 Deposition of Metastable (Ti,Al)N Coatings by Thermal CVD, J. WAGNER, Materials Center Leoben Forschung GmbH, Austria, V. EDLMAYR, Materials Center Leoben Forschung GmbH, Germany, M. PENOY, C. MICHOTTE, CERATIZIT Luxembourg S.á.r.l., Mamer, Germany, C. MITTERER, University of Leoben, Austria, M. KATHREIN, CERATIZIT Austria G.m.b.H., Austria
9:40 am	BREAK	B3-7 Microstructural Investigation of MTCVD (Ti(C,N) Coatings, S. CANOVIC, M. HALVARSSON, Chalmers University of Technology, Sweden, S. RUPPI, Seco Tools AB, Sweden
10:00 am	A3-3-7 Sensor TBCs: Remote Condition Monitoring of EB-PVD Coatings Utilising Laser Induced Phosphorescence (LIP), R.J.L. STEENBAKKER, Cranfield University, United Kingdom, J.P. FEIST, Southside Thermal Sciences Ltd, R.G. WELLMAN, J.R. NICHOLLS, Cranfield University, United Kingdom	B3-8 Effects of Deposition Temperatures on the Properties of Hermetically Carbon-Coated Optical Fibers Prepared by Thermal Chemical Vapor Deposition Method, S.-S. CHEN, S.-T. SHIUE, National Chung Hsing University, Taiwan, Y.-H. WU, National Chung Hsing University., Taiwan, K.-J. CHEN, National Chung Hsing University, Taiwan
10:20 am	A3-3-8 Effect of Excitation Energy on Luminescence Decays in Rare-Earth Doped High Temperature Oxides, M.D. CHAMBERS, D.R. CLARKE, University of California, Santa Barbara	
10:40 am	A3-3-9 Hyperspectral Imaging of Residual Stress Distributions In Thermally Grown Oxides, B. HEEG, J.R. ABBISS, M. DANG, MetroLaser, Inc., D.R. CLARKE, University of California, Santa Barbara	
11:00 am	A3-3-11 High-Temperature Vibration Damping Characteristics of Thermal Barrier Coating Systems, A.M. LIMARGA, T.L. DUONG, G. GREGORI, D.R. CLARKE, University of California, Santa Barbara	
11:20 am	A3-3-10 Relationships Between Microstructural Features and Optical Properties of Yttria-Stabilized Zirconia Plasma-Sprayed Coatings, E.D. MEILLOT, Cea Le Ripault, France	
		Tutorial: Art & Skills of Manuscript Preparation 12:00-1:15 pm

Thursday Morning, April 26, 2007

	Hard Coatings and Vapor Deposition Technology Room: Golden West - Session B6-1 Hard and Multifunctional Nano-Structured Coatings Moderators: P.H. Mayrhofer, Montanuniversität Leoben, J.J. Moore, Colorado School of Mines, M. Stüber, Forschungszentrum Karlsruhe	Carbon and Nitride Materials: Synthesis-Structure-Property Relationships Room: Sunset - Session D2-2 Diamond and Diamond-Like Carbon Materials Moderators: H.J. Scheibe, Fraunhofer Inst. for Matl. and Beam Tech. Y. Koga, Natl. Institute of Advanced Industrial Science and Technology
8:00 am		D2-2-1 Invited Laser Micro and Nanoprocessing of Diamond and Diamond-Like Carbon Films, V. KONONENKO, T. KONONENKO, S. PIMENOV, M. KOMLENOK, V. KONOV, General Physics Institute, Russia
8:20 am		Invited talk continued.
8:40 am	B6-1-3 The Origin of Superhardness in nc-TiN/a-Si_3N_4 Nanocomposites, S. VEPREK, Technical University Munich, Germany, C. STAMPFL, The University of Sydney, Australia, A.S. ARGON, Massachusetts Institute of Technology, R.F. ZHANG, M.G.J. VEPREK-HEIJMAN, Technical University Munich, Germany	D2-2-3 Comparative Studies of Influence of Acetylene to Argon Flow Rate Ratios on Amorphous Carbon Films Produced on Steel Substrates by Plasma Immersion Ion Implantation and Deposition, M. XU, Shanghai Jiao Tong Univ. & City Univ. o f HK X. CAI, Shanghai Jiao Tong Univ., J. ZHAO, Southwest Inst. of Physics, Q. CHEN, Shanghai Jiao Tong Univ. HK, P.K. CHU, City Univ. of HK
9:00 am	B6-1-4 Metastable Phase Selection and Spinodal Decomposition in $Ti_{1-x}Si_xN_y$ System Studied by ab Initio Thermodynamic Modeling: A Comparison with the TiN/CrN-AlN System, R.F. ZHANG, S. VEPREK, Technical University Munich, Germany	D2-2-4 Successful CVD Diamond Integration with GaN for High Power Electronics Applications, F. FAILI, C. ENGDAHL, E. FRANCIS, Crystallume
9:20 am	B6-1-5 Ti-Si-C Thin Films Deposited by Magnetron Sputtering from a Ti_3SiC_2 Target, P. EKLUND, J. FRODELIUS, M. BECKERS, Linköping University, Sweden, O. WILHELMSSON, U. JANSSON, Uppsala University, Sweden, H. HÖGBERG, L. HULTMAN, Linköping University, Sweden	D2-2-5 The Electrical Properties of Amorphous Carbon at High Electric Field Using the Sandwich and Coplanar Structure, Y. MIYAJIMA, J.M. SHANNON, S.J. HENLEY, D.C. COX, S.R.P. SILVA, University of Surrey, United Kingdom
9:40 am	B6-1-6 Room Temperature Deposition and Characterization of Hard Ti(X)N (X= Y, Si) Nanostructured Composite Films, R ESCOBAR GALINDO, Inst. de Ciencia de Matl. de Madrid, Spain, J.L. ENDRINO, Lawrence Berkeley NL, O. SANCHEZ, Insti. de Ciencia de Matls. de Madrid, Spain, J.F. MARCO, Insti. de Quimica-Fisica Rocasolano CSIC, Spain, A. ANDERS, Lawrence Berkeley NL, J.M. ALBELLA, Instituto de Ciencia de Materiales de Madrid, Spain	D2-2-6 Structure, Electronic Characterisation and Applications of Nanostructured Carbon Thin Films, J.D. CAREY, S.J. HENLEY, S.R.P. SILVA, University of Surrey, United Kingdom
10:00 am	B6-1-7 Characterisation of Hard Ti-Si-B Coatings Deposited by Pulsed Unbalanced Magnetron Sputtering, M. AUDRONIS, A. LEYLAND, A. MATTHEWS, University of Sheffield, United Kingdom	D2-2-7 Invited Anti-Inflammatory, Antiallergic and Anticancerogenic Properties of NCD, K. MITURA, S. MITURA, Technical University of Lodz, Poland
10:20 am	B6-1-8 Improvement of the Cutting Performance of TiSiN Coated Cemented Carbide-Tools, T. ISHIKAWA, F. FUJII, Hitachi Tool Engineering, Ltd., Japan	Invited talk continued.
10:40 am	B6-1-9 Mechanical Property and Cutting Test of Multilayer Coating System with Si Containing Layers, K. YAMAMOTO, S. KUJIME, Kobe Steel Ltd., Japan	D2-2-9 Low-Friction Diamond-Like-Carbon (DLC)-Layers for Humid Environments, W. TILLMANN, E. VOGLI, F. HOFFMANN, University of Dortmund, Germany
11:00 am	B6-1-10 Comparative Study of Nanocomposite Ti-B-C, Ti-B-C-N, and Ti-B-C-N-Si Films Deposited by Unbalanced Magnetron Sputtering, I.W. PARK, Advanced Coatings & Surface Engineering Laboratory (ACSEL), J.J. MOORE, B. MISHRA, Colorado School of Mines, A.A. VOEVODIN, Air Force Research Laboratory, K.H. KIM, Pusan National University, Korea, E.A. LEVASHOV, Moscow State Institute of Steel and Alloys, Russia	D2-2-11 Deformation Behaviour of DLC Coatings on (111) Silicon Substrates, A.J. HAQ, University of New South Wales, Australia, P.R. MUNROE, M. HOFFMAN, New South Wales, Australia, P.J. MARTIN, A. BENDAVID, CSIRO Industrial Physics, Australia
11:20 am	B6-1-11 Hard Tribological Ti-(Al,Cr,Si)-(B,N) Films with Enhanced Thermal Stability, Corrosion- and Oxidation-Resistance, D.V. SHTANSKY, PH.V. KIRYUKHANTSEV-KORNEEV, A.N. SHEVEIKO, A.E. KUTYREV, M.I. PETRZHIK, E.A. LEVASHOV, Moscow State Institute of Steel and Alloys, Russia	D2-2-10 Effect of Residual Stress in P Doped Microcrystalline Silicon Carbide (mc-SiC) Films Grown by Hot-Wire Chemical Vapor Deposition (HWCVD), B.P. SWAIN, University of Cape Town, South Africa

Thursday Morning, April 26, 2007

	Tribology and Mechanical Behavior of Coatings and Thin Films Room: California - Session E2-3 Mechanical Properties and Adhesion Moderators: Y.T. Cheng, Purdue University, N.M. Jennett, National Physical Laboratory, M.M. Stack, University of Strathclyde	Applications, Manufacturing, and Equipment Room: Royal Palm 4-6 - Session G4/E4 Tribological Study of Coatings for Green Manufacturing and Dry Machining Moderators: A. Sanz, SKF Engineering & Research Center, S. Dixit, Plasma Technology, Inc.
8:00 am	E2-3-1 Invited Exploiting Quantitative In-Situ Nanoindentation to Investigate the Mechanisms of Plastic Deformation in Thin Films, E.A. STACH, Purdue University, A.M. MINOR, Lawrence Berkeley National Laboratory, O. WARREN, S.A. SYED-ASIF, Z. SHAN, Hysitron, Inc., M. JIN, J.W. MORRIS, University of California, Berkeley	G4/E4-1 TiAlCN/VCN Nanoscale Multilayer PVD Coatings Deposited by the Combined High Power Impulse Magnetron Sputtering / Unbalanced Magnetron Sputtering, (HIPIMS/UBM) Technology Dedicated to Machining of Al and Ti Alloys, P.EH. HOVSEPIAN, A.P. EHIASARIAN, Sheffield Hallam University, United Kingdom, I. PETROV, Frederick-Seitz Materials Research
8:20 am	Invited talk continued.	G4/E4-2 Invited A Review of the Developments in PVD Coatings for Machining High Temperature Alloys, A.T. SANTHANAM, Kennametal Inc.
8:40 am	E2-3-3 Recent Advances in Nanomechanical/Nanotribological Testing of Ultra-Thin Films for Stiction Control in MEMS Devices, B.D. BEAKE, Micro Materials Ltd, United Kingdom, G. WILSON, B. SHI, J. SULLIVAN, Aston University, United Kingdom, K.E. COOKE, Teer Coatings, United Kingdom, S.R. GOODES, Micro Materials Ltd, United Kingdom	Invited talk continued.
9:00 am	E2-3-4 True Hardness Measurement by Nanoindentation using a Single Sharp Indenter, J.-Y. KIM, S.-K KANG, Seoul National University, Korea, J.-I. JANG, Hanyang University, Korea, D. KWON, Seoul National University, Korea	G4/E4-4 Application of Nano Multilayered PVD Coatings, M. ARNDT, H. WESTPHAL, Kennametal Technologies GmbH, Germany, R.M. PENICH, Kennametal Inc., USA, H. VAN DEN BERG, Kennametal Technologies GmbH, Germany
9:20 am	E2-3-5 Atomic Force Microscope Investigation on Static Versus Dynamic Nanotribological Evaluation of Metal-ZrN and ZrN Thin Films, D.M. MIHUTE, University of Nebraska - Lincoln, S.M. AOUADI, Southern Illinois University Carbondale, J.A. TURNER, S.L. ROHDE, University Nebraska - Linclon	G4/E4-5 Tribological Properties Investigation on Coated and Thermal Treated Surface used for Dry Machining, L. WANG, X. NIE, University of Windsor, Canada, C. YAO, DaimlerChrysler Corporation Technology Center
9:40 am	E2-3-7 Limits of Measurement and Analysing Techniques for the Determination of Mechanical Coating Parameters - a) classical indentation and b) indenters of the next generation, N. SCHWARZER, Saxonian Institute of Surface Mechanics SIO, Germany	G4/E4-6 Tribological and Wetting Behaviour of a Nanolaminated PVD Tool Coating with a Nanostructured Top Layer in Interaction with a Biodegradable Lubricant for Green Metal Forming, C. WARNKE, Surface Eingeering Institute, Germany, P. IMMICH, C. PINERO, R. NICKEL, T. MASSMANN, F. KLOCKE, C. ZEPPENFELD, K. BOBZIN, RWTH Aachen University, Germany
10:00 am	E2-3-8 FEM Simulation of the Effect of Surface Roughness on Nanoindentation of Thin Films With a Spherical Indenter, C. WALTER, T. ANTRETTER, R. DANIEL, University of Leoben, Austria, C. MITTERER, Montanuniversität Leoben, Austria	G4/E4-7 Development of Nano-Columnar Carbon Coating for Dry Micro-Forming, T.A. AIZAWA, E.I. IWAMURA, University of Toronto, Canada, K.I. ITOH, Seki-Corporation, Co., Ltd., Japan
10:20 am	E2-3-9 On the Problem of Properly Designed FE-Models for Mechanical Contact Problems on Layered Materials, M. HERRMANN, R. UNGER, A. MEYER, F. MOLNAR, F. RICHTER, Chemnitz University of Technology, Germany, N. SCHWARZER, Saxonian Institute of Surface Mechanics, Germany	G4/E4-8 Mechanical Properties and Tool Performance of Si Doped TiAlN Coatings Deposited by Arc Ion Plating, M.C. KANG, D.H. KWON, Pusan National University, Korea, K.I. MOON, Korea Institute of Industrial Technology, Korea, M.S. PARK, Y.H JUN, J&L Tech. Co., Ltd., Korea
10:40 am	E2-3-10 Understanding Automotive Coatings Behaviour using Nanoindentation, R. RASTEGAR TOHID, S.J. BULL, Newcastle University, United Kingdom	G4/E4-9 Development of Nano-Textured Self-Lubricating Adaptive Films, S.M. AOUADI, C. BRADLEY, L. BRANDON, P. BASNYAT, R. ZAKERI, P. KOHLI, Southern Illinois University Carbondale
11:00 am	E2-3-11 Deviations in Determining Coatings' and Other Materials' Mechanical Properties, when Considering Different Indenter Tip Geometries and Calibration Procedures, K.-D. BOUZAKIS, N. MICHAILIDIS, G. SKORDARIS, Aristoteles University of Thessaloniki, Greece	G4/E4-10 Microstructure and Vacuum Sliding Behaviour of Thermally Oxidized Ti-6Al-4V Alloy, A. EDRISY, M.M. YAZDANIAN, A.T. ALPAS, University of Windsor, Canada
	2008 Planning Meeting 12:15-1:15 pm	

Thursday Morning, April 26, 2007

New Horizons in Coatings and Thin Films
Room: Tiki Pavilion - Session H2
High Power Impulse Magnetron Sputtering (HIPIMS)
Moderators: A.P. Ehiasarian, Sheffield Hallam University,
K. Marchev, P&G - The Gillette Company

8:00 am	H2-1 Invited Influencing Parameters for Thin Film Deposition in High-Power Impulse Magnetron Sputtering Processes, S. KONSTANTINIDIS, J.P. DAUCHOT, M. HECQ, Materia Nova, Belgium	
8:20 am	Invited talk continued.	
8:40 am	H2-4 Efficiency of High-Power Pulsed Magnetron Sputtering, J. VLCEK, K. BURCALOVA, P. KUDLACEK, University of West Bohemia, Czech Republic	
9:00 am	H2-5 Modulated Pulse Power Technology for Protective and Tribological Coatings, R. CHISTYAKOV, Zond, Inc., B. ABRAHAM, Zpulser, LLC, W.D. SPROUL, Reactive Sputtering Consulting, LLC, J.J. MOORE, J. LIN, I. PARK, Colorado School of Mines	
9:20 am	Break	
9:40 am	H2-7 CrN/NbN Nanoscale Multilayer Coatings with Enhanced Corrosion Resistance Achieved by HIPIMS Interface Pre-treatment, A.P. EHIASARIAN, C. REINHARD, P.EH. HOVSEPIAN, Sheffield Hallam University, United Kingdom	
10:00 am	H2-8 Growth of ZrO_2 Films by High Power Pulsed Magnetron Sputtering, K. SARAKINOS, C. KLEVER, J. ALAMI, M. WUTTIG, RWTH Aachen University, Germany	
10:20 am	H2-9 HIPIMS Plasma Impedance Characterization, D. LUNDIN, Linköping University, Sweden, S.R. KIRKPATRICK, S.L. ROHDE, University of Nebraska-Lincoln, U. HELMERSSON, Linköping University	
10:40 am	H2-10 Invited New Process Latitude in the Plasma Technology by HIPIMS/HPPMS using High Peak Pulse Power Supply in Unipolar, Bipolar, and DC with Additional Pulse-Combined Mode, G. MARK, MELEC GmbH, Germany, M. VERGÖHL, R. BANDORF, P. GIESEL, Fraunhofer Institute for Surface Engineering and Thin Films (IST), Germany, T. WALLENDORF, IFU GmbH, Germany	
11:00 am	Invited talk continued.	

Thursday Afternoon, April 26, 2007

	Coatings for Use at High Temperature Room: Sunrise - Session A3-4 Thermal Barrier Coatings Moderators: R. Mevrel, ONERA, C.G. Levi, University of California, Santa Barbara, K. Murphy, Howmet Castings	Hard Coatings and Vapor Deposition Technology Room: Pacific - Session B6-2 Hard and Multifunctional Nano-Structured Coatings Moderators: P.H. Mayrhofer, Montanuniversität Leoben, J.J. Moore, Colorado School of Mines, M. Stüber, Forschungszentrum Karlsruhe
1:30 pm	A3-4-1 Invited New Hybrid Processes to Deposit Advanced Gas Phase Thermal Barrier and Bond Coatings for Turbine Applications, G. ABADIAS, Universite de Poitiers, France, W. BEELE, Sulzer Metco Coatings BV, Netherlands, A. REFKE, Sulzer Metco (AG), Switzerland	B6-2-1 Invited Thermal Stability of TiAlN Based Nanoscale Multilayered Coatings, J.K. PARK, Y.J. BAIK, Korea Institute of Science and Technology, Korea
1:50 pm	Invited talk continued.	Invited talk continued.
2:10 pm	A3-4-3 The Deposition of Thermal Barrier Coating Systems onto Gas Turbine Engine Components by Directed Vapor Deposition, D. HASS, B. MUSYNSKI, B. SLAWSKI, C. ELZEY, Vapor Technologies International	B6-2-4 Tribological Study of Nanocomposite PVD Coatings, J.A. GARCIA, Asociacion de la Industria Navarra (AIN), Spain, I. AZKONA, METAL ESTALKI, S. L., Spain, M.J. DIAZ, R. MARTINEZ, R.J. RODRIGUEZ, Asociacion de la Industria Navarra (AIN), Spain
2:30 pm	A3-4-4 Zircoat-HP^TM : A New High Purity Segmented YSZ Coating, T.A. TAYLOR, N. HITCHMAN, A. FEUERSTEIN, A. BOLCAVAGE, Praxair Surface Technologies	B6-2-5 Effect of Copper Addition on the Temperature Dependent Reciprocating Wear Behaviour of CrN Coatings, M. URGEN, V. EZIRMIK, K. KAZMANLI, E. SENEL, Istanbul Technical University, Turkey, A. ERDEMIR, Argonne National Laboratory
2:50 pm	A3-4-5 The Effectiveness of Oxidation Barriers for the Application of Lanthanum Zirconate as EB-PVD TBC on Laves-Phase Strengthened NiAl, K. BOBZIN, E. LUGSCHEIDER, R. NICKEL, N. BAGCIVAN, RWTH Aachen University, Germany	B6-2-6 Anti-Wear and Anti-Bacteria Behaviors of TaN-Cu Nanocomposite Thin Films With and Without Annealing, J.H. HSIEH, M.K. CHENG, Y.G. CHANG, S.H. CHEN, Mingchi University of Technology, Taiwan
3:10 pm	BREAK	B6-2-8 Adjusted Thin Layers for the Electromagnetic Sheet Metal Forming Die, W. TILLMANN, E. VOGLI, S. MOHAPATRA, University of Dortmund, Germany
3:30 pm	A3-4-7 Pulsed Electron Beam Treatment of MCrAlY Bondcoats for EB PVD TBC Systems Part 1 of 2: Coating Production, A. WEISENBURGER, Forschung Karlsruhe GmbH, Germany, G. RIZZI, A. SCRIVANI, Turbocoating, Italy, G. MUELLER, Forschung Karlsruhe GmbH, Germany, J.R. NICHOLLS, Cranfield University, UK	B6-2-9 Nanostructured SiC by Chemical Vapor Deposition and Nanoparticle Impaction, A. BEABER, L. QI, J. HAFIZ, W.W. GERBERICH, S.L. GIRSHICK, P.H. MCMURRY, J.V.R. HEBERLEIN, University of Minnesota
3:50 pm	A3-4-8 Pulsed Electron Beam Treatment of MCrAlY Bondcoats for EB PVD TBC Systems Part 2 of 2: Cyclic Oxidation of the Coatings, R.G. WELLMAN, Cranfield Univ., UK, G. RIZZI, Turbocoating, Italy, A. WEISENBURGER, Forschung Karlsruhe GmbH, Germany, F.H. TENAILLEAU, J.R. NICHOLLS, Cranfield Univ., UK	B6-2-10 Effects of Superperiod, Interdiffusion, Orientation, and Phase/Polymorph Distribution on the Mechanical Properties of Nanostructured TiN/TaN Superlattices, N. PATEL, Carnegie Mellon University, A. INSPEKTOR, Kennametal Inc., P. SALVADOR, Carnegie Mellon University
4:10 pm	A3-4-9 Low Conductivity Plasma Sprayed Thermal Barrier Coating using Hollow PSZ Spheres Correlation Between Thermophysical Properties and Microstructure, G. BERTRAND, P. BERTRAND, P. ROY, LERMPS, France, C. RIO, ONERA, France	B6-2-7 Structural and Mechanical Properties of Nanocrystalline TiN Passivation Layer on TiNi Shape Memory Thin Films, A. KUMAR, R. CHANDRA, D. KAUR, IIT Roorkee, India
4:30 pm	A3-4-10 Deposition of Thick Oxide Layers from Solutions in a Low Pressure Plasma Reactor, F. ROUSSEAU, S. AWAMAT, D. MORVAN, J. AMOUROUX, Universite Pierre et Marie Curie, France, R. MEVREL, ONERA, France	
4:50 pm	A3-4-11 Thermal Stability of Solution Precursor Plasma Spray and Air Plasma Spray Thermal Barrier Coatings, M. GELL, E.H. JORDAN, University of Connecticut, E. CAO, Gillette Corporation, D. CHEN, University of Connecticut	
5:10 pm	A3-4-12 Improving the Erosion Resistance of Plasma-Sprayed Zirconia Thermal Barrier Coatings by Laser Glazing, P.-C. TSAI, J.-H. LEE, National Formosa University, Taiwan, C.-L. CHANG, Mingdao University, Taiwan	

Thursday Afternoon, April 26, 2007

	Optical Thin Films Room: Tiki Pavilion - Session C1 Recent Advances in Optical Thin Films Moderators: K. Robbie, Queen's University, E. Kurman, JDS Uniphase	Carbon and Nitride Materials: Synthesis-Structure-Property Relationships Room: Sunset - Session D3 Carbon Nanotubes and Related Materials Moderators: S.R.P. Silva, University of Surrey, M. Chhowalla, Rutgers University, B.K. Tay, Nanyang Technological University
1:30 pm	C1-1 Aerosol Assisted CVD Synthesis of Vanadium Oxides Thin Films, C. PICCIRILLO, I.P. PARKIN, R. BINIONS, University College london, United Kingdom	D3-1 Invited Nanelectronics using Carbon Nanotubes, G. AMARATUNGA, Cambridge University, United Kingdom
1:50 pm	C1-2 Effect of Hydrogen on Reactive Sputtering of Transparent Oxide Films, V. ONDOK, J. MUSIL, University of West Bohemia, Czech Republic	Invited talk continued.
2:10 pm	C1-3 Invited Production Scale Deposition of Multilayer Film Structures for Birefringent Optical Components, M.K. TILSCH, K. HENDRIX, K. TAN, D. SHEMO, R. BRADLEY, R. ERZ, J. BUTH, JDSU	D3-3 Invited Novel Displays and Electronics with Carbon Nanotube, I.T. HAN, Y.W. JIN, J.M. KIM, Samsung Advanced Institute of Technology, Korea
2:30 pm	Invited talk continued.	Invited talk continued.
2:50 pm	C1-5 Structural Analysis of Chemical Bath Deposited Cu(InAl)Se2 Thin Films, B. KAVITHA, M. DHANAM, Kongunadu Arts and Science College, India	D3-5 Functionalization of Vertically Aligned Carbon Nanotubes via Radio-Frequency Nitrogen Plasma, G. ABBAS, P PAPAKONSTANTINOU, S. IYER, University of Ulster, United Kingdom, I. KIRKMAN, SERC, Daresbury Laboratory, United Kingdom, L.C. CHEN, National Taiwan University, Taiwan
3:10 pm	C1-6 Effect of Substrate Temperatures on the Properties of Carbon-Coated Optical Fibers Prepared by Plasma Enhanced Chemical Vapor Deposition Method, H.-C. LIN, Y.-M. CHOU, S.-T. SHIUE, National Chung Hsing University, Taiwan	D3-6 Influence of CO_2 / N_2 on the Growth of Carbon Nanotubes in Methane by using Thermal Chemical Vapor Deposition, M. CHEN, H.W. YU, Ming-Hsin University, Taiwan
3:30 pm	C1-7 Photocatalytic Behaviour of Nanocrystalline TiO_2 Films Sputtered at Low Temperature, J. SICHA, D. HERMAN, J. MUSIL, University of West Bohemia, Czech Republic	D3-10 Microfabrication of Carbon Nanotubes on Microfluidic Channels, H. WU, D. MISHRA, J. TING, S. CHEN, National Cheng Kung University, Taiwan
3:50 pm	C1-8 Invited Real Time Spectroscopic Ellipsometry for Thin Film Photovoltaics, R.W. COLLINS, J. LI, N.J. PODRAZA, D. SAINJU, J.A. STOKE, University of Toledo	
4:10 pm	Invited talk continued.	
4:30 pm	C1-10 Ellipsometer Analysis in the n-k Plane, F.K. URBAN, D. BARTON, Florida International University	

Thursday Afternoon, April 26, 2007

	Tribology & Mechanical Behavior of Coatings & Thin Films Room: California - Session E3 Tribology of Diamond, Diamond-Like and Related Carbon Coatings/Thin Films Moderators: T.W. Scharf, The University of North Texas, K. Miyoshi, NASA Glenn Research Center	Applications, Manufacturing, and Equipment Room: Royal Palm 4-6 - Session G2-1 Coatings and Automotive Applications Moderators: E. Bergmann, Ecole d'Ingenieurs de Geneva, A. Ravagni, Balzers AG
1:30 pm	E3-1 The Role of Substrate Deformation on the Tribological Behavior of Diamond-like Nanocomposite Coated Metallic Substrates, J.M. JUNGK, S.V. PRASAD, J.R. MICHAEL, Sandia National Laboratories	G2-1-1 Invited Coating Technology for the Automotive Industry, Present and Future, H. BRÄNDLE, Oerlikon Balzers Coating AG, Liechtenstein
1:50 pm	E3-3 Invited Tribology of DLC : Industrial Applications and Scientific Aspects, H. OHARA, Nippon ITF, Inc., Japan	Invited talk continued.
2:10 pm	Invited talk continued.	G2-1-3 Invited Development of Advanced Coated Bearings, X.B. ZHOU, A. SANZ, SKF Engineering & Research Company, The Netherlands, S. IOANNIDES, SKF Engineering & Research Company, Netherlands
2:30 pm	E3-5 Tribological Investigation of Diamond-Like Carbon Films Containing Nanoclusters of Indium, Deposited by Femtosecond Pulsed Laser Ablation, J. FONTAINE, Ecole Centrale de Lyon, France, F. GARRELIE, C. DONNET, C. PAREIGE, Université Jean Monnet, France, M. BELIN, T. LE MOGNE, Ecole Centrale de Lyon, France, F. ROGEMOND, Université Jean Monnet, France	Invited talk continued.
2:50 pm	E3-7 Characterization of DLC Thin Film and Evaluation of Machining Forces using Coated Tools in Turning of Al-Si Alloys, G.R. SANTOS, Balzers Balinit do Brasil, Brazil, F.A. AMORIM, Pontifical Catholic Univ. of Parana, Brazil, D. COSTA, Federal Univ. of Parana, Brazil, R.D. TORRES, Pontifical Catholic Univ. of Parana, Brazil	G2-1-6 Elastic and Plastic Deformation Behaviour of Diamond-Like Carbon Coatings, J. SCHAUFLER, K. DURST, M. GOEKEN, Friedrich Alexander University, Germany, O.K. MASSLER, Oerlikon Balzers Coating AG, Liechtenstein
3:10 pm	E3-8 Effect of Counterpart and Substrate Materials on Tribological Properties of DLC Film for Space Applications, K. MATSUMOTO, Japan Aerospace Exploration Agency, Japan, M. BELIN, J. FONTAINE, T. LE MOGNE, Ecole Centrale de Lyon, France	G2-1-7 Invited Enhancing the Performance of Automotive Components with Nanocomposite Tribological Coatings, G.L. DOLL, R.D. EVANS, The Timken Company
3:30 pm	E3-9 Friction-Induced Gas Desorption on Hydrogenated Amorphous Carbon Films, A. RUSANOV, J. FONTAINE, T. LE MOGNE, Ecole Centrale de Lyon, France, R. NEVSHUPA, Bauman Institute, Russia, J.M. MARTIN, Ecole Centrale de Lyon, France	Invited talk continued.
3:50 pm	E3-11 Effect of Hydrogen Content on Tribological Behaviour of DLC Coatings Under Fretting Mode I at Room and High Temperature, T. VAN DER DONCK, S. ACHANTA, W.Z. EDDINE, M. MUCHLADO, Katholieke Universiteit Leuven, Belgium, N.J.M. CARVALHO, Bekaert Advanced Coatings, Belgium, J.-P. CELIS, Katholieke Universiteit Leuven, Belgium, V. LIBERMN, Bekaert Advanced Coatings	G2-1-9 Invited The Development of Hydrogen-Free DLC-Coated Valve-Lifter, Y. YASUDA, Y. MABUCHI, T. HAMADA, H. IZUMI, Nissan Motor Corporation, Japan
4:10 pm		Invited talk continued.
4:30 pm		G2-1-11 Super-Hard and EGR-Resistant Coatings for Advanced Diesel Engines, K. KAZMANLI, O. KELES, M. URGEN, Istanbul Technical University, Turkey, O.L. ERYILMAZ, A. ERDEMIR, O.O. AJAYI, Argonne National Laboratory
4:50 pm		G2-1-12 Successful Applications of Innovative PVD-CVD Technology in Machining, Forming and Automotive Industry, A. FARINOTTI, C. CARINI, Lafer Spa, Italy
5:10 pm		G2-1-13 Functionality of Coatings in Automotive Applications, O.K. MASSLER, Oerlikon Balzers Coating AG, Liechtenstein

Bioengineered Surfaces and Interfaces
Room: Royal Palm 1-3 - Session TS3
Bioengineered Surfaces and Interfaces
Moderators: S.M. Aouadi, Southern Illinois University, Carbondale, D.V. Shtansky, Moscow State Institute of Steel and Alloys

1:30 pm	TS3-1 Carbon Nanotubes/Hydroxyapatites for Orthopaedic Implant Applications, E. TITUS, G. CABRAL, T. SHOKUHFAR, J.C. MADALENO, J. GRACIO, University of Aveiro, Portugal	
1:50 pm	TS3-2 Experimental and ab-Initio Study of the Mechanical Properties of Hydroxyapatite Thin Films, R. SNYDERS, D. MUSIC, J.M. SCHNEIDER, RWTH Aachen University, Germany	
2:10 pm	TS3-3 Plasma Processing for Inducing Bioactivity in Stainless Steel Orthopaedic Screws, S. KUMAR, R. SMART, D. SIMPSON, University of South Australia	
2:30 pm	TS3-4 Mechanical Properties of Sol-Gel Calcium Titanate Bioceramic Coatings on Titanium, A.V. STANISHEVSKY, S.G. HOLLIDAY, University of Alabama at Birmingham	
2:50 pm	TS3-5 Thick Functionally Graded Composite Coatings for Internal Bone Implants with Enhanced Bio- and Mechanical Compatibility, A.L. YEROKHIN, University of Sheffield, United Kingdom, V.I KALITA, A.G. GNEDOVETS, Institute of Metallurgy RAS, Russia, A. MATTHEWS, University of Sheffield, United Kingdom	
3:10 pm	TS3-7 Invited Nanostructured Diamond and Biphasic Hydroxyapatite Coatings on Ti-6Al-4V Alloys for Biomedical Implants, Y.K. VOHRA, University of Alabama at Birmingham (UAB)	
3:30 pm	Invited talk continued.	
3:50 pm	TS3-9 Biofunctionalization of Amorphous Carbon DLC Films using Mixed He/N_2 DBD Atmospheric Plasma Treatments, J.L. ENDRINO, Lawrence Berkeley NL, M. ALLEN, Syracuse Upstate Medical Univ., P. POOLCHARUANSIN, Lawrence Berkeley NL, J.F. MARCO, Inst. de Quimica-Fisica Rocasolano CSIC, Spain, J.M. ALBELLA, Inst. de Ciencia de Materiales de Madrid, A. ANDERS, Lawrence Berkeley NL	
4:10 pm	TS3-10 Novel Plasma Treated NiTi for Orthopaedic Implantation, K.W.K. YEUNG, K.O. WONG, Y.L. CHAN, The University of Hong Kong, S.L. WU, X.M. LIU, C.Y. CHUNG, P.K. CHU, City University of Hong Kong, W.W. LU, D. CHAN, K.D.K. LUK, K.M.C. CHEUNG, The University of Hong Kong	
4:30 pm	TS3-11 Hemocompatibility of Surface Modified Si Incorporated Diamond-like Carbon Films, R.K. ROY, S.-J. PARK, KIST, Korea, H.W. CHOI, KIST & Seoul National University, Korea, K.-R. LEE, Korea Institute of Science and Technology, Korea, T. HASEBE, Tachikawa Hospital and Keio University, Japan	

Thursday Afternoon Poster Sessions

Coatings for Use at High Temperature
Room: Town & Country - Session AP

Symposium A Poster Session
5:00-7:00 pm (Reception 5:30 pm)

AP-1

A High-Temperature Oxidation Resistance of Novel Si-B-C-N Coatings Prepared by Reactive Magnetron Sputtering, S. HREBEN, J. VLCEK, S. POTOCKY, J. KALAS, P. ZEMAN, K. RUSNAK, University of West Bohemia, Czech Republic, V. PERINA, Academy of Sciences of the Czech Republic, Y. SETSUHARA, Osaka University, Japan

AP-2

Temperature Effects on the Cyclic Oxidation Behavior of Aluminide Coatings on Various Superalloys, J.A. HAYNES, B.A. PINT, Oak Ridge National Laboratory, Y. ZHANG, Tennessee Technological University, K COOLEY, I.G. WRIGHT, Oak Ridge National Laboratory

AP-3

Erosion Wear and Corrosion Behaviors of M2 Steel Arc-Deposited Cr-N-O Double-Layered Coatings, C.-H. HSU, C.-J. HUANG, Y.-D. CHEN, Tatung University, Taiwan

AP-5

The Influence of Aluminum Addition on the Thermal Stability and Microstructure in the Ternary NiPAl Coatings, C.-Y. KANG, J.G. DUH, C.-H. LIN, National Tsing-Hua University, Taiwan

AP-6

Effect of Nitrogen Flow on the Characterizations of Quaternary CrAlSiN Coatings at Elevated Temperature, S.-K. TIEN, National Tsing-Hua Univerisity, Taiwan, Y.Z. TSAI, J.G. DUH, National Tsing-Hua University, Taiwan

AP-8

Microstructures and Oxidation Behavior of Aluminized, Pt-Aluminized HVOF Sprayed CoNiCrAlY Coatings, P.-C. TSAI, National Formosa University, Taiwan, J.-W. LEE, Tung Nan Institute of Technology, Taiwan, C.-L. CHANG, Mingdao University, Taiwan

AP-9

Measuring and Modeling the TBC Damage Kinetics by using Acoustic Emission Analysis, D. RENUSCH, Karl-Winnacker-Institut der DECHEMA e.V., Germany, M. SCHUETZE, Karl-Winnacker-Institut der DECHEMA e.V, Germany

AP-10

Evaluation of Aluminium-Coating on Ferritic Steels by CVD-FBR Technology in Steam Oxidation, F.J. BOLÍVAR, L. SÁNCHEZ, M.P. HIERRO, J.A. TRILLEROS, F.J. PÉREZ, Universidad Complutense de Madrid, Spain

AP-11

Corrosion Behaviors of Cr(N,O)/CrN Multi-layered Coatings by Filtered Cathodic Arc Deposition, W.-Y. HO, C.-L. CHANG, C.-H. SHEN, MingDao University, Taiwan

AP-12

Accuracy of Localized High Temperature Measurements In TBCs Using Luminescence Doping, B. HEEG, MetroLaser, Inc., M. CHAMBERS, University of California, Santa Barbara, T.P. JENKINS, MetroLaser, Inc., D.R. CLARKE, University of California, Santa Barbara

AP-14

A New Approach to Improve SCC Resistance of Austenitic Stainless Steel with a Thin Cr_xN_{1-x} Film, Deposited by Arc Physical Vapor Deposition, W. TILLMANN, E. VOGLI, S. MOHAPATRA, University of Dortmund, Germany

AP-15

Erosion Performance of Abradable Coating Materials, J.R. NICHOLLS, T. ROSE, Cranfield University, United Kingdom, C. SELLARS, D.S. RICKERBY, Rolls-Royce plc., United Kingdom

AP-16

Influence of a Ce Surface Treatment on the Oxidation Behavior of Type 347 Stainless Steel, D. ALMAN, P. JABLONSKI, National Energy Technology Laboratory

AP-19

Degradation of Yttria Stabilized Zirconia Topcoat in Thermal Barrier Coatings by V_2O_5 and P_2O_5, P. MOHAN, Y.H. YUAN, University of Central Florida, V. DESAI, New Mexico State University, Y.H. SOHN, University of Central Florida

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

Symposium B Poster Session
5:00-7:00 pm (Reception 5:30 pm)

BP-2

Microstructure and Mechanical Properties of Ti-Si-C-N Films Synthesized by a Plasma-Enhanced Chemical Vapor Deposition, S. ABRAHAM, K.H. KIM, E.Y. CHOI, Pusan National University, Korea

BP-3

MgO Growth by Liquid Injection Chemical Vapor Deposition: Experiments, Modeling and Simulation, S. THOLLON, CEA, France, M. PONS, INP Grenoble, France, M. MANIN, CEA, France, H. ROUCH, INOPRO, France

BP-4

Energetic Balance and Kinetics for the Decomposition of Supersaturated $Ti_{1-x}Al_xN$, P.H. MAYRHOFER, F.D. FISCHER, Montanuniversität Leoben, Austria, H.J. BÖHM, Vienna University of Technology, Austria, C. MITTERER, Montanuniversität Leoben, Austria, J.M. SCHNEIDER, RWTH Aachen University

BP-5

Pulsed DC Magnetron Sputtered Al_2O_3 Films and Their Hardness, M. SRIDHARAN, A.M. EJSING, J. BOTTIGER, H. BIRKEDAL, University of Aarhus, Denmark

BP-6

Copper Film and Anode Temperature Distribution Measurements in a Vacuum Arc with Tungsten Anode, I.I. BEILIS, A. SHNAIDERMAN, A. SHASHURIN, R.L. BOXMAN, S. GOLDSMITH, Tel-Aviv University, Israel

BP-7

Structural and Magnetic Studies of $La_{2/3}Ca_{1/3}MnO_3/LaNiO_3$ Artificial Superlattices Prepared by rf Magnetron Sputtering, H.-J. LIU, H.-Y. LEE, National Synchrotron Radiation Research Center, Taiwan, C.-W. YU, C.-H. LEE, National Tsing Hua University, Taiwan

BP-8

Magnetic Properties and Nanostructures of Fe Based Alloy Thin Film, G.J. CHEN, L.S. TSENG, P.T. CHIANG, J.S.C. JANG, Y.H. SHIH, I-Shou University, Taiwan

BP-9

Mechanical Properties and Thermal Stability of CrN/AlN Multilayer Thin Film Coatings, J.K. KIM, E.Y. KIM, M.G. KIM, S.Y. LEE, HanKuk Aviation University, Korea

BP-10

Hardness and Residual Stress in Nanocrystalline ZrN Films: Effect of Bias Voltage and Heat Treatment, H.-M. TUNG, J.-H. HUANG, National Tsing Hua University, Taiwan, D.-G. TSAI, C.-F. AI, Institute of Nuclear Energy Research, Atomic Energy Council, Taiwan, G.-P. YU, National Tsing Hua University, Taiwan

BP-11

Structural and Mechanical Properties of Cr(C,O) Thin Films Synthesized by a Cathodic Arc Deposition Process, Y.Y. CHANG, S.-J. YANG, D.-Y. WANG, Mingdao University, Taiwan

BP-12

High Temperature Oxidation Resistance and Electrical Properties of Cr-Al-Si-N Coatings Synthesized by a Cathodic-Arc Deposition Process, Y.Y. CHANG, C.-P. CHANG, D.-Y. WANG, Mingdao University, Taiwan

BP-13

Effect of Sputtering Gas Pressure on Structural, Electrical, and Optical Properties of ZnO:Al Thin Films, T.-Y. TSENG, National Chiao Tung University, Taiwan, S.-N. BAI, Chienkuo Technology University, Taiwan, F.-C. CHUANG, National Chiao-Tung University, Taiwan

BP-14

The Effect of Bombarding Conditions on the Properties of Multifunctional Ti-C-O Thin Films Grown by Magnetron Sputtering, A.C. FERNANDES, P. CARVALHO, L. CUNHA, Minho University, Portugal, PH. GOUDEAU, J.P. RIVIERE, Poitiers University, France, F. VAZ, Universidade do Minho, Portugal

BP-15

Optimization of Magnetic Field Configuration and Erosion Zone Profile in Planar Axisymmetric Magnetron, S. NAVALA, C. COTE, P. JEDRZEJOWSKI,

A. SARKISSIAN, Plasmionique Inc., Canada

BP-16

Effect of Ion Enhance on Ti1-xAlxN Thin Films Deposited by Rf-Reactive Sputtering, Y.-W. LIN, J.-H. HUANG, G.-P. YU, National Tsing Hua University, Taiwan

BP-17

A Comparison of the Performance of Planar and Cylindrical Magnetrons Operating in Pulsed DC and AC Modes, P.J. KELLY, G.T. WEST, Y.N. KOK, Manchester Metropolitan University, United Kingdom, J.W. BRADLEY, I. SWINDELLS, University of Liverpool, United Kingdom, G.C.B. CLARKE, Manchester Metropolitan University, United Kingdom

BP-18

The Properties of Al Doped ZnO/Ag/Al Doped ZnO Multilayer Thin Film Prepared by Facing Targets Sputtering Method, S.M. KIM, B.J. CHO, Kyungwon University, Korea, M.J. KEUM, Center for Advaced Plasma Surface Technology, Korea, H.W. CHOI, H.H. YOON, S.J. PARK, K.H. KIM, Kyungwon University, Korea

BP-19

Mechanical Properties and Thermal Stability of Ultra-Fine bcc Ta and V Coatings, A.F. JANKOWSKI, J.P. HAYES, Lawrence Livermore National Laboratory

BP-20

Microstructure and Electrical Characteristics with Ferroelectric (Ba,Sr)TiO_3 Thin Films and HfO_2 Buffer Layer for the Non-Volatile Memory Application, L.-C. CHANG, Huafan University, Taiwan, C.-C. HO, National Chiao-Tung University, Taiwan

BP-21

Characterization of Cr-Doped TiO_2 Thin Films Prepared by Cathodic Arc Plasma Deposition, M.-H. CHAN, National Chung Hsing University, Taiwan, W.-Y. HO, D.-Y. WANG, Mingdao University, Taiwan, F.-H. LU, National Chung Hsing University, Taiwan

BP-22

Effects of the Inserted-Cr Layer Thickness on Electrical Characteristics of a Novel Sandwich Capacitor, C.-C. HO, B.-S. CHIOU, National Chiao-Tung University, Taiwan, L.-C. CHANG, Huafan University, Taiwan

BP-23

Aluminium Oxide Coatings by Remote Plasma Sputtering, A. PILKINGTON, A.L. YEROKHIN, A. LEYLAND, University of Sheffield, United Kingdom, M.A. BAKER, University of Surrey, United Kingdom, A. MATTHEWS, University of Sheffield, United Kingdom

BP-24

Detaching Mechanism for Mo-Ru Hard Coating on Tungsten Carbide, L.-C. CHANG, Huafan University, Taiwan, Y.-I. CHEN, Ether Precision Inc., J.-W. LEE, Tung Nan Institute of Technology, Taiwan, H.-Y. LIN, Huafan University, Taiwan

BP-25

Influences of Nitrogen Partial Pressures on Structure, Mechanical and Corrosion Properties of TiSiN Coating Synthesized by Cathodic Arc Plasma Evaporation, C.-T. LIN, C.-L. CHANG, W.-Y. HO, D.-Y. WANG, Mingdao University, Taiwan

BP-26

Effect of Glass Substrate Temperature on Electrical Properties of Ga-Doped ZnO Films Prepared by Ion-Plating using DC Arc-Discharge, T. YAMADA, A. MIYAKE, S. KISHIMOTO, H. MAKINO, T. YAMAMOTO, Kochi University of Technology, Japan

BP-27

Microstructural and Mechanical Characterization of Sputtered ZrN-TiB_2 Thin Coatings, O. JIMENEZ, A. MATTHEWS, A. LEYLAND, University of Sheffield, United Kingdom

BP-28

Effects of Nitrogen Partial Pressure on Electrical Properties and Thermal Stability of TiAlN Films by Ion Beam Sputter Deposition, S.-Y. LEE, National Cheng-Kung University, Taiwan, S.-C. WANG, Southern Taiwan University, Taiwan, J.-S. CHEN, J.-L. HUANG, National Cheng-Kung University, Taiwan

BP-29

Corrostion Behavior of Commercial Nanolayered and Multilayers TiAlN Coatings, L.E. GIL, Universidad Nacional Experimental Politecnica (UNEXPO), Venezuela, M.H. STAIA, Universidad Central de Venezuela, Veneauela, E. PUCHI, Universidad Central de Venezuela, S. LISCANO, Universidad Nacional Experimental Politecnica (UNEXPO), Venezuela, E. LE BOURHIS, D. EYIDI, Université de Poitiers, France

BP-30

Reactive ECR-Plasma Sputtering of Aluminium Oxide, A. MATTHEWS, M. AUDRONIS, T. PILKINGTON, A. LEYLAND, University of Sheffield, United Kingdom

BP-31

Corrosion Behavior of PAPVD CrN Coating on Plasma Nitrided AISI H13 Steel, S. LISCANO, L.E. GIL, Universidad Nacional Experimental Politecnica (UNEXPO), Venezuela, M. CRUZ, M.H. STAIA, Universidad Central de Venezuela, O.A. LEÓN, Polytechnic Experimental National University (UNEXPO), Venezuela, E.S. PUCHI-CABRERA, Universidad Central de Venezuela, E. LE BOURHIS, Université de Poitiers, France

BP-32

Thin Films Deposition by PECVD Method for Low- k Materials and Characterization of Their Electrical and Mechanical Properties, I.-S. BAE, S.-J. CHO, J.-H. BOO, Sungkyunkwan University, Korea

BP-34

Effects of sp^3 Contents on the Quality of Amorphous Diamond-Like Carbon by Filter Arc Deposition, Y.-C. CHEN, National Chung Hsing University, Taiwan, K.-W. WENG, MingDao University, Taiwan, S. HAN, National Taichung Institute of Technology, Taiwan, F.S. SHIEU, National Chung Hsing University, Taiwan, H.C. SHIH, National Tsing Hua University, Taiwan

BP-35

The Hardness and Oxidation Behavior of $Ti_{1-x}Al_xN$/VN Nanoscale Multilayered Coatings, J.K. PARK, Y.J. BAIK, Korea Institute of Science and Technology, Korea

BP-36

Effects of Bias Voltage and Temperature on Mechanical Properties of Cr-Si-N Coatings Deposited by a Hybrid System of Arc Ion Plating and Sputtering Techniques, S.J. HEO, J.H. YUN, K.H. KIM, Pusan National University, Korea

BP-37

CrB_2 Coatings Deposited by Inductively Coupled Plasma - Assisted DC Magnetron Sputtering, H.S. CHOI, B. PARK, J.J. LEE, Seoul National University, Korea

BP-38

Effect of Microstructures on Electrical and Photoluminescent Properties of Nanocrystalline Ta-Si-N Thin Films by Magnetron Reactive Co-Sputtering, C.K. CHUNG, T.S. CHEN, C.C. PENG, B.H. WU, C.W. LAI, National Cheng Kung University, Taiwan

BP-39

Thermal Stability of (Ti,Cr,Al)N/(Al,Si)N Nano-Multilayered Films Deposited by Cathodic Arc Ion Plating System, N. FUKUMOTO, Keio University Japan, H. EZURA, K. ICHIJO, Keio University, Japan, K. YAMAMOTO, Kobe Steel Ltd., Japan, A. HOTTA, T. SUZUKI, Keio University, Japan

BP-40

Effect of Lamellae Thickness on Characteristics and Performance of TiSiN/TiAlN Multilayers Coating Synthesized by Cathodic Arc Plasma Evaporation, C.-L. CHANG, W.-C. CHEN, W.-Y. HO, D-Y. WANG, Mingdao University, Taiwan

BP-45

LARC and CERC Nanocomposite Coatings for High-Performance Metal Cutting Applications, O. CODDET, M. MORSTEIN, A LUEMKEMANN, T. CSELLE, Platit AG, Switzerland, B. TORP, Platit Scandinavia, Denmark

BP-47

Evaluation of the Effect of TiN and ZrN Coating on the Corrosion Resistance of the Aluminium 7075T-6 Alloy, L. JIMENEZ, L.E. GIL, Polytechnic Experimental National University (UNEXPO), Venezuela, M.H. STAIA, E.S. PUCHI-CABRERA, Universidad Central de Venezuela, E. BOURHIS, D. EYIDI, Université de Poitiers, France, O.A. LEÓN, Polytechnic Experimental National University (UNEXPO), Venezuela

BP-48

Raman Spectra and Structural Analysis of TiC_xO_y Thin Films: Effect of Preparation Conditions, A.C. FERNANDES, C. MOURA, P. CARVALHO, Minho University, Portugal, PH. GOUDEAU, J.P. RIVIERE, Université de Poitiers, France, F. VAZ, Minho University, Portugal

BP-49

Improvement on Corrosion Resistance of Mold Steel by (Ti,TiAl)(C,N) Filtered Arc-PVD Coatings, C.-H. HSU, Y.-F. CHEN, C.-Y. LEE, C.-C. LEE, Tatung University, Taiwan

BP-50

Mechanical Properties of Electroless Ni-P Deposited on Aluminum 7075-T6, E. MORENO, M.H. STAIA, E.S. PUCHI-CABRERA, Universidad Central de Venezuela, J. LESAGE, G. MESMACQUE, Université de Lille, France, E. LE BOURHIS, PH. GOUDEAU, Université de Poitiers, France, T. DORADO LOPEZ, A. GOMEZ COEDO, CENIM - CSIC, Spain

BP-52

Low-k Dielectric Organosilicate Thin Film With Nano-Pores, Y.-H. PARK, Research Institute of Industrial Science and Technology, Korea

BP-53

Thermally Activated Superficial and Interfacial Modifications of a VC Coting Deposited by CVD on Ni Substrate, L. MATAMOROS, I.C. GRIGORESCU, A. RUIZ, Universidad Simón Bolívar, Venezuela, D. MOREL, HE-ARC Ingénierie, Switzerland, C. ROJAS, Universidad Central de Venezuela, E. BARRIOS, IUTRC, Venezuela

BP-54

Development of Zirconium Modified Aluminide Coating by CVD in Fluidized Bed Reactor, L. SÁNCHEZ, F.J. BOLÍVAR, M.P. HIERRO, J.A. TRILLEROS, F.J. PÉREZ, Universidad Complutense de Madrid, Spain

BP-55

Evaluation of the Effect of Heat Treatment in Aluminium-Hafmium Coating Deposited on Ferritic Steels by CVD-FBR Technology, F.J. BOLÍVAR, L. SÁNCHEZ, M.P. HIERRO, J.A. TRILLEROS, F.J. PÉREZ, Universidad Complutense de Madrid, Spain

BP-56

The Influence of the Mechanical Properties of PVD Coated Cutting Tools on Milling and Turning Performance, K.-D. BOUZAKIS, J. ANASTOPOULOS, N. MICHAILIDIS, Aristoteles University of Thessaloniki, Greece

BP-57

Production and Characterization of (Ti,Mg)N Nano-Composite Coatings, K. KAZMANLI, B.S. DEMIREL, Istanbul Technical University, Turkey

BP-59

Mechanical and Tribological Properties of Hard SiCN Coatings Produced by PECVD, V.I. IVASHCHENKO, L.A. IVASHCHENKO, M.V. USHAKOV, S.M. DUB, A.V. VASIN, P.L. SKRYNSKY, NAS of Ukraine

BP-60

Deposition of SiOCN and Si-C:H Films in an Industrial Pulsed dc PACVD System, C. FORSICH, D. HEIM, University of Applied Sciences Weis, Austria, T. MUELLER, Rubig GmbH&CoKG Weis, Austria

Optical Thin Films
Room: Town & Country - Session CP

Symposium C Poster Session
5:00-7:00 pm (Reception 5:30 pm)

CP-1

In-Situ Spectroscopic Ellipsometry for Perylene-3, 4, 9, 10-Tetracarboxylic Dianhydride/Copper Phthalocyanine in Organic Molecular Beam Deposition, K. SEO, H. COOPER, C. BONNER, Norfolk State University

CP-2

Second Harmonic Generation in Periodically Poled $LiNbO_3$ Waveguides, S.W. KWON, Hankuk Aviation University, Korea, W.S. YANG, W.K. KIM, H.M. LEE, Korea Electronics Technology Institute, Korea, Y.S. SONG, Hankuk Aviation University, Korea, B.Y. KIM, University of Incheon, Korea, D.Y. LEE, Daelim College of Technology, Korea

CP-3

Effects of MPII-Implanted Titanium on the Electrochromic Properties of Tungsten Trioxide Film, K.-W. WENG, Mingdao University, Taiwan, S. HAN, National Taichung Institute of Technology, Taiwan, Y.-C. CHEN, National Tsing Hua University, Taiwan, T.-N. YUAN, National Taichung Institute of Technology, Taiwan, D.-Y. WANG, Mingdao University, Taiwan

CP-4

The Characterization of Nano-Copper Oxide Thin Films, H.-Y. CHEN, National Kaohsiung University of Applied Sciences, Taiwan, S. HAN, National Taichung Institute of Technology, Taiwan

CP-5

Photo-Induced Hydrophilicity of $TiO_{2-x}N_x$ Coated PET Plates, H.-Y. CHOU, E.-K. LEE, J.-W. YOU, Ta-Hwa Institute of Technology, Taiwan, S.-S. YU, National Chiao Tung University, Taiwan

CP-6

Vanadium Doping in Tungsten Oxide Thin Films Using a Single Target in Reactive DC Magnetron Sputtering Technique: Preliminary Results, M.K. KARUPPASAMY, A. SUBRAHMANYAM, Indian Institute of Technology Madras, India

CP-7

Indium Tin Oxide Films Prepared via Wet Chemical Route, M. CREMONA, PUC-Rio, Brazil, S.A.M. LIMA, M.R. DAVOLOS, H.H.S. OLIVEIRA, Instituto de Quimica - UNESP, Brazil, C. LEGNANI, W.G. QUIRINO, R. MACHADO, Inmetro, Brazil, R.M.B. DOS SANTOS, PUC-Rio, Brazil, C.A. ACHETE, Inmetro - Dimat, Brazil

CP-8

Water Permeation Study of Plasma Polymerized TMDSO for Organic Light Emitting Diode Application, Y.X. LIU, X.C. CHANG, Y.S. LEE, J.L. HE, C.-K. LIN, Feng Chia University, Taiwan

CP-9

Microstructure and Physical Properties of Filtration Arc Ion Plated ITO Thin Film, M.S. LEU, J.-J. CHANG, J.-B. WU, Industrial Technology Research Institute, Taiwan, C.-H. HSU, Tatung University, Taiwan

CP-10

Study of Ag Nanoparticles Incorporated SnO_2 Transparent Conducting Films by Photochemical Metal-Organic Deposition, H. KIM, H.-H. PARK, H.-H. PARK, Yonsei University, Korea, H.J. CHANG, Dankook University, Korea, R.H. HILL, Simon Fraser University, Canada

CP-11

Effect of Plasma Post-Treatment on the Photoluminescence Characteristics of Al-doped ZnO Thin Films, H.-S. YUN, S.-H. KIM, S. CHO, N.-S. KIM, K.-D. KIM, S.S. YI, Silla University, Korea

CP-12

Optical Properties and Fabrication of Ga Doped ZnO Nanowires Grown on Si Substrate by TCVD, H.-C. SHIH, National Tsing Hua University, Taiwan, L.-W. CHANG, M.-W. HUANG, F.S. SHIEU, National Chung-Hsing University, Taiwan

CP-14

Optical and Structural Characterization of ZnO-In Thin Films, C.-Y. CHEN, J.-L. HUANG, National Cheng-Kung University, Taiwan, D.-F. LII, Cheng Shiu University, Taiwan, D.R. SAHU, National Cheng-Kung University, Taiwan

CP-15

Transparent Conducting GZO, Pt/GZO, and GZO/Pt/GZO Thin Films, J. TING, J. CHENG, National Cheng Kung University, Taiwan

CP-16

The Properties of ZnO/Cu/ZnO Multilayer Films Before and After Annealing in the Different Atmosphere, D.R. SAHU, J.-L. HUANG, National Cheng-Kung University, Taiwan

CP-17

Application of Mesoporous SiO_2 as Thermal Isolation Layer for Infrared Sensor, S.G. CHOI, T.-J. HA, Yonsei University, Korea, B.-G. YU, Electronics and Telecommunications Research Institute, Korea, H.-H. PARK, Yonsei University, Korea

CP-18

Structural and Optical Properties of V_2O_5 Nano Powder and Thin Films, A. KUMAR, P. SINGH, IIT Roorkee, India, D. KAUR, IITR, Roorkee, India

Carbon and Nitride Materials: Synthesis-Structure-Property Relationships

Room: Town & Country - Session DP

Symposium D Poster Session

5:00-7:00 pm (Reception 5:30 pm)

DP-1

The Effects of Si Interlayer Thickness on the Roughness and Microstructure of the Diamond-Like Carbon Films, J.I. JEONG, J.H. YANG, Y.-H. PARK, Research Institute of Industrial Science & Technology, Korea

DP-2

Substrate Bias Voltage Effect on the Properties of Fluorinated Amorphous Carbon (a-C:F) Films Deposited by Filtered Cathodic Vacuum Arc Plasma System, Y.-C. HSUEH, Y.-H. LIN, H.-C. SHIH, National Tsing Hua University, Taiwan

DP-3

Characterization of Hydrogen-Free Diamond-like Carbon Film for Inverted Top Emission Organic Electro-luminescence Application, D-Y. WANG, F.-K. CHEN, Mingdao University, Taiwan

DP-4

Depth Profiling of Fluorine-Doped Diamond-Like Carbon Films (F-DLC): Localized Fluorine in the Top-Most Thin Layer Can Enhance the Non-Thrombogenic Properties of F-DLC, T. HASEBE, Tachikwa Hospital, Japan, S. NAGASHIMA, Keio University, Japan, A. KAMIJO, The University of Tokyo Hospital, Japan, S. YOHENA, T. YOSHIMURA, T. ISHIMARU, Y. YOSHIMOTO, H. KODAMA, A. HOTTA, Keio University, Japan, K. TAKAHASHI, University of Tokyo Hospital, Japan, T. SUZUKI, Keio University, Japan

DP-6

^{125}Xe Produced from Xenon Atoms Implanted in Amorphous Carbon Thin Films, G.A. VIANA, Universidade Estadual de Campinas, Brazil, R.G.F. GONCALVES, A.S. LEAL, L.O. LADEIRA, M.V.B. PINHEIRO, A. FERLAUTO, R.G. LACERDA, Universidade Federal de Minas Gerais, Brazil, P.F. BARBIERI, F.C. MARQUES, Universidade Estadual de Campinas, Brazil

DP-8

Diamond Synthesis Using high Power Microwave Plasma CVD, Y.T. TAKAMI, Chiba Institute of Technology, Japan

DP-9

Effects of the Substrate Setting Position on Diamond Growth Using Hot Filament CVD, K. WATANABE, Chiba Institute of Technology, Japan

DP-10

The Effect of Nitrogen Addition on the Morphology and Quality of Boron-Doped Diamonds Grown by the Microwave Plasma-Assisted Chemical Vapor Deposition, M. NISHITANI-GAMO, K. IWASAKI, Toyo University, Japan, H. GAMO, Toppan Printing Co., Ltd., Japan, K. NAKAGAWA, Toyo University, Japan, T. ANDO, National Institute for Materials Science (NIMS), Japan

DP-11

Ultra-Fine Patterning of the N-Doped CVD Diamond Films I. -N_2 Addition in the Gas Phase for Nano-Fabrication, H. GAMO, Toppan Printing Co., Ltd., Japan, K. SHIMADA, M. NISHITANI-GAMO, Toyo University, Japan, T. ANDO, National Institute for Materials Science (NIMS), Japan

DP-12

Ultra-Fine Patterning of the N-Doped CVD Diamond Films II. -Electron Beam Lithography-, H. GAMO, N. FUKUGAMI, A. TAMURA, Toppan Printing Co., Ltd., Japan, M. NISHITANI-GAMO, Toyo University, Japan, T. ANDO, National Institute for Materials Science (NIMS), Japan

DP-13

Preparation of CVD Diamond using RF Thermal Plasma, K.O ONIZAWAO, Chiba Institute of Technology, Japan

DP-14

Etching of Graphite in Atomic Hydrogen, a Simple Method for Characterization of Diamond CVD Chambers, F. FAILI, C. ENGDAHL, E. FRANCIS, Crystallume

DP-17

Properties of CN Nanofibers Synthesized by Plasma-Enhanced Chemical Vapor Deposition, J.H. YANG, J.I. JEONG, Research Institute of Industrial Science & Technology, Korea, M.H. YUM, D.H. RYU, S.Y. LEE, W.S. SONG, J.Y. HONG, C.-Y. PARK, Sungkyukwan University, Korea

DP-18

Formation of Beaded Vapor Grown Carbon Nanofiber, J. TING, Y. CHEN, W. WU, National Cheng Kung University, Taiwan

DP-19

Characterization of Amorphous CN_x Films Grown by Electrochemical Deposition Using Acrylonitrile Liquid, H. KIYOTA, Kyushu Tokai University, Japan, H. GAMO, Toppan Printing Co., Ltd., Japan, M. GAMO, Toyo University, Japan, T. ANDO, National Institute for Materials Science (NIMS), Japan

DP-20

Synthesis and Structural Evolution of Boron Nitride Films and Nano-Structures, P.C. HUANG, M.S. WONG, National Dong Hwa University, Taiwan

DP-21

Effects of Silver Content in MWNT Paste on the Carbon Nanotubes Field Emission Back Light Unit Properties, S.F. CHEN, National Taipei University of Technology, Taiwan, L.-K. CHANG, S.-H. LEE, Industrial Technology Research Institute, Taiwan

DP-22

Field Emission Properties of Carbon Nanotubes Grown on a Conical Tungsten Tip for The Application of a Microfocus X-Ray Tube, C.K. PARK, S.J. YUN, Hanyang University, Korea, S.K. KIM, Korea Atomic Energy Research Institute, Korea, S.H. HEO, S.O. CHO, Korea Advanced Institute of Science and Technology, Korea, J.S. PARK, Hanyang University, Korea

DP-23

Thickness Effect on the Formation of SiC Nanoparticles in Sandwiching Structure of Si/C/Si Multilayers, C.K. CHUNG, B.H. WU, T.S. CHEN, C.C. PENG, C.W. LAI, National Cheng Kung University, Taiwan

DP-24

Mechanical Properties of a-C:H Films Deposited from Butadiene, Butene and Methane Gases by CVD Glow Discharge, M.M.D. MICHEL, UFPR, Brazil, P.J.G. ARAÚJO, C.A. ACHETE, C.M. LEPIENSKI, Universidade Federal de Rio de Janeiro, Brazil

DP-27

Wear Resistance of Ni-P-Diamond Composite Coating, X. HUA, FuZhou University, China

Tribology and Mechanical Behavior of Coatings and Thin Films
Room: Town & Country - Session EP

Symposium E Poster Session
5:00-7:00 pm (Reception 5:30 pm)

EP-1

Effect of CrZrN Thin Film Coating on the Improvement of the Low-Speed Torque Efficiency of a Hydraulic Piston Pump, Y.S. HONG, S.Y. LEE, HanKuk Aviation University, Korea, S.H. KIM, Korea Institute of Machinery and Metals, Korea

EP-2

Mechanical Properties and Coefficient of Friction of Cu/a-C Films, M. LOUDA, J. SUNA, J. MUSIL, University of West Bohemia, Czech Republic

EP-3

Improvement of Bonding Strength to Titanium Surface by Sol-Gel Derived Hybrid Coating of Hydroxyapatite and Titania, K.H. IM, K.N. KIM, K.M. KIM, Y.K. LEE, Yonsei University College of Dentistry, Korea

EP-4

Microstructure and Tribological Properties of Anodic Oxide Layer Formed on AlSi Alloy Produced by Semisolid Processing, A. FORN, J.A. PICAS, M.T. BAILE, Technical University of Catalonia, Spain, E. MARTIN, Technical University of Catalonia,, Spain, V.G. GARCIA, Technical University of Catalonia, Spain

EP-5

Wear Resistance of Multilayered Sol-Gel Silica Coatings on Aluminium SiC Composites, J. RAMS, A.J. LOPEZ, M.D. LOPEZ, A. UREÑA, Rey Juan Carlos University, Spain

EP-7

Tribological Behaviour of Pulsed Magnetron Sputtered CrB_2 Coatings Examined by the Reciprocating Sliding Wear Testing, M. AUDRONIS, Z.M. ROSLI, A. LEYLAND, University of Sheffield, United Kingdom, P.J. KELLY, Manchester Metropolitan University, United Kingdom, A. MATTHEWS, University of Sheffield, United Kingdom

EP-8

The Patterning Characteristic of Cu/80Ni20Cr Layers on PI in FCCL Deposited by Magnetron Sputtering, S.-H. KIM, Korea University of Technology and Education (KUT), Korea

EP-9

Tribological Study of Sol-Gel Thin Solid Films, C. MASSARD, J.L. TAVERDET, S. BROUILLET, Université Jean Monnet, France, C. DONNET, Université Jean Monnet and University Institute of France

EP-10

Surface Characterization and Mechanical Properties of the Electrodeposited Nickel-Phosphorus Binary Coatings, Y.M. SU, F.B. WU, National United University, Taiwan

EP-12

Residual Stress and Nano-Hardness Behavior of the C/Si Nanocomposites, C.K. CHUNG, C.C. PENG, B.H. WU, T.S. CHEN, National Cheng Kung University, Taiwan

EP-13

Fatigue Properties of DLC Coated Stainless Steel, S. HIROTA, Kobe Steel Ltd., Japan, T. MORITA, Kyoto Institute of Technology, Japan, T. KUMAKIRI, Kobe Steel Ltd., Japan

EP-14

Wear Behavior of Unbalanced Magnetron Sputtered Multilayer TiN/TiAlYN Coatings Deposited on Plasma Nitrided Steels, M. FLORES, Universidad de Guadalajara, Mexico, E. DE LAS HERAS, INTI, Mexico, I. RODRIGUEZ, Universidad de Guadalajara, Mexico, P. CORENGIA, INTI, Mexico

EP-16

Statistical Characterization of the Strength of Wear-Resistant Hard Coatings, S. KAMIYA, Nagoya Institute of Technology, Japan, H. HANYU, OSG corporation, Japan, S. AMAKI, H. YANASE, Nagoya Institute of Technology, Japan

E3-6

Cutting Performance of DLC Coated WC Insert for Machining of Aluminum Alloy, K.Y. LEE, Pukyong National University, Korea, C.S. HONG, Pukyong National University, Koea, R. WEI, Southwest Research Institute

EP-19

Mechanical and Tribological Properties of Compositionally Graded CrAlN Films by AC Reactive Magnetron Sputtering, S. PULUGURTHA, D. BHAT, M.H. GORDON, J. SHULTZ, University of Arkansas, M.H. STAIA, Universidad Central de Venezuela, S.V. JOSHI, S. GOVINDARAJAN, ARC-I, India

EP-20

Mechanical Characteristics of AISI 1010 Mild Steel Treated by Plasma Thermochemical Processes, V.H. BAGGIO-SCHEID, A.J. ABDALLA, General-Command of Aerospace Technology, Brazil

EP-21

Effect of Silicon Doping to the Mechanical and Tribological Properties of DLC Thin Films, F. PIGHETTI MANTINI, G. BOLELLI, L. LUSVARGHI, L. PASQUALI, M. MONTORSI, University of Modena and Reggio Emilia, Italy, M. BARLETTA, Universitat degli Studi di Roma Tor Vergata, Italy, A. FARINOTTI, Lafer Spa, Italy

EP-22

Deposition and Tribology of Carbon and Boron Nitride Nanoperiod Multilayer Solid Lubricating Films, S. MIYAKE, T. HASHIZUME, W. KUROSAKA, Nippon Institute of Technology, Japan, M. SAKURAI, M. WANG, Osg Corporation, Japan

EP-23

The Effect of Hydrogen Plasma Treatment on Tribological Behavior of Diamondlike Carbon Films, O.L. ERYILMAZ, A. ERDEMIR, Argonne National Laboratory

Advances in Characterization of Coatings & Thin Films
Room: Town & Country - Session FP

Symposium F Poster Session
5:00-7:00 pm (Reception 5:30 pm)

FP-1

Microstructure and Mechanical Properties of B4C Films Deposited by Ion Beam Sputtering, M.J. ZHOU, Q. LI, The Chinese University of Hong Kong

FP-2

Resistive Switching Behavior in V-$SrZrO_3$ Sputter-Deposited Thin Films, C.H. LAI, National United University, Taiwan, C.Y. LIU, National Kaohsiung University of Applied Sciences, Taiwan, C.H. HSU, National United University, Taiwan, T.-Y. TSENG, National Chiao Tung University, Taiwan

FP-3

Characteristics of Low-k SiOC(-H) Films Deposited at Various Substrate Temperature by PECVD using DMDMS/O_2 Precursor, C.-Y. KIM, S.-H. KIM, R. NAVAMATHAVAN, C.-K. CHOI, Cheju National University, Korea, W. Y. JEUNG, Korea Institute of Science and Technology, Korea

FP-4

Poisson's Ratio and Young's Modulus of Thin Films Measured using X-Ray Diffraction Associating Curvature Technique, H.-Y. CHEN, National Kaohsiung University of Applied Sciences, Taiwan, F.-H. LU, National Chung Hsing University, Taiwan

FP-5

Luminescence Characteristics of Nano $ZnGa_2O_4$ Phosphor by Precipitation Method, H.W. CHOI, K.H. KIM, H.H. YOON, S.J. PARK, J.H. CHA, H.H. KWAK, S.J. KIM, Kyungwon University, Korea

FP-8

Structural Characterisation of Al-Au Based Intermetallic Coatings Prepared by Unbalanced Magnetron Sputtering, I.M. ROSS, J.C. WALKER, University of Sheffield, United Kingdom, M. MOSER, University of Leoben, Austria, P.H. MAYRHOFER, Montanuniversität Leoben, Austria, R. BRAUN, DLR - German Aerospace Center, Germany, W.M. RAINFORTH, University of Sheffield, United Kingdom

FP-9

The Effect on the Microstructures of Electroless Nickel Coatings Initiated by Pulsating Electric Current, C.-K. LIN, C.-T. CHEN, T.-J. YANG, Feng Chia University, Taiwan

FP-10

Nickel Silicide Nanocrystals Embedded in SiO_2 and HfO_2 for Low Power Nonvolatile Memory Application, F.M. YANG, National Chiao Tung University, Taiwan, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, P.-T. LIU, National Chiao Tung University, Taiwan, P.H. YEH, National Tsing Hua University, Taiwan, Y.C. YU, J.Y. LIN, National Yunlin University of Science and Technology, Taiwan, S.M. SZE, J.C. LOU, National Chiao Tung University, Taiwan

FP-11

Characterization of $BaZrO_3$ Films Prepared by a PVD and Hydrothermal Duplex Technique, F.-H. LU, H.-P. DENG, Y.-C CHIEH, National Chung Hsing University, Taiwan

FP-12

Experimental Studies on Epitaxially Grown TiN, VN and TiN/VN Coatings, K. KUTSCHEJ, B. RASHKOVA, J. SHEN, C. MITTERER, G. DEHM, Montanuniversität Leoben, Austria

FP-13

Temperature Dependence of Microstructure and Residual Stress Properties of Nickel Coating on Silicon, T.F. YOUNG, Y.K. CHAO, Y.C. CHIOU, National Sun Yat-sen University, Taiwan, C.C. TING, National Taipei University of Technology, Taiwan

FP-14

Enhanced Performance Thin-Film-Transistor Passivated with a Low Dielectric Material for AMLCD, T.S CHANG, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, P.-T. LIU, National Chiao Tung University, Taiwan, S.W. TSAO, National Sun Yat-Sen University, Taiwan, F.S. YEH, National Tsing Hua University, Taiwan

FP-15

Characterization of Thermoelectric Behavior of Composite Bismuth Telluride Thin Films Deposited by Pulsed UBM Sputtering, D-Y. WANG, N.-H. WANG, Mingdao University, Taiwan

FP-16

Oxygen-Adsorption Characterization of Activated Non-Evaporable TiZrV Getter Films by Synchrotron Radiation Photoemission Spectroscopy, C.-C. LI, J.-L. HUANG, National Cheng-Kung University, Taiwan, R.-J. LIN, Intellectual Property Exchange Limited, Taiwan, D.-F. LII, Cheng Shiu University, Taiwan

FP-17

Alternating Current Measurements of Thermally Evaporated Triclinic Lead Phthalocyanine Thin Films, T.S. SHAFAI, Staffordshire University, United Kingdom, R.D. GOULD, Keele University, United Kingdom

FP-18

Structural and Textural Analyses of Si-C and Carbon CVD Coatings by Raman Microspectroscopy, G. CHOLLON, LCTS, France

FP-19

TEM Analysis of Alumina Coating Deposited by AC Inverted Magnetron Sputtering, A. ARYASOMAYAJULA, University of Arkansas, S. CANOVIC, Chalmers University of Technology, Sweden, D. BHAT, University of Arkansas, MAT HALVERSSON, Chalmers University of Technology, Sweden

FP-20

Hot Corrosion Behaviour of Ti-6Al-4V in Molten Salt Environments, R.A MAHESH, R. JAYAGANTHAN, S. PRAKASH, IIT Roorkee, India

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

Symposium G Poster Session
5:00-7:00 pm (Reception 5:30 pm)

GP-1

Elucidating the Characteristics of Plasma Spraying Boron Carbide Coatings Applied for High-Density Plasma Devices, W.H. LIAO, W.T. HSIAO, Industrial Technology Research Institute, Taiwan, C.Y. SU, National Taipei University of Technology, Taiwan, F.S. SHIEU, National Chung Hsing University, Taiwan, M.S. LEU, Industrial Technology Research Institute, Taiwan

GP-2

Microfabrication and Characterization of Metal Embedded Thin-Film Thermomechanical Microsensors for Application in Hostile Manufacturing Environments, V.V. RAVI KIRAN, Osmania University, India, T. SRI KRISHNA, CMR College Of Engineering And Technology, India

GP-3

Microstructures and Tribological Characteristics of Cr-Zr-N Thin Film Coatings, S.Y. LEE, B.Y. LEE, G.S. KIM, HanKuk Aviation University, Korea

GP-5

The Effect of Inductively Coupled Plasma (ICP) on the Heat Flux to the Substrate During ICP Sputtering, J.N. KIM, H.Y. LEE, J.J. LEE, Seoul National University, Korea

GP-7

High Power Laser Diode Surface Treatment of Aluminium Matrix Composites, J. RAMS, Rey Juan Carlos University, Spain, A. PARDO, R. ARRABAL, F. VIEJO, Universidad Complutense de Madrid, Spain, A.J. LOPEZ, Rey Juan Carlos University, Spain, M.C. MERINO, Universidad Complutense de Madrid, Spain, A. UREÑA, Rey Juan Carlos University, Spain

GP-8

Secondary Ion Efficiency Enhancement in SIMS by Electron Beam Irradiation, W.-C. LEE, C.-C. LIN, J. HWANG, National Tsing Hua University, Taiwan

GP-9

Correlation Between Wetting and Tribological Performance of CrAlN, ZrC_g and WC/C Films with Different Lubricants, K. BOBZIN, R. NICKEL, N. BAGCIVAN, K. YILMAZ, RWTH Aachen University, Germany

GP-10

Definition of Cavitation Erosion Stages in Surface-Treated Systems using 3d Surface Topography Analyses, C. GODOY, R.D. MANCOSU, P.J. MODENESI, Universidade Federal de Minas, Brazil, J.C. AVELAR-BATISTA, Tecvac Ltd., Brazil

GP-11

Preparation of $BaTiO_3$ Films by a PVD and Hydrothermal Duplex Technique, P.-H. CHAN, F.-H. LU, National Chung Hsing University, Taiwan

GP-12

Remote Plasma Etching of Amorphous Silicon using Pin to Plate Dielectric Barrier Discharge, S.J. KYUNG, J.B. PARK, Sungkyunkwan University, Korea, Y.H LEE, Samsung, Korea, J.H. LEE, G.Y. YEOM, Sungkyunkwan University, Korea

GP-13

Wear and Fatigue Properties Of Duplex-Treated Ti_6Al_4V Coatings under Conditions Of Reciprocating-Sliding and Rotating-Bending, Z. MOHD ROSLI, A. LEYLAND, A. MATTHEWS, University of Sheffield, United Kingdom

GP-14

Influence of the Heat Treatment Temperature on the Corrosion Resistance of a Ni-P Autocatalytic Coating, O.A. LEÓN, D. PACHECO, L.E. GIL, Polytechnic Experimental National University (UNEXPO), Venezuela

GP-15

Effects of the Electrodeposition Parameters on Adhesion and Wear Resistance of Tin - Nickel Coatings, H. JIMENEZ, Fundacite Guayana, Venezuela, L.E. GIL, Polytechnic Experimental National University (UNEXPO), Venezuela, E. PUCHI, Universidad Central de Venezuela, M.H. STAIA, Universidad Central de Venezuela, Veneauela

GP-16

Formation and Characterization of Cr-DLC/Cu-DLC Multi-Layers Coating Using Filtered Cathodic Arc Evaporation, J.-Y. JAO, L.-S. CHANG, National Chung Hsing University, Taiwan, S. HAN, National Taichung Institute of Technology, Taiwan, H.C. SHIH, National Tsing Hua University, Taiwan

GP-17

High-Speed Deposition of Amorphous Carbon Films on Inner Surface of Metal Tube With Surface Wave-Excited High-Density Plasma, H. KOUSAKA, S. KISHINE, N. UMEHARA, Nagoya University, Japan

GP-18

Fabrication and Thermal Analysis of the Cu/Diamond/Cu Thermal Spreading Device, T.F. YOUNG, National Sun Yat-Sen University, Taiwan, R.O.C., J.H. HSU, National Sun Yat-Sen University, Taiwan

GP-19

Effect of Surface Modified Carbon Nanotubes and Organic Vehicles on the Dispersion and Emission Properties of the Paste for Display, H.-F. WEI, G.-H. HSIUE, National Tsing Hua University, Taiwan, C.-Y. LIU, Industrial Technology Research Institute, Taiwan

GP-20

Synthesis and Electrochemical Properties of High Energy Li-Ion Battery with $LiNi_{0.8}Co_{0.15}Mn_{0.05}O_2$ as Cathode Material, C.-L. LU, H.C. SHIH, National Tsing Hua University, Taiwan, J.M. CHEN, Industrial Technology Research Institute, Taiwan

GP-21

Cutting Performance Through Cutting Temperature Measurement of (Ti, Al, Si)N Coated Tool for High-Speed Ball-End Milling, M.C. KANG, J.S. KIM, K.H. KIM, S.H. SHIN, Pusan National University, Korea

GP-22

Hydrogen Plasma Immersion Ion Implantation of AZ91 Magnesium Alloy for Biomedical Applications, Y. XIN, Tsinghua University, China, C.L. LIU, City University of Hong Kong, M. XU, Shanghai Jiao Tong University and City University of Hong Kong, P.K. CHU, City University of Hong Kong, G. TANG, Tsinghua University, China

GP-23

Alternative Route for the Formation of Organic Thin Films : Inkjet Printing Process and Its Properties, M. CHEN, H.S. KOO, Ming-Hsin University, Taiwan

New Horizons in Coatings and Thin Films
Room: Town & Country - Session HP

Symposium H Poster Session
5:00-7:00 pm (Reception 5:30 pm)

HP-1

The Effect of Deposition Temperature on the Structure and Electrical Properties of Low-k Film using Diethoxymethylsilane (DEMS) Prepared by Plasma Enhanced Chemical Vapor Deposition, Y.-L. CHENG, National Chi-Nan University, Taiwan

HP-2

Improvement of Stability of the Dielectric Properties of High-Density-Plasma Fluorinated-Silicate-Glass by Doping Nitrogen, B.-J. WEI, Y.-L. CHENG, National Chiao-Tung University, China

HP-3

Memory Effect of RF Sputtered ZrO_2 Thin Films, C.-Y. LIN, C.-Y. WU, National Chiao Tung University, Taiwan, T.-C. LEE, F.-L. YANG, Taiwan Semiconductor Manufacturing Company, Taiwan, T.-Y. TSENG, National Chiao Tung University, Taiwan

HP-4

High-Power Pulsed Magnetron Sputtering: Model Predictions and Experimental Verification, K. BURCALOVA, J. VLCEK, P. KUDLACEK, J. LUKAS, J. MUSIL, University of West Bohemia, Czech republic

HP-6

Influence of Aeration on the Pitting Corrosion Resistance of Duplex and Non-Duplex Cr-N Coated AISI H13 Steels, J.K. MORAIS, C. GODOY, Universidade Federal de Minas Gerais, Brazil, J.C. AVELAR-BATISTA, Tecvac Ltd., Brazil, M.M.A.M. SCHVARTZMAN, Centro de Desenvolvimento da Tecnologia Nuclear- CDTN, Brazil, S. GOULART-SANTOS, Universidade Federal de Minas Gerais, Brazil

HP-7

The Effect of Silicon Nitride Barrier Process on Damascene Copper Interconnect, M.H. YU, National Chiao-Tung University,, Taiwan, Y.-L. CHENG, National Chi-Nan University, Taiwan

HP-8

Resistance Characterization of Cu Stress-Induced Void Migration at Narrow Metal Finger Connected with Wide Lead, R. C.-J. WANG, Taiwan Semiconductor Manufacturing Company, Taiwan, L.K.S. CHANG, National Tsing-Hua University, Taiwan, C.C. LEE, J.-H. LIN, K. WU, Taiwan Semiconductor Manufacturing Company, Taiwan

HP-9

Low Temperature Processing of Sol-Gel Derived $CaCu_3Ti_4O_{12}$ Dielectric Thin Film Using KrF Laser Annealing, D.-Y. LEE, National Chiao-Tung University, Taiwan, L.-C. CHANG, Huafan University, C.-C. HO, B.-S. CHIOU, J.-K. WANG, National Chiao-Tung University, Taiwan

HP-10

On the Mechanism of 'Excessive' Gas Evolution during Plasma Electrolytic Oxidation of Al, L.O SNIZHKO, A.L. YEROKHIN, A. MATTHEWS, University of Sheffield, United Kingdom

HP-11

Thickness-Dependent Microstructures and Electrical Properties of $CaCu_3Ti_4O_{12}$ Films Derived from Sol-Gel Process, D.-Y. LEE, National Chiao-Tung University, Taiwan, L.-C. CHANG, Huafan University, C.-C. HO, B.-S. CHIOU, National Chiao-Tung University, Taiwan

HP-12

Ultra-Thin Porous Alumina Templates with Low Aspect Ratio Pores for the Fabrication of Metallic Quantum Dots, M. KOKONOU, C. REBHOLZ, University of Cyprus, C.C. DOUMANIDIS, MIT

HP-14

A Mechanistic Study of the Pitting Corrosion of High Entropy Alloys $Co_{1.5}CrFeNi_{1.5}Ti_{0.5}Mo_x$ in Aqueous Environments, Y.-T. TSENG, Y.-C. WANG, J.-Y. HSU, J.-W. YEH, H.-C. SHIH, National Tsing Hua University, Taiwan

HP-15

Evaluation of the Influence of a Carbon Thin Film Addition in AISI M2 High Speed-Steel by CO_2 Laser Radiation, G.DE VASCONCELOS, General Command of Aeroespace Technology, Brazil, J.L. REIS, Instituto Tecnológico de Aeronaútica - ITA, Brazil, V.H. BAGGIO-SCHEID, General-Command of Aerospace Technology, Brazil, R.C. MAIA, Instituto Tecnológico de Aeronáutica, Brazil

HP-17

Electron Transport in Epitaxial Cu(001)/MgO(001) Layers, J.M. PURSWANI, D. GALL, Rensselaer Polytechnic Institute

HP-18

Source-Drain Barrier High Engineering for Suppressing the a-Si:H TFTs Photo Leakage Current, M.-C. WANG, National Tsing Hua University, Taiwan, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, P.-T. LIU, National Chiao Tung University, Taiwan, Y.Y. LI, J.R. CHEN, National Tsing Hua University, Taiwan

HP-20

Relationships Between Material Properties of Piezo-Electric Thin Films and Device Characteristics of Film Bulk Acoustic Resonators, C.K. PARK, D.Y. KIM, D.H. CHO, Hanyang University, Korea, J.B. LEE, Samsung Electro-Mechanics Co. Ltd., Korea, S.J. YUN, J.S. PARK, Hanyang University, Korea

HP-21

Photocatalytic Properties of Pd-Doped Mesoporous TiO_2 Thin Films, C.-C. CHANG, C.-C. CHAN, W.-J. SHIU, Feng Chia University, Taiwan

HP-23

Corrosion Resistance and Wear Behaviour of PVD Zinc/Nickel-Based Nanocomposite Coatings, N. AL-ANAZI, Z. MOHD ROSLI, A. LEYLAND, A. MATTHEWS, University of Sheffield, United Kingdom

HP-24

The Electrical Performance of a-Si:H Thin Film Transistor Under Cryogenic Temperature, S.W. TSAO, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, M.-C. WANG, National Tsing Hua University, Taiwan

HP-25

Electronic Degradation of Poly-Si TFT at Cryogenic Temperature, C.F. WENG, T.-C. CHANG, National Sun Yat-sen University, Taiwan

HP-26

Investigation on Hot Carrier Effects in 65-nm MOSFETs Under External Mechanical Stress, Y.-J. KUO, T.-C. CHANG, W.-T. HO, National Sun Yat-Sen University, Taiwan

HP-27

Optical and Electrical Properties of Mixed Oxide $Zr_xSi_{1-x}O_2$ Thin Films, F.J. FERRER, Centro Nacional de Aceleradores, Spain, F. FRUTOS, Universidad de Sevilla, Spain, J. GARCÍA LÓPEZ, Centro Nacional de Aceleradores, Spain, A.R. GONZÁLEZ-ELIPE, Insituto de Ciencia de Materiales de Sevilla, Spain, F. YUBERO, ICMSE (CSIC-Univ. Sevilla), Spain

HP-28

Gd-Substituted Bismuth Titanate Film Capacitors Having Ferroelectric Reliability and Large Nonvolatile Charges, U. CHON, Research Institute of Industrial Science and Technology, Korea

HP-30

Development of an Electrolytic Coating Tin-Cobalt Alloy Plating Alternative by Techniques of Current Modulation, L.T. BOET, O.J. HERNÁNDEZ., UNEXPO University, Venezuela

HP-31

Aerosol Assisted CVD of Molybdenum Oxide Films from Polyoxometalate Precursors and their Functional Properties, I.P. PARKIN, S. ASHRAF, C.S. BLACKMAN, University College London, United Kingdom

Coatings for Aerospace Applications
Room: Tiki Pavilion - Session TS1P

TS2 Poster Session
5:00-7:00 pm (Reception 5:30 pm)

TS1P-1

Studies on Tribological Behaviors of Cr-X-N (X=Si, Zr) Coatings Deposited on Hydraulic Pump Part, S.Y. LEE, E.Y. KIM, J.T. KIM, HanKuk Aviation University, Korea

Thursday Afternoon Poster Sessions

Coatings for Fuel Cells
Room: Town & Country - Session TS2P

TS3 Poster Session (Reception 5:30 pm)
5:00-7:00 pm

TS2P-1

Electrically Conductive Amorphous Carbon Film Coating on Metal Bipolar Plate for the PEFC, Y. SHOW, Tokai University, Japan

TS2P-2

Microstructure and Performance of Anode Supported SOFC Single Cells with Anode/Electrolyte and Cathode/Electrolyte Interlayers, H.K. YANG, J.H. MOON, H.W. CHOI, K.H. KIM, H.H. YOON, J.S. KIM, S.J. PARK, Kyungwon University, Korea

TS2P-3

Electrical Properties of Ceria and Samaria Doped Ceria Thin Films, C. MANSILLA, Instituto de Ciencia de Materiales de Sevilla, CSIC-USE, Spain, J.P. HOLGADO, J.P. ESPINÓS, Instituto de Ciencia de Materiales de Sevilla, Spain, F. YUBERO, ICMSE (CSIC-Univ. Sevilla), Spain, A.R. GONZALEZ-ELIPE, Insituto de Ciencia de Materiales de Sevilla, Spain

TS2P-4

Deposition of $La_{0.8}Sr_{0.2}Cr_{0.97}V_{0.03}O_3$ and $MnCr_2O_4$ Thin Films on Ferritic Alloy for Solid Oxide Fuel Cell Application, L. MIKKELSEN, P.V. HENDRIKSEN, N. PRYDS, K. RODRIGO, Risoe National Laboratory, Denmark

Bioengineered Surfaces and Interfaces
Room: Town & Country - Session TS3P

TS4 Poster Session
5:00-7:00 pm (Reception 5:30 pm)

TS3P-1

Corrosion and Electrical Properties of Multi-layered Coatings on Stainless Steel for PEMFC Bipolar Plate Applications, W.-Y. HO, C.-L. CHANG, Mingdao University, Taiwan

TS3P-2

Effect of Calcium Phosphate and Serum Proteins on in Vitro Corrosion of Magnesium Alloys in Phosphate Buffer Saline Solution, C.L. LIU, City University of Hong Kong, Y. XIN, Tsinghua University, X. TIAN, Harbin Institute of Technology, P.K. CHU, City University of Hong Kong

TS3P-3

Deposition of Multiwalled Carbon Nanotubes from Solution, E. WIDENKVIST, J. LI, U. JANSSON, H. GRENNBERG, Uppsala University, Sweden

TS3P-4

Antimicrobial Efficacy of Photocatalytic TiO_2 Coatings Prepared by Arc Ion Plating, C.J. CHUNG, Feng Chia University and Central Taiwan University of Science and Technology, Taiwan, H.I. LIN, J.L. HE, Feng Chia University, Taiwan

TS3P-5

Enhancing Bioactivity and Corrosion Resistance of NiTi using Plasma Immersion Ion Implantation, Y.L. CHAN, The University of Hong Kong, S.L. WU, X.M. LIU, City University of Hong Kong, K.W.K. YEUNG, W.W. LU, A.H.W. NGAN, K.D.K. LUK, The University of Hong Kong, P.K. CHU, City University of Hong Kong, K.M.C. CHEUNG, The University of Hong Kong

TS3P-6

Preparation and Characterization of 1-D SnO_2 Nanostuctures, C.-C. KUO, National Tsing Hua University, Taiwan, J.-M. WU, Y.-R. LIN, S.-Y. TSAI, Photovoltaics Technology Center, Taiwan, H.-C. SHIH, National Tsing Hua University, Taiwan

TS3P-7

Size Effect of Tin Oxide Nanoparticles for High Capacity Lithium Battery Anode Materials, Y.-C. CHEN, National Tsing Hua University, Taiwan, J.M. CHEN, Y.-H. HUANG, Y.-R. LIN, Industrial Technology Research Institute, Taiwan, H.-C. SHIH, National Tsing Hua University, Taiwan

TS3P-8

Synthesis and Characterization of ZnO:Al Nanostructures on Silicon Substrates by Thermal Evaporation, C.-C. LIN, National Tsing Hua University, Taiwan, J.-M. WU, Y.-R. LIN, S.-Y. TSAI, Photovoltaics Technology Center, Taiwan, H.-C. SHIH, National Tsing Hua University, Taiwan

TS3P-9

Capacitance-Voltage Characteristics of MOS Capacitors with Ge Nanocrystals Embedded in ZrO_2 Gate Material, H.R. LEE, Korea Universtiy, Korea, S.J. CHOI, Samsung Electronics Co., Korea, K. CHO, Korea University, Korea, S.S. KIM, Korea University

TS3P-10

Corrosion Resistance and Biocompatibility of ZrO_2/HA Coating on Titanium by Electrochemical Method, H.C. HSU, Central Taiwan University Science and Techology, Taiwan, J.S. YANG, F.T. LIN, Central Taiwan University of Science and Technology, Taiwan, W.F. HO, Da-Yeh University, Taiwan, S.C. WU, Central Taiwan University of Science and Technology, Taiwan

TS3P-11

Synthesis of Segmented YSZ/Ni Nanofibers for Advanced Catalysis Application, D-Y. WANG, C.-C. CHU, Mingdao University, Taiwan

TS3P-12

The Effect of Various Composed of SiO_2 and HfO_2 Thin Films on the Memory Properties of MOS Capacitors with Embedded Ni Nanocrystals., F.-Y. JIAN, National of Sun Yat-Sen University, Taiwan, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, P.-T. LIU, National Chiao Tung University, Taiwan, P.H. YEH, National Tsing Hua University, Taiwan, M.-N. TSAI, National of Sun Yat-Sen University, Taiwan, C.-M. CHANG, UMC (United Microelectronic Corporation) Device Department, Taiwan

Nanostructured Thin Film Assemblies and Composites
Room: Grand Foyer - Session TS4P

TS1 Poster Session
5:00-7:00 pm (Reception 5:30 pm)

TS4P-1

Nanostructured Composite Films Produced by Microwave Plasma-Assisted Chemical Vapor Deposition Combined with Sputter-Deposition Technique, Y. PAULEAU, S. KUKIELKA, National Polytechnic Institute of Grenoble, France, A. SYLVESTRE, Joseph Fourier University of Grenoble, France, W. GULBINSKI, The Technical University of Koszalin, Poland

TS4P-2

Growth and Characterization of Waterweed-Like SnO_2 Nanowires, C.T. LI, National Tsing Hua University, Taiwan, J.M. CHEN, C.T. HSIEH, Industrial Technology Research Institute, Taiwan, H.-C. SHIH, National Tsing Hua University, Taiwan

TS4P-3

Resistive Switching Properties of Sol-Gel Derived Mo-Doped $SrZrO_3$ Thin Films, C.-C. LIN, C.-H. HUANG, C.-C. LIN, National Chiao Tung University, Taiwan, C.-H. LIN, Winbond Electronics Corporation, Taiwan, T.-Y. TSENG, National Chiao Tung University, Taiwan

TS4P-5

Performance of Sol-Gel Deposited $Zn_{1-x}Mg_xO$ Films used as Active Channel Layer for Thin-Film Transistors, C.-Y. TSAY, Feng Chia University, Taiwan, H.-C. CHENG, National Chiao Tung University, Taiwan, M.-C. WANG, Feng Chia University, Taiwan, P.-Y. LEE, National Taiwan Ocean University, Taiwan, C.-K. LIN, Feng Chia University, Taiwan

TS4P-6

High-Preformance Polycrystalline Silicon Thin-Film-Transistors with Surrounded Gate Electode on Multiple Nanowire Channels Structure, L.W. FENG, National Chiao Tung University, Taiwan, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, P.-T. LIU, National Chiao Tung University, Taiwan, S.C. CHEN, National Tsing Hua University, Taiwan, Y.C. WU, S.M. SZE, C.-Y. CHANG, National Chiao Tung University, Taiwan

TS4P-8

The Novel Nonvolatile Memory Devices of Tin-Palladium Alloy Embedded in Polyimide using Sol-Gel-Spin-Coating Method, C.-H. CHEN, National Tsing Hua University, Taiwan, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, P.-T. LIU, National Chiao Tung University, Taiwan, M.-C. WANG, National Tsing Hua University, Taiwan, S.M. SZE, National Chiao Tung University, Taiwan, J.R. CHEN, Engineering, National Tsing Hua University, Taiwan

TS4P-9

Novel Design of Durable Hydrophobic Film, K.-H. CHA, LS cable LTD., Korea, M.S. HSU, NIST

TS4P-10

Photocatalytic Disinfection of Phytopathogenic Bacteria by Dye-Sensitized TiO_2 Thin Film Activated by Visible Light, K.S. YAO, D.-Y. WANG, C.Y. CHANG, K.W. WENG, L.Y. YANG, Mingdao University, Taiwan

TS4P-11

Physical Characteristics of Metal/Carbon Composite Films Prepared by Microwave Plasma-Assisted Deposition Technique, A. SYLVESTRE, Joseph Fourier University of Grenoble, France, S. KUKIELKA, Y. PAULEAU, National Polytechnic Institute of Grenoble, France, W. GULBINSKI, The Technical University of Koszalin, Poland

TS4P-12

Texture and Orientation Response of Ti Films Deposited on Different Organic Underlayers, P.J. HENRY, S.F. SHULER, S.C. STREET, M.L. WEAVER, The University of Alabama

TS4P-13

Formation of Germanium Nanocrystals by Rapid Thermal Oxidizing $Si_xGe_yO_z$ Layer, W.-R. CHEN, National Chiao Tung University, Taiwan, T.-C. CHANG, National Sun Yat-Sen University, Taiwan, P.-T. LIU, C.-H. TU, C.-Y. CHANG, National Chiao Tung University, Taiwan

Friday Morning, April 27, 2007

	Coatings for Use at High Temperature Room: Sunrise - Session A4 Clearance Control Moderators: T.A. Taylor, Praxair Surface Technologies, D.S. Rickerby, Rolls-Royce plc.	Hard Coatings and Vapor Deposition Technology Room: Golden West - Session B6-3 Hard and Multifunctional Nano-Structured Coatings Moderators: P.H. Mayrhofer, Montanuniversität Leoben, J.J. Moore, Colorado School of Mines, M. Stüber, Forschungszentrum Karlsruhe
8:00 am	A4-1 Invited Clearance Control Systems in Gas Turbines, D. SPORER, Sulzer Metco, Germany	B6-3-1 Invited Hardening Mechanisms in Multicomponent Coatings, W.J. CLEGG, Gordon Laboratory, University of Cambridge, United Kingdom
8:20 am	Invited talk continued.	Invited talk continued.
8:40 am	A4-3 A Proposal for Numerical Simulations of Abradability Tests, J.-L. SEICHEPINE, H.I. FARAOUN, F. PEYRAUT, C. CODDET, University of Technology of Belfort-Montbeliard, France, C. SELLARS, Rolls-Royce plc., United Kingdom, D. SPORER, Sulzer Metco, Germany, M. HERTTER, MTU Aero Engines, Germany	B6-3-3 Ti-B-N Nanocomposite Hard Coatings Synthesized by Reactive Arc Evaporation, J. NEIDHARDT, University of Leoben, Austria, B. SARTORY, University of Innsbruck, Austria, M. O'SULLIVAN, Plansee AG, Austria, C. MITTERER, Montanuniversität Leoben, Austria
9:00 am	A4-4 High Speed Rub Wear Mechanism in IN-718 vs. NiCrAl-Bentonite Coating, T.A. TAYLOR, Praxair Surface Technologies	The Effect of Pulsed DC Discharges and Pulse Energy on Structure and Properties of Cr-Al-N Coatings Deposited by Pulsed-Closed Field Unbalanced Magnetron Sputtering (P-CFUBMS), J. LIN, J.J. MOORE, B. MISHRA, Colorado School of Mines, W.D. SPROUL, Reactive Sputtering Consulting, LLC, J.A. REES, Hiden Analytical Ltd, M. PINKAS, CSM Instruments, Switzerland
9:20 am	A4-5 Factors Affecting the Performance of a Porous, High Temperature Abradable Coating, D.B. ALLEN, Siemens Power Generation	B6-3-5 Metastable Single-Crystal AlCrN Thin Films; - The Influence of Crystallinity on Age-Hardening, H. WILLMANN, M. BECKERS, J. BIRCH, Linköping University, Sweden, P.H. MAYRHOFER, C. MITTERER, Montanuniversität Leoben, Austria, L. HULTMAN, Linköping University, Sweden
9:40 am	A4-7 Freestanding Abradable Coating Manufacture and Tensile Test Development, R.E. JOHNSTON, University of Wales Swansea, United Kingdom, W.J. EVANS, University of Walse Swansea, United Kingdom	B6-3-6 Microstructure and Mechanical Properties of Cr-B-N and Cr-B-Al-N Coatings by Unbalanced Magnetron Sputtering,, W.C.M. MOERBE, J.J. MOORE, B. MISHRA, Colorado School of Mines
10:00 am		B6-4-7 Invited PVD Oxide Deposition by Enhanced Electron Emission, J. RAMM, M. ANTE, T. BACHMANN, W. KALSS, B. WIDRIG, C. WOHLRAB, OC Oerlikon Balzers Ltd, Liechtenstein
10:20 am		Invited talk continued.
10:40 am		B6-4-9 Phase Formation, Microstructure and Properties of Nanostructured Hard Coatings of the Material System Cr-Al-N-O, M. STÜBER, U. ALBERS, H. LEISTE, C. ZIEBERT, S. ULRICH, Forschungszentrum Karlsruhe, Germany
11:00 am		B6-4-10 Al-Si-N Transparent Thin Films as Protective Coatings: Structural, Optical and Mechanical Properties, A. PÉLISSON, M. PARLINSKA-WOJTAN, EMPA, Switzerland, F.-J. HAUG, University of Neuchatel, IMT, Switzerland, H.-J. HUG, J. PATSCHEIDER, EMPA, Switzerland
11:20 am		B6-4-11 Combinatorial Studies of Co-Sputtered Carbon-Incorporated Titania Films as Visible Light Photocatalyst, M.S. WONG, C.W. WENG, T.K. CHEN, K. KOTESWARA RAO, National Dong Hwa University, Taiwan
	FAREWELL PARTY Trellis Courtyard 12:30-1:30 pm	FAREWELL PARTY Trellis Courtyard 12:30-1:30 pm

Friday Morning, April 27, 2007

	Optical Thin Films Room: Royal Palm 4-6 - Session C4 Optical Coatings for Aerospace Applications Moderators: I. Palusinski, The Aerospace Corporation, M.Y. Chen, Air Force Research Laboratory	Carbon and Nitride Materials: Synthesis-Structure-Property Relationships - Room: Royal Palm 1-3 - Session D4 Frontier Devices for Bio-, Energy- and Optoelectronic Applications Based on Carbon and Nitride Materials Moderators: P Papakonstantinou, University of Ulster, K.H. Chen, Academia Sinica
8:00 am	C4-1 Invited Optical Thin-Films for Space Applications, P.D. FUQUA, J.D. BARRIE, C.-T. CHU, The Aerospace Corporation	D4-1 Invited Diamond Nanowires and the Insulator-Metal Transition In n-Type Ultrananocrystalline Diamond Films, D.M. GRUEN, P. BRUNO, R. ARENAL DE LA CONCHA, D. MILLER, M. BLEUEL, J. LAL, Argonne National Laboratory
8:20 am	Invited talk continued.	Invited talk continued.
8:40 am	C4-3 Mechanical Testing of Reaction Bonded Silicon Carbide for Space Qualification, D. WITKIN, I. PALUSINSKI, J. GEIS, The Aerospace Corporation	D4-3 Invited Bioaffinity Platforms Based on Carbon-Polymer Biocomposites for Electrochemical Biosensing, M. PIVIDORI, S. ALEGRET, Universitat Autonoma de Barcelona, Spain
9:00 am	C4-4 Impact of Plasma and Atomic Oxygen Cleaning on Optical Coatings and Substrates, C. BAO, CVI Laser, LLC	Invited talk continued.
9:20 am	C4-5 Invited Dimensionally Stable and Survivable VIS/LWIR Coatings for the Space Effects Environment, W. GOODMAN, Schafer Coproration, D. REICHER, S. PEPLINKSKI, AFRL Optical Components Laboratory	D4-5 Invited Solid State Fabrication of Carbon Nanotubes and the Applications, M. ZHANG, S FANG, A. ZAKHIDOV, S. LEE, A. ALIEV, C. WILLIAMS, Nano Tech Institute University of Texas at Dallas, K. ATKINSON, CSIRO Textile & Fibre Technology, Australia, R. BAUGHMAN, Nano Tech Institute University of Texas at Dallas
9:40 am	Invited talk continued.	Invited talk continued.
10:00 am	C4-7 Growth and Control of Residual Stress in Optical Coatings During Rapid Mirror Assembly Processing, M.Y. CHEN, J.G. JONES, Air Force Research Laboratory, L.E. MATSON, Air Force Research Laboraotry, T.-I. MAH, R. BHATTACHARYA, UES Inc.	D4-7 Direct Electrochemical Impedance Detection of DNA Hybridization at Vertically Aligned Carbon Nanotubes, H. MURPHY, P PAPAKONSTANTINOU, University of Ulster at Jordanstown, N. Ireland, United Kingdom, L.C. CHEN, National Taiwan University, Taiwan
10:20 am	C4-8 Energy Sources, Dynamics, and Thermodynamic Considerations for Coatings Performance, Reactions, and Degradation Mechanisms in Space Environments, G. PIPPIN, The Boeing Company	D4-8 GaN Nanowires for DNA-Sensing Applications, A. GANGULY, C.P. CHEN, C.-H. WANG, C.-W. HSU, National Taiwan University, Taiwan, Y.-K. HSU, K.H. CHEN, Academia Sinica, Taiwan, L.C. CHEN, National Taiwan University, Taiwan
10:40 am	C4-9 Post Flight Analysis of MISSE Optical Coatings, A.F. STEWART, Boeing DES	D4-9 Surface and Bioproperties of Nanocrystalline Diamond/Amorphous Carbon Nanocomposite Films, W. KULISCH, Joint Research Center, Italy, C. POPOV, S. BLIZNAKOV, University of Kassel, Germany, M. CEKADA, Jozef Stefan Institute, Slovenia, H. RAUSCHER, D. GILLILAND, R. ROSSI, Joint Research Center, Italy
	FAREWELL PARTY Trellis Courtyard 12:30-1:30 pm	FAREWELL PARTY Trellis Courtyard 12:30-1:30 pm

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	Tribology & Mechanical Behavior of Coatings & Thin Films Room: California - Session E4/G4 Tribological Studies of Coatings for Green Manufacturing and Dry Machining Moderators: A. Sanz, SKF Engineering & Research Company, S. Dixit, Plasma Technology Inc.	Applications, Manufacturing, and Equipment Room: San Diego - Session G2-2 Coatings and Automotive Applications Moderators: E. Bergmann, Ecole d'Ingenieurs de Geneva, A. Ravagni, Balzers AG
8:00 am	E4/G4-1 Characterization of Nanocrystalline Diamond Coating Cutting Tools, J. HU, Y. CHOU, The University of Alabama, R. THOMPSON, Vista Engineering, Inc.	G2-2-1 Invited Surface Modification Technologies for Piston Rings, T. SEKIYA, RIKEN Corporation, Japan
8:20 am	E4/G4-2 Synthesis and Characterization of Ultra-Thin Nanocrystalline Diamond Coatings for Micro End Mills, P.J. HEANEY, University of Wisconsin,Madison, C.D. TORRES, University of Wisconsin, Madison, A.V. SUMANT, Argonne National Laboratory, R.W. CARPICK, University of Pennsylvania, F.E. PFEFFERKORN, University of Wisconsin,	Invited talk continued.
8:40 am	E4/G4-3 Investigation on Thin Vanadium Oxide Films for Forming Tools Deposited by Pulsed PVD Process Technology, P. IMMICH, K. BOBZIN, R. NICKEL, E. LUGSCHEIDER, M. WITT, RWTH Aachen University, Germany	G2-2-5 Invited Structural Characterization of Selflubricating Nanocomposites Designed for Engine Applications, B. PÉCZ, Hungarian Academy of Sciences, Hungary
9:00 am	E4/G4-5 Invited Effect of Multi-Layer Coating Design on their Properties and Wear Mechanism in Dry Machining, H. GEKONDE, IonBond, LLC	Invited talk continued.
9:20 am	Invited talk continued.	G2-2-3 Invited Nanocomposite Coatings for Piston Rings, C. MITTERER, G. GASSNER, K.P. BUDNA, University of Leoben, Austria
9:40 am	E4/G4-7 Conventional Drill Testing of State-of-the-Art PVD Coatings and Comparison to Microstructure Revealed by FEGSEM. Out of Place and Out of Time?, T. VOM BRAUCKE, Swinburne University of Technology, Australia, S.J. DOWEY, Surface Technology Coatings, Australia, E.D. DOYLE, Swinburne University of Technology, Australia	Invited talk continued.
10:00 am	E4/G4-8 Role of Original Surface State in Dry Cutting at Magnetic-Assisted Machining, M. EL MANSORI, ENSAM, France, A. MKADDEM, LMPF- ENSAM, France	G2-2-7 Synthesis of CrCN/C Nanocomposite Coatings for Piston Rings with a Novel PVD Process, G. WAHLI, G. PANNATIER, E. BERGMANN, Geneva School of Engineering, Switzerland, B. PECS, L. TOTH, E. HEGEDUS, Research Institute for Technical Physics and Material Science, Switzerland
10:20 am	E4/G4-9 Synthesis and Characterization of CrN, Mo_2N Multilayers and Different Phases of Molybdenum Nitride, R. KOSHY, M. GRAHAM, L. MARKS, Northwestern University	G2-2-8 Invited Thin Layers in the Automotive Industry as a Challenge for Design and Development, H. MEERKAMM, A. SEITZ, S. TREMMEL, University of Erlangen-Nuermberg, Germany
10:40 am		Invited talk continued.
11:00 am		G2-2-10 Reduction of Frictional Losses and Wear in Valve Train Systems - the Role of DLC Coatings, M. BOGHE, N.J.M. CARVALHO, Bekaert Advanced Coatings, Belgium
11:20 am		G2-2-11 Invited Coatings for Automotive Components: Tribological Designs, Problems and Solutions, A. HURKMANS, IonBond LLC
11:40 am		Invited talk continued.
12:00 pm		G2-2-13 New Zinc-Based Automotive Steel Protection Technologies by PVD, F.E. GOODWIN, International Lead Zinc Research Organization, Inc., F. FRIESS, A. KOVACS, G.K. WOLF, Limedion GmbH, Germany
12:20 pm	FAREWELL PARTY Trellis Courtyard 12:30-1:30 pm	G2-2-14 Corrosion Protection Properties of Thin Plasma Electrolyte Oxidation Coatings on an Al-Si Alloy in E85, P. ZHANG, D.O. NORTHWOOD, X. NIE, University of Windsor, Canada

Coatings for Fuel Cells
Room: Sunset - Session TS2
Coatings for Fuel Cells
Moderators: J.W. Stevenson, Pacific Northwest National Laboratory, D. Mumm, University of California

8:00 am	TS2-1 Invited Application of Vacuum Deposition Methods to Solid Oxide Fuel Cells, L. PEDERSON, X.-D. ZHOU, Pacific Northwest National Laboratory	
8:20 am	Invited talk continued.	
8:40 am	TS2-3 ASR Evaluation of Different Kinds of Coatings on Ferritic Stainless Steel as SOFC Interconnects, P. PICCARDO, DCCI, Italy, P.E. GANNON, Montana State University, S. CHEVALIER, LRRS, UMR 5613 CNRS, France, M. VIVIANI, National Research Council, Italy, A. BARBUCCI, DICHeP - Universitat di Genova, Italy, G.	
9:00 am	TS2-4 Ion Beam Analysis of Thermal Stability and Oxidation Resistance of (Al,Cr,Ti,Co,Mn,Y) Oxide Coatings on Ferritic Steels for SOFC Interconnect Applications[1], R.J. SMITH, Montana StateUniversity, A. KAYANI, H. CHEN, W. PRIYANTHA, T.L. BUCHANAN, M. KOPCZYK, R. HUTCHISON, Montana State	
9:20 am	TS2-5 Structure and Properties of Spinel Protection Layers on Ferritic Stainless Steels for SOFC Interconnect Applications, Z.G. YANG, G.-G. XIA, C.-M. WANG, X.-L. LI, G.D. MAUPIN, S.P. SIMNER, Z.-M. NIE, J.W. STEVENSON, Pacific Northwest National Laboratory	
9:40 am	TS2-6 Influence of a Ce Surface Treatment on the Behavior of Ferritic Stainless Steel for SOFC Interconnect Applications, D. ALMAN, G. HOLCOMB, R. WILSON, T. ADLER, P. JABLONSKI, National Energy Technology Laboratory	
10:00 am	TS2-7 Volatilization of Cr Vapor Species from Coated and Uncoated SOFC Interconnect Alloys, J.W. STEVENSON, G.D. MAUPIN, P SINGH, Z.G. YANG, G.G. XIA, Pacific Northwest National Laboratory	
10:20 am	TS2-8 Large Area Filtered Arc (Al,Cr,Ti,Co,Mn,Y) Nanocomposite Oxide Coatings on T430 Ferritic Steel: Solid Oxide Fuel Cell Interconnect Performance and Substrate Surface Finish Effects, P.E. GANNON, Montana State University, V. GOROKHOVSKY, Arcomac Surface Engineering, LLC, M.C. DEIBERT,	
10:40 am	TS2-9 Preparation and Characterization of Model Oxides used for Optimization of the Properties for Interconnect Materials used in High Temperature Fuel Cells, C.C. MARDARE, H. ASTEMAN, M. SPIEGEL, Max Planck Institute for Iron Research, Germany	
11:00 am	TS2-12 Deposit of Dense YSZ Electrolyte and Porous NiO-YSZ Cermet Anode for SOFC Device by a Low Pressure Plasma Process, F. ROUSSEAU, S. AWAMAT, Universite Pierre et Marie Curie, France, M. NIKRAVECH, Universite Paris 13, France, D. MORVAN, J. AMOUROUX, Universite Pierre et Marie Curie, France	
11:20 am	TS2-13 Hydrophobic Coatings on Carbon Electrodes for PEMFC, K.-F. CHIU, K.W. WANG, Feng Chia University, Taiwan	
	FAREWELL PARTY Trellis Courtyard 12:30-1:30 pm	