



# Smart Materials and Structures

5th International Workshop Marrakech

9. - 12. September 2015

## Schedule

Welcome, Wednesday, 2015-09-09	
16.00	Arrival  Workshop office opened
19.00	Welcome

Titles of the IMMEA plenaries will be communicated later.

<b>Morning session, Thursday, 2015-09-10</b>	
8.30	<b>Opening</b>
<b>Plenary Talks</b> <span style="float: right;">Room: Lecture hall 1</span>	
9.00 P	<i>Catherine Dubourdieu, France</i> Towards complex oxide electronics on semiconductors
9.45 P	<i>Andrew Gallant, UK</i> Micro- and Nanoengineering of Plasmonic Terahertz Devices
10.30 – 10.50	Break: Coffee / Tea
10.50 – 12.40	<b>Energy Storage</b> Chair: Thirumany Sritharan Room: Lecture hall 2
10.50 I	<i>Mato Knez, Spain</i> Optimization of supercapacitor electrodes by Atomic Layer Deposition
11.20 I	<i>Rose-Noelle Vannier, France</i> Oxide ion transport in Mixed Ionic Electronic Conductors as SOFC cathodes
11.50 I	<i>Jean-Claude Badot, France</i> The contribution of the dielectric spectroscopy to the multiscale study of the electrode materials cells
12.20 T	<i>Eivind Skou, Denmark</i> The “Missing Buffer Effect” and the implications for super capacitors using aqueous electrolytes
12.45 – 14.00	<b>Lunch break</b>

<b>Afternoon sessions, Thursday, 2015-09-10</b>	
<b>Plenary Talk</b>	
Room: Lecture hall 1	
14.00 P	<i>Valerii Vinokur, USA</i> Vortex Mott insulator-metal transitions: experiment and theory Chair : Catherine Dubourdieu
14.50 – 16.20	<b>Smart Materials and Devices</b> Chair: Abderrazzak Douhal Room: Lecture hall 2
14.50 I	<i>Aline Rougier, France</i> Electrochromics as smart materials
15.20 I	<i>Franz Faupel, Germany</i> Functional Nanocomposites – From Fabrication to Function
15.50 I	<i>Mimouna Baitoul, Morocco</i> Graphene derivatives based nanocomposites for potential applications
16.20 – 16.40	Break: Coffee, Tea
16.40 – 18.00	<b>Solar Cells</b> Chair: Mohammed Es-Souni Room: Lecture hall 2
16.40 I	<i>Thirumany Sritharan, Singapore</i> Iron Pyrite (FeS <sub>2</sub> ) Nanoparticles and Thin Films as Photon Absorbers and Counter Electrodes in Solar Cells
17.10 I	<i>Malle Krunks, Estonia</i> Metal oxide and metal sulphide nanostructures by solution methods
17.40 T	<i>Karima Meziane, Morocco</i> Study of the physical properties of zinc oxide thin films prepared by the solgel method and doped lithium for photovoltaic applications
18.00 – 19.00	Poster session I

<b>Morning session, Friday, 2015-09-11</b>	
<b>Plenary Talks</b>	
Room: Lecture hall 1	
8.30 P	<i>Abderrazzak Douhal, Spain</i> Ultrafast Dynamics in Metal-Organic-Frameworks (MOFs)  Chair: Aline Rougier
9.15 P	<i>Dagou Zeze, UK</i> Nanostructured Materials & Devices  Chair : Arunas Krotkus
10.00 – 10.20	Break: Coffee / Tea
10.20 – 12.30	<b>Energy Materials</b> Chair: Nagahiro Saito Room: Lecture hall 2
10.20 I	<i>Soshu Kirihara, Japan</i> Stereolithographic Additive Manufacturing of Ceramics Dendrites with Geometric Fluctuations for Energy and Material Flows Modulation
10.50 I	<i>Minoru Mizuhata, Japan</i> Enhancement of photoluminescence and electrochemical activity in porous silicon/metal oxide composite materials
11.20 I	<i>Michel Latroche, France</i> Alloying and size effects on the sorption properties of Mg-based hydrides
11.50 T	<i>Maryem El Khatabi, Morocco</i> An in-depth study of the effect of transition metals on the hydrogen storage proprieties of MgH <sub>2</sub>
12.10 T	<i>Andreas Zeinert, France</i> Optical and photocatalytic properties of BiVO <sub>4</sub> thin films
12.45 – 14.00	<b>Lunch break</b>

<b>Afternoon sessions, Friday, 2015-09-11</b>			
		<b>Plenary Talk</b>	
		Room: Lecture Hall 1	
14.00 P	<i>Vladimir Dyakonov, Germany</i> Recombination pathways in high efficiency organic solar cells	Chair: Horst-Günter Rubahn	
14.50 – 16.20	<b>Organic Solar Cells</b> Chair: Malle Krunks Room: Seminar room 1	14.50 – 16.10	<b>Processing</b> Chair: Soshu Kirihara Room: Lecture hall 2
14.50 I	<i>Jost Adam, Denmark</i> Modeling nanostructure-enhanced light trapping in organic solar cells	14.50 I	<i>Nagahiro Saito, Japan</i> Solution Plasma Process for Fine Nanoparticles and Carbon Materials Production
15.20 T	<i>Vida Engmann, Denmark</i> Stabilization of Organic Solar Cells by Ternary Blending Active Layers with Additives	15.20 I	<i>Mady Elbahri, Germany, Finland</i> Macroscopic optical antennas with glassy disordered dipolar composites
15.40 T	<i>Hajar Jaouani, Morocco</i> Organic Solar Cells integrated in Smart Textile	15.50 T	<i>Nele Berger, Germany</i> On-substrate fabrication of porous Al-oxide templates with tunable pore diameters and interpore distances
16.00 T	<i>Morten Madsen, Denmark</i> Application of non-crystalline MoO <sub>x</sub> films for optoelectronic organic devices		
16.20 – 16.40	Break: Coffee / Tea		
16.40 – 18.00	<b>Properties and Applications</b> Chair: Mato Knez Room: Lecture hall 2	16.40 – 18.00	<b>Numerical Studies</b> Chair: Jost Adam Room: Seminar room 1
16.40 T	<i>Dimitri Schopf, Germany</i> Supported porous carbon and carbon-CNT-nanocomposites for supercapacitor applications	16.40 T	<i>Houda Ennaceri, Morocco</i> Optical Performance of ZnO and ZAO (ZnO:Al) Thin Films prepared by Reactive Magnetron Sputtering: Experimental and ab initio Study
17.00 T	<i>Boubker Ouadil, Morocco</i> Preparation of antibacterial and conductive textiles impregnated with graphene oxide, graphene and metallic nanoparticles	17.00 T	<i>Abderrahmanan Abbassi, Morocco</i> First principles study on the electronic and optical properties of Si and Al co-doped zinc oxide for solar cell devices
17.20 T	<i>Albert Juma, Botswana</i> Effect of microstructure on the electrical properties of TiO <sub>2</sub> thin films deposited by chemical spray pyrolysis	17.20 T	<i>Mourad Boujnah, Morocco</i> Ab initio comparative study of Scintillating Crystals LaX <sub>3</sub> with X=(F, Br and I) using mBJ exchange-correlation potential
17.40 T	<i>Ghizlan El Hallani, Morocco</i> Effect of different molarities on structural and optical properties of ZnO thin films elaborated by spin coating method	17.40 T	<i>Imane Matrane, Morocco</i> Numerical study of the adsorption and the diffusion on the clean (1×1) unreconstructed and (1×2), (1×3) and (1×4) reconstructed Pt (110) surfaces
18.00 – 19.00	Poster session II		
19.00	Departure to conference party		

<b>Saturday, 2015-09-12</b>	
9.00 – 11.40	<b>Ferroic Materials and Structure</b> Chair: Abdelilah Benyoussef Room: Lecture hall 2
9.00 T	<i>Jaroslavas Belovickis, Lithuania</i> Ferroelectric and ultrasonic studies on polymer based P(VDF-TrFE) composites with PZT, BTO and CFO inclusions
9.20 T	<i>Meriem Ben Ali, Morocco</i> Structural and magnetic properties of mixed Mn–Zn ferrites nanoparticles synthesized by Sol/Gel method
9.40 T	<i>Khadija El Maalam, Morocco</i> Composites perovskites materials for magnetic refrigeration application
10.00 T	<i>Azrou Mohamed, Morocco</i> Crystal structure and room and high temperature raman spectroscopy studies of $M_{3-x}M'_xX_2O_8$ (M = Ba, Sr; M' = Pb, Sr; X = P, As, V; $0 \leq x \leq 3$ ) and $A_{1-x}A'_xPb_4(XO_4)_3$ (A = Na, K; A' = Ag, K; X = P, As, V and $0 \leq x \leq 1$ )
10.20 T	<i>Abdehalim Elbasset, Morocco</i> Impedance complex, dielectric relaxation and electrical conductivity studies of $Ba_{1-x}Sr_xTiO_3$ ceramics
10.40 – 11.00	Break: Coffee / Tea
11.00 T	<i>Abdelhak El Ghandouri, Morocco</i> Structural and electrical properties of sol-gel processed strontium – doped barium titanate ceramics
11.20 T	<i>Omar Oabi, Morocco</i> High Seebeck Coefficients in ZnO-P <sub>2</sub> O <sub>5</sub> / (Ni & Co) Composites
<b>Plenary Talk</b> <span style="float: right;">Room: Lecture Hall 1</span>	
11.50 P	<i>Pooi See Lee, Singapore</i> High Performance Hybrid Pseudocapacitive Materials for Energy Storage Chair: Mohammed Es-Souni
12.35	Closure
12.45 – 14.00	Lunch

Abbreviations:

P	Plenary talk: 45 min, including discussion
I	Invited talk: 30 min, including discussion
T	Talk: 20 min, including discussion



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## List of Poster Presentations

No.	Poster session I	2015-09-10
P1	<i>Ibtissam El Housni, Morocco</i> Energy and exergy analysis of an integrated solar combined cycle system (ISCCS) in Morocco	
P2	<i>Arkadiusz Goszczak, Denmark</i> Nanostructures for organic solar cells from anodized aluminum templates	
P3	<i>Sara Mtougui, Morocco</i> Simulating the feasibility of installing a smart grid in Rabat, Morocco	
P4	<i>Nabil Chakhchaoui, Morocco</i> Use of electro-active polymers in the energy harvesting application to TTU	
P5	<i>Zineb Sabri, Morocco</i> Effect of different signals of polarization using electrostrictive polymers for harvesting energy	
P6	<i>Steffen Thrane Vindt, Denmark</i> 3D graphene-based material as catalyst support material for fuel cells	
P7	<i>Abdelilah Lahmar, France</i> Temperature influence on microstructure and optical properties of TiO <sub>2</sub> -Au monolayer thin films	
P8	<i>Abdehalim Elbasset, Morocco</i> Investigation of the structural, microstructural and optical properties of strontium titanate SrTiO <sub>3</sub>	
P9	<i>Hicham Gounaya, Morocco</i> The relaxation and the diffusion of Au and Pt adatoms on missing row reconstructed surfaces of gold	
P10	<i>Chahrazed Kaddour, Algeria</i> Thermal effects on I-V characteristics for GaAs MESFET devices	
P11	<i>Ali Hafis, Algeria</i> Structural characterization and superconducting properties of Nb <sub>3</sub> Al by combustion synthesis	
P12	<i>Yusuke Kondo, Japan</i> Encapsulation of gold nanoparticles onto green tea extracts-modified chitosan flakes as catalyst for 4-nitrophenol Reduction	
P13	<i>Najoua Zayyoun, Morocco</i> PH effect on the synthesis of Cu <sub>2</sub> O/CuO nanoparticles by sol-gel method in a glycolic medium	
P14	<i>Yoshida Shuhei, Japan</i> Preparation and catalytic evaluation of natural leaf supported gold nanoparticles	
P15	<i>Hyemin Kim, Japan</i> Simple one-step synthesis of nanostructured MnO <sub>2</sub> colloidal suspension by plasma discharge in liquid	
P16	<i>Anyarat Watthanaphanit, Japan</i> Synthesis of black titania spheres with efficient visible-light photocatalytic activity by water plasma	
P17	<i>Sana El-Kacemi, Morocco</i> Photocatalytic degradation of methylorange by TiO <sub>2</sub> nanostructured thin films	
P18	<i>Abdessamad Moumen, Morocco</i> Synthesis of nickel nanoparticles in aqueous copolymer emulsion	

P19	<i>Mohamed Houmad, Morocco</i> Absorption of visible light by GaAs and GaN nanosheet
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No.	Poster session II	2015-09-11
P1	<i>Rabab Bekkari, Morocco</i> Influence of sol concentration and annealing temperature on the structural and optical properties of nanocrystalline ZnO thin films synthesized by the sol-gel method	
P2	<i>Chaki Imane, Morocco</i> Physical properties of Gd doped ZnO thin films grown by spray pyrolysis	
P3	<i>Klaa Kalthoum, Algeria</i> Structural, electronic and thermal properties of wurtzite ZnO structure	
P4	<i>Mohamed Khuili, Morocco</i> First principles study of (Mg,Al)-codoped ZnO with GGA and mBJ approximations	
P5	<i>Abdi Naima, Algeria</i> First principles calculations of the structural, elastic and thermal properties of ZnO in zinc blende structure	
P6	<i>Bhihi Mohamed, Morocco</i> First principal study of hydrogen storage proprieties of double substituted Mg based hydrides Mg <sub>14</sub> TMLiH <sub>32</sub> , (TM = Sc, Ti, V, Cr, Y, Zr, Nb, Mo)	
P7	<i>Mustapha Abdellaoui, Morocco</i> Ab initio study of effects of B (Bsub,Bins) substituted and insertion Tm (Sr,Ca) co-doping on destabilizing of MgH <sub>2</sub>	
P8	<i>Zakaryaa Zarhri, Morocco</i> First principal calculations of optical and electrical properties in F and Al doped TiO <sub>2</sub> DMS	
P9	<i>Mohamed Tadout, Morocco</i> First principles calculations of GaN and AlN nanosheets	
P10	<i>Karim Saidi, Morocco</i> Numerical simulation of the filling phase of the microinjection process with the level set method	
P11	<i>Ahmed Moussaoui, Morocco</i> Numerical study by the meshless method LRPIM of shape parameter in radial basis function in linear elasticity	
P12	<i>Omar El Rhazouani, Morocco</i> Antisite disorder study by Monte Carlo Simulation of the double perovskite Sr <sub>2</sub> CrReO <sub>6</sub>	
P13	<i>Abderrahmanan Abbassi, Morocco</i> Spontaneous polarization, magnetic and electronic properties of BiXO <sub>3</sub> (X=Co, Mn, Fe, V, Zn) : First principles study	
P14	<i>Mohssine El Bachra, Morocco</i> Magnetic properties of heavy fermions compound URu <sub>2</sub> Si <sub>2</sub> : ab initio calculations and Monte Carlo simulation	
P15	<i>Rachid Masrouf, Morocco</i> Magnetism of size effect in graphene nano-islands: A Monte Carlo study	
P16	<i>Younes Benhouria, Morocco</i> Dynamic compensation temperatures and hysteresis behaviors of a mixed spin Ising double walled ferromagnetic nanotubes	
P17	<i>Dani Ibtissam, Morocco</i> Phase diagrams of spin-1 Ashkin-Teller model with crystal field and transverse field	
P18	<i>Khadija El Maalam, Morocco</i> Changing the magnetic and optical properties of (Ga, Fe)N and (Ga, Co)N by alloying with oxygen	
P19	<i>Abderrahim Ait Raiss, Morocco</i> Magnetic and magneto-optical properties of doped and co-doped CdTe	
P20	<i>Younes Sbai, Morocco</i> Magnetic properties and phase transition in transitions metal doped semiconductor GaN	



No.	Poster session II 2015-09-11	
P21	<i>Zakaria Mahhouti, Morocco</i> Structural and magnetic study of $\text{Co}_{(1-x)}\text{Ni}_x\text{Fe}_2\text{O}_4$ nanoparticles synthesized by the sol-gel method	
P22	<i>Hassan El Moussaoui, Morocco</i> Synthesis and magnetic properties of cobalt ferrite nanoparticles doped with neodymium and tin	
P23	<i>Ali Oubelkacem, Morocco</i> Thermodynamic properties and hysteresis behaviors of a mixed ferrimagnetic nanowire	