

MATERIAIS 2017 Detailed Scientific Program

Sunday, April 9, 2017

SCHOOL 1

School on Advanced Biomaterials (SABio)

Satellite event of MATERIAIS 2017 under the auspices of UT Austin | Portugal
International Collaboratory for Emerging Technology, CoLab

Hotel Montebelo, Ílhavo

08:30-09:00	SABio Registration at Department of Communication and Art (DECA), University of Aveiro (UA)
09:00	Bus Departure from DECA, UA, to Hotel Montebelo, Ílhavo
09:30-09:45	Welcome and Opening Remarks (Hotel Montebelo, Ílhavo) Paula M Vilarinho (UA / UT Austin Portugal International Collaboratory for Emerging Technology) Maria Helena Fernandes (UA, School Organizer)
09:45-10:30	Phosphate Based Glasses for Biomedical Engineering Jonathan Knowles <i>Eastman Dental Institute, Faculty of Medical Sciences, University College London, UK</i>
10:30-11:15	Identifying molecular signatures of tumor dormancy as a basis for the rational design of precision nanomedicines Ronit Satchi-Fainaro <i>Department of Physiology and Pharmacology Sackler School of Medicine, Tel Aviv University, Israel</i>
11:15-12:00	Polysaccharides in the development of advanced biomaterials for tissue engineering João F. Mano <i>CICECO, Department of Chemistry, University of Aveiro, Portugal</i>
12:00-12:45	Developing next generation methodology for an ethical, accelerated clinical translation of innovative materials François Berger <i>FMUC, Institut National de la Santé et de la Recherche Médicale, Grenoble, France</i>

Lunch

14:00-14:45	Designing instructive biomaterials for bone regeneration Pamela Habibović <i>MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Netherlands</i>
14:45-15:30	3D Printing of Advanced Biostructures Paulo Bártolo <i>School of Mechanical, Aerospace and Civil Engineering, The University of Manchester, UK</i>

15:30-16:30	General Discussion and Concluding Remarks
17:00-18:00	Guided tour to Museu da Vista Alegre
18:00	Get together and bus departure to University of Aveiro

SCHOOL 2

School on Advanced Electron Microscopy (SAEM)

**Satellite event of MATERIAIS 2017 under the auspices of UT Austin | Portugal
International Collaboratory for Emerging Technology, CoLab**

University of Aveiro, Department of Communication and Art (DECA), Aveiro

08:30-08:45	SAEM Registration at Department of Communication and Art (DECA), University of Aveiro (UA)
08:45-09:00	Welcome and Introduction to the Course Paula M Vilarinho (UA / UT Austin Portugal International Collaboratory for Emerging Technology) Leonard Francis (INL, School Organizer)
09:00-10:30	Transmission electron microscopy and electron diffraction Patricia Carvalho <i>SINTEF MK, Forskningsveien 1, N-0373 Oslo, Norway</i>

Discussions and Coffee Break

11:00-12:30	Fundamentals and Trends of Scanning Transmission Electron Microscopy Pedro Costa <i>Physical Science and Engineering Division, King Abdullah University of Science and Technology, Saudi Arabia</i>
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Lunch

14:00-15:30	EELS in a TEM: principle and applications Raul Arenal <i>Laboratorio Microscopias Avanzadas, INA, University of Zaragoza, Spain</i>
15:30-17:00	Seeing is Believing: The Beauty of <i>In Situ</i> Transmission Electron Microscopy Paulo Ferreira <i>Materials Science and Engineering Program, University of Texas at Austin, USA</i>
17:00-18:00	Questions & Answers Session and Discussions



MATERIAIS 2017

University of Aveiro, Department of Communication and Art (DECA), Aveiro

18:30-20:00	MATERIAIS 2017 Registration and Welcome Cocktail
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Monday, April 10, 2017

University of Aveiro, Department of Communication and Art (DECA), Aveiro

08:45-19:30	MATERIAIS 2017 Registration
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08:45-09:15	MATERIAIS 2017 Opening (DECA Amphitheatre)
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Chair: João Rocha

09:15-10:15	Substitution and Sustainability in Functional Materials and Devices – Plenary Talk (DECA Amphitheatre)	Ian M. Reaney
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Coffee Break

Energy Satellite Event
(DECA Amphitheatre)

Solar energy: photonics & thermics		
Chairs: Angus Kingon & Brian Korgel		
10:45-11:15	The Future of the Photovoltaics Industry - Invited talk	Brian Korgel
11:15-11:30	Flexible solar cells on paper based substrates	Hugo Águas
11:30-11:45	Electroluminescent Metal-Organic Frameworks based in host: guest or hetero ligand approaches	Carlos Baleizão
11:45-12:00	Oxidation kinetics of sintered SiC for solar receivers	Fernando Oliveira
12:00-12:15	Effective anisotropic etching of silicon wafers in temperature gradients – variation of surface topography and reflectivity with a specially designed apparatus	Petr Smolka
12:15-12:30	High-temperature thermoelectric energy harvesting: materials and approaches	Andrei Kovalevsky
12:30-12:45	Development of rigid polyurethane foam incorporating phase change material microencapsulated with calcium carbonate shell for thermal energy storage	Claudia Amaral
12:45-13:00	PCM emulsions for cold storage	Jorge Frade

Lunch

Energy conversion & storage		
Chair: Filipe Figueiredo & João Abrantes		
14:30-14:45	Manganese oxide nanostructured supercapacitor electrodes: size matters	Ricardo Silva
14:45-15:00	Environmental friendly screen-printed electrodes for printed lithium-ion batteries	Carlos M. Costa
15:00-15:15	Energy Storage Density of Bismuth Sodium Titanium Based Lead Free Relaxor-Ferroelectrics.	Amit Mahajan

15:15-15:30	Electrochemistry of Hydrogen Evolution in RTILs Mixtures	Luis Amaral
15:30-15:45	Electrical Properties of Pyrochlore $\text{Pr}_2\text{O}_3\text{-ZrO}_2$ System: A Defect Chemistry Approach	João Abrantes
15:45-16:00	Enhanced densification and improved chemical stability of ZnO-added $\text{BaZr}_{0.1}\text{Ce}_{0.7}\text{Y}_{0.1}\text{Yb}_{0.1}\text{O}_{3-6}$ electrolyte material for proton conducting solid oxide fuel cells	Muhammad Naeem Khan
16:00-16:15	Nanostructured Bacterial Cellulose based composite anion exchange membranes for energy conversion	Nuno Sousa
16:15-16:30	Ph-m-SPEEK ionomer and polysiloxane hybrid membranes for direct methanol fuel cells	Alejandro Gutiérrez-Sánchez

Coffee break

Biomass Chair: Luis Gil		
17:00-17:30	Biomass - Invited talk	Ibrahim Gulyurtlu
Opportunities & gaps in renewable energies Chairs: Angus Kingon, Manuel Colares-Pereira, Luis Gil, Jorge Frade		
17:30-17:45	Materials and renewable energy	Luis Gil
17:45-18:15	Debate	

Session 1
(DECA Room 40.1.8)

A1	Bio-inspired materials and materials for healthcare applications Chairs: Jonathan Knowles & Paulo Bártolo	
10:45-11:00	Molecularly Imprinted Biodegradable Magnetic Responsive Particles Based on Poly(2-pyrrolidone)	Zlatan Denchev
11:00-11:15	Chitosan/Chitin films with imprinted liquid crystalline architecture	João P. Borges
11:15-11:30	Formation of poly(lactide) stereocomplexes in blends with a cholinium ionic liquid	Paula Barbosa
11:30-11:45	Digital Microfluidics Devices for Nucleic Acid Amplification	Beatriz Coelho
11:45-12:00	A dual-crosslinking strategy to design biofunctional pectin hydrogels for extrusion bioprinting	Ruben Pereira
12:00-12:15	In vitro and in vivo assessment of Pectin Hydrogels for Skin Regeneration and Repair	Aureliana Sousa
12:15-12:30	Effect of poling state of piezoelectric poly(vinylidene fluoride) films on C2C12 myoblast differentiation for skeletal muscle tissue engineering	Sylvie Ribeiro
12:30-12:45	Extracellular electrical recordings using poly (L-lactic) acid coated electrodes	Ana Mestre

Lunch

A1	Bio-inspired materials and materials for healthcare applications (cont.) Chairs: Sandra Carvalho & Maria Ascensão Lopes	
14:15-14:30	Ti _{1-x} Ag _x and Ag-TiN _x coatings deposited on PVDF substrates for sensors applications	Sandra Mariana Marques
14:30-14:45	Thin Film Nickel Resistance as Temperature Sensor for Application in Neuronal Electrodes	José Marinho Palha
14:45-15:00	Antibiofilm properties of ZnO-based coatings in resorbable metallic biomaterials	Marta Alves
15:00-15:15	Deposition of ZnO nanoparticles by magnetron sputtering onto tantalum nanostructures	Joana Oliveira
15:15-15:30	Efficient upconversion in Yb:Er:NaT(XO ₄) ₂ thermal nanoprobe intended for biomedical applications	Carlos Zaldo
15:30-15:45	Anisotropic calcium carbonate particles in vaterite phase: synthesis and applications	Bogdan Parakhonskiy
15:45-16:00	The effect of porosity on osteogenic differentiation of hMSC in biphasic calcium phosphate scaffolds fabricated by robocasting	Catarina F. Marques
16:00-16:15	Design and FE simulation of a novel implant-supported dental bridge using hybrid materials – Ti6Al4V and PEEK	Duarte Domingues
16:15-16:30	Tribological characterization of Ti6Al4V+HAp and Ti6Al4V+β-TCP biocomposites to assess the primary stability of implants	Telma Dantas
16:30-16:45	New approach on creation multifunctional microcapsules for drug delivery systems	Ekaterina Lengert

Coffee Break

A1	Bio-inspired materials and materials for healthcare applications (cont.) Chairs: Ana Luisa Daniel & Paula Ferreira	
17:15-17:30	Development of antimicrobial leather modified with Ag-TiO ₂ nanoparticles for footwear industry	Sandra Carvalho
17:30-17:45	NanoShoe: Use of nanoparticles to develop materials with antimicrobial properties for footwear application	Maria José Ferreira
17:45-18:00	Emulsion electrospun fiber mats of PCL/PVA/Chitosan with antibacterial properties as potential wound dressing material	Cláudia Mouro
18:00-18:15	The potential of positive alginate as an antimicrobial agent for wound dressings	Frederico Nogueira
18:15-18:30	Functional material based on CaCO ₃ mineralized fibrous polymeric matrix for tissue engineering applications	Mariia S. Saveleva

Session 2
(DECA Room 40.2.15)

D3	Advanced characterization using microscopy techniques Chairs: Pedro Costa & Joaquim Vieira	
10:45-11:15	Atomic-scale changes induced by hydrogen and boron in crystalline materials – Invited Talk	Patricia Almeida Carvalho
11:15-11:30	Exploring stresses in $K_{0.5}Na_{0.5}NbO_3$ thin films by in-situ TEM sintering	Manuela Fernandes
11:30-11:45	Locally inducing and mapping of structural transformations in Ni-Mn-Ga thin films by scanning thermal microscopy	Maria Pereira
11:45-12:00	Testing Systems for Miniaturized Samples	Matthias Prinz

D1	Physical, chemical and structural characterization Chairs: Joaquim Vieira & Pedro Costa	
12:00-12:15	Raman and infrared reflectivity studies of $LaTaTiO_6$ polymorphs	Roberto Luiz Moreira
12:15-12:30	Thermal ageing of an epoxy observed with positron lifetime and mechanical tests	Marco Duarte Naia

Lunch

C1	Processing using laser/plasma/electric field technologies Chairs: Ana Senos & Daniel Marinha	
14:15-14:45	Flash Sintering Ceramics – Invited Talk	Daniel Marinha
14:45-15:00	Presentation of two different approaches to elaborate transparent ceramics for LASER and ballistic protection applications	Judith Boehmler
15:00-15:15	Alternative sintering of lead free potassium sodium niobate (KNN): Spark plasma texturing	Rui Pinho
15:15-15:30	Structural and dielectric properties of laser annealed multiferroic nanostructures	João Rodolfo Alves
15:30-15:45	Upconversion luminescence of Ho^{3+} doped zirconia nanoparticles produced by pulsed laser ablation in water	Rosa Soares
15:45-16:00	Influence of liquid medium and laser fluence on production of silver nanoparticles by pulsed laser ablation	Caroline G. Moura
16:00-16:15	Macro and microstructure properties of microwave fired porcelain	Tiago Santos
16:15-16:30	Copper thin films obtained by cathodic cage: Analysis of plasma confinement by increasing the thickness of the cage lid and the deposition parameters	Fernanda de Melo Fernandes
16:30-16:45	Performance analysis of High speed steel (HSS) drills subjected to different surface treatments to plasma	Thercio Costa

Coffee Break

D4	Materials modelling (Advanced atomistic algorithms, computer simulations) Chairs: Vladimir Bystrov & Sérgio Tavares	
17:15-17:30	Numerical Modelling of Welded T-Joint Configurations using Sysweld	Sérgio Tavares
17:30-17:45	Finite element modeling of the mechanical milling and physical characterization of copper powders	Tomás Seixas
17:45-18:00	First principle computational study of Hydroxyapatite structures, properties and related materials	Vladimir Bystrov
18:00-18:15	Comparative analysis of the diffusion-controlled thermal annealing of radiation defects in simple oxides and piezoelectric PLZT ceramics	Anatoli Popov
18:15-18:30	a-SiC:H photodetector in VLC system with RGB LEDs	Paula Louro
18:30-18:45	Modelling and simulation of thin-film coatings for optical applications	Norberto Jorge Gonçalves

Session 3 **(DECA Room 40.2.5)**

B4	Advances in composites and hybrid materials Chairs: Rob Pullar & João Gomes	
10:45-11:15	Developing smart and functional materials for textile applications: Success Cases from Portugal – Invited Talk	João Gomes
11:15-11:30	Expanded corkboard core sandwich structure: low velocity impact and flexural properties	António Torres Marques
11:30-11:45	New Multi-scale Cementitious Composites Developed Using Carbon Nanotubes and Microcrystalline Cellulose	Shama Parveen
11:45-12:00	Tailor-made carbon nanotubes dispersion in epoxy matrices through self-assembly with block copolymers	Joana Guedes
12:00-12:15	Fracture mechanisms of epoxy nanocomposites: influence of carbon nanoparticles with different geometries	Marcia Bär Schuster
12:15-12:30	Effect of carbon nanotube on the micro hot-embossed aluminium powder	Omid Emadina
12:30-12:45	Hybrid composites with tailored electromagnetic and dielectric properties based on shell-core polyamide microcapsules	Filipa M. Oliveira

Lunch

B4	Advances in composites and hybrid materials (cont.) Chairs: Patricia Almeida Carvalho & João Tedim	
14:15-14:30	Synthesis of CNT-silica aerogels	Alyne Lamy-Mendes
14:30-14:45	New Bio-based Multi-scale Composites Developed Using Carbon Nanotubes	Sohel Rana
14:45-15:00	Development of polymer/metal multilayer composites by “Spark Plasma Sintering”	Sebastian Lemonnier
15:00-15:15	Nickel matrix composites reinforced by carbon nanotubes	Sónia Simões

B2	Advances in metals and alloys Chairs: Patricia Almeida Carvalho & João Tedim	
15:15-15:30	Assessing the thermomechanical processing steps of NiTi alloy production for orthodontic application	Patricia Rodrigues
15:30-15:45	Study of the Effect of Corrosion on Nickel-Aluminum Bronze in Natural Waters	Ignacio Cobo
15:45-16:00	Explosive welding of similar and dissimilar copper and aluminium alloys	Gustavo Henrique Senna Carvalho
16:00-16:15	Joining of AA6082-T6 aluminium alloys by Friction Stir Welding Mechanical characterization, modelling and numerical simulation	Maria Inês Costa
16:15-16:30	Influence of ultrasound melt treatment in the corrosion of AZ91D-Eco alloy	Vítor Emanuel Rebelo Lopes
16:30-16:45	Corrosion behaviour of alternatives to the WC-Co hardmetal	Alexandre Ferro Rocha

Coffee Break

D2	Mechanical characterization (including at nanoscale) Chairs: Paulo M.S. Tavares de Castro & Victor Neto	
17:15-17:30	Validation of cohesive laws for static strength estimation of adhesively-bonded joints	Raul Campilho
17:30-17:45	Determination of Mechanical Properties of aluminium AA6061 and HSLA420 steel using Inverse Analysis	Sara Miranda
17:45-18:00	Effect of σ and χ phases on micro residual stresses in cast super duplex stainless steel	Ricardo Sousa
18:00-18:15	Local Texture Characterization of Stainless Steel Cladding using Neutron Diffraction	Maria José Marques
18:15-18:30	Fracture behaviour of sheet metal materials for different stress triaxialities	Rui Amaral
18:30-18:45	Assessment of standardized methodologies for fatigue design of shafts: DIN 743, FKM and AGMA 6001	Paulo M.S. Tavares de Castro

19:30	Music Show (Rectory of University of Aveiro)
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Tuesday, April 11, 2017

**Session 1
(DECA Amphitheatre)**

A2	Magnetic, electric, multiferroic, plasmonic functional materials Chairs: Angus Kingon & Chris Bowen	
09:00-09:45	Piezoelectric and Pyroelectric Materials and Structures for Energy Harvesting – Keynote Talk	Chris Bowen
09:45-10:00	Unidirectional porous PZT with improved pyroelectric and piezoelectric properties for energy harvesting applications	Yan Zhan
10:00-10:15	Crystal structure and piezoelectric properties of Bi _{1-x} Sm _x FeO ₃ ceramics	Dmitry Karpinsky

Coffee Break

A2	Magnetic, electric, multiferroic, plasmonic functional materials (cont.) Chairs: Chris Bowen & Angus Kingon	
10:45-11:15	Perovskite Photovoltaics: Why the Excitement? And What are the Challenges? – Invited Talk	Angus Kingon
11:15-11:30	Ag-TiO ₂ nano-heterostructures exhibiting gas sensing properties, visible-light activated photochromism with simultaneous plasmon-enhanced photocatalysis and antibacterial activity	David Tobaldi
11:30-11:45	Turning biocompatible and biodegradable biopolymers into electric and magnetic flexible bionanocomposites	Ana Barra
11:45-12:00	Synthesis, Structure, Optical and Magnetic Properties of New Multifunctional Lanthanide Complexes	Maria Susano
12:00-12:15	Oxyorthosilicates obtained by Laser Floating Zone: from photonic to electrical applications	Francisco Rey-García
12:15-12:30	New features in indentation and scratch testing	Aurelien Fillon

**Session 2
(DECA Room 40.1.8)**

A1	Bio-inspired materials and materials for healthcare applications (cont.) Chairs: Maria Helena Fernandes & Martinho Oliveira	
09:00-09:45	Bone repair and regeneration: relevant aspects – Keynote Talk	Jonathan Knowles
09:45-10:00	Mechanical and tribocorrosion behavior of Ti6Al4V cellular structures impregnated with biomedical PEEK	Flávio Bartolomeu
10:00-10:15	A Single-Step Method to obtain Additive Manufactured 3D Scaffolds with Tailored Surface Topography	Sara Neves

Coffee Break

C2	Additive manufacturing Chairs: Maria Helena Fernandes & Martinho Oliveira	
11:00-11:15	A new generation of x-ray computed tomography devices for quality insurance and metrology inspection in the field of additive manufacturing	Patrick Möser
11:15-11:30	Study of PLA properties obtained by 3D printing FDM process with FUZZY-PID temperature control and cooling system	Santiago Villa
11:30-11:45	Mechanical behavior of thermoplastic based composites processed by additive manufacturing	Isaac Ferreira
11:45-12:00	Porcelain powders formulation for indirect selective laser sintering	Pedro Duarte
12:00-12:15	A multimaterial approach for the next generation of high performance moulds	Cyril Santos
12:15-12:30	Improving the performance of injection moulding through the application of additive manufacturing	Nilza Reis
12:30-12:45	Influence of the thickness parts produced by SLM on the transformation characteristics of NiTi	Pedro Carreira

Session 3 **(DECA Room 40.2.15)**

A3	Materials for environment and sustainable materials Chairs: Ian M. Reaney & Luis Gil	
09:00-09:45	The industrial-digital revolution: How would this shape future materials and manufacturing supply chain sustainability and efficiency – Keynote Talk	Lenny Koh
09:45-10:00	Natural and synthetic sorbent materials performance for CO ₂ capture: a comparative study	Paula Teixeira
10:00-10:15	Boron Detection and Scavenging Materials	José Paulo Farinha

Coffee Break

A3	Materials for environment and sustainable materials (cont.) Chairs: Lenny Koh & Ian M. Reaney	
10:45-11:00	Gold nanoisland-decorated TiO ₂ for enhanced photocatalysis	Pedro Martins
11:00-11:15	Bimetallic metal nanoparticles on carbon nanotubes embedded in polymeric membranes as supported hybrid catalysts for environmental applications	Vicente Esquivel-Peña
11:15-11:45	Active and transparent chitosan-genipin films: a promising approach for food packaging materials	Idalina Gonçalves

C4	Recycling Chairs: Luis Gil & Lenny Koh	
11:45-12:00	Inorganic polymers reinforced with glass fibre waste for construction materials	Rui Novais
12:00-12:15	Eco Composites based on Slate Residues	Luís Nobre
12:15-12:30	Physical and mechanical properties of eco-reactive powder concrete	Samihha Ramdani
12:30-12:45	Transformation of Textile and Wood Waste in new Products	Jorge Lino Alves

Lunch

Chair: Martinho Oliveira

14:00-15:00	Additive Manufacturing: Future Challenges – Plenary Talk (DECA Amphitheatre)	Paolo Bártolo
15:00-16:30	Debate	

Coffee Break

17:00-18:30	Show Case + Poster Session	
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19:30	Gala Dinner (Escola Secundária José Estevão)	
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Wednesday, April 12, 2017

Session 1
(DECA Amphitheatre)

A2	Magnetic, electric, multiferroic, plasmonic functional materials (cont.) Chairs: Elisabete Costa & K C James Raju	
09:00-09:30	Tunable microwave dielectric properties of ferroelectric thin films and their applications – Invited Talk	K C James Raju
09:30-09:45	High Temperature Giant Magnetoelectric Coupling in BaTiO ₃ :Fe auto-composites	Carlos Amorim
09:45-10:00	Role of topology in apolar-to-polar phase transition of hexagonal RMO ₃ (M=Mn, Fe) improper ferroelectrics	Joaquim Vieira
10:00-10:15	Green cellulose-based hydrogel stickers applied as gate dielectric in paper electrolyte-gated transistors	Inês Cunha

Coffee Break

A2	Magnetic, electric, multiferroic, plasmonic functional materials (cont.) Chairs: K C James Raju & Elisabete Costa	
10:45-11:00	Comparative Analysis of Structural and Electromagnetic Properties of Cobalt Ferrite With And Without Addition of Niobium Pentoxide	Francisco Carvalho
11:00-11:15	Fabrication and characterization of a DC magnetic field sensor based on magnetoelectric polymer composites	Sílvia Reis
11:15-11:30	Tuning functionalized periodic mesoporous phenylene-silicas for CO ₂ /CH ₄ separation	Mirtha Louenço
11:30-11:45	Nanotechnology Usability tool for optimization of nano-based products	Bárbara Gabriel
11:45-12:00	Piezo-resistive behaviour at high strain levels of intrinsically conductive polymers printed on a flexible polymeric substrate by a novel surface treatment.	Sílvia Cruz
12:00-12:15	Temperature Phase Transition and Modification of Surface States in Self-Assembled Nanocomposites Based on CdSe/ZnS Quantum Dots and Dyes	Eduard Zenkevich
12:15-12:30	Study of the NLO properties of L- Histidine HCl-[ErNO ₃]5H ₂ O crystals	ErasmO Orrantia Borunda

D4	Materials modelling (Advanced atomistic algorithms, computer simulations) (cont.) Chairs: Elisabete Costa & K C James Raju	
12:30-12:45	The possibility of use of ferrocene-substituted conducting polymers in paraquat electrochemical detection	Volodymyr Tkach

Session 2
(DECA Room 40.1.8)

C3	Coatings and interfaces Chairs: Albano Cavaleiro & David Maestre	
09:00-09:30	Tailoring morphology and optical properties of Cr doped SnO ₂ micro- and nanostructures grown by a vapor-solid method – Invited Talk	David Maestre
09:30-09:45	Protective coatings to avoid zirconia aging behavior	Rafael Pereira
09:45-10:00	Using CO ₂ supercritical fluid deposition to prepare functional thin film composites	Paula Ferreira
10:00-10:15	Selective metallization of flexible substrates by inkjet printing with electroless copper plating	Geoffrey Barral

Coffee Break

C3	Coatings and interfaces (cont.) Chairs: David Maestre & Albano Cavaleiro	
10:45-11:00	On the role of the energetic species in TiN thin film growth by reactive DOMS in Ar/N ₂	Ricardo Serra
11:00-11:15	Microstructure and Hardness Enhancement of Multilayer CrN/MoN Films	Bogdan Postolnyi
11:15-11:30	Interface Characterization of Industrial Slide-Contact Bearings Coated with Tin Based Alloys	Fernando Simões
11:30-11:45	Synthesis and structural characterization of fluorine-alloyed WS ₂ -C coatings produced by reactive magnetron sputtering	Simone Rodrigues
11:45-12:00	Effect of high dosage on the short-fiber-carbon-reinforced epoxy composites machining process	Sergio Espel de Oliveira
12:00-12:15	Reinforcement Sputtering Functionalization and influence on the interface reaction of 410L- SiCp stainless steel composites	Oscar Carvalho
12:15-12:30	Structural studies of the hydrogenated silicon thin film deposited by RF magnetron sputtering	Zeudmi Fouzia

Session 3
(DECA Room 40.2.15)

A4	Carbon based materials Chairs: Raul Arenal & Jorge Frade	
09:00-09:30	Advanced TEM Studies on Different Atomically Thin 1D and 2D Nanomaterials – Invited Talk	Raul Arenal
09:30-09:45	Production and characterisation of alternative activated carbons – a full factorial design approach	Guilaine Jaria
09:45-10:00	Adherent and hard DLC coatings deposited by HiPIMS in Deep Oscillations Magnetron Sputtering (DOMS) mode.	Fábio Ferreira
10:00-10:15	Conductive biopolymer-clay-graphene composite film doped with carbon nanotubes	Cláudia Nunes

Coffee Break

A4	Carbon based materials (cont.) Chairs: Raul Arenal & Carlos Baleizão	
10:45-11:00	Bacterial cellulose and graphene nanostructures as promising nanocomposites for the development of new insulating and fire-retardant materials	Susana Pinto
11:00-11:15	A graphene-oxide-collagen scaffold as a versatile three-dimensional biomimetic microenvironment for tissue engineering applications	André F. Girão

D4	Materials modelling (Advanced atomistic algorithms, computer simulations) (cont.) Chairs: Raul Arenal & Carlos Baleizão	
11:15-11:30	QSPR Modeling Applied to High Molecular Weight Polymers: Ductility Characterization from Elongation at Break	Ignacio Ponzoni

B1	Advances in ceramics, concrete, building materials Chairs: Carlos Baleizão & Jorge Frade	
11:30-11:45	Revifeel PLUS: Ceramic tiles with improved thermal comfort	Ana Sampaio
11:45-12:00	Self-healing concrete with bacteria encapsulated in expanded clay	Sandra Simaria De Oliveira Lucas
12:00-12:15	Impact of coal and wheat husk addition on the properties of fired clay bricks	Safeer Ahmad
12:15-12:30	Mechanical characterization of cement pastes reinforced with pristine and functionalized MWCNTs	Hawreen Ahmed
12:30-12:45	Study of mechanical behaviour and correlations with physical and chemical properties of solid ceramic bricks in Asunción	Roberto Rojas Holden

Lunch

MATERIAIS 2017 and 40 Years Anniversary of DEMaC Event **(Rectory Amphitheatre)**

Chairs: Joaquim Vieira, Paula M. Vilarinho

14:00-15:00	Ceramics and Materials in Aveiro: Commemoration of the Past, and a Perspective on the Future – Plenary Talk	Angus Kingon, Brown University
15:00-15:20	New Challenges of Materials and Surface Engineering in Industry 4.0 - Invited talk	Ricardo Alexandre, T&M
15:20-15:40	Networking for European Materials Scientists and Engineers - Invited talk	Brett Suddell, FEMs

Coffee Break

16:00-17:45	<p style="text-align: center;">40 Years Anniversary of DEMaC Round Table</p> <ul style="list-style-type: none"> - Addressing words - Prof. Dr Manuel Assunção (Rector, UA) - Addressing words - Prof. Dr Mário Ferreira (director DEMaC, UA) - Addressing words - Prof. Dr Victor Gil (1st Rector of UA) - Addressing words - Prof. Dr Richard J. Brook (Oxford University Emeritus, ECS) - Addressing words - Prof. Dr Ana M Rocha e Senos (DEMaC, UA) - Addressing words –Dr. João Leão Costa (SPCV/AAEC) - Addressing words – Eng. António Miguel Casal das Neves (GRETEL) - Addressing words – Eng. Manuel Valente (DURIT) - Addressing words - Prof. Dr Júlio Pedrosa de Jesus (Former Rector of UA and Former Minister of Education of Portugal) - Addressing words – Prof. Dr. João Lopes Baptista (1st Director of DECV/DEMaC and Former Vice-rector of UA)
17:45-18:15	Awards on achievements
18:15-18:45	SPM 2017 Career and Conference Awards
18:45-	MATERIAIS 2017 Closing