

FCSE-2017 Symposium program

Key to session numbers:

FF	Functional Films
FFS	Functional Films and Surfaces
PBP	Plasma-based Processes
PP	Poster Presentation
PC	Protective Coatings
TC	Tribological Coatings

Sunday, June 4, 2017

SHORT COURSES

Location: École Polytechnique, Main Building, 5th floor

8:30	Continental breakfast
9:00	Short course A – Room B-505 Nucleation and growth of self-assembled nanostructures: Materials science of small things – self-assembly and self-organization <p style="text-align: right;">J.E. Greene <i>University of Illinois at Urbana-Champaign, Urbana, IL, USA</i></p>
	Short course B – Room B-506 Ionized physical vapor deposition and related technologies <p style="text-align: right;">A. Anders <i>Lawrence Berkeley National Lab, Berkeley, CA, USA</i></p>
	Short course C – Room B-530.2 Fundamental aspects of reactive sputter deposition <p style="text-align: right;">D. Depla <i>University of Ghent, Ghent, Belgium</i></p>
10:30	Break
10:45 ⋮ 12:00	Continuation of the short courses
12:00	Lunch (included) and discussions – Room B-512
13:00 ⋮ 17:00	Continuation of the short courses

Monday Morning, June 5, 2017

ORAL PRESENTATIONS

Location: Jean-Coutu Building, Room S1-151

8:30	<p>OPENING CEREMONY Welcome address, acknowledgements and introductory remarks: <i>L. Martinu and J.E. Klemberg-Sapieha, Polytechnique Montréal, QC, Canada, Symposium Chairs</i> <i>J.E. Greene, University of Illinois at Urbana-Champaign, Urbana, IL, USA, AVS Secretary</i> <i>G. Vergason, Vergason Technology, Inc., Van Etten, NY, USA, SVC President</i> <i>M. Hilke, McGill University, Montreal, QC, Canada, RQMP Director</i></p>
<p>Session 1: Plasma-based Processes I</p> <p>Moderators: <i>E. Chason, Brown University, CT, USA</i> <i>P. Mayrhofer, Technische Universität, Wien, Austria</i></p>	
8:50	<p>PBP1 – Invited Non-evaporative getter and other coatings for applications in ultrahigh vacuum <p style="text-align: right;">A. Anders <i>Lawrence Berkeley National Lab, Berkeley, CA, USA</i></p></p>
9:20	<p>PBP2 The geometry of the race track and the magnetic field in a magnetron cathode <p style="text-align: right;">J. Cruz¹, J. Restrepo², S.E. Rodil¹, S. Muhl¹ ¹<i>Universidad Nacional Autónoma de México, Coyoacan, Mexico City, Mexico</i> ²<i>Sadosa S.A. de C.V., Aragón - La Villa México D.F., Mexico</i></p></p>
9:30	<p>PBP3 Electron heating in magnetron sputtering facilitated by the potential structure of the ionization zone <p style="text-align: right;">M. Panjan^{1,2}, A. Anders¹ ¹<i>Lawrence Berkeley National Laboratory, Berkeley, CA, USA</i> ²<i>Jožef Stefan Institute, Ljubljana, Slovenia</i></p></p>
9:40	<p>PBP4 Using HiPIMS for engineering the triad of adhesion, toughness and stress for premium cutting tool coatings <p style="text-align: right;">C. Morton¹, G. Lake¹, T. Leyendecker², C. Schiffrers² ¹<i>CemeCon Inc., Horseheads, NY, USA</i> ²<i>CemeCon AG, Würselen, Germany</i></p></p>
9:50	<p>PBP5 A novel process gas monitor based on plasma emission monitoring of a remote plasma <p style="text-align: right;">F. Papa¹, J. Brindley², D. Monaghan², B. Daniel² ¹<i>Genco USA, Medina, OH, USA</i> ²<i>Genco Ltd., Liverpool, UK</i></p></p>
10:00	<p>Break</p>

Monday Morning, June 5, 2017 - continued

ORAL PRESENTATIONS

Location: Jean-Coutu Building, Room S1-151

Session 2: Plasma-based Processes II

Moderators: A. Anders, *Lawrence Berkeley National Lab, Berkeley, CA, USA*
A. Subrahmanyam, *Indian Institute of Technology Madras, Chennai, India*

10:30	<p>PBP6 – Invited Non-conventional plasmas for reduced and high pressure processes</p> <p style="text-align: right;">L. Bardos, H. Barankova <i>Uppsala University, Uppsala, Sweden</i></p>
11:00	<p>PBP7 Energetics of reactions in dielectric barrier discharges with argon carrier gas: thin hydrocarbon deposits</p> <p style="text-align: right;">B. Nisol¹, S. Watson¹, S. Lerouge^{2,3}, M.R. Wertheimer¹ ¹<i>Polytechnique Montréal, Montreal, QC, Canada</i> ²<i>Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Montreal, QC, Canada</i> ³<i>École de technologie supérieure, Montreal, QC, Canada</i></p>
11:10	<p>PBP8 Functional grafting via syngas photo-initiated chemical vapor deposition</p> <p style="text-align: right;">D. Farhanian, G. De Crescenzo, J.R. Tavares <i>Polytechnique Montréal, Montreal, QC, Canada</i></p>
11:20	<p>PBP9 Electrostatics of RF plasmas and their influence on film morphology</p> <p style="text-align: right;">K.S.A. Butcher^{1,2}, P.T. Terziyska^{3,4}, V. Georgiev¹, D. Georgieva³, R. Gergova^{3,5}, P.W. Binsted³ and S. Skergetc³ ¹<i>Meaglow Ltd, Thunder Bay, ON, Canada</i> ²<i>Macquarie University, Sydney, NSW, Australia</i> ³<i>Lakehead University, Thunder Bay, ON, Canada</i> ⁴<i>Institute of Solid State Physics, Bulgarian Academy of Sciences, Sofia, Bulgaria</i> ⁵<i>Central Laboratory of Solar Energy and New Energy Sources, Bulgarian Academy of Sciences, Sofia, Bulgaria</i></p>
11:30	<p>PBP10 – Invited Some answers and a million of questions about reactive magnetron sputtering</p> <p style="text-align: right;">D. Depla, K. Strijckmans, R. Schelfhout <i>Ghent University, Ghent, Belgium</i></p>
12:00 ⋮ 13:30	<p>Lunch, Beginning of Poster Session & Exhibit</p> <p>Jean-Coutu Building, Morris and Rosalind Goodman Agora</p>


Monday Afternoon, June 5, 2017

ORAL PRESENTATIONS

Location: Jean-Coutu Building, Room S1-151

Session 3: Functional Films I

Moderators: S. Kéna-Cohen, *Polytechnique Montréal, Montreal, Quebec, Canada*
A. Alpas, *University of Windsor, Windsor, Ontario, Canada*

13:30	FF1 - Invited Hemocompatible and inherently biofunctionalisable coatings for cardiovascular stents M. Bilek ¹ , M. Santos ¹ , R. Ganesan ¹ , D.G McCulloch ² , M. Hiobb ³ , A. Kondyurin ¹ , D.R. McKenzie ¹ , A.S. Weiss ³ , M.K.C. Ng ⁴ , S.G. Wise ⁴ ¹ <i>School of Physics, University of Sydney, NSW, Australia</i> ² <i>RMIT University, Melbourne, Victoria, Australia</i> ³ <i>School of Molecular Biosciences, University of Sydney, NSW, Australia</i> ⁴ <i>Heart Research Institute, Sydney, NSW, Australia</i>
14:00	FF2 - Invited High rate synthesis of self assembled Si quantum dots using radical and plasma control in RF/UHF high density plasmas at low temperature J.G. Han, B.B. Sahu <i>Sungkyunkwan University, Suwon, South Korea</i>
14:30 : : : 17:00	Poster Session & Exhibit Continued Jean-Coutu Building, Morris and Rosalind Goodman Agora
17:00	Evening Lecture Tracing the recorded history of thin-film sputter deposition: from the 1800s to 2017 J.E. Greene <i>University of Illinois at Urbana-Champaign, Urbana, IL, USA</i>
18:30 : : : 21:00	Conference Dinner <i>École Polytechnique Lassonde Buildings Trottier Atrium</i> 

Monday Afternoon, June 5, 2017

POSTER PRESENTATIONS

Location: Jean-Coutu Building, Morris and Rosalind Goodman Agora, 12:00 – 17:00

PP1	<p>Different effects of saccharin on electrodeposition of nanocrystalline nickel coating and electrodeposition of nanocrystalline iron coating</p> <p style="text-align: right;">A. Bahrololoomi, M.E. Bahrololoom <i>Shiraz University, Shiraz, Iran</i></p>
PP2	<p>Formation of nanoparticles in HMDSO-based dusty plasma with pulsed injection of the precursor for the fabrication of nanocomposite layers</p> <p style="text-align: right;">V. Garofano¹, R. Bérard^{2,3}, L. Stafford¹, B. Despax², F. Gaboriau², C. Joblin³, K. Makasheva² ¹<i>Université de Montréal, Montreal, QC, Canada</i> ²<i>LAPLACE, Université de Toulouse, Toulouse, France</i> ³<i>IRAP-OMP, Université de Toulouse, Toulouse, France</i></p>
PP3	<p>Optical properties of 1-DT stabilized silver nanoparticles</p> <p style="text-align: right;">S. Hafezian, S. Kéna-Cohen, L. Martinu <i>Engineering Physics Department, Polytechnique Montréal, Montreal, QC, Canada</i></p>
PP4	<p>Challenges and opportunities around the synthesis of nanocomposite thin films by cold dielectric barrier discharge at atmospheric pressure</p> <p style="text-align: right;">J. Profili, L. Stafford <i>Université de Montréal, Montreal, QC, Canada</i></p>
PP5	<p>Optical and mechanical performance of Cd₂SnO₄ thin films deposited by sol-gel</p> <p style="text-align: right;">C.J. Diliégros-Godines¹, N. Abundiz-Cisneros², R. Sangines², O. Hernández-Utrera², R. Castanedo-Pérez³, R. Machorro-Mejía² ¹<i>Instituto de Física, Benemérita Universidad Autónoma de Puebla, Puebla, Mexico</i> ²<i>CONACyT, Centro de Nanociencias y Nanotecnología UNAM, Ensenada, Baja California, Mexico</i> ³<i>Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Querétaro, Mexico</i></p>
PP6	<p>Influence of internal stress on the failure modes of optical coatings during scratch testing</p> <p style="text-align: right;">T. Poirié, T. Schmitt, E. Bousser, L. Martinu, J.E. Klemberg-Sapieha <i>Polytechnique Montréal, Montreal, QC, Canada</i></p>
PP7	<p>Maximizing light-to-solar-gain and clear-neutrality in a novel spectrally selective material system</p> <p style="text-align: right;">S.S. Balakrishnan¹, Y. Ye², N.P. Kherani^{1,3} ¹<i>Department of Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada</i> ²<i>Division of Engineering Science, University of Toronto, Toronto, ON, Canada</i> ³<i>Department of Materials Science and Engineering, University of Toronto, Toronto, ON, Canada</i></p>
PP8	<p>Strain-tunable optical properties of <i>a priori</i> designed structured nano-thin metal films</p> <p style="text-align: right;">A. El-Hadi Zeineddine¹, N.P. Kherani^{1,2} ¹<i>Department of Electrical & Computer Engineering, University of Toronto, Toronto, ON, Canada</i> ²<i>Department of Materials Science & Engineering, University of Toronto, Toronto, ON, Canada</i></p>

Monday Afternoon, June 5, 2017

POSTER PRESENTATIONS

Location: Jean-Coutu Building, Morris and Rosalind Goodman Agora

PP9	<p>Wear behavior of Fe₃Al-TiN-TiB₂ HVOF coatings: a comparative study between <i>in situ</i> and <i>ex situ</i> powder processing routes</p> <p>F. Pougoum¹, T. Schmitt¹, L. Martinu¹, J.-E. Klemberg-Sapieha¹, S. Savoie², R. Schulz² ¹<i>Polytechnique Montréal, Montreal, QC, Canada</i> ²<i>Institut de recherche d'Hydro-Québec (IREQ), Varennes, QC, Canada</i></p>
PP10	<p>Solid solution hardening in nanolaminate ZrN-TiN multilayer coatings</p> <p>E. Herrera-Jiménez¹, A. Raveh², Z. Rozek¹, T. Poirié¹, T. Schmitt¹, L. Martinu¹, J.E. Klemberg-Sapieha¹ ¹<i>Polytechnique Montréal, Montreal, QC, Canada</i> ²<i>Rotem Industries Ltd., Arava, Negev, Israel</i></p>
PP11	<p>Towards perpetual dynamic component exchange using a surface immobilized anchor for azomethine substitution</p> <p>M. Lerond¹, D. Bélanger², W.G. Skene¹ ¹<i>Université de Montréal, Montreal, QC, Canada</i> ²<i>Université du Québec à Montréal, Montreal, QC, Canada</i></p>
PP12	<p>Tribological behavior of carbon and carbon-nitride films measured at the microscale levels</p> <p>F.J. Flores-Ruiz¹, A. Gallegos-Melgar², M. Tucker³, K. Bakoglidis³, K.X. Yu⁴, A.J. Gellman⁴, L. Hultman³, J. Rosen³, E. Broitman³ ¹<i>CONACYT and Physics institute of Benemerita University of Puebla, Mexico</i> ²<i>Polytechnique Montreal, Montreal, QC, Canada</i> ³<i>Linkoping University, Linkoping, Sweden</i> ⁴<i>Carnegie Mellon University, Pittsburgh, PA, USA</i></p>
PP13	<p>A CMOS compatible, ferroelectric tunnel junction memory device</p> <p>F. Ambriz-Vargas, G. Kolhatkar, A. Sarkissian, M.A. Gauthier, A. Ruediger <i>Institut national de la recherche scientifique (INRS), Varennes, QC, Canada</i></p>
PP14	<p>Effect of WC content on solid particle erosion behavior of cold-sprayed Ni-WC composite coatings</p> <p>S.A. Alidokht, S. Yue, R.R. Chromik <i>McGill University, Montreal, QC, Canada</i></p>
PP15	<p>Investigation of metal/ceramic interfaces created by cold spray</p> <p>S.I. Imbriglio, R. Gauvin, R.R. Chromik <i>McGill University, Montreal, QC, Canada</i></p>
PP16	<p>Cold spray and dry sliding wear of Ti6Al4V and Ti6Al4V+TiC metal matrix composite coatings</p> <p>M.V.N. Vamsi, S.A. Alidokht, R.R. Chromik <i>McGill University, Montreal, QC, Canada</i></p>

Monday Afternoon, June 5, 2017

POSTER PRESENTATIONS

Location: Jean-Coutu Building, Morris and Rosalind Goodman Agora

PP17	<p>Surface patterning and tribochemistry of silicon-oxide containing diamond-like carbon (a-C:H:Si:O) films K. Koshigan¹, J. Lengaigne¹, R.W. Carpick², J. Fontaine³, L. Martinu¹, J. Sapieha¹ ¹<i>Polytechnique Montréal, Montreal, QC, Canada</i> ²<i>University of Pennsylvania, Philadelphia, PA, USA</i> ³<i>École Centrale de Lyon, Écully, France</i></p>
PP18	<p>Durability and wear mechanisms of easy-to-clean coatings on glass assessed by <i>in situ</i> tribometry J.C. Qian¹, T. Schmitt¹, B. Baloukas¹, C.A. Kosik-Williams², J.J. Price², E.L. Null², C.A. Paulson², L. Martinu¹, J.E. Klemberg-Sapieha¹ ¹<i>Engineering Physics Department, Polytechnique Montréal, Montreal, QC, Canada</i> ²<i>Corning Inc., Corning, NY, USA</i></p>
PP19	<p>Ion beam oxidation of vanadium thin films: structural characterization A. Fekecs¹, C. Coia², L. Fréchette¹, N. Braidy¹ ¹<i>Université de Sherbrooke, Sherbrooke, QC, Canada</i> ²<i>Teledyne Dalsa Semiconductor, MIQro Innovation Collaborative Center, Bromont, QC, Canada</i></p>
PP20	<p>Durable thermochromic VO₂ coatings on polymer substrates deposited by HiPIMS S. Loquai, B. Baloukas, J.-E. Klemberg-Sapieha, L. Martinu <i>Engineering Physics Department, Polytechnique Montréal, Montreal, QC, Canada</i></p>
PP21	<p>All-thin-film color shifting electrochromic devices for security and architectural applications F. Blanchard, B. Baloukas, L. Martinu <i>Engineering Physics Department, Polytechnique Montréal, Montreal, QC, Canada</i></p>
PP22	<p>The effect of polymer additives on femtosecond laser micromachining of UV cured urethane diacrylate M. Wood¹, M. Coady², P. Ragona², A.-M. Kietzig¹ ¹<i>McGill University</i> ²<i>University of Western Ontario</i></p>
PP23	<p>Thermal sprayed CaviTec coatings for the protection against cavitation erosion S. Lavigne¹, F. Pougoum¹, J.-E. Klemberg-Sapieha¹, L. Martinu¹, S. Savoie², R. Schulz² ¹<i>Engineering Physics Department, Polytechnique Montréal, Montreal, QC, Canada</i> ²<i>Materials Science Dept., Institut de recherche d'Hydro-Québec (IREQ), Varennes, QC, Canada</i></p>
PP24	<p>Application of suspension plasma spray process for fabricating titanium dioxide water filtration membranes E. Ale ebrahim, F. Tarasi, S. Rahaman, A. Dolatabadi, C. Moreau <i>Concordia University, Montreal, QC, Canada</i></p>

Monday Afternoon, June 5, 2017

POSTER PRESENTATIONS

Location: Jean-Coutu Building, Morris and Rosalind Goodman Agora

PP25	<p>Effect of nanofluid stability on heat transfer enhancement</p> <p>A. Karthikeyan^{1,2}, S. Coulombe¹, A.M. Kietzig² <i>¹Plasma Processing Laboratory, ²Biomimetic Surface Engineering Laboratory, Department of Chemical, Engineering, McGill University, Montréal, QC, Canada, H3A 0C5</i></p>
PP26	<p>Microstructural and mechanical characterization of three hardfacing alloys with different buffer layers</p> <p>Y. Wu¹, T. Schmitt¹, E. Bousser¹, J. Klemberg-Sapieha¹, F. Khelifaoui², N. Tarfa² and M. Brochu¹ <i>¹Polytechnique Montreal, Quebec H3T 1J4, Canada ²Velan, 550 Rue McArthur, Saint-Laurent, Quebec H4T 1X8, Canada</i></p>
PP27	<p>High load-carrying capacity duplex-coated low strength steel</p> <p>M. Laberge¹, J. Schmitt¹, M. Koshigan¹, T. Schmitt¹, E. Bousser¹, F. Khelifaoui², L. Vernhes², J.E. Klemberg-Sapieha¹ <i>¹Department of Engineering Physics, Polytechnique Montréal, Montreal, QC H3T 1J4, Canada ²Velan, 550 Rue McArthur, Saint-Laurent, QC H4T 1X8, Canada</i></p>
PP28	<p>Durability test of optical coatings on plastics with in situ tribo-imaging characterization of the degree of failure</p> <p>A. Gallegos-Melgar¹, O. Zabeida¹, A. Dehoux², D. Poinot Cherroret², L. Martinu¹ and J.E. Klemberg-Sapieha¹ <i>¹Department of Engineering Physics, Polytechnique Montréal, Montreal, QC H3T 1J4, Canada ²Essilor International, 39-69 Boulevard Jean-Baptiste Oudry, 94000 Créteil, France</i></p>

Monday and Tuesday Afternoon, June 5-6, 2017

EXHIBIT

Location: Jean-Coutu Building, Morris and Rosalind Goodman Agora, 12:00 – 17:00

Agilent Technologies
Representative: Jean-Louis Cabral
www.agilent.com
302-636-1619
2850 Centerville Rd, Wilmington, DE, 19808 USA

Anton Paar Canada Inc.
Representative: Mahdi Dargahi , Pierre Morel
www.anton-paar.com
1-514-788-4862 #316
4920 Place Olivia, Montreal, QC, H4R 2Z8, Canada

Gencoa Ltd.
Representative: Frank Papa
www.gencoa.com
1-530-601-8860, 44 (0) 151 486 4466
De Havilland Dr., Liverpool L24 8RN, UK

IHI Hauzer Techno Coating
Representative: Roel Tietema
www.hauzertechnocoating.com
+31-77-355-97-41 (O) | +31-62-327-87-65 (M)
Van Heemskerckweg 22, 5928 LL Venlo, Netherlands

Intellivation
Representative: Mike Simmons
www.intelli-vation.com
970-237-2124
1230 Blue Spruce Dr #3, Fort Collins, CO 80524, USA

Intercovamex/InnovaTorr
Representative: Jean-Marc Zisa
www.intercovamex.com

Vacuum Products Canada Inc.
Representative: Jean-Francois Poncelet
1-450-994-0673
www.vpcinc.ca
1340, rue Denison, suite 110, St-Alphonse de Granby (Quebec) J0E 2A0

Intlvac Inc.
Representative: Dino Deligiannis
www.intlvac.ca
1-800-959-5517, 905-873-0166
247 Armstrong Ave, Georgetown, ON L7G 4X6, Canada

IHI Ionbond AG
Representative: Ton Hurkmans
www.ionbond.com
+41-44-298-50-70
Uetlibergstrasse 132, CH-8045 Zürich, Switzerland

Monday and Tuesday Afternoon, June 5-6, 2017

EXHIBIT

Location: Jean-Coutu Building, Morris and Rosalind Goodman Agora, 12:00 – 17:00

J.A. Woollam Co., Inc.

Representative: Jianing Sun

www.jawoollam.com

+1-402-477-7501

645 M Street, STE 102, Lincoln, NE 68508, USA

Kurt J. Lesker Co. Canada

Representative: Joey Keller

www.lesker.com

1-800-465-2476, 416-588-2610

553 Basaltic Rd, Concord, ON L4K 4W8, Canada

MANTIS-SIGMA

Representative: Anthony Graziano

www.mantisdeposition.com

1-720-833-7730

10200 E Girard Ave, Suite A300, Denver, CO 80231, USA

Meaglow

Representative: Scott Butcher

www.meaglow.com

+1-807-252-4391

Box 398, 2400 Nipigon Road, Thunder Bay, Ontario, P7C 4W1, Canada

Metalilux

Representative: Hamidreza Zolghadr

www.metalilux.com

514-339-1600

2371 rue Guenette, Montreal, QC H4R 2E9, Canada

Plasmionique Inc.

Representative : Andranik Sarkissian

www.plasmionique.com

+1-514-228-6931

9092 rue Rimouski, Brossard, QC, J4X 2S3, Canada

SFR (Systems For Research)

Representative: Laura Belmar

www.sfr.ca

613-492-0182

300 Earl Grey Drive, Suite 225, Kanata, Ontario, K2T 1C1, Canada

T&C Power Conversion, Inc.

Representative: Tomasz Mokrzan

www.tcpowerconversion.com

+1-585-482-5551

132 Humboldt Street, Rochester, NY 14621, USA

Monday and Tuesday Afternoon, June 5-6, 2017

EXHIBIT

Location: Jean-Coutu Building, Morris and Rosalind Goodman Agora, 12:00 – 17:00

UC components, Inc.

Representative: Chris Malocsay

www.ucomponents.com

+1-408-782-1929, 510-506-5894

18700 Adams Court, Morgan Hill, CA 95037, USA

Vergason Technology, Inc.

Representative: Michael Brazil

www.vergason.com

+1-607-589-3919, 607-589-4429 (main)

166 State Route 224, Van Etten, NY 14889, USA

Tuesday Morning, June 6, 2017

ORAL PRESENTATIONS

Location: Jean-Coutu Building, Room S1-151

Session 4: Tribological Coatings

Moderators: C. Stoessel, *Eastman Chemical Co., Palo Alto, CA, USA*
D. Depla, *Ghent University, Ghent, Belgium*

8:30	TC1 – Invited Re-engineering of tribological interfaces toward more efficient and green transportation technologies <i>A. Erdemir</i> <i>Argonne National Laboratory, Energy Systems Division, Argonne, IL, USA</i>
9:00	TC2 – Invited Relating thin film stress to the processing conditions and microstructure <i>E. Chason</i> <i>Brown University, Providence, RI, USA</i>
9:30	TC3 – Invited Innovative ceramic-like coatings for tooling, machining, aerospace, energy and automotive industry <i>P. Mayrhofer</i> <i>Technische Universität Wien, Vienna, Austria</i>
10:00	Break

Session 5: Protective Coatings

Moderators: H. Barankova, *Uppsala University, Uppsala, Sweden*
A. Erdemir, *Argonne National Laboratory, Energy Systems Division, Argonne, IL, USA*

10:30	PC1 – Invited Wear and corrosion resistant coatings for demanding environments <i>B. Strahin¹, D. Shreeram², G.L. Doll^{1,2}</i> <i>¹Department of Mechanical Engineering, The University of Akron, Akron, OH, USA</i> <i>²Department of Chemical and Biomolecular Engineering, The University of Akron, Akron, OH, USA</i>
11:00	PC2 How to ease health monitoring of CFRP in aeronautics? Stimuli sensitive-coatings: a promising solution! <i>S. Senani, E. Campazzi, J. Wehr</i> <i>Airbus Group Innovations, Suresnes, Ile de France, France</i>
11:10	PC3 Substrate rotation-induced chemical modulation in Ti-Al-O-N coatings synthesized by cathodic arc in an industrial deposition plant <i>M. Hans¹, M. to Baben^{1,2}, Y.-T. Chen¹, K.G. Pradeep¹, D.M. Holzapfel¹, D. Primetzhofe³, D. Kurapov⁴, J. Ramm⁴, M. Arndt⁴, H. Rudigier⁵, J.M. Schneider¹</i> <i>¹RWTH Aachen University, Aachen, Germany</i> <i>²GTT-Technologies, Herzogenrath, Germany</i> <i>³Uppsala University, Uppsala, Sweden</i> <i>⁴Oerlikon Balzers, Oerlikon Surface Solutions AG, Balzers, Liechtenstein</i> <i>⁵Oerlikon Balzers, Oerlikon Surface Solutions AG, Pfäffikon, Switzerland</i>
11:20	PC4 Phase stability and aluminum segregation in the nanocomposite ZrO ₂ -Al ₂ O ₃ coatings <i>A. Raveh¹, I. Zukerman^{2,3}, S. Hayun⁴, R.L. Boxman³</i> <i>¹Rotem Industries Ltd., Mishor Yamin, D.N. Arava, Israel</i> <i>²NRC-Negev, Beer-Sheva, Israel</i> <i>³Tel-Aviv University, Tel-Aviv, Israel</i> <i>⁴Ben Gurion University of the Negev, Beer-Sheva, Israel</i>

Tuesday, June 6, 2017 - continued

ORAL PRESENTATIONS

Location: Jean-Coutu Building, Room S1-151

11:30	<p>PC5 – Invited Carbon-based coatings for industrial applications</p> <p style="text-align: right;">A.T. Alpas, S. Bhowmick, Z. Yang, F.G. Sen, A. Banerji <i>University of Windsor, Windsor, ON, Canada</i></p>
12:00 ⋮ 13:30	<p>Lunch, Continuation of Poster Session, Exhibit & Announcement of the Poster Awards</p> <p>Jean-Coutu Building, Morris and Rosalind Goodman Agora</p>
<p>Session 6: Functional Films II</p> <p>Moderators: M. Bilek, <i>School of Physics, University of Sydney, NSW, Australia</i> G.L. Doll, <i>The University of Akron, Akron, OH, USA</i></p>	
13:30	<p>FF3 – Invited Quantification of structure-property relationships at interfaces</p> <p style="text-align: right;">S.B. Sinnott <i>Penn State University, University Park, PA, USA</i></p>
14:00	<p>FF4 Controlling friction and adhesion using supported two-dimensional responsive microgel arrays</p> <p style="text-align: right;">S. Giasson, L. Giraud, P. Vialar-Trarieux <i>Université de Montréal, Montreal, QC, Canada</i></p>
14:10	<p>FF5 Tailoring the superconductivity in epitaxial ultrathin films of NbTiN</p> <p style="text-align: right;">F. Mercier¹, N. Tsavdaris¹, M. Jacquemin¹, D. Hazra², M. Hofheinz², M. Pons¹, E. Blanquet¹ ¹<i>Université Grenoble Alpes, Grenoble, France</i> ²<i>INAC/SPSMS, CEA-Grenoble, France</i></p>
14:20	<p>FF6 Efficient and low-damage N-doping of graphene by nitrogen late-afterglow plasma treatment</p> <p style="text-align: right;">X. Glad, G. Robert Bigras, L. Stafford <i>Université de Montréal, Montreal, QC, Canada</i></p>
14:30	<p>FF7 – Invited Advances in non-destructive surface and interface analyses using the Kelvin probe</p> <p style="text-align: right;">A. Subrahmanyam <i>Indian Institute of Technology Madras, Chennai, India</i></p>
15:00	<p>Break</p>

Tuesday Afternoon, June 6, 2017 - continued

ORAL PRESENTATIONS

Location: Jean-Coutu Building, Room S1-151

Session 7: Functional Films and Surfaces

Moderators: S.B. Sinnott, *Penn State University, University Park, PA, USA*
L. Bardos, *Uppsala University, Uppsala, Sweden*

15:30	<p>FFS1 – Invited Functional organic and metallic films for optoelectronics</p> <p style="text-align: right;">S. Kéna-Cohen <i>Polytechnique Montréal, Montreal, QC, Canada</i></p>
16:00	<p>FFS2 X-ray absorption of nanostructured silicon carbon nitride: Interdependency of luminescence and structural properties</p> <p style="text-align: right;">Z. Khatami¹, G.B.F. Bosco², P.R.J. Wilson¹, J. Wojcik¹, L. Tessler², P. Mascher¹ ¹<i>McMaster University, Hamilton, ON, Canada</i> ²<i>University of Campinas, Campinas, São Paulo, Brazil</i></p>
16:10	<p>FFS3 Vacuum-based technique for production of silver nanostructures for double plasmon resonance with tunable properties</p> <p style="text-align: right;">O. Kylian, J. Hanus, H. Libenska, H. Biederman <i>Charles University, Prague, Czech Republic</i></p>
16:20	<p>FFS4 Effect of doping on the conductivity of δ-Bi₂O₃ thin films</p> <p style="text-align: right;">C.L. Gómez¹, O. Depablos-Rivera², S.E. Rodil² ¹<i>Centro de Investigación y de Estudios Avanzados, Unidad Querétaro, Mexico</i> ²<i>National Autonomous University of Mexico, Mexico City, Mexico</i></p>
16:30	<p>FFS5 Hierarchical superhydrophobic/icephobic coatings developed through atmospheric pressure plasma deposition of HMDSO in nitrogen plasma</p> <p style="text-align: right;">S. Asadollahi^{1,2}, Luc Stafford², M. Farzaneh¹ ¹<i>Université du Québec à Chicoutimi, Chicoutimi, QC, Canada</i> ²<i>Université de Montréal, Montreal, QC, Canada</i></p>
16:40	<p>FFS6 How black holes relate to relaxation phenomena in amorphous oxide thin films</p> <p style="text-align: right;">A. Ananyeva¹, B. Baloukas², G. Billingsley¹, A. Heptonstall¹, E. Gustafson¹, L. Martinu², A. Markosyan³, C. Menoni⁴, S. Penn⁵, S. Roorda⁶, F. Schiettekatte⁶, R. Shink⁶, C. Torrie¹, G. Vajente¹, L. Yang⁴ ¹<i>LIGO Laboratory Caltech, Pasadena, CA, USA</i> ²<i>Polytechnique Montréal, Montreal, QC, Canada</i> ³<i>Stanford University, Stanford, CA, USA</i> ⁴<i>Colorado State University, Fort Collins, CO, USA</i> ⁵<i>Hobart & William Smith Colleges, Geneva, NY, USA</i> ⁶<i>Université de Montréal, Montreal, QC, Canada</i></p>
16:50	<p>FFS7 How smart optical materials can help for energy saving and anticounterfeiting applications</p> <p style="text-align: right;">B. Baloukas, F. Blanchard, S. Loquai, and L. Martinu <i>Polytechnique Montréal, Montreal, QC, Canada</i></p>
17:00	<p>Closing remarks and Visit of the facilities</p>

Wednesday, June 7, 2017

HANDS-ON WORKSHOPS ON CHARACTERIZATION TECHNIQUES

Location: École Polytechnique, Main Building

8:30	Continental breakfast – Room A410
9:00	<p>Workshop A – Room A-404</p> <p>Optical characterization – Spectroscopic ellipsometry</p> <p style="text-align: right;">Jianing Sun¹, F. Blanchard², B. Baloukas² ¹<i>J.A. Woollam Co. Inc., Lincoln, NE, USA</i> ²<i>Polytechnique Montréal, Montreal, QC, Canada</i></p>
	<p>Workshop B – Room A-401</p> <p>Optimization of coating systems for in use condition with indentation, scratch and tribology techniques</p> <p style="text-align: right;">G. Favaro¹, P. Morel², M. Dargahi³, J. Lengaigne⁴, T. Schmitt⁴ ¹<i>Anton Paar TriTec SA, Switzerland</i> ²<i>Anton Paar USA Inc., Ashland, VA, USA</i> ³<i>Anton Paar Canada Inc., Montreal, QC, Canada</i> ⁴<i>Polytechnique Montréal, Montreal, QC, Canada</i></p>
10:30	Break
10:45 ⋮ 12:00	Continuation of the workshops
12:00	Lunch (included) and discussions – Room A-410
13:00 ⋮ 17:00	<p>Workshops A: Hands-on workshop in the laboratory Location: Room B-581</p> <hr/> <p>Workshop B: Hands-on workshop in the laboratory – Scratch and indentation testing – theory and application Location: Room B-581</p>

Wednesday, June 7, 2017

DEMONSTRATIONS OF CHARACTERIZATION EQUIPMENT (FREE)

Location: École Polytechnique, Main Building

Register during the exhibit

8:30	Continental breakfast – Room B406
9:00 ⋮ 12:00	Demonstration A – Room B-406 Introduction to modern spectrophotometric tools with Agilent Technologies - Cary 7000 spectrophotometer and the Universal Measurement Unit (UMS) J.-L. Cabral ¹ , G. Prosser ¹ , F. Blanchard ² , B. Baloukas ² <i>¹Agilent technologies, Wilmington, DE, USA</i> <i>²Polytechnique Montréal, Montreal, QC, Canada</i>
12:00	Lunch (included) and discussions – Room A-410
12:00 ⋮ 16:30	Demonstration B – Room B-401 Introduction to high-resolution optical and stylus profilers for surface metrology with Bruker and Systems For Research (SFR) L. A. Belmar ¹ , S. Basu ² , J. Lengaigne ³ , T. Schmitt ³ <i>¹Systems for Research, Kanata, ON, Canada</i> <i>²Bruker Nano Surfaces Division, Eden Prairie, MN, USA</i> <i>³Polytechnique Montréal, Montreal, QC, Canada</i>