



European Materials Research Society

Spring Meeting 2022

May 30 | June 3
Virtual Conference

SYMPOSIUM D2

Materials for nanoelectronics and nanophotonics

Symposium Organizers :

Andreas SEIFERT, CIC nanoGUNE

Graziella MALANDRINO, Università degli Studi di Catania

Shashank MISHRA, Université Claude Bernard Lyon 1, CNRS

Yogendra MISHRA (Main organizer), University of Southern Denmark

Monday may 30

08:45	Welcome and Introduction to the Symposium	
	From 0D to 3D nanomaterials II : Graziella Malandrino, Yogendra Kumar Mishra	
09:00	INV Functional 3D Network Structures by Effective Assembly of 1D and 2D Nanomaterials	D2 2 1.1
	F. Schütt1, F. Rasch1, L. Saure1, A. S. Nia2, X. Feng2, R. Adelung1 1 Institute for Materials Science, Kiel University, 24118, Kiel, Germany 2 Department of Chemistry and Food Chemistry, Center for Advancing Electronics Dresden (cfaed), Technische Universität Dresden, 01062 Dresden, Germany	
09:30	Group IV-V based lamellar thin films: a route toward novel 2D materials	D2 2 1.2
	A. Valdenaire*(1), M. Stoffel (1), X. Devaux (1), E. André (2), C. Carteret (2), A. Bouché (1), M. Vergnat (1), H. Rinnert (1) (1) Université de Lorraine, CNRS, IJL, F-54000 Nancy, France, (2) Université de Lorraine, CNRS, LCPME, F-54000 Nancy, France	
09:45	Controlling the Coverage, Morphology, Optical Properties and SERS activity of self-assembled AuNP Monolayers on Si in 2D and 3D	D2 2 1.3
	Bartschmid, T.* (1), Bourret, G.R. (2) * lead presenter (1) and (2) Department of Chemistry and Physics of Materials, University of Salzburg, Jakob-Haringer Strasse 2A, A-5020 Salzburg, Austria	
10:00	Measurement of spatial homogeneity in 2D transition metal dichalcogenides – a VAMAS inter-laboratory comparison	D2 2 1.4
	Yameng Cao* (1), Sebastian Wood (1), Fernando A Castro (1). (1) National Physical Laboratory, United Kingdom * lead presenter	
10:15	Physical vapour deposition of atomically-thin crystals of the helimagnetic material NiBr2	D2 2 1.5
	Ivona Košič*(1), Efrén Navarro-Moratalla(1), Antoni Vicent Monteagudo Julia(2) (1) Instituto de Ciencia Molecular, Universitat de València, Calle Catedrático José Beltrán Martínez 2, 46980, Paterna, Spain.	
10:30	Discussion	
10:45		

From 0D to 3D nanomaterials II : Fabian Schuett, Anna Lucia Pellegrino, Graziella Malandrino

11:00	INV New Luminescent 1D and 2D d10 Coinage Metal Organic Chalcogenolate Coordination Polymers	D2 2 2.1
	Saly Hawila,1 Florian Massuyeau,2 Romain Gautier,2 Gilles Ledoux,3 Adel Mesbah,1 Aude Demessence1 1 Univ Lyon, Université Lyon 1, Institut de Recherches sur la Catalyse et l'Environnement de Lyon, IRCELYON, UMR5256, CNRS, 2 Avenue Albert Einstein, 69626, Villeurbanne Cedex, France 2 Université de Nantes, CNRS, Institut des Matériaux Jean Rouxel, IMN, F-44000 Nantes, France 3 Univ Lyon, Université Claude Bernard Lyon 1, CNRS, Institut Lumière Matière, 69622, Villeurbanne, France	
11:30	On the origin of slow decay photoluminescence decay in CdS quantum dots obtained using Langmuir-Blodgett technique	D2 2 2.2
	Svit, K.A. and Zhuravlev, K.S. Rzhanov Institute of Semiconductor Physics, Novosibirsk 630090, Russian Federation	
11:45	Fabrication of branch-like bridges based on Ge-on-Si(110) and observation of strong resonant light emission	D2 2 2.3
	Takahiro Inoue, Youya Wagatsuma, Leo Ikegaya, Kentarou Sawano Adv. Res. Lab., Tokyo City Univ.	
12:00	Fast-Response Single-Nanowire Photodetector Based on ZnO/WS2 Core/Shell Heterostructures	D2 2 2.4
	Edgars Butanovs, Alexei Kuzmin, Sergei Piskunov, Boris Polyakov Institute of Solid State Physics, University of Latvia, Kengaraga Street 8, LV-1063 Riga, Latvia	
12:15	Discussion	
12:45	Lunch and Plenary	

Functional nanostructured materials : Graziella Malandrino

14:00	INV Surface Modification of TiO2 Thin Films for Functional Applications	D2 2 3.1
	Salih Veziroglu, Franz Faupel, Oral Cenk Aktas Chair for Multicomponent Materials, Institute of Materials Science, Kiel University (CAU), 24143 Kiel, Germany	
14:30	Optimization of sensors developed for magnetic and temperature fields and based on the nanoscale heterostructures	D2 2 3.2
	K.K.Abgaryan, A.V. Leonov, D.L.Reviznikov Federal Research Center «Computer Science and Control» of the Russian Academy of Sciences, Institute for Problems of Microelectronics Technology and High-Purity Materials, Russian Academy of Sciences, Federal Research Center «Computer Science and Control» of the Russian Academy of Sciences	
14:45	Synthesis and Optical Study of Heterometallic Plasmonic Photocatalysts	D2 2 3.3
	Joshua Piaskowski, Gilles R. Bourret Department of Chemistry and Physics of Materials, University of Salzburg, Jakob Haringer Strasse 2A, A-5020 Salzburg, Austria, Department of Chemistry and Physics of Materials, University of Salzburg, Jakob Haringer Strasse 2A, A-5020 Salzburg, Austria	
15:00	Magnetic nanoparticles decorated ZnO tetrapods as advanced photocatalysts	D2 2 3.4
	Matiushkina, A.A.*(1), Abolhassani, R.(2), Fiutowski, J.(3), Rubahn, H.-G.(3), Mishra, Y. K.(2) & Orlova, A.A.(1) (1) Faculty of Photonics, ITMO University, Russia, (2) Smart Materials, NanoSYD, Mads Clausen Institute, University of Southern Denmark, Denmark, (3) NanoSYD Centre, Mads Clausen Institute, University of Southern Denmark, Denmark, * lead presenter	
15:15	Multicomponent nanocrystal-based hydrogels and aerogels with distinct optical, electrical and electrochemical properties	D2 2 3.5
	N. C. Bigall Leibniz Universität Hannover, Institute of Physical Chemistry and Electrochemistry and Cluster of Excellence PhoenixD (Photonics, Optics, and Engineering, Innovation Across Disciplines), Hannover, Germany	
15:30	Discussion	
15:30		

Synthesis of nanostructured materials : Salih Veziroglu

16:00	The effect of the concentration of NaOH on the synthesis and applicability of CeO2 nanoparticles	D2 2 4.1
	Tóth, Zs. R. *(1), R?zvan??, L.N. (2), Feraru, A. (1,3), Baia, L. (1,3) & Magyari, K. (1,4). (1) Nanostructured Materials and Bio-Nano-Interfaces Center, Interdisciplinary Research Institute on Bio-Nano-Sciences, Babe?-Bolyai University, Treboniu Laurian Str. 42, RO-400271 Cluj-Napoca, Romania, (2) Faculty of Chemistry and Chemical Engineering, Babe?-Bolyai University, Arany János Str. 11, RO-400028 Cluj-Napoca, Romania, (3) Faculty of Physics, Babe?-Bolyai University, M. Kog?niceanu Str. 1, RO-400084 Cluj-Napoca, Romania, (4) Department of Applied and Environmental Chemistry, Faculty of Science and Informatics, University of Szeged, Rerrich Béla Sqr. 1, HU-6720 Szeged, Hungary, *zsejke.toth@ubbcluj.ro	
16:15	Assemblies of Polymer-coated Nanocrystals	D2 2 4.2
	Irene Morales, Franziska Lübke, Christoph Wesemann, Nadja C. Bigall Institut für Physikalische Chemie und Elektrochemie, Leibniz Universität Hannover	
16:30	Luminescence-based wide range pH sensor using the biocompatible material, Fluorapatite	D2 2 4.3
	T K Krishnapriya 1, R Anjana 1, Ayswaria Deepti 2, P S Baby Chakrapani 2,3, A S Asha 2,3* and M K Jayaraj 4 1 Department of Physics, Cochin University of Science and Technology, Kochi 682022, India 2 Department of Biotechnology, Cochin University of Science and Technology, Kochi 682022, India 3 Centre of Excellence in Advanced Materials, Cochin University of Science and Technology, Kochi 682022, India 4 University of Calicut, Malappuram 673635, India	
16:45	Light emitting tensile strained germanium microstructures fabricated via liquid phase epitaxy	D2 2 4.4
	Cicek Boztug, Buse Unlu, Milad Ghasemi, Selcuk Yerci, Department of Electrical and Electronics Engineering, TED University, Department of Micro and Nanotechnology, Middle East Technical University, Department of Electrical and Electronics Engineering, Middle East Technical University	

17:00 **Effect of starting materials and fabrication conditions on the properties of Mg-doped ZnO materials**
 N. Korsunskaya1, I. Markevich1, D. Bulana2, K. Kozoriz1, S. Ponomaryov1, Yu. Polishchuk1, D. Khmil1, O. Melnichuk3, L. Melnichuk3, L. Khomenkova1,2
 1) V. Lashkaryov Institute of Semiconductor Physics of National Academy of Sciences of Ukraine, 45, Pr. Nauky, Kyiv, 03028, Ukraine, 2) National University of Kyiv Mohyla Academy?, 2 Skovorody str., 04070 Kyiv, Ukraine, 3) Mykola Gogol State University of Nizhyn, 2 Hrafska Str., Nizhyn 16600, Ukraine.

D2 2
4.5

17:15 **Discussion**

Tuesday may 31

Functional nanomaterials: theory vs. experiments : Graziella Malandrino

09:00 **INV The Photonic Materials Cloud - Designing, Comparing, and Testing Photonics Materials Online** D2 2
5.1
 Jost Adam
 Computational Materials Group, Centre for Photonics Engineering, Mads Clausen Institute, University of Southern Denmark, Campusvej 55, DK-5230 Odense, Denmark

09:30 **Electronic structure of CaF2** D2 2
5.2
 Jiaqi Chen, Zhaofu Zhang, Yuzheng Guo, John Robertson
 Department of Engineering, University of Cambridge, Cambridge CB3 0FA, UK, College of Engineering, Swansea University, Swansea, SA1 8EN, United Kingdom

09:45 **ZnSnN2 nanometric layers prepared by magnetron sputtering: theory vs experiment** D2 2
5.3
 Narolschi, Ig.(1), Klyukanov, A.A.(1), Rotaru, C.(1,2), Ghilechii, Gh.(1), Bercu, E.(1), Vataavu, S.*(1,2)
 (1) Physics of Semiconductors and Devices Lab, Faculty of Physics and Engineering, Moldova State University, 60 A. Mateevici str., MD 2009, Chisinau, Moldova, (2) CaRISMA Research Center, Faculty of Physics and Engineering, Moldova State University, 60 A. Mateevici str., MD 2009, Chisinau, Moldova

10:00 **Strong coupling effect on hot-carrier generation in nanoparticle-molecule assemblies** D2 2
5.4
 Rania Zaier, Maria Bancerek, Katarzyna Kluczyk-Korch, Tomasz J. Antosiewicz
 Faculty of Physics, University of Warsaw, Pasteura 5, PL-02-093 Warsaw, Poland

10:15 **Chiral-plasmonic materials for refractive index sensitivity** D2 2
5.5
 Sergio Gómez-Graña, Isabel Pastoriza-Santos and Jorge Pérez-Juste
 CINBIO, Departamento de Química Física, Universidade de Vigo 36310 Vigo (Spain)

10:30 **Electronic properties of beta-Ga2O3 Nanotube (or Nanowire) Arrays** D2 2
5.6
 Prof. Balabai, R.M. (1), PhD student Naumenko, M.V.*(1).
 (1) Kryvyi Rih State Pedagogical University, Ukraine

10:35 **Discussion**

10:50

**Applications: Nanomaterials for sensing :
 Jost Adam, Yogendra Kumar Mishra, Graziella Malandrino**

11:00 **Room temperature H2S gas sensor using one-step CVD grown MoS2 and 2H - MoS2/1T@ 2H - MoS2 heterostructure** D2 2
6.1
 Swathy B Saseendran , Anamika Ashok , Asha A S.
 Nanomaterials for Emerging Solid State Technology (NEST) Research laboratory, Department of Physics, Cochin University of Science and Technology, Kochi 682022, Kerala, India , Nanomaterials for Emerging Solid State Technology (NEST) Research laboratory, Department of Physics, Cochin University of Science and Technology, Kochi 682022, Kerala, India , Nanomaterials for Emerging Solid State Technology (NEST) Research laboratory, Department of Physics, Cochin University of Science and Technology, Kochi 682022, Kerala, India 2.Centre of Excellence in Advanced Materials, Cochin University of Science and Technology, Kochi 682022, Kerala, India.

11:15 **Fabrication and characterization of combined thick-film nanostructures for sensors application** D2 2
6.2
 Klym Halyna
 Lviv Polytechnic National University, Lviv, Ukraine

11:30 **Effect on radiative emission mechanism of surface modification of ZnO nanorods through Au nanoparticle decoration** D2 2
6.3
 Bruno, L.*(1,2), Strano, V. (1,2), Scuderi, M. (3), Franzò, G.(2), Priolo, F.(1,2) & Mirabella, S.(1,2)
 (1) Dipartimento di Fisica e Astronomia "Ettore Majorana", Università di Catania, via S. Sofia 64, 95123 Catania, Italy, (2) CNR-IMM, via S. Sofia 64, 95123 Catania, Italy, (3) CNR-IMM, VIII Strada 5, 95121 Catania, Italy.

11:45	Single-step Hybridization of ZnO Tetrapod-based Highly Porous 3D Network with Metals and Metal Oxides Nanoparticles Reza Abolhassani, Horst-Gunter Rubahn, Yogendra Kumar Mishra Mads Clausen Institute, NanoSYD, University of Southern Denmark Alsion 2, 6400, Sønderborg, Denmark	D2 2 6.4	17:15	Temperature dependent growth of spray-cast Cs3Bi2I9 films: A Perovskite-inspired material for self-powered photodetectors Sebin Devasia, S. Shaji, D. A. Avellaneda, J.A. Aguilar Martinez, B. Krishnan Facultad de Ingeniería Mecánica y Eléctrica, Universidad Autónoma de Nuevo León. San Nicolás de los Garza, Nuevo León, México, 66455 ,Centro de Innovación, Investigación y Desarrollo en Ingeniería y Tecnología (CIIDIT)- Universidad Autónoma de Nuevo León, Parque de Investigación e Innovación Tecnológica (PIIT), Apodaca, Nuevo León, 66600, México, Centro de Investigación e Innovación en Ingeniería Aeronáutica (CIIA), Facultad de Ingeniería Mecánica y Eléctrica, Carretera a Salinas Victoria, Apodaca, Nuevo León, 66600, México.	D2 2 8.3
12:00	Study of the H2 detection mechanism in chemoresistive sensors using low-cost WO3 nanorods G. Mineo ^{1,2} , K. Moulaei ³ , G. Neri ³ , S. Mirabella ^{1,2} , E. Bruno ^{1,2} 1 Dipartimento di Fisica e Astronomia "Ettore Majorana", Università degli Studi di Catania, via S. Sofia 64, 95123 Catania, Italy, 2 CNR-IMM (Università di Catania), via S. Sofia 64, 95123 Catania, Italy, 3 Dipartimento di Ingegneria, Università degli Studi di Messina, Contrada Di Dio, 98158, Sant'Agata, Messina, Italy,	D2 2 6.5	17:30	High quality inkjet printed-emissive nanocrystalline perovskite CsPbBr3 layers for CCL and LEDs applications G. Vescio, ¹ J.L. Frieiro, ¹ A. F. Gualdrón-Reyes, ² S. Hernández, ¹ A. Cirera, ¹ I. Mora-Seró, ² B. Garrido ¹ 1) MIND-IN2UB, Department of Electronics and Biomedical Engineering, Universitat de Barcelona, Martí i Franquès 1, 08028 Barcelona (Spain) 2) INAM, Universitat Jaume I (UJI), Avenida de Vicent Sos Baynat s/n, 12071 Castelló de la Plana (Spain)	D2 2 8.4
12:15	Discussion				
12:30	Lunch and Plenary				
	Synthesis of metal-based nanomaterials : Shashank Mishra				
14:45	INV Amalgamation Synthesis of Intermetallic Nanocrystals Jasper Clarysse, Annina Moser, Olesya Yarema, Vanessa Wood, and Maksym Yarema Chemistry and Materials Design Group, Institute for Electronics, ETH Zurich, Zurich, Switzerland	D2 2 7.1	17:45	Discussion	
15:15	Hybrid nanostructured thin films of noble metal/bimetallic nanoparticles with tin monosulfide for enhanced photodetection Akshana Parameswaran Sreekala, Sebin Devasia, Bindu Krishnan, David Avellaneda Avellaneda, Sadasivan Shaji Facultad de Ingeniería Mecánica y Eléctrica, Universidad Autónoma de Nuevo León. San Nicolás de los Garza, Nuevo León, 66455, México, Centro de Innovación, Investigación y desarrollo en Ingeniería y Tecnología (CIIDIT), Universidad Autónoma de Nuevo León., PIIT Monterrey, Apodaca, Nuevo León, 66629, México.	D2 2 7.2			
15:30	High-Aspect Ratio Au Microflakes via Gap-Assisted Synthesis Fateme Kiani, Giulia Tagliabue Laboratory of Nanoscience for Energy Technologies (LNET), STI, École Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland	D2 2 7.3			
15:45	Kinetics of Dispersion During Annealing in Vacuum of Palladium and Platinum Nanofilms Deposited onto Oxide Materials Stetsyuk T.V. Frantsevich Institute for Problems of Materials Science of NAS of Ukraine	D2 2 7.4			
15:50	In situ liquid-assisted vapor-solid-solid silicon nanowires growth with bi-element catalysts E. Ngo, W. Wang, P. Bulkin, I. Florea, P. Roca i Cabarrocas, J.-L. Maurice Université Paris-Saclay, CNRS, C2N, 91220, Palaiseau, France, École	D2 2 7.5			
16:05	Discussion				
16:20					
	Halide perovskites : Anna Lucia Pellegrino, Graziella Malandrino, Yogendra Kumar Mishra				
16:45	Stability improvement of red CsPbBrI2 nanocrystals tethering phenylated phosphine ligands Kuan-Hsueh Peng, Sheng-Hsiung Yang Institute of Lighting and Energy Photonics, National Yang Ming Chiao Tung University	D2 2 8.1			
17:00	Enhanced optical properties of halide perovskites by multicentred bonding mechanism Xuewei Zhang, Zhaofu Zhang, Yuzheng Guo, Daping Chu, John Robertson Department of Engineering, University of Cambridge, Cambridge CB3 0FA, UK, School of Electrical Engineering, Wuhan University, Wuhan, 430072, China	D2 2 8.2			

Wednesday June 1

Luminescent nanomaterials I : Shashank Mishra

09:00	INV Upconversion nanoparticles for photocatalysis light harvesting	D2 2 9.1
	Bhagyesh Purohit, Yannick Guyot, David Amans, Marie-France Joubert, Benoit Mahler, Shashank Mishra, Christophe Dujardin, Gilles Ledoux Univ Lyon, Université Claude Bernard Lyon 1, CNRS, Institut Lumière Matière, F-69622, Lyon, France, Univ Lyon, Université Claude Bernard Lyon 1, CNRS, Institut de Recherches sur l'Environnement et la Catalyse de Lyon, F-69622, Lyon, France	
09:30	Luminescent Er Doped Y2O3 Nanoparticles for Biological Applications	D2 2 9.2
	Regina M. Chiechio 1,3,4, Maria L. Amoroso2, Federica Pappalardo1, Pascale Even-Hernandez 4, Annalinda Contino2, Giuseppe Maccarrone 2, Riccardo Reitano1, Giorgia Franzo1,3, Valerie Marchi4, Paolo Musumeci1, Maria J. Lo Faro1,3* 1) Dipartimento di Fisica e Astronomia "Ettore Majorana", Università degli Studi di Catania, Via S. Sofia 64, 95123 Catania, Italy. 2) Dipartimento Di Scienze Chimiche, Università Degli Studi Di Catania, Viale Andrea Doria 6, 95125, Catania, Italy. 3) Istituto per la Microelettronica e Microsistemi, Consiglio Nazionale delle Ricerche (CNR-IMM) UoS Catania, Via S. Sofia 64, 95123 Catania, Italy. 4) Institut des Sciences Chimiques de Rennes, CNRS UMR 6226, Université Rennes 1, 35042 Rennes Cedex, France.	
09:45	Multifunctional identification markers based on Gd2O3:Tm3 , Er3 , Nd3 particles	D2 2 9.3
	Vassily A. Medvedev, Ilya E. Kolesnikov, Pavel K. Olshin, Mikhail D. Mikhailov, Alina A. Manshina, Daria V. Mamonova Saint Petersburg State University, Saint Petersburg, 199034, Russia, École Polytechnique Fédérale de Lausanne, Lausanne, 1015, Switzerland, Peter the Great St.Petersburg Polytechnic University, Saint Petersburg, 194064, Russia	
10:00	BaF2:Eu thin films for photovoltaic applications: fabrication through a simple MOCVD approach and conversion properties	D2 2 9.4
	Francesca Lo Presti,1 Anna Lucia Pellegrino,1 Adolfo Speghini,2 and Graziella Malandrino.1 1.Dipartimento di Scienze Chimiche, Università di Catania and INSTM UdR Catania V.le A. Doria 6, 95125 Catania Italy. E-mail: gmalandrino@unicat.it, 2. Nanomaterials Research Group, Dipartimento di Biotecnologie, Università di Verona and INSTM UdR Verona, Strada le Grazie 15, 37134 Verona, Italy.	
10:15	Luminescence of Europium doped 2D-MoO3 nanocrystals	D2 2 9.5
	E. Nieto-Pinero, A. Caño, F. Chacon, R. Serna Laser Processing Group, Instituto de Optica, IO, CSIC, Serrano 121, 28006 Madrid, Spain	
10:30	Discussion	
10:45		
	Luminescent nanomaterials II : Gilles Ledoux	
11:00	Luminescence of BaxMg(2-x)F4 ceramics synthesized in a radiation field	D2 2 10.1
	Zhunosbekov A. 1, Strelkova A. 1, Lisitsyna2 L.A. 1. The L. N. Gumilyov Eurasian National University sunaman@mail.ru, a.strelkova@nurorda.kz 2. Tomsk State University of Architecture and Building. Tomsk, Russia lisitsyna@mail.ru	
11:15	Identification of visible photoluminescence emissions from a single excited state of self-assembled quantum dots	D2 2 10.2
	Rihani Jawher-a, Meherzi Oueslati-b*, Hosni Ajjani-b, and Radhwen Chtourou-a a-Laboratoire de Photovoltaïque de Semiconducteurs et de Nanostructures, Centre de Recherche des Sciences et Technologie de l'Energie, BP. 95, Hammam-Lif 2050, Tunisia. b-Laboratoire de Nanomatériaux, Nanotechnologie et Energie (L2NE), Faculté des Sciences de Tunis, Université de Tunis El Manar, 2092 Tunis, Tunisia.	

11:30	Study of microstructure, optical behaviors of Rare earth doped Ba0.85Ca0.12RE0.03Ti0.90Zr0.04Nb0.042O3 ceramics (RE = Ce3+ and	D2 2 10.3
	1/ Zeineb Raddaoui 2/ Marwa Bourguiba 3/ Pascal Marchet 4/ Jemai Dhahri 5/ Moez Chafra 1/ - Laboratory of Condensed Matter and Nanosciences, Faculty of Sciences of Monastir, University of Monastir, Avenue of the environment , 5019 Monastir, Tunisia. - Institute for Research on Ceramics, University of Limoges, UMR 7315, 87068 Limoges, France. 2/ - Laboratory of Applied Mechanics and systems, School Polytechnic of Tunisia, University of Carthage, La Marsa, Tunisia. - Faculty of Sciences Tunis, University of Tunis el Manar, Tunis 2092. 3/ Institute for Research on Ceramics, University of Limoges, UMR 7315, 87068 Limoges, France. 4/ Laboratory of Condensed Matter and Nanosciences, Faculty of Sciences of Monastir, University of Monastir, Avenue of the environment , 5019 Monastir, Tunisia. 5/ Laboratory of Applied Mechanics and systems, School Polytechnic of Tunisia, University of Carthage, La Marsa, Tunisia.	
11:45	Ratiometric luminescent thermometry in Nd3+/Yb3+ codoped oxide materials for in vivo applications	D2 2 10.4
	Itália V. BARBOSA1,2, Géraldine DANTELLE1, Alain IBANEZ1, Lauro J. Q. MAIA2 1 Université Grenoble Alpes - Institut Néel, CNRS, Grenoble, France, 2 Universidade Federal de Goiás – Instituto de Física, Goiânia, Goiás, Brazil	
12:00	Strong Er3+ radiative emission enhancement by quasi-BIC modes coupling in all-dielectric slot nanoantenna arrays	D2 2 10.5
	Kalinic, B.(1), Cesca, T.(1), Balasa, I. G.(1), Jacassi, A.(2), Sapienza, R.(2), Mattei, G. (1) (1) Department of Physics and Astronomy, University of Padova, Padova, Italy, (2) The Blackett Laboratory, Department of Physics, Imperial College, London, United Kingdom	
12:15	Correlative study between nanoscale structure and optical properties of highly Erbium-doped silicon oxide thin films	D2 2 10.6
	E. Talbot1, S.Guehairia1, C. Castro1, P. Pareige1, F. Gourbilleau2, J. Cardin2, C. Labbé2, M. Carrada3 1- Normandie Univ, UNIROUEN, INSA Rouen, CNRS, Groupe de Physique des Matériaux, 76000 Rouen, France 2- CIMAP, Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, CIMAP, 14000, Caen, France 3- CEMES-CNRS, Université de Toulouse, 29 rue Jeanne Marvig, 31055 Toulouse, France	
12:30	Discussion	
12:45	Lunch and Plenary	
	Applications: sensing and luminescence : Graziella Malandrino	
15:00	Low temperature detection of nitric oxide by CuO nanoparticles synthesized by pulsed laser ablation	D2 2 11.1
	Censabella M. (1,2), Iacono V. (1,2,3), Scandurra A. (1,2), Moulae K. (4), Neri G. (4), Ruffino F. (1,2,3), Mirabella S. (1,2,3) (1) Dipartimento di Fisica e Astronomia "Ettore Majorana", Università di Catania, via S. Sofia 64, 95123 Catania, Italy (2) CNR-IMM (Catania Università), via S. Sofia 64, 95123 Catania, Italy (3) CSFNSM - Centro Siciliano di Fisica Nucleare e Struttura della Materia, Via S. Sofia 64 95123 Catania (4) Department of Engineering, University of Messina and INSTM Research Unity, C.da Di Dio, I-98166, Messina, Italy	
15:15	Tuning the Gas Sensing Properties of rGO with In2O3 Nanoparticles	D2 2 11.2
	Bruno S. de Lima (1, 2), Amanda A. Komorizono (1), Amadou L. Ndiaye (2), Maria Inês B. Bernardi (1), Jérôme Brunet (2), and Valmor R. Mastelaro (1) 1 Sao Carlos Institute of Physics, University of Sao Paulo, Sao Carlos 565-905, SP, Brazil, 2 Clermont Auvergne INP, CNRS, Institut Pascal, Université Clermont Auvergne, F-63000 Clermont-Ferrand, France, F-63000 Clermont-Ferrand, France,	
15:30	Aluminium borate powders and composite coatings as rare earth-free phosphors	D2 2 11.3
	Cathalan, J.*(1)(2), Salaün, M.(2), Ibanez, A.(2), Potdevin, A.(1), Chadeyron, G.(1), Gautier-Luneau, I.(2). (1) Université Clermont Auvergne, Clermont Auvergne INP, CNRS, Institut de Chimie de Clermont-Ferrand, F-63000 Clermont-Ferrand, France (2) Université Grenoble Alpes, CNRS, Grenoble INP, Institut Néel, F-38000 Grenoble, France	

15:45 **Study of post-deposition anneal for optimized ALD Al₂O₃/etched GaN interfacial properties**
 P. Fernandes Paes Pinto Rocha* (1)(2), L. Vauche (1), E. Martinez (1), W. Vandendaele (1), N. Rochat (1), T. Spelta (1), S. Boubenia (2), B. Salem (2), V. Sousa (1)
 (1) CEA, LETI, MINATEC Campus, F-38054 Grenoble, France and Univ. Grenoble Alpes, F-38000 Grenoble, France (2) Univ. Grenoble Alpes, CNRS, CEA/LETI Minatec, Grenoble INP, LTM, F-38054 Grenoble, France

D2 2
11.4

16:00 **Discussion**

Thursday June 2

Dielectric, piezo- and ferroelectric nanomaterials I : Graziella Malandrino

09:00 **INV Optical transistor and optical memory realization with photoferroelectrics** D2 2
12.1
 A. Makhort(1), R. Gumeniuk(2), J.-F. Dayen(1), P. Dunne(1), U. Burkhardt(3), M. Viret(4), B. Doudin(1), B. Kundys(1)*
 1. Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, 23 rue du Loess, Strasbourg F-67000, France. 2. Institut für Experimentelle Physik, TU Bergakademie, Leipziger Str. 23, Freiberg 09596, Germany. 3. Max Planck Institut für Chemische Physik fester Stoffe Nöthnitzer Str. 40, 01187 Dresden, Germany. 4. SPEC, CEA, CNRS, Université Paris-Saclay, Gif-sur-Yvette 91191, France.

09:30 **Nanoscale studies of electronic and photoinduced effects in ferroelectric thin films heterostructures** D2 2
12.2
 Xavier Henning, Laurianne Wendling, Mircea Rastei, Aziz Dinia, Silviu Colis
 Institut de Physique et Chimie des Matériaux de Strasbourg CNRS Université de Strasbourg 23 rue du Loess F-67034 Strasbourg France

09:45 **Nanoscale measurements of High Dielectric Constants for piezoelectric materials by Scanning Microwave Microscopy** D2 2
12.3
 K. Kaja*(1), D. Richert (1), J. Morán (1), A. Delvallée (1), D. Allal (1), B. Gautier (2) (3) & F. Piquemal (1).
 (1) Laboratoire national de métrologie et d'essais, France (2) Institut des Nanotechnologies de Lyon, France (3) Institut National des Sciences Appliquées de Lyon, France

10:00 **Piezoelectric nanostructured α -Quartz films on Silicon: from material to new devices** D2 2
12.4
 Claire Jolly* (1), David Sánchez-Fuentes (1), Dilek Cakiroglu (1), A. Gomez (1), Raissar Rathar (1,2), Laura Picas (2), A.Carretero-Genevri. (1) * lead presenter
 (1) Institut d'Electronique et des Systemes (IES), CNRS, Université de Montpellier, 860 Rue de Saint Priest 34095 Montpellier, France (2) Institut de Recherche en Infectiologie de Montpellier (IRIM), CNRS UMR 9004–Université de Montpellier, 34293 Montpellier, France

10:15 **Giant Piezoelectric Response in Non-stoichiometric Epitaxial BaTiO₃** D2 2
12.5
 Subhajit Pal,*Sandeep Vura*, ?Debadarshini Samantaray, Amulya Dwivedi, Rama Satya Sandilya, Vishnu Kumar, Vijayendra Shastri, Saurabh Chandorkar, Srinivasan Raghavan, and Pavan Nukala*
 Centre for Nanoscience and Engineering, Indian Institute of Science, Bangalore 560012, India

10:30 **Discussion**

10:45

Dielectric, piezo- and ferroelectric nanomaterials II : Bohdan Kundys

11:00 **Inverse design from synthetic conditions and precursors for dielectric properties of BaTiO₃ assisted by machine-learning** D2 2
13.1
 Min-Jeong Gong(1)*, Dong-Hwa Seo(1), Young Seog Yoon(2), Hyun-woo Oh(2), Suyoung Chi(2), Seong Hyeok Choi(3), Hyeon Jin Jung(3), Moonhee Choi(3), Sung Beom Cho(3)
 (1) School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology, South Korea (2) ICT-enabled Intelligent Manufacturing Research Section, Electronics and Telecommunications Research Institute, South Korea (3) Korea Institute of Ceramic Engineering & Technology, South Korea * lead presenter

11:15 **Excellent excitonic properties and non-zero valley splitting in 2D antiferromagnetic MPX₃ crystals** D2 2
13.2
 Milosz Rybak, Paulo E. Faria Junior, Tomasz Wozniak, Paweł Scharoch, Jarosław Fabian, Jens Kunstmann and Magdalena Birowska
 Department of Semiconductor Materials Engineering, Faculty of Fundamental Problems of Technology Wrocław University of Science and Technology Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland

11:30 **The Effects of Characteristics of Raw Materials and Synthetic Conditions on Properties of BaTiO₃: A Structural Equation Model** D2 2
13.3
 Young Seog Yoon(1)*, Suyoung Chi(1), Hyun-woo Oh(1), Min-Jeong Gong(2), Dong-Hwa Seo(2), Hyeon Jin Jung(3)
 (1) ICT-enabled Intelligent Manufacturing Research Section, Electronics and Telecommunications Research Institute, South Korea (2) School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology, South Korea (3) Korea Institute of Ceramic Engineering & Technology, South Korea * lead presenter

11:45	<p>MOVPE growth of cubic GaN on GaAs (110) substrate I. Daldoul a*, S. Othmani a, A. Mballo b, P. Vuong b, J.P. Salvestrini b,c, N. Chaaben a a Laboratoire de Recherche sur les Hétéro-Epitaxies et Applications, Faculté des Sciences de Monastir, 5019, Université de Monastir, Tunisia b International Research Lab Georgia Tech – CNRS (IRL 2958), Georgia Tech Lorraine, 2 rue Marconi, 57070, Metz, France c School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, 30332, USA Corresponding author. E-mail address: imendaldoul9@gmail.com (I.Daldoul).</p>	D2 2 13.4
12:00	<p>Study of manganese incorporation in Zn2TiO4 produced by solid-state reaction method L. Borkovska1, T. Stara1, I. Vorona1, V. Nosenko1, O.Gudymenko1, V. Kladko1, K. Kozoriz1, C. Labbé2, J. Cardin2, J.-L. Doualan2 and T. Kryshtab3 1V. Lashkaryov Institute of Semiconductor Physics of the NAS of Ukraine, 45 Prospect Nauky, 03028 Kyiv, Ukraine, 2CIMAP, CEA-CNRS-ENSICAEN, Normandie Université, 6 Blvd Maréchal Juin, Caen, France, 3Instituto Politécnico Nacional ? ESFM, Av. IPN, Ed.9 U.P.A.L.M., 07738 Mexico D.F., Mexico</p>	D2 2 13.5
12:15	Discussion	
12:30	Lunch and Plenary	
	Nanostructured films : Yogendra Kumar Mishra, Graziella Malandrino	
15:00	<p>Comparative study of WSe2 thin films synthesized via pre-deposited WO3 and W precursor material selenization Kevon Kadiwala, Edgars Butanovs, Andrejs Ogurcovs, Martins Zubkins, Boris Polyakov Institute of Solid State Physics, University of Latvia, Kengaraga street 8, Riga, Latvia, LV-1063</p>	D2 2 14.1
15:15	<p>Facile synthesis of ultra-thin nanocomposite films G. Cristian Vásquez, Sascha Ehlert, Martin Dulle, Margarita Kruteva, Stephan Hauschild, Beate Förster, Stephan Förster Jülich Centre for Neutron Science (JCNS-1), Forschungszentrum Jülich</p>	D2 2 14.2
15:30	<p>Cobalt metal via ALD using new zinc alkyls as reduction inducing agents: A promising approach for metal ALD David Zanders, Seán T. Barry, Anjana Devi Inorganic Materials Chemistry, Ruhr University Bochum, Universitätsstraße 150, Bochum, Germany 44780, Department of Chemistry, Carleton University, 1125 Colonel By Drive, Ottawa, Ontario K1S 5B6, Canada Department of Chemistry, Inorganic Materials Chemistry, Ruhr University Bochum, Universitätsstraße 150, Bochum, Germany 44780</p>	D2 2 14.3
15:45	<p>Tunable Photoluminescence Enhancement with Plasmonic Nanoparticles on Thin Film Vanadium Dioxide Stephen Cunningham, Calin Hrelescu, Gwenael Acheson, Plamen Stamenov, A. Louise Bradley School of Physics and AMBER, Trinity College Dublin</p>	D2 2 14.4
16:15	<p>Optimization of sensors developed for magnetic and temperature fields and based on the nanoscale heterostructures K.K.Abgaryan, A.V. Leonov, D.L.Reviznikov Federal Research Center "Computer Science and Control" of the Russian Academy of Sciences, Institute for Problems of Microelectronics Technology and High-Purity Materials, Russian Academy of Sciences, Federal Research Center "Computer Science and Control" of the Russian Academy of Sciences</p>	D2 2 14.6
16:30	Discussion and Closing	