1st Workshop on Characterization and Analysis of Nanomaterials
University of Aveiro, Portugal, July 9, 2019

Auditorium: Anf. 22.3.2 (DEM)

Lectures		
9:00-9:15	**WELCOME ADDRESS: Prof. Dr. António Manuel de Bastos Pereira, Dr. Igor Bdikin**	
9:15-10:15	CHAIR: Dr. Igor Bdikin **Dr. Duncan Paul Fagg,** X-ray diffraction (XRD)	
10:15–10:30	**Coffee break**	
10:30–11:30	CHAIR: Dr. Igor Bdikin **Prof. Dr. José Coutinho,** Modeling of nano-structures	
11:30–12:00	**Bystrov V.S.,** Coutinho J., L.F. Avakyan A.V. Bystrova, E.V. Paramonova (**O2**) Piezoelectric, ferroelectric, optoelectronic phenomena in hydroxyapatite by first-principles and influencing of them by the defects levels	
12:00–12:30	**Dr. Nuno André Fraga de Almeida,** Scanning electron microscope (SEM)	
12:30–14:00	**Lunch**	
14:00–15:00	CHAIR: Dr. Gil Alberto Batista Gonçalves **Dr. Igor Bdikin,** Atomic force microscopy (AFM) and Nanoindentation	
15:00–16:00	**Dr. Gonzalo Guillermo Otero Irurueta,** X-ray photoelectron spectroscopy (XPS)	
16:00–16:15	**Coffee break**	
Equipment / method presentations		
16:15–18:15	**X-ray diffraction**	**NRD Lab**
	High resolution electron microscopy	**NRD Lab**
	Atomic force microscopy and Nanoindentation	**NRD Lab**
	X-ray photoelectron spectroscopy	**NRD Lab**
	Modeling of nano-structures	**Auditorium UA**

Local-scale and magneto-electric measurements in functional nanomaterials

University of Aveiro, Portugal July 9, 2019

Coordinator: Dr. Andrei Kholkin
Department of Physics &
CICECO – Aveiro Institute of Materials
University of Aveiro
Portugal

After decades of intense research, functional nanomaterials are now an integral part of many applications and attract the attention of a large research community. Intrinsically **Aveiro** multi-disciplinary, research activities are spanning from engineering, physics, metrology and chemistry to biology and medicine. Likewise, current applications may differ from contrast agents for medical imaging to touch screens for mobile phones.

The scope of this Workshop is to cover the principles and applications of local scale measurement techniques such as Atomic Force Microscopy (and techniques based on it, e.g. Piezoresponse Force Microscopy, Kelvin Force Probe Microscopy etc.) and HR-(S)TEM for nanomaterials research and provides a forum for presenting and discussing new results.

The workshop is organized in frame of Marie Skłodowska-Curie Research and Innovation Staff Exchange program, projects TRANSFERR and FUNCOAT projects (Grant agreement: 778070 and 823942).

More information about the projects is available at: https://hzg.de/ms/funcoat/ and http://transferr.eu/

TransFerr-FunCoat joint workshop
University of Aveiro, Portugal
Measurement techniques for studying functional nanomaterials
July 9, 2019

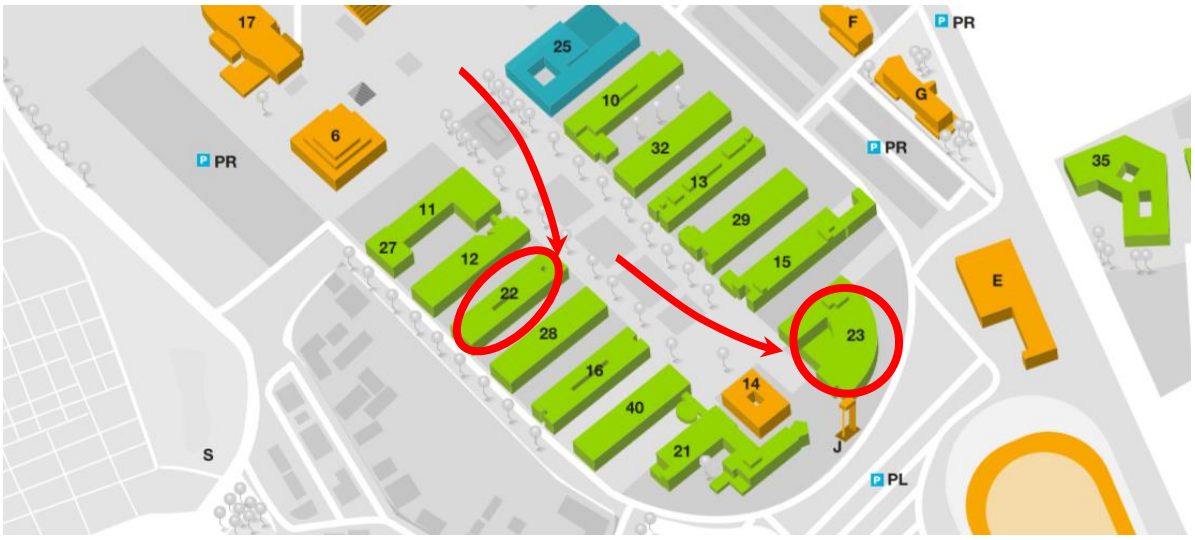
Workshop program
Auditorium: José Grácio (DEM)

9:00 -9:15	CHAIR: Dr. Dmitry Karpinsky Opening Session – Welcome and general info about MSCA-RISE action and FUNCOAT project overview *Dr. Maria Serdechnova (Helmholtz Zentrum Geesthacht, Germany)*
9:15 -9:30	TransFerr project overview *Dr.Andrei Kholkin (CICECO & University of Aveiro, Portugal)*
9:30 -10:00	***Keynote talk*** Near-field microwave microscopy in applications to ferroelectrics and in-situ imaging in liquid electrolytes *Dr. Alexander Tselev (CICECO & University of Aveiro, Portugal)*
10:00-10:20	Coffee break
10:20-11:00	CHAIR: Dr. Andrei Kholkin ***Keynote talk*** Development and design of novel multifunctional PEO coatings *Dr. Carsten Blawert (Helmholtz Zentrum Geesthacht, Germany)*
11:00-11:30	Lecture "Measurements of local electronic and ionic transport by scanning probe microscopy" *Dr. Denis Alikin (University of Aveiro, Portugal)*
11:30-12:00	Lecture "Use of functionalized coatings for environmental protection" *Prof. Rastko Vasilic (University of Belgrad, Serbia)*
12:00-12:30	Lecture "Structural research by photons and neutrons with focus on nano-resolution of P03 beamline" *Dr. Vasyl Haramus (Helmholtz Zentrum Geesthacht, Germany)*
12:30-14:00	Lunch
14:00-14:30	CHAIR: Dr. Svitlana Kopyl Lecture: "Local characterization: Kelvin probe, localized corrosion characterization, role of inhibitors" *Dr. Kiryl Yasakau (University of Aveiro, Portugal)*
14:30-15:00	Lecture:"Magnetic and crystal structure phase transitions in multiferroics" *Dr. Dmitry Karpinsky (SPMRC, Minsk, Belarus)*
15:00-18:00	Practical session/training AFM, PFM, etc.
19:00-21:00	Working dinner

2nd International Conference on Nanomaterials Science and Mechanical Engineering

(SCIENTIFIC PROGRAM)

University Aveiro, DEM, Complexo Pedagógico (auditorium 23.1.7) 09.07-12.07. 2019



Department of Mechanical Engineering - 22

Complexo Pedagógico - 23

10 July 2019

<table>
<tr><th colspan="4">2nd International Conference on Nanomaterials Science and Mechanical Engineering</th></tr>
<tr><td></td><td colspan="3">Auditorium 1: Anf. 23.1.7 (Complexo Pedagógico)</td></tr>
<tr><td>9:00-
9:30</td><td colspan="3">WELCOME ADDRESS: Prof. Dr. Vítor António Ferreira da Costa (UA, Portugal), Prof. Dr. António Manuel de Bastos Pereira (UA, Portugal), Dr. Paula Alexandrina de Aguiar Pereira Marques (UA, Portugal), Dr. Duncan Paul Fagg (UA, Portugal), Dr. Igor Bdikin (UA, Portugal), Dr. Gonzalo Guillermo Otero Irurueta (UA, Portugal), Dr. Gil Alberto Batista Gonçalves (UA, Portugal)</td></tr>
<tr><td></td><td colspan="3">Session: New Materials and Advanced Materials
CHAIRS: Prof. Dr. Paula Alexandrina de Aguiar Pereira Marques,
Prof. Dr. António Manuel de Bastos Pereira</td></tr>
<tr><td>9:30-
10:15</td><td colspan="3">Plenary Lecture
Prof. Dr. Philip LeDuc
Planes, Trains, Automobiles….and Cells?
Institut Departments of Mechanical Engineering, Biomedical Engineering, Computational Biology, and Biological Sciences Carnegie Mellon University, USA</td></tr>
<tr><td>10:15-
11:00</td><td colspan="3">Plenary Lecture
Prof. Dr. Yuri Dekhtyar
Prethreshold electron emission to characterize nanostructured objects.
Biomedical Engineering and Nanotechnology Institute, Riga Technical University, Riga, Latvia</td></tr>
<tr><td>11:00-
11:30</td><td colspan="3">Coffee break (Complexo Pedagógico)</td></tr>
<tr><td></td><td>Auditorium 1: Anf. 23.1.7 (Complexo Pedagógico)

Session: New Materials and Advanced Materials
CHAIRS: Prof. Dr. Philip LeDuc, Dr. Gonzalo Guillermo Otero Irurueta</td><td>Auditorium 2: Anf. 22.3.2 (DEM)

Session: Micro / Nano Materials
CHAIRS: Prof. Dr. Yuri Dekhtyar, Dr. Gil Alberto Batista Gonçalves</td><td>Auditorium 3: José Grácio (DEM)

Session: Mechanical Engineering
CHAIRS: Prof. Dr. António Manuel de Bastos Pereira, Prof. Dr. António Manuel Godinho Completo</td></tr>
<tr><td>11:30-
12:00</td><td>Keynote talk
Dr. Dmitry Karpinsky (I16)
Crystal structure of co-doped BiFeO3 ceramics near the phase boundary regions
National Research University of Electronic Technology “MIET”, 124498 Moscow, Russia; Scientific-Practical Materials Research Centre of NAS of Belarus, 220072 Minsk, Belarus</td><td>Keynote talk
Prof. Dr. Salam J.J. Titinchi (O29)
Graphene-Based Porous Adsorbents for CO2 Capture
Department of Chemistry, University of the Western Cape, Cape Town, South Africa</td><td>Keynote talk
Prof. Dr. Ezddin Hutli (I14)
The Relation between the Material Mechanical Properties and the Behaviour in the Fluid-Solid Structures Interaction
Department of Thermohydraulics, Centre for Energy Research, Hungarian Academy of Sciences, Budapest, Hungary; Institute of Nuclear Techniques (INT) of the Budapest University of Technology and Economics (BME), Hungary; Faculty of Mechanical Engineering, Department of Energy Engineering Techniques, Budapest University of Technology and Economics (BME), Hungary</td></tr>
</table>

			Surface Engineering/Coatings
12:00-12:30	***Keynote talk*** Dr. Indrani Coondoo (**I12**) **An investigation on the impact of the synthesis routes on the electrical properties of lead-free ceramics** *Department of Physics & CICECO, University of Aveiro, Portugal*	***Keynote talk*** Dr. Andrey Kovalskii (**I13**) **Hollow BN spherical nanoparticles: synthesis and applications** *Laboratory of Inorganic Nanomaterials, National University of Science and Technology "MISiS, Leninsky prospect 4, Moscow, 119049, Russian Federation*	Ana Antelava (**O25**) **Development of repellent surfaces** *London South Bank University, 103 Borough Rd, London SE1 0AA, United Kingdom*
12:30-14:00	Lunch (UA restaurant)		
14:00-14:45	Auditorium 1: Anf. 23.1.7 (Complexo Pedagógico) Session: **Biomaterials** CHAIRS: Dr. Duncan Paul Fagg, Dr. Igor Bdikin ***Plenary Lecture*** Prof. Dr. Vincent Ball **From prebiotic chemistry to materials science: deposition of aminomalonitrile based films** *Université de Strasbourg. Faculté de Chirurgie Dentaire. 8 rue Sainte Elizabeth. 67000 Strasbourg. France*		
14:45-15:30	Session: **New Methods of Modeling Properties Materials** CHAIRS: Dr. Duncan Paul Fagg, Dr. Igor Bdikin ***Plenary Lecture*** Prof. Dr. Vladimir Bystrov **Modeling of the Piezoelectric and Pyroelectric properties of the ferroelectric composites based on the polyvinylidene fluoride (PVDF) with graphene and graphene oxide layers and fibers** *Inst. Mathematical Problems of Biology, Keldysh Institute of Applied Mathematics RAS, Pushchino, Moscow region, Russia*		
15:30-16:00	Coffee break (Complexo Pedagógico)		
	Auditorium 1: Anf. 23.1.7 (Complexo Pedagógico) Session: **New Materials and Advanced Materials** CHAIRS: Prof. Dr. Salam J.J. Titinchi, Dr. D. Pukazhselvan	Auditorium 2: Anf. 22.3.2 (DEM) Session: **New Methods of Modeling Properties Materials** CHAIRS: Prof. Dr. Herbert Kliem, Prof. Dr. Vladimir Bystrov	Auditorium 3: José Grácio (DEM) Session: **Mechanical Engineering** CHAIRS: Prof. Dr. Vítor António Ferreira da Costa, Prof. Dr. Marco Paulo Soares dos Santos
			Materials Forming
16:00-16:30	***Keynote talk*** Prof. Dr. Neeraj Panwar (**I11**) **Magnetization reversal and low temperature magnetocaloric effect in rare-**	***Keynote talk*** Dr. José Coutinho (**I4**) **Electronic structure calculations of solids, surfaces and nanostructures.**	Olesya Fedchenko (**O14**) **STUDY THE INFLUENCE OF THE PRE-FINISH GAUGES FORM ON THE EFFECTIVENESS OF THE GROOVES FILLING IN THE**

	earth orthochromites: Impact of co-doping *Department of Physics, School of Physical Sciences, Central University of Rajasthan, Bandarsindri-305817, Ajmer, Rajasthan-INDIA*	*I3N & Department of Physics, University of Aveiro, Campus Santiago, 3810-193, Portugal*	**FINISHING PASS OF REINFORCING STEEL ROLLING** *Karaganda state industrial university, 101400, Republic avenue 30, Temirtau, Kazakhstan*
16:30-17:00	Dr. Hanna S. Abbo (**O31**) **Organo functionalised core shell magnetic nanomaterial as adsorbent for aqueous heavy metals removal** *Department of Chemistry, University of Western Cape, Cape Town, South Africa.* *Department of Chemistry, University of Basrah, Iraq*	***Keynote talk*** Dr. Leon Avakyan (**O7**) **Atomic Structure of Multicomponent Metallic Nanoparticles From Extended X-ray Absorption Fine Structure Spectroscopy** *Southern Federal University, Rostov-on-Don, Russia*	**Manufacturing Processes and Mechanical Engineering** Prof. Dr. Boutahari Said (**O22**) **Comparison between linear and nonlinear tolerance analysis of flexible assembly taking into account spot welding effects** *High School of Technology of Fez, University sidi mohamed ben abdellah B.P 2626 –Route d'Imouzzar, 30000 Fez, Morocco*
17:00-17:30	Dr. Dina I. Bakranova (**O4**) **SYNTHESIS OF SILICON CARBIDE FILMS BY MAGNETRON SPUTTERING** *Kazakh-British Technical University, Kazakhstan*	Dr. Budhendra Singh (**O10**) **First Principle study on Structural, Electrical, Optical and Mechanical properties of $GaSe_{1-x}S_x$ solid solution (x = 0,0.25,0.5,0.75,1)** *TEMA, Department of Mechanical Engineering, University of Aveiro, Portugal*	Hafsa ATIK (**O11**) **A new tolerance analysis approach for deformable assemblies: an industrial case study** *High School of Technology of Fez, University sidi mohamed ben abdellah B.P 2626 –Route d'Imouzzar,30000 Fez,Morocco*
17:30-18:00	Monika Nehra (**O38**) **Structural Studies of Metal-Organic Frameworks for Selective Adsorption of Hazardous Contaminants from Aqueous Solutions** *Guru Jambheshwar University of Science and Technology, Hisar-Haryana, 125001, India*	***Keynote talk*** Dr. Ekaterina Paramonova (**O6**) **Magnetic iron substitutions in hydroxyapatite: density functional study** *Institute of Mathematical Problems of Biology, Keldysh Institute of Applied Mathematics, RAS, Pushchino, 142290, Russia*	**Low Dimension Structures / Mechanical Engineering** Abdelkadir Belhadj (**O41**) **Free vibration investigation of single walled carbon nanotubes with rotary inertia** *Computational Mechanics Laboratory, Department of Mechanical Engineering, Faculty of Technology, University of Tlemcen, Tlemcen, Algeria*
18:00-18:30	Chimaine FEUDJIO TSAGUE (**O30**) **Surface modification of polyethylenimine coated magnetic nanoparticles in water treatment** *Department of Chemistry, University of the Western Cape, Cape Town, South Africa*		

11 July 2019

2nd International Conference on Nanomaterials Science and Mechanical Engineering

Auditorium 3: José Grácio (DEM)

9:00-9:45 — Auditorium 1: Anf. 23.1.7 (Complexo Pedagógico)

Session: **Nanotechnology**
CHAIRS: Dr. Duncan Paul Fagg, Dr. Igor Bdikin

Plenary Lecture
Prof. Dr. Nikolai Sobolev
Modification of perpendicular magnetic tunnel junctions by ion irradiation
Physics Department & i3N, University of Aveiro, 3810-193 Aveiro, Portugal; National University of Science and Technology "MISiS", 119049 Moscow, Russia

9:45-10:30 — Session: **New Methods of Modeling Materials Properties**
CHAIRS: Dr. Duncan Paul Fagg, Dr. Igor Bdikin

Plenary Lecture
Prof. Dr. Herbert Kliem
A Novel Model for Ferroelectric Imprint in P(VDF-TrFE)
Institute of Electrical Engineering Physics, Saarland University, Building A5 1, 66123 Saabruecken, Germany

10:30-11:00 — Coffee break (Complexo Pedagógico)

	Auditorium 1: Anf. 23.1.7 (Complexo Pedagógico)	Auditorium 2: Anf. 22.3.2 (DEM)
	Session: **Biomaterials** CHAIRS: Prof. Dr. Vincent Ball, Prof. Dr. Herbert Kliem	Session: **Powder Metallurgy** CHAIRS: Prof. Dr. António Manuel de Bastos Pereira, Prof. Dr. Fernando José Neto da Silva
11:00-11:30	**Molecular Modelling of Bio-nanostructures** ***Keynote talk*** Prof. Dr. V. S. Bystrov (**I2**) **Piezoelectric and ferroelectric properties of various amino acids and dipeptides structures: molecular modeling and experiments** *Institute of Mathematical Problems of Biology, Keldysh Institute of Applied Mathematics, RAS, 142290 Pushchino, Moscow region, Russia*	***Keynote talk*** Prof. Dr. HAMİT ÖZKAN GÜLSOY (**O12**) **Influence of Niobium additions on sintering behaviors and mechanical properties of injection molded 420 stainless steel powder** *Marmara University, Technology Faculty, Metallurgy and Materials Eng. Dep., 34722 Istanbul, Turkey*

2nd International Conference of TEMA: Mobilizing Projects

	Composites, Biomaterials	Session: **Nanotechnology**	Auditorium 3: José Grácio (DEM)
11:30-12:00	MOUGHAOUI FATIHA (**O9**) **Removal of Methylene Blue Dye by Adsorption Using Alginate–Clay–Activated Carbon nanobiocomposite** *Biomolecular and Organic Synthesis Laboratory, Faculty of Science Ben M'sik, University Hassan II of Casablanca. Morocco*	Dr. Deepa Kummattummal Govindan (**O18**) **Photocatalytic degradation of methylene blue under visible light using Cu2ZnSnS4 film made of nanoparticle ink** *Interdisciplinary Centre for Energy Research , Department of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore, India*	
12:00-12:30	***Keynote talk*** Prof. Dr. Münir Taşdemir (**O1**) **Mechanical properties of polypropylene bio composites with sea weeds** *Marmara University, Technology Faculty, Metallurgy and Materials Eng. Dep., Istanbul, 34722, Turkey*	Dr. Nimisha Kaippamangalath (**O27**) **Nonlinear Optical and Mechanical Features of Conjugated Polymer Nanocomposites** *Organic Nano Electronic Group, Department of Materials Engineering, Indian Institute of Science Bangalore, India*	
12:30-14:00	Lunch		
	Auditorium 1: Anf. 23.1.7 (Complexo Pedagógico) Session: **Biomaterials** CHAIRS: Prof. Dr. Herbert Kliem, Prof. Dr. Vincent Ball	Auditorium 2: Anf. 22.3.2 (DEM) Session: **Nanotechnology** CHAIRS: Prof. Dr. Nikolai Sobolev, Dr. Gonzalo Guillermo Otero Irurueta	2nd International Conference of TEMA: Mobilizing Projects
14:00-14:30	**Biomaterials** ***Keynote talk*** Dr. Pavel Zelenovskii (**I15**) **Chirality-dependent self-assembly of diphenylalanine microtubes** *Department of Physics & CICECO–Aveiro Institute of Materials, University of Aveiro, 3810-193 Aveiro, Portugal; School of Natural Sciences and Mathematics, Ural Federal University, 620000 Ekaterinburg, Russia*	Kapil Faliya (**O17**) **Charge Oscillations in PEO from Surface Potential by KPFM** Institute of Electrical Engineering Physics, Saarland University, Germany	
14:30-15:00	Mariia Likhodeeva (**O34**) **DNA-noble metal nanoparticles complexes for biomedical applications** *Saint Petersburg State University, Russia, Saint-Petersburg*	***Keynote talk*** Dr. Olena Okhay (**I9**) **Utilizing reduced graphene oxide for harvesting / storage energy** *TEMA, Department of Mechanical Engineering, University of Aveiro, Portugal*	
15:00-15:30	**Sensor Materials, Biomaterials** Miguel Reis (**O26**) **Thin film functionalization for engineering of biologically active selective sensor surface**	**Low Dimension Structures** ***Keynote talk*** Prof. Dr. Sergey Bozhko (**O36**) **STM lithography at MoO2/Mo(110) surface** *Institute of Solid State Physics RAS, Russia*	

	MacDiarmid Institute for Advanced Materials and Nanotechnology, Department of Electrical and Computer Engineering, University of Canterbury, Christchurch, 8140, New Zealand		
15:30-16:00	Gul Sirin Ustabasi (**O19**) **Determining the impact of aging on the bacterial toxicity of Zn nanoparticles** *Health Services Vocational School of Higher Education, T. C. Istanbul Aydın University, Sefakoy Kucukcekmece, 34295, Istanbul, Turkey*		
16:00-18:00	**Poster session (Complexo Pedagógico)**		
20:00-22:00	**Conference Dinner**		

12 July 2019

2nd International Conference on Nanomaterials Science and Mechanical Engineering			
	Auditorium 1: Anf. 23.1.7 (Complexo Pedagógico) Session: **Thin Films** CHAIRS: Dr. Duncan Paul Fagg, Dr. Gonzalo Guillermo Otero Irurueta	Auditorium 2: Anf. 22.3.2 (DEM) Session: **Composites** CHAIRS: Dr. Indrani Coondoo, Dr. Gil Alberto Batista Gonçalves	Auditorium 3: José Grácio (DEM)
9:00-9:30	***Keynote talk*** Prof. Dr. Eudes Borges de Araujo (**I1**) **Thermally activated processes and bias field effects on the electrical properties of BiFeO3 thin films** *Department of Physics and Chemistry, São Paulo State University, 15385-000 Ilha Solteira, Brazil*	**Building Materials** Dr. HAMDANE Hasna (**O23**) **Mechanical and microstructural properties of geopolymeric mixtures based on not thermally treated Moroccan phosphate washing sludge: Experimental investigation of new materials as a building materials** *University Hassan II of Casablanca, Faculty of Sciences Ben M'sik. Laboratory of Engineering and Materials. Casablanca, Morocco*	2nd International Conference of TEMA: Mobilizing Projects
9:30-10:00	***Keynote talk*** Dr. Paula Ferreira (**I5**) **Self-standing chitosan-based piezoelectric composite films** *Department of Materials and Ceramic Engineering, CICECO - Aveiro Institute of Materials, University of Aveiro, 3810-193 Aveiro, Portugal; TEMA-NRD, Mechanical Engineering Department and Aveiro Institute of Nanotechnology (AIN), University of Aveiro, Aveiro, 3810-193, Portugal*	Younesse HADDAJI (**O20**) **Mechanical and microstructural investigation of Metakaolin/ phosphate washing sludge Based Geopolymers composites Reinforced with polypropylene fibers** *Laboratory of engineering and materials LIMAT, Faculty of science Ben M'Sik, Hassan II University, Casablanca, Morocco*	
10:00-10:30	Coffee break (Complexo Pedagógico)		
	Session: **Thin Films** CHAIRS: Prof. Dr. Eudes Borges de Araujo, Dr. Gonzalo Guillermo Otero Irurueta	Session: **Composites** CHAIRS: Dr. Gil Alberto Batista Gonçalves, Prof. Dr. Paula Alexandrina de Aguiar Pereira Marques	
10:30-11:00	***Keynote talk*** Dr. Oleksandr Tkach (**I8**) **Strain mediated substrate effect on the properties of polar dielectric thin films** *Department of Materials and Ceramic Engineering, CICECO – Aveiro Institute of Materials, University of Aveiro, Aveiro, 3810-193, Portugal*	Dr. Maryam Salimian (**O40**) **Synthesis and characterization of Ni/rGO nanocomposite: from nickel nanoclusters to homogeneously distributed discrete nickel nanoparticles** *TEMA, Department of Mechanical Engineering, University of Aveiro, Portugal*	

11:00-11:30	Katarzyna Mituła (**O3**) **Multi(alkenyl)functionalized silsesquioxanes as potential polysiloxanes modifiers** *Adam Mickiewicz University in Poznan, Umultowska 89C, 61-614 Poznan, Poland*	Martina Kocijan (**O28**) **Synthesis of TiO2-rGO nanocomposites as photocatalysts for the degradation of methylene blue dye in water** *Department of Materials, Faculty of Mechanical Engineering and Naval Architecture University of Zagreb, Ivana Lučića 1, 10000 Zagreb, Croatia*	Auditorium 3: José Grácio (DEM)
11:30-12:00	António Fróis (**O5**) **DLC coatings for better orthodontics alloys performance** *CEMMPRE-DEM, Universidade de Coimbra, Pólo II, Rua Luís Reis, 3030-788, Coimbra, Portugal*	Oumaima JAMAL EDDINE (**O8**) **Synthesis and characterization of phosphate glass fibers: mechanical and luminescence properties** *University Hassan II, F. S. Ben M'sik, Laboratory LIMAT, Boulevard Cdt Driss Harti, BP.7955, Ben M'sik - Casablanca - Morocco*	
12:00-12:30		Talha Baig (**O16**) **Synthesis and characterization of gold nanoparticles immobilized on vinyl modified sepiolite** *The City School, Capital Campus, Islamabad, Pakistan*	
12:30-14:00	Lunch		
	Session: **Thin Films** CHAIRS: Dr. Paula Ferreira, Dr. Oleksandr Tkach	Session: **Nanotechnology** CHAIRS: Dr. Isabel Maria Alexandrino Duarte, Prof. Dr. Neeraj Panwar	
14:00-14:30	Dr. Mourad Mebarki (**O13**) **Physical properties of Fe1-xCux films electrodeposited on porous and non-porous silicon** *Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique (CRTSE), 2, Bd Frantz Fanon, BP 140 Alger 7- Merveilles 16038, Algeria*	***Keynote talk*** Dr. Andrei Kovalevsky (**I10**) **Oxide thermoelectrics: redox tuning of the functional properties** *CICECO – Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro, Portugal*	
14:30-15:00	***Keynote talk*** Prof. Dr. Sergey Bozhko (**I7**) **Dynamic of molecules rotation in monolayer C60 film.** *Institute of Solid State Physics RAS, Russia*	Dr. Niloufar Raeis-Hosseini (**O37**) **Reconfigurable Metamaterial Perfect Absorber** *Imperial College London, Department of Electrical and Electronic Engineering, South Kensington, London, SW7 2BT, UK*	
15:00-15:30	Prof. Dr. Aleksandr Bagmut (**O21**)	Prof. Dr. Musaab ZAROG (**O35**)	

2nd International Conference of TEMA: Mobilizing Projects

	Crystal growth modes and crystallization kinetics of amorphous films according to transmission electron microscopy "in situ" *National Technical University "Kharkiv Polytechnic Institute", NTU "KhPI" 2, Kyrpychova sr., 61002, Kharkiv, Ukraine*	**Sizing Electrode and its effect on performance of a microactuator** *Department of Mechanical and Industrial Engineering, College of Engineering, Sultan Qaboos University, P.O. Box 33, Al-Khod, Muscat, 123, Oman*	Auditorium 3: José Grácio (DEM)
15:30-16:00	Coffee break (Complexo Pedagógico)		
	Session: **Thin Films** CHAIRS: Prof. Dr. Sergey Bozhko, Dr. Duncan Paul Fagg	Session: **Nanotechnology** CHAIRS: Dr. Denis Alikin, Dr. Igor Bdikin	
16:00-16:30	**Low Dimension Structures Laser Processing** Dr. Georgiy Shakhgildyan (**O32**) **Femtosecond laser processing of Ag/CdS doped oxide glasses** *Mendeleev University of Chemical Technology of Russia, 9 Miusskaya sq., Moscow, Russia*	***Keynote talk*** Dr. Maciej Wojtaś (**I3**) **Strong piezoelectricity in Pirydyl-Alanine based hybrid crystals.** *Faculty of Chemistry, University of Wrocław, 14 Joliot-Curie, 50-383 Wrocław, Poland*	
16:30-17:00	**New Energy Materials** ***Keynote talk*** Dr. D. Pukazhselvan (**I6**) **High capacity hydrogen storage: current developments and future perspectives.** *TEMA, Department of Mechanical Engineering, University of Aveiro, Portugal*	Alexander Abramov (**O34**) **Local Electric-Field Induced Phase and Domain Transformations in (1-x)BiFeO3-BaTiO3 systems** *School of Natural Sciences and Mathematics, Ural Federal University, Ekaterinburg, Russia*	
17:00-17:30	**Hydrogen and Fuel Cell Science** Francisco J. A. Loureiro (**O39**) **Proton conductivity in BCY10 in nominally dry conditions** *TEMA, Department of Mechanical Engineering, University of Aveiro, Portugal*	**Environmental Friendly Materials, Composites** Prof. Dr. Shaista Taimur (**O15**) **Influence of synthesis parameters on polyamidoxime chelating nanohybrid by radiation induced graft polymerization and emulsion graft polymerization for copper (II) uptake** *Balochistan University of Information Technology, Engineering and Management Sciences, Baleli, Quetta, Pakistan; Department of Metallurgy and Materials Engineering, Pakistan Institute of Engineering and Applied Sciences, PO Nilore, Islamabad, Pakistan*	
17:30-18:00	Auditorium 1: Anf. 23.1.7 (Complexo Pedagógico) **Conference Closing Ceremony**		

2nd International Conference of TEMA: Mobilizing Projects

Poster session, 16:00-18:00, 11 July

P1	**XPS, FTIR and photoelectron emission spectroscopies to analyze nanocapacitor silicon nitride nano layered structures** Mindaugas Andrulevičius, Liga Avotina, Yuri Dekhtyar, Gennady Enichek, Marina Romanova, Evgeny Shulzinger, Hermanis Sorokins, Sigitas Tamulevičius, Aleksandr Vilken, Aleksandr Zaslavski *Kaunas University of Technology, K. Donelaičio g. 73, Kaunas 44249, Lithuania; University of Latvia, Raiņa blvd 19, LV-1586, Riga, Latvia; Riga Technical University, LV1658, 1 Kalku str, Riga, Latvia; Joint-Stock Company ALFA RPAR, Ropazu str 140, LV-1006, Riga, Latvia*
P2	**Ferroelectric domain wall motion in lead-free BST thin films** M.S. Afanasiev, G.V. Chucheva, D.A. Kiselev Fryazino branch of the Kotel'nikov Institute of Radioengineering and Electronics of *Russian Academy of Sciences, Vvedensky Square 1, Fryazino, Moscow region, Russia; Department of Materials Science of Semiconductors and Dielectrics, NUST "MISiS"*
P3	**Development of magnetic nanoparticles for use in conjunction with radiofrequency heating for greener processes** Duaa Raja, Javier Fernandez Garcia, Ali Hassanpour, Jason Ho *University of Leeds, Leeds, LS2 9JT, UK; South University of Science and Technology of China,1088 Xueyuan Ave, Nanshan, Shenzhen, Guangdong, China*
P4	**Optimizing Citral-loaded Lipid Nanoparticles using a 2^2 Experimental Factorial Design** Zielinska, A., Dias-Ferreira, J., Ferreira, N.R., Silva, A.M., Nowak, I., Souto, E.B. *Faculty of Pharmacy, University of Coimbra, Coimbra, Portugal; Faculty of Chemistry, Adam Mickiewicz University in Poznań, Poland; University of Trás-os-Montes and Alto Douro, Portugal; Centre for Research and Technology of Agro-Environmental and Biological Sciences (CITAB-UTAD); CEB - Centre of Biological Engineering, University of Minho, Campus de Gualtar 4710-057 Braga, Portugal*
P5	**Lipid Nanomaterials for the Targeting of Triamcinolone Acetonide to Retinal Müller Cells in vitro** Dias-Ferreira, J., Zielinska, A., Silva, A. M, Sanchez-Lopez, E., Garcia, M. L., Souto, E. B. *Department of Pharmaceutical Technology, Faculty of Pharmacy, University of Coimbra, Portugal; Department of Faculty of Chemistry, Adam Mickiewicz University in Poznań, Poland; School of Life and Environmental Sciences (ECVA), University of Trás-os-Montes and Alto Douro, Portugal; Centre for Research and Technology of Agro-Environmental and Biological Sciences (CITAB-UTAD), Quinta de Prados; 5001-801 Vila Real, Portugal; Department of Pharmacy, Pharmaceutical Technology and Physical-Chemistry, Faculty of Pharmacy, University of Barcelona, Spain; Institute of Nanoscience and Nanotechnology (IN2UB), Faculty of Pharmacy, University of Barcelona, Spain; CEB - Centre of Biological Engineering, University of Minho, Campus de Gualtar 4710-057 Braga, Portugal*
P6	**Di- and tetrasubstituted double-decker silsesquioxanes as building blocks for molecular and macromolecular frameworks** Julia Duszczak, Beata Dudziec, Michał Dutkiewicz *Faculty of Chemistry, Adam Mickiewicz University in Poznan, Umultowska 89B, 61-614 Poznan, Poland; Centre for Advanced Technologies, Adam Mickiewicz University in Poznan, Umultowska 89c, 61-614 Poznan, Poland; Adam Mickiewicz University Foundation, Rubiez 46, 61-612 Poznan, Poland*
P7	**SYNTHESIS OF NANOSTRUCTURES AND FILMS USING HIGH-TEMPERATURE VACUUM ELECTRIC FURNACE** K.Kh. Nussupov, N.B. Beisenkhanov, S. Keiinbay, D.I. Bakranova, A.A. Turakhun, A.A. Sultan *Kazakh-British Technical University, Kazakhstan*
P8	**The structures of non-IPR isomers 29 (C2), 31 (Cs), 38 (D2) and 39 (D5d) of fullerenes C40** Khamatgalimov A.R., Idrisov R.I., Kamaletdinov I.I., Kovalenko V.I. Arbuzov Institute of Organic and Physical Chemistry, FRC Kazan Scientific Center, *Russian Academy of Sciences, 8 Arbuzova str., 420088 Kazan, Russia; Kazan National Research Technological University, 68 K. Marx str., 420015, Kazan, Russia*

P9	**Ythrene: Radical Fullerene Substructure in Fullerenes Molecules** Khamatgalimov A.R., Melle-Franco M., Gaynullina A.A., Kovalenko V.I. Arbuzov Institute of Organic and Physical Chemistry, FRC Kazan Scientific Center, *Russian Academy of Sciences, 8 Arbuzova str., 420088 Kazan, Russia; CICECO-Aveiro Institute of Materials, Department of Chemistry, University of Aveiro, 38; 10-193, Aveiro, Portugal; Kazan National Research Technological University, 68 K. Marx str., 420015, Kazan, Russia*
P10	**Titanium oxide-peroxide as a precursor for preparing titania coatings** P.V. Akulinin, A.A. Bezdomnikov, L.N. Obolenskaya, E.V. Savinkina *Lomonosov Institute of Fine Chemical Technology, RTU MIREA, Vernadskogo 86, Moscow, Russia*
P11	**Influence of Structure and Aggregation State of Silver-Gold Nanoparticles on Optical Extinction Spectra** Anna Skidanenko, Leon Avakyan, Maximilian Heinz, Manfred Dubiel, Lusegen Bugaev *Southern Federal University, Department of Physics, Zorge Str. 5, RU-344090 Rostov-on-Don, Russia; Martin Luther University Halle-Wittenberg, Institute of Physics, Von-Danckelmann-Platz 3, D-06120 Halle (Saale), Germany*
P12	**First-principles investigation of structural, magnetic and optoelectronic properties of Mn and Gd doped zinc blende CdS** Hakima HEDJAR, Abdelkader BOUKORTT, Messouda LANTRI, Amel BENYAGOUB *University of Abd ElHamid Ibn Badis-MOSTAGANEM-ALGERIA*
P13	**A new family of alkynylsubstituted silsesquioxanes** Monika Rzonsowska, Kinga Zmudzińska, Beata Dudziec *Faculty of Chemistry, Adam Mickiewicz University in Poznań, Umultowska 89b, 61-614 Poznań, Poland; Centre for Advanced Technologies, Adam Mickiewicz University in Poznań, Umultowska 89c, 61-614 Poznań, Poland*
P14	**Single source precursor synthetic route to quaternary chalcogenide Cu2FeSnS4 nanocrystals as potential solar energy materials** Abdulaziz. M. Alanazi, Firoz Alam, David. J. Lewis, Paul O'Brien *School of Chemistry and Materials, the University of Manchester, Oxford Road UK, M13 9PL; Schools of Materials, the University of Manchester, Oxford Road UK, M13 9PL; School of Chemistry, Islamic university, Prince Naif Ibn Abdulaziz Rd, Madinah, 42351, KSA.*
P15	**Synthesis of maleic anhydride copolymer catalyzed by maghnite-H+** Bettahar Faiza, Bekkar Fadila, Ferahi Mohammed Issam *Polymer Chemistry Laboratory, Department of Chemistry, Faculty of Exact and Applied Science, University of Oran 1. Ahmed Benbella. BP No. 1542 El'Menoeur, 31000 Oran, Algeria.*
P16	**Micro- and nanohardness of gallium sulfide crystals** Elena Borisenko, Nikolai Kolesnikov, Dmitrii Borisenko, Anna Timonina, Budhendra Singh, and Igor Bdikin *Institute of Solid State Physics, the Russian Academy of Sciences, Chernogolovka, Russia; TEMA-NRD, Mechanical Engineering Department, University of Aveiro, 3810-193 Aveiro, Portugal*
P17	**Basal cell carcinoma-targeted therapy using aptamer functionalized liposomes** Anca Niculina Cadinoiu, Delia Mihaela Rață, Leonard Ionuț Atanase, Oana Maria Darabă, Gabriela Vochita, Marcel Popa *"Apollonia" University, Faculty of Medical Dentistry, Pacurari Street, No. 11, Iasi, Romania; Department of Experimental and Applied Biology, Institute of Biological Research Iasi, Lascar Catargi 47, Iasi, Romania; Academy of Romanian Scientists, Plaiul Independentei Street, No 54, Bucharest, Romania*
P18	**Aptamer-Functionalized Polymeric Nanocapsules — a promising alternative for the Basal Cell Carcinoma treatment** Rata Delia Mihaela, Anca Cadinoiu, Leonard Ionut Atanase, Luiza Madalina Gradinaru, Mihai Cosmin-Teodor, Marcel Popa

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P19	**Synthesis and Structural Characterization of Erbium Electrodepositing on Silicon nanowires** A. Brik, S.B.Assiou, T.Hadjersi, B. Benyahia, A. Manseri *Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique (CRTSE)* *2 Bd Frantz Fanon, B.P.140 Alger-7 Merveilles, Algiers (Algeria)*
P20	**Influence of the magnetic field on the structure and properties of epoxy composites with metal oxides** Yuliia Bardadym, Edward Sporyagin, Oleksandr Naumenko *Institute of Macromolecular Chemistry of NAS of Ukraine; Oles Honchar Dnipro National University; Ukrainian State University of Chemical Technology*
P21	**Minimization of the concentration quenching effect of Tris(bipyridine)ruthenium(II) chloride dye** Olga Lu, Akbota Yensebayeva, Irina Irgibaeva, Artur Mantel *L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*
P22	**Silicon nanowires modified by nanocomposites materials-based graphene oxide for enhanced photodegradation of organic dye** Naama Sabrina, Benkara Amira, Khen Adel, Baba Ahmed Latifa, Hadjersi Toufik, Manseri Amar *Research Center in Semiconductors Technology for Energetic (CRTSE). 2, Bd. Frantz Fanon, B.P. 140 Alger-7 Merveilles, Algiers, Algeria; University of Saad Dahleb Blida 1,street of Soumaa, BP 270, Blida 09000, Algeria*
P23	**Electrochemical contribution to local electromechanical response in P(VDF-TrFe)/LiNbO3** Maxim V. Silibin , Maxim S. Ivanov, Vladimir A. Khomchenko, Timur Nikitin, Arseny S. Kalinin, Dmitry V. Karpinsky, Vyacheslav V. Polyakov, Rui Fausto and Jose A. Paixão *National Research University of Electronic Technology "MIET," Zelenograd, 124498 Moscow, Russia; CFisUC, Department of Physics, University of Coimbra, 3004-516 Coimbra, Portugal; CQC, Department of Chemistry, University of Coimbra, 3004-535 Coimbra, Portugal; NTMDT Spectrum Instruments, Zelenograd, 124460 Moscow, Russia*
P24	**Facile wet chemical powders synthesis for Copper Oxide thin films preparation and gas sensing applications** S. BOUACHMA, Z. BOUKHEMIKHEM, A. MANSERI, N. GABOUZE *Semiconductor Technology Research Center for Energetics: Ave Doctor Frantz Fanon BP 140, Algiers, Algeria*
P25	**Structural properties of silicone carbide nanoparticles produced by sol-gel method** Karima Benfadel, Samira Kaci, Fahim Hamidouche, Aissa Keffous, Abdelbaki Benmounah *CMSI, Semiconductor Technology Research Center for Energetics, (CRTSE), 2UR-MPE: research unit materials, processes and environment M'hamed Bougara University.*
P26	**Ti surface nanoarhitecturing for gliadin identification** Dumitriu Cristina, Pirvu Cristian *University Polytechnic of Bucharest, Faculty of Applied Chemistry and Materials Science, 1-7 Polizu, 011061, Bucharest, Romania*
P27	**Physicochemistry of Hyaluronic-based Oil Core Nanocapsules for Drug Delivery** Małgorzata Janik, Justyna Bednorz, Joanna Szafraniec, Szczepan Zapotoczny *Jagiellonian University, Faculty of Chemistry, Department of Physical Chemistry and Electrochemistry, Gronostajowa 2 30-387 Cracow, Poland; Jagiellonian University Medical College, Faculty of Pharmacy, Department of Pharmaceutical Technology and Biopharmaceutics, Medyczna 9 30-688 Cracow, Poland.*
P28	**Nano- and microstructures formed from hydrophobic homopolymer and amphiphilic copolymer – comparative study** Maria Zatorska, Urszula Kwolek, Natalia Wilkosz, Aleksandra Urych, Keita Nakai, Dorota Jamróz, Shin-ichi Yusa, Mariusz Kępczyński

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P29	**Interactions of Polycations with Anionic Lipid Membranes** Agata Żak, Kinga Liczmańska, Rina Nakahata, Shin-ichi Yusa, Mariusz Kępczyński *Jagiellonian University, Faculty of Chemistry, Gronostajowa 2, 30-387 Kraków, Poland; University of Hyogo, Department of Applied Chemistry, 2167 Shosha, Himeji, Hyogo 671-2280, Japan.*
P30	**Intercalation of magnetic nanoparticles into bitumen** Kurmetkhan Sanzhar, Issayeva Amina, Irina Irgibaeva, Artur Mantel, Mendigalyeva Svetlana *L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*
P31	**Influence of ions-releasing surfaces on grafting of polymer brushes** Gabriela Grześ, Karol Wolski, Anna Gruszkiewicz, Joanna Rokita, Szczepan Zapotoczny *Jagiellonian University, Faculty of Chemistry, Department of Physical Chemistry and Electrochemistry, Gronostajowa 2, 30-387 Cracow, Poland*
P32	**Luminescent properties of novel Ce-doped ZnO:SiO2 nanosized films under the action of bovine myoglobin** Hayrullina I., Nagovitsyn I.A., Sheshko T.F., Chudinova G.K., Boruleva E.A. *Peoples' Friendship University of Russia (RUDN University), 6 Miklukho-Maklaya Str., Moscow, 117198, Russia Federation; General Physics Institute RAS, 38 Vavilov Str., Moscow, 119991, Russia Federation; Semenov Institute of Chemical Physics RAS, 4 Kosygina Str., Building 1, Moscow, 119991, Russian Federation; National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), 31 Kashirskoye shosse, Moscow, 115409, Russia Federation*
P33	**A green Functionalization of Poly(ethylene glycol) for Use as biomaterials** Sara HAOUE, Mohammed BELBACHIR *Laboratory of Polymer Chemistry, Department of Chemistry, Faculty of Sciences, University Ahmed Ben Bella Oran, BP 1524,ElM'nouar 31000 Oran, Algeria*
P34	**Synthesis and characterization of TEOS/VES silicone nanoparticles** R. Petka, A. Łatkiewicz, O. Woznicka, M. Romek, M. Kepczynski *Faculty of Chemistry, Jagiellonian University, 2 Gronostajowa, 30-387 Kraków, Poland; Institute of Geological Sciences, Jagiellonian University, 3a Gronostajowa, 30-387 Kraków, Poland; Institute of Zoology, Jagiellonian University, 9 Gronostajowa, 30-387 Kraków, Poland*
P35	**Structural Study of Silicon nitride thins films doped with Cerium** K. Bekhedda, A. Brik, B. Benyahia, H. Menari, A. Manseri *Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique (CRTSE)* *2 Bd Frantz Fanon, B.P.140 Alger-7 Merveilles, Algiers (Algeria).*
P36	**Porous silicon double membranes for lithium- ion batteries** C. Yaddaden, A. Cheriet, M. Berouaken and N. Gabouze *Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique (CRTSE), 02 Bd, Frantz Fanon, B.P. 140, Algiers, Algeria.*
P37	**MODIFICATIONS ON THE CRYSTALLINE STRAIN AND SIZE IN THE PHASE FORMATION OF MULTIFERROIC BISMUTH FERRITE NANOPARTICLES** Venkatapathy Ramasamy, Yathavan Subramanian, Durairajan Arulmozhi, Manuel Pedro Fernandes Graca, Manuel Almeida Valente, Gokulraj Srinivasan and Ramesh Kumar Gubendiran *Department of Physics / University College of Engineering Arni, Anna University, India;* *I3N-Aveiro-Department of Physics / University of Aveiro, Portugal; Department of Physics / C. Kandasamy Naidu College for Men Chennai. India*
P38	**Swift Heavy Ion Irradiation effect on Ferroelectric Triglycine Sulphate (TGS) Single Crystals** V.C. Bharath Sabarish, A. Durairajan, G. Ramesh Kumar,M. P. F. Graca, M. A. Velente, E. V. Ramana, S. Gokulraj

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P39	**Two spectral infrared detectors based on HgCdTe epitaxial layers** K. Andrieieva, F. Sizov, Z. Tsybrii, M. Vuichyk, M. Apatska, S. Bunchuk, N. Dmytruk, M. Smolii, I. Lysuk, K. Svezhentsova *V.E. Lashkaryov Institute of Semiconductor Physics, 41 pr. Nauky, Kyiv, Ukraine*
P40	**The synthesis and characterization of a new class of conductive polymers** Bekkar Fadila, Bettahar Faiza, Meghabar Rachide Hammadouche Mohammed Belbachir. *Laboratory of Polymer Chemistry, Department of Chemistry, Faculty of Science, University Oran1 Ahmed Ben bella. BP N°1524 El'Menouer, 31000 Oran, Algeria; Laboratory of Fine Chemistry, Department of Chemistry, Faculty of Science, University Oran1 Ahmed Benbella. BP N°1524 El'Menouer, 31000 Oran, Algeria.*
P41	**Esterification of polyvinyl alcohol with abietic acid in the presence of a green Maghnite-H+ ctalyzer** Badia Imene Cherifi, Mohammed Belbachir *Laboratory of Polymer Chemistry, Department of Chemistry, Faculty of Exact and Applied Sciences, University Oran 1 Ahmed Ben Bella, BP 1524 El M'Naouar, 31000Oran, Algeria*
P42	**Synthesis of 1D and 2D ZnO/Ag/CdS nanocomposites to photon driven hydrogen production** Bakranov N., Kudaibergenov S. *Kazakh National Research Technical University after K.I.Satpayev, Satpayev street. 22, Almaty, Kazakhstan; Institute of Polymer Materials and Technologies, Microdistrict Atyrau-1, 3/1, Almaty, Kazakhstan.*
P43	**Growth and spectral characteristics of KY(WO4)2 : Ho3+ single crystals** S. Guretsky, D. Karpinsky, I. Kolesova, A. Kravtsov, O. Dernovich, S. Özçelik, N. Kuleshov *Scientific and Practical Materials Research Center NAS Belarus, Minsk, Belarus; Belarusian National Technical University, Minsk, Belarus; Photonics Application and Research Center, Gazi University, Ankara, Turkey*
P44	**Structural Properties of Sol-Gel BiFeO3- Films** S.A. Khakhomov, V.E. Gaishun, D.L. Kovalenko, A.V. Semchenko, V.V. Sidsky, O.I. Tyelenkova, W. Strek, D. Hreniak, A.L. Kholkin, S. Kopyl, I. Bdikin *F. Skorina Gomel State University, Sovetskaya 104, Gomel, 246019, Belarus; Institute of Low Temperature and Structures Research PAN, Okolna st. 2, Wroclaw, Poland; University of Aveiro, Campus Universitário de Santiago, Aveiro, 3810-193, Portugal*
P45	**Investigation of Bi0,9La0,1FeO3 Sol-Gel films by XRD** S.A. Khakhomov, V.E. Gaishun, D.L. Kovalenko, A.V. Semchenko, V.V. Sidsky, W. Strek, D. Hreniak, A.L. Kholkin, S. Kopyl, I. Bdikin, O. V. Ignatenko *F. Skorina Gomel State University, Sovetskaya 104, Gomel, 246019, Belarus; Institute of Low Temperature and Structures Research PAN, Okolna st. 2, Wroclaw, Poland; University of Aveiro, Campus Universitário de Santiago, Aveiro, 3810-193, Portugal; Scientific-Practical Materials Research Centre of National Academy of Sciences of Belarus, P.Brovki st. 19, Minsk, 220072, Belarus*
P46	**Synthesis of BiFeO3 and Bi0,9Sm0,1FeO3 films by Sol-Gel method** S.A. Khakhomov, V.E. Gaishun, D.L. Kovalenko, A.V. Semchenko, V.V. Sidsky, V.V. Vaskevich, A.N. Aleshkevich, A.L. Kholkin, S. Kopyl, I. Bdikin, A. Kareiva, Z. Stankeviciute *F. Skorina Gomel State University, Sovetskaya 104, Gomel, 246019, Belarus; Institute of Low Temperature and Structures Research PAN, Okolna st. 2, Wroclaw, Poland; University of Aveiro, Campus Universitário de Santiago, Aveiro, 3810-193, Portugal; Vilnus University, Universiteto g. 3 Vilnius, 01513, Lithuania.*
P47	**Modification of interface-controlled parameters of magnetic tunnel junctions by ion irradiation** B. M. S. Teixeira, A. A. Timopheev, N. F. F. Caçoilo, J. Mondaud, J. R. Childress, E. Alves, N. A. Sobolev *Physics Department & i3N, University of Aveiro, 3810-193 Aveiro, Portugal; Crocus Technology, 3 avenue Doyen Louis Weil, BP1505 - 38025 GRENOBLE Cedex1, France; IPFN, Instituto Superior Técnico,*

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P48	**Conjugation of nanomaterials in cellulose filter paper for superior water filtration** Sandeep Kumar, Monika Nehra, Shikha Jain, Neeraj Dilbaghi, Ki-Hyun Kim *Department of Bio and Nano Technology, Guru Jambheshwar University of Science and Technology, Hisar-Haryana, 125001, India; Department of Electronics and Communication Engineering, Guru Jambheshwar University of Science and Technology, Hisar- Haryana, 125001, India; Department of Civil & Environmental Engineering, Hanyang University, 222 Wangsimni-Ro, Seoul 04763, Republic of Korea*
P49	**Polarization and Piezoelectric properties of ZnO nanoparticles/nanorods interacting with various dopant and PVDF structures: molecular modeling and experiments** V. S. Bystrov, I. K. Bdikin, B. Singh, B.Kumar *Institute of Mathematical Problems of Biology, Keldysh Institute of Applied Mathematics, RAS, 142290 Pushchino, Moscow region, Russia; TEMA-NRD, Mechanical Engineering Department and Aveiro Institute of Nanotechnology (AIN), University of Aveiro, 3810-193 Aveiro, Portugal; Crystal Lab, Department of Physics & Astrophysics, University of Delhi, Delhi-110007, India*
P50	**Properties optimization by Al doping of ZnMgO for transparent conductive oxide (TCO) films** Amel Bahfir, Messaoud Boumaour, Mouhamed Kechouane, Hadjira Labech *Research Center in Semiconductors Technology for Energetic (CRTSE). 2, Bd. Frantz Fanon, B.P. 140 Alger-7 Merveilles, Algiers, Algeria; University of science and Houari Boumediene- USTHB - Bab-Ezzouar, Algiers, Algeria*
P51	**Li vacancies effect onto Li/Si alloys properties: theoretical investigation** A. LARABI, M. MEBARKI, A. Mahmoudi and N. Gabouze (61) *Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique (CRTSE), 2, Bd Frantz Fanon, BP 140 Alger 7- Merveilles 16038, Algerie*
P52	**Local piezoelectric properties of dipeptide nanotube structures** Budhendra Singh, V.S. Bystrov, Nuno Almeida, I.K. Bdikin *TEMA, Department of Mechanical Engineering, University of Aveiro, Portugal; Institute of Mathematical Problems of Biology, Keldysh Institute of Applied Mathematics, RAS, 142290 Pushchino, Moscow region, Russia*
P53	**Development of new materials for air purification applications** Maryam Salimian, Nuno A. F. Almeida, Eduarda B. H. Santos and Paula A. A. P. Marques *TEMA, Department of Mechanical Engineering, University of Aveiro, Portugal*
P54	**TiO2-rGO nanocomposite immobilized in P(VDF-TrFE): a sunlight active and reusable photo-catalyst for the elimination of metoprolol in water** Silva V., Salimian M., Marques P. A. A. P., Santos E. B. H. *Department of Chemistry, University of Aveiro, 3810-193 Aveiro, Portugal, valentinagsilva@ua.pt and telephone: +351916198762; TEMA, Department of mechanical engineering, University of Aveiro, 3810-193 Aveiro, Portugal; CESAM, Department of Chemistry, University of Aveiro, 3810-193 Aveiro, Portugal.*
P55	**Modeling of dichalcogenide MoS2 monolayers and its composites with PVDF/P(VDF-TrFE)** V. S. Bystrov, Hong Shen, Xiangjian Meng *Institute of Mathematical Problems of Biology, Keldysh Institute of Applied Mathematics, RAS, 142290 Pushchino, Moscow region, Russia; Shanghai Institute of Technical Physics, Chinese Academy of Sciences, Shanghai 200083, China*
P56	**Mechanical properties and fracture mechanism of Ti3Al intermetallic produced by powder metallurgy and casting processes** D. Božić, B. Dimčić, J. Stašić *University of Belgrade, Mike Petrovića Alasa 12-14, P.O. Box 522, 11001 Belgrade, Serbia*
P57	**The effect of picosecond laser on silver target – surface modification and nanoparticles production** J. Stašić, M. Trtica *University of Belgrade, Mike Petrovića Alasa 12-14, P.O. Box 522, 11001 Belgrade, Serbia*

P58	**Comparison of surface topography in machining Ti alloys for biomedical applications: Correlative microscopy approach for qualitative and quantitative analysis** Sílvia Carvalho, Ana Horovistiz, A. J. Festas, J.P. Davim *TEMA, Department of Mechanical Engineering, University of Aveiro, 3810-193 Aveiro, Portugal*
P59	**A comparative study between conventional drilling and helical milling in titanium alloys for medical applications** A. J. Festas, R. B. Pereira, A. Ramos, J. P. Davim *Dep. of Mechanical Engineering, University of Aveiro, Campus Santiago, 3010-193 Aveiro, Portugal; Dep. of Mechanical Engineering, Federal University of São João Del-Rei, 170 Frei Orlando Square, São João Del-Rei, MG 36880-000, Brazil.*
P60	**Sintering Atmosphere Effect on Powder Injection molded AISI-420 stainless steel powder** Lutfi Yakut, H.Ozkan Gulsoy *Marmara University, Inst. Graduate Studies Pure and Applied Sci., 34722, Istanbul, Turkey; Marmara University, Technology Faculty, Metallurgy and Materials Eng. Dep., 34722 Istanbul, Turkey*
P61	**A biomimetic engineered texture that turns wetting materials omniphobic even under immersion** Eddy M. Domingues, Sankara Arunachalam, Ratul Das, Jamilya Nauruzbayeva and Himanshu Mishra *University of Aveiro, Department of Mechanical Engineering, Centre for Mechanical Technology and Automation, Nanoengineering Research Group; King Abdullah University of Science and Technology, Water Desalination and Reuse Center, Biological and Environmental Science and Engineering Division, Thuwal 23955-6900, Saudi Arabia*
P62	**Growth, structure and magnetic properties of $NdFeO_3$ single crystals** A.Durairajana, E. Venkata Ramana, G. Ramesh Kumar, M.P.F. Graça, M.A. Valente *I3N-Aveiro, Department of Physics, University of Aveiro, Aveiro 3810 193, Portugal; Department of Physics, University College of Engineering Arni, Anna University, India*
P63	**Unusual magnetic properties of BLFO - KBr nanocomposites** Olena M. Fesenko, Andrii Yaremkevich, Dmitry V. Karpinsky, Maxim V. Silibin, Vladimir V. Shvartsman, and Anna N. Morozovska *Institute of Physics, NAS of Ukraine, 46, pr. Nauky, 03028 Kyiv, Ukraine; Scientific-Practical Materials Research Centre of NAS of Belarus, 220072 Minsk, Belarus; National Research University of Electronic Technology "MIET", 124498 Moscow, Russia; Institute for Materials Science and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, 45141, Essen, Germany*
P64	**Graphoepitaxial growth of CeO2 thin films on tilted-axes NdGaO3 substrates** Peter B. Mozhaev, Julia E. Mozhaeva, Igor K. Bdikin, Iosif M. Kotelyanskii, Valery A. Luzanov, Jørn Bindslev Hansen, Claus S. Jacobsen *Institute of Physics and Technology of the Russian Academy of Sciences, Moscow, 117218, Russia; TEMA-NRD, Mechanical Engineering Department and Aveiro Institute of Nanotechnology (AIN), University of Aveiro, Aveiro, 3810-193, Portugal; Kotelnikov Institute of Radioengineering and Electronics of Russian Academy of Sciences, Moscow, 125009, Russia; Department of Physics, Technical University of Denmark, Kongens Lyngby, DK-2800, Denmark*
P65	**Theoretical investigation of structural, electronic and mechanical properties of Al-doped c-BN compound** Budhendra Singh, Igor Bdikin *TEMA-NRD, Mechanical Engineering Department and Aveiro Institute of Nanotechnology (AIN), University of Aveiro, 3810-193, Aveiro, Portugal*
P66	**DFT investigation of mechanical strength of graphene and adsorption of H2 , NO and CO on monolayer graphene and graphene oxide** Budhendra Singh, Igor Bdikin *TEMA-NRD, Mechanical Engineering Department and Aveiro Institute of Nanotechnology (AIN), University of Aveiro, 3810-193, Aveiro, Portugal*
P67	**Synthesis and characterization of Double Pervoskites Halides** Janaradhan Rao, Nitu Salunke, Sonam Unde,Tejaswini Manolikar, Nazia Tarranum, Ranjit Hawaldar

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P68	**Radiation-induced point defects transformation in irradiated lithium fluoride crystals after their mechanical fragmentation** A. P. Voitovich, V. S. Kalinov, A. N. Novikov, L. P. Runets *B. I. Stepanov Institute of Physics of the National Academy of Sciences of Belarus, 68-2 Nezavisimosti ave., Minsk, 220072, Belarus*
P69	**Development of 3D electrospun PCL/Chitosan scaffolds for musculoskeletal tissue engineering** Andreia Leal Pereira, André F. Girão, Ângela Semitela, Samuel Guieu, Paula A.A.P. Marques, Maria Helena V. Fernandes *CICECO - Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro, 3810-193 Aveiro, Portugal; TEMA – Centre for mechanical technology and automation, Department of Mechanical Engineering, University of Aveiro, 3810-193 Aveiro, Portugal; QOPNA & LAQV-REQUIMTE, Department of Chemistry, University of Aveiro, 3810-193 Aveiro, Portugal; The Discoveries Centre for Regenerative and Precision Medicine, Headquarters at University of Minho, Avepark, 4805-017 Barco, Guimarães, Portugal*