European conference on Nanofilms 2018

Programme

March 20-22 2018

Cranfield University

ecnf2018

Tuesday 20 March

Location	Vincent Auditorium	Topic #
9:00 - 9:15	**Welcome** - Professor Sir Peter Gregson, Chief Executive and Vice-Chancellor Cranfield University	
9:15 - 9:30	Opening – J L Endrino and coorganisers	
9:30 - 10:00	**Graphene Industry opportunities and challenges** Amaia Zurutuza, Graphenea (ES)	5
10:00 - 10:30	**Tailoring the absorption and emission properties of nanomaterials through their photonic environment** Alberto Jimenez, Institute of Materials Science of Sevilla (ES)	2
10:30 - 11:00	**Coffee break / exhibition**	
11:00 - 11:30	**Optimized properties of Al-doped ZnO thin films** David Horwat, University of Lorrain (FR)	2
11:30 - 12:00	**The catalytic potential of new MOF-based composite materials** Andrew Wheatley, University of Cambridge (UK)	2
12:00 - 12:30	**Structure-based design and applications of closed porous coatings fabricated by magnetron sputtering** Vanda Godinho, Institute of Materials Science of Sevilla (ES)	2
12:30 - 1:30	**Lunch / exhibition**	
1:30 - 2:00	**The Roadmap to applications of graphene and related materials** Andrea Ferrari, University of Cambridge (UK)	5
2:00 - 2:30	**Graphene and 2D materials for next generation optoelectronics and photonics** Anna Baldycheva, University of Exeter (UK)	5
2:30 - 3:00	**Contact, friction and wear of carbon and silicon: from thin films to atomic sheets** Lars Pastewka, University Freiburg (DE)	3
3:00 - 3:30	**Mo2BC thin films - a material system combining hardness and ductility?** Gerhard Dehm, Max-Planck-Institut für Eisenforschung GmbH (DE)	3

Topic 1 Session
Contributed talks - Protective and tribological coatings

Location	LR 1	
4:00 - 4:15	**Evaluation of the corrosion performance of aluminium-based thin films as potential alternatives to cadmium coatings** Sarah Banfield, Wallwork Cambridge (UK)	1
4:15 - 4:30	**Realistic lifetime estimation of protective DLC coatings for articulating biomedical implants: combined dynamic and corrosion wear test** Ainhoa Pardo, Empa (CH)	1
4:30 - 4:45	**HIPIMS deposited CrN/NbN coatings to preserve the mechanical properties of the substrate material and protect against steam oxidation and water droplet erosion attacks** Papken Eh. Hovsepian, Sheffield-Hallam (UK)	1
4:45 - 5:00	**Positive voltage reversal in HiPIMS discharges: widening the process window** Ivan Fernandez-Martínez, Nano4energy (ES)	2
5:00 - 5:15	**Oxide coated cemented carbides for high temperature applications** Jessica Marshall, Warwick University (UK)	2

Topic 6 Session
Contributed talks - sensors and instruments based on nanofilms

Location	LR 4	
4:00 - 4:15	**Growth of large area conductive diamond for electrochemical and bio-sensing devices** Andrew Taylor, Institute Of Physics Cas (CZ)	6
4:15 - 4:30	**NanoMIP-EIS-Sensors to detect traces of cocaine** Roberta D'aurelio, Cranfield University (UK)	6
4:30 - 4:45	**Sensing of ultralow concentration of the target protein exploiting imprinted nanogels and plasmonic plastic optical fibers** Alessandra Maria Bossi, University of Verona (IT)	6
4:45 - 5:00	**Large-Area Microchannel plates and photodetectors** Till Cremer, Incom Inc (US)	6
5:00 - 5:15	**Gold nanoparticle-enhanced immunosensors for rapid malaria detection** Aver Hemben, Cranfield University (UK)	6
5:15 - 5:30	**Annealed nanostructures for biosensing applications** Rodica Elena Ionescu, Université de technologie de Troyes (FR)	6
5:30 - 5:45	**Functionalized cellulose acetate membranes as coatings for biomedical applications** S.I. Voicu, University Politehnica of Bucharest (RU)	6

Wednesday 21 March

Location	Vincent Auditorium	Topic #
9:00-10:30	Industrial Breakfast Panel (Open to the public) Chair: Dave Rickerby, Cranfield University (UK) Confirmed guests: John Christopher, Enterprise Europe Network (UK) Laurent Espitalier, Wallwork Cambridge (UK) Trevor Walker, Thin Metal Films (UK)	
10:30 - 11:00	**Coffee break / exhibition**	
11:00 - 11:30	**Electrochemical Protein, DNA and Aptamer-based Biosensors** Pedro Estrela, University of Bath (UK)	**6**
11:30 - 12:00	**Photoinduced preparation of Molecularly Imprinted Polymers (MIP) for sensor applications** Olivier Soppera, French National Centre for Scientific Research (FR)	**6**
12:00 - 12:30	**Recent advances in polymer nanocomposites based biosensors** Giovanna Marrazza, University of Florence (IT)	**6**
12:30 - 1:30	**Lunch / exhibition**	
1:30 - 2:00	**Wear resistance of HVAF-sprayed hardmetal coatings** Heli Koivuluoto, Tampere University of Technology (FI)	**1**
2:00 - 2:30	**Tribooxidation as a way to improve the wear resistance of cutting tools** Dmitry Wainstein, Bardin Central Research Institute (RU)	**1**
2:30 - 3:00	**Behavior of micro-scaled composite TBCs under corrosive attack by CMAS deposits** Daniel Emil Mack, Forschungszentrum Jülich GmbH (DE)	**1**
3:00 - 3:30	**Self adaption: a solution for improving the friction behaviour of thin sputtered coatings** Albano Cavaleiro, University of Coimbra (PT)	**1**
3:30 - 4:00	**Coffee break / exhibition**	

Topic 5 Session
Contributed talks - 2D materials: graphene and beyond

Location	LR 1	
4:00 - 4:15	**Characterisation of femtosecond pulsed laser deposited MoS2 thin films for photonic applications** Chiranjeevi Maddi, University Of Leeds (UK)	**5**
4:15 - 4:30	**Freestanding Graphene Gyroids** Tomasz Cebo, Cambridge University (UK)	**5**
4:30 - 4:45	**Electrospun Piezoelectric Thermoplastic Nanofibre Layers for Toughening and In-situ Measurement of Laminated Composites** Hamed Yazdani Nezhad, Cranfield (UK)	**5**

Topic 3
From atoms to sheets: growth and tribology of thin films

Location	LR 4	
4:00 - 4:15	**Multiscale modelling of thermally sprayed particle impact and coating formation** Jordan Davidson, Robert Gordon University (UK)	**3**
4:15 - 4:30	**Influence of multiply charged ions on the adhesive strength of coatings at HV pulsed negative bias on a substrate** Petr A. Tsygankov, Universidad Industrial de Santander (CO)	**3**
4:30 - 4:45	**Nanomechanical characterisation of DLC coating systems** Sam McMaster, University of Leeds (UK)	**3**
4:45 - 5:00	**Developments in nano-impact testing on optical thin films** Luis Isern Arrom, Cranfield University (UK)	**3**
5:00 - 5:15	**Determination of the mechanical properties of coatings and thin films using nanoindentation and analytical model** Andrei S. Vasiliev, Don State Technical University (RU)	**3**

Thursday 22 March

Location	Vincent Auditorium	Topic #
9:00 - 10:30	Special Seminar Nanofilms for Breast Cancer Detection Devices Chairs: I. Chianella, J.L. Endrino **Heterostructure Radiation Detector Materials for the next generation of Time of Flight Positron Emission Tomography Scanners** Gregory Bizarri, Cranfield University (UK) **Field Cancerization effect in the early detection of cancer** David Miranda, Universidad Industrial de Santander (CO) **Zinc isotopes as a possible biomarker for breast cancer** Rebekah Moore, Imperial College (UK) **Development of a Point of Care Biosensor for the Detection of Breast Cancer Biomarkers** Shayalini Wignarajah (Cranfield University), I.E.Tothill	6
10:30 - 11:00	**Coffee break / exhibition**	
11:00 - 11:30	**Design, validation and thermal testing of durable central receiver coatings for high-temperature concentrated solar power** Matthias Krause, Helmholtz-Zentrum Dresden-Rossendorf (DE)	1
11:30 - 12:00	**Multiscale modelling of Meso-Bio-Nano (MBN) systems with MBN Explorer and MBN Studio: thermally induced morphological transitions of nanostructures** Andrey V. Solov'yov, MBN Research Centre (DE)	3
12:00 - 12:30	**Self-powered high performance photodetectors for ultraviolet and visible lights** Durga Basak, Indian Association for the Cultivation of Science (IN)	4
12:30 - 1:30	**Lunch / exhibition**	
1:30 - 2:00	**Towards functional Copper Halide thin films for Optoelectronics** Aidan Cowley, European Space Agency (FR)	4
2:00 - 2:30	**Fracture toughness and yield strength of hard, thin coatings at high temperatures using in situ micromechanical testing** Jeff Wheeler, Swiss Federal Institute of Technology (CH)	4
3:00 - 3:30	**Characterization by TEM and Raman of high-density low-defect-concentration zinc oxide nanowires grown by afterglow** Thierry Belmonte, Institut Jean Lamour (FR)	4
3:30 - 4:00	**Coffee break / exhibition**	

Topic 2
Thin films for energy conversion, catalysis and related processes

Location	LR 1	
4:00 - 4:15	**Infrared electrochromism of VO2/Ag nanowires electrodes in ionic liquid** Nicolas Glandut, University Of Limoges (FR)	2
4:15 - 4:30	**REACH compliant epoxides used in the synthesis of Fe2O3 aerogel monoliths for target fabrication** Paul Jones, Cranfield University (UK)	2
4:30 - 4:45	**Interconnections between electronic structure and optical properties of multilayer nanolaminate TiAlN/Ag and Al2O3/Ag coating** Dmitry Wainstein, I.P. Bardin (RU)	2
4:45 - 5:00	**Tuning of catalytic activity by thermoelectric materials** Zhaorong Huang, Cranfield University (UK)	2
5:00 - 5:15	**The role of coatings in addressing a more cost-effective PEM electrolyser** Marlon R. Cruz Vivas, Flubetech S.L. (ES)	2
5:15 - 5:30	**New developments in solid polymer electrolytes for electrochromic smart windows** Quentin Lonne, Cranfield University (UK)	2
5:30 - 5:45	**Plasma Printing Oxide nanoparticles by in-situ Tailoring of Oxidation State** Avishek Dey, The Open University (UK)	2

Thursday 22 March

Topic 4 Functionalisation and characterisation of coatings and nanofilms		
Location	**LR 4**	
4:00 - 4:15	**Characterisation of an antimicrobial silver nanocomposite coating on orthopaedic grade cobalt chromium alloy** Liuquan Yang, Wallwork Cambridge (UK)	4
4:15 - 4:30	**Synthesis and deposition of polyfluoroacrylate film on anodised aluminium surface for hydrophobic and icephobic applications** Tamal Barman, The University of Nottingham (UK)	4
4:30 - 4:45	**Characteristics of bloch surface wave resonances in total internal ellipsometry spectra: effect of adsorbed nanolayer on selected dielectric multilayers** Karl Fleury-Frenette, Université de Liège (BE)	4
4:45-5:00	**High temperature nanoindentation up to 800°C for characterizing high temperature properties of coatings** Nicholas X. Randall , Anton Paar (CH)	4
5:00 - 5:15	**Biopolyurethane – carbon nanotubes composite for functional coating applications** Oskars Platnieks, Riga Technical University (LV)	4
5:15 - 5:30	**Optimization of silver nanocolumnar coatings made by glancing angle deposition with magnetron sputtering to reduce the multipactor effect** J. M. García-Martín (Instituto de Micro y Nanotecnología IMN-CNM (ES)	4
5:30-5:45	**Development of smart coating for structural health monitoring** Stephen Edmondson, Direct-C (CA)	4
5:45-6:00	**CuS-based p-type transparent conducting thin film for all transparent electronics** Arindam Mallick, Indian Association for the Cultivation of Science (IN)	4

Poster Session		
Location	**Vincent Building Atrium**	**Topic #**
Characterization of bio-deterministic surfaces fabricated by photochemical machining of aisi 52100 steel coated with DLC and MoS2 for tribological applications Juan C. Sanchez Gonzalez, National University of Colombia (CO)		1
Control of the compensating defects in doped ZnO nanocrystalline thin films Shuvaraj Ghosh, Indian Association for the Cultivation of Science (IN)		2
Large area synthesis and properties of diamond - silicon carbide composite thin films for enhanced protective coatings Andrew Taylor, Institute of Physics CAS (CZ)		3
(Al, In) co-doped nanocrystalline ZnO transparent conducting thin films for rigid and flexible substrates A Mallick, Indian Association for the Cultivation of Science (IN)		2
Nickel-aluminide based anticorrosion coatings prepared by Plasma Spray for Concentrating Solar Power applications Sarah Yasir, Cranfield University,(UK)		1
Manufacturing of devices using light cure resin with nanofillers of copper and copper nickel through stereolithography technique Ely Dannier V-Niño and Andrés Díaz Lantada, Universidad Politécnica de Madrid (ES)		6
Electrochemical impedance spectroscopy biosensor for neuron specific enolase (NSE) biomarker for lung cancer detection Mahdi Arabnejad, Cranfield University (ES)		6
New DNA-based sensing platform for the detection of profenofos pesticide Oana Hosu, University of Florence (IT)		6
Development of thin films for applications in piezoresistive sensors for cancer detection James Janderson Rosero Romo, National University of Colombia (CO)		6
Localized surface plasmon resonance in laser- deposited gold nanoparticle layers for total internal reflection based optical sensors Jurij Hastanin, Université de Liège (BE)		6
Sharp fall of the thermal conductivity of a van der Waals heterobilayer due to interlayer sp3 bonds Kazuhito Shintani, University of Electro-Communications (JP)		5
Self-supporting Diamond-Like Carbon (DLC) as a material for laser-driven particle sources David Haddock, Rutherford Appleton Laboratories (UK)		4