

**Program for FFSCI-NanoScience/EMN Croatia Meeting**

**May 3-7, 2017**

**14:00-18:00**

**Wednesday Afternoon, 03<sup>rd</sup> May, Onsite Registration & Sign up**

**Thursday Morning, 04<sup>th</sup> May  
Room A**

**Session: NanoMaterials & Devices I**

**Chair: Vojislav Mitic**

08:00-08:25

A01: Surface Modification Methods for Nano-tribological Applications

**Dae-Eun Kim**  
Yonsei University, Korea

08:25-08:50

A02: Silicon nanophotonics for Interconnects, Computing and Sensing Applications

**Ray T. Chen**  
The University of Texas, USA

08:50-09:15

A03: Electrowetting Vari-focal Lenticular Lens for 2D/3D Switchable Display

**Yong Hyub Won**  
Korea Advanced institute of Science and Technology, S. Korea

09:15-09:40

A04: Nano material for electrochemical sensing of Insulin

**Izumi Kubo**  
Soka University, Japan

09:40-10:05

A05: Application of a-IGZO thin film transistor for dynamic digital X-ray detector

**Duck-kyun Choi**  
Hanyang University, Korea

**10:05-10:20**

**Session Break**

**Session: NanoMaterials & Devices II**

**Chair: Ray T. Chen**

10:20-10:45

A06: Sonochemical synthesis of doped-carbon nanotubes-composite polymeric membranes as membrane reactors

**Stefan Ioan Voicu**  
University Politehnica, Romania

10:45-11:10

A07: Dynamic Behavior of Gold-Based Nanoparticles on Reducible Oxide Supports

**Mal-Soon Lee**  
Pacific Northwest National Laboratory, USA

11:10-11:35

A08: Challenge of Photonics Polymer towards Ultra-High Speed and High Quality 8K Display System

**Yasuhiro Koike**  
Keio University, Japan

11:35-12:00

A09: Surface coupling of electric and entropic currents mediates current stability at the nanoscale

**Alkiviadis-Constantinos Cefalas**  
National Hellenic Research Foundation, Greece

**12:05-13:10**

**Lunch Break**

**Thursday Afternoon, 04<sup>th</sup> May  
Room A**

<b>Session: Bioelectronics &amp; Nanocarriers for Biomedical Applications I Chair: Stefan Voicu</b>		
13:10-13:35	A10: Non-viral vectors for gene therapy	<b>Mariana Pinteala</b> “Petru Poni” Institute of Macromolecular Chemistry, Romania
13:35-14:00	A11: Multi-timescale dynamics of single enzyme molecules during catalysis	<b>Hagen Hofmann</b> Weizmann Institute of Science, Israel
14:00-14:25	A12: Three-dimensional plasmonic nanostructures for multifunctional nanotechnologies	<b>Michele Dipalo</b> Italian Institute of Technology, Italy
14:25-14:50	A13: Electron transfer and proton transfer in proteins	<b>Hiroshi Ishikita</b> University of Tokyo, Japan
<b>14:50-15:05</b>	<b>Session Break</b>	
<b>Session: Nanowires I Chair: Anders Gustafsson</b>		
15:05-15:30	A14: Modeling the optical properties of nanowires: from single wire to disordered ensembles	<b>Philippe Lalanne</b> Centre national de la recherche scientifique, France
15:30-15:55	A15: Characterization of doping distribution in GaAs nanowires by off-axis electron holography	<b>Elisabetta M. Fiordaliso</b> Technical University of Denmark, Denmark
15:55-16:20	A16: Entropic and surface topological coupling mediates current flow at the nanoscale	<b>Jan Eric Stehr</b> Linköping University, Sweden
16:20-16:45	A17: A Electrochemical Preparation of Undoped and Doped ZnO Nanowires for Gas and UV-Light Sensing Applications	<b>Thierry Pauporte</b> PSL Research University, France
<b>Session: Photocatalysis I Chair: Jaroslaw Polanski</b>		
16:45-17:10	A18: Mechanism of Particulate Photocatalysis: Novel Concepts beyond the Conventional Band-Structure Model	<b>Bunsho Ohtani</b> Hokkaido University, Japan
17:10-17:35	A19: Photocatalytic remedy of pollutants in aqueous environment	<b>Xiaojing Wang</b> Inner Mongolia University, China
17:35-18:00	A20: Using heterogeneous photocatalysis for cofactor regeneration of coupled enzymatic reactions	<b>Jonathan Bloh</b> DECHEMA-Forschungsinstitut Chemical Technology, Germany
<b>18:00</b>	<b>Dinner Social</b>	

**Friday Morning, 05<sup>th</sup> May  
Room A**

**Session: Session: Nanoelectromagnetics & Nanomagnetism Chair: Tsitsilianis Constantinos**

08:00-08:25	A21: EELS of functional nanostructures	<b>Pau Torruella Besa</b> University of Barcelona, Spain
08:25-08:50	A22: Reprogrammable Dynamics of Interacting Spin Vortices	<b>Novosad Valentine</b> Argonne National Laboratory, USA
08:50-09:15	A23: Room Temperature Magnets and Advanced Sensors Derived from Functionalized Graphene	<b>Radek Zboril</b> Palacky University, Czech Republic
09:15-09:40	A24: Development of a new on-chip magnetic memory and its characterization	<b>Atsufumi Hirohata</b> University of York, UK
09:40-10:05	A25: About intrinsic or extrinsic origin of superparamagnetism in nanostructured doped zinc ferrites	<b>Pietro Galinetto</b> University of Pavia, Italy
<b>10:05-10:20</b>	<b>Session Break</b>	
<b>Session: Membranes &amp; Fluidics Chair: Baldycheva Anna</b>		
10:20-10:45	A26: Nanoscale fluid flows in nanofluidic devices	<b>Yutaka Kazoe</b> University of Tokyo, Japan
10:45-11:10	A27: Flow-field measurements in electrokinetic micro-flows	<b>Peter Ehrhard</b> Biochemical & Chemical Engineering, TU Dortmund, Germany
11:10-11:35	A28: Microsystems for cell culture and nanoparticles analysis	<b>Elzbieta Jastrzebska</b> Warsaw University of Technology, Poland
11:35-12:00	A29: Novel Properties of Thin Poly(vinylalcohol)-Cellulose Nanocrystal membranes	<b>Reza Shahbazian Yassar</b> University of Illinois at Chicago, USA
<b>12:00-13:30</b>	<b>Lunch Break</b>	

<b>Friday Afternoon, 05<sup>th</sup> May</b>		
<b>Room A</b>		
<b>Session: Bioelectronics &amp; Nanocarriers for Biomedical Applications-II Chair: Novosad Valentine</b>		
13:30-13:55	A30: Arrays and Nanocomposite Hydrogels of Bifunctional Nanomaterials for Biomedical Applications	<b>Nermin Seda Kehr</b> University of Münster, Germany
13:55-14:20	A31: Drug Delivery with Novel Bio-conjugated Nano-materials	<b>Reuben Jih-Ru Hwu</b> National Tsing Hua University, Taiwan
14:20-14:45	A32: Lower limb exoskeleton based on the detection of lower limb movement intention	<b>Dowan Cha</b> Korea Army Academy at Yeongcheon, Korea
14:45-15:05	A33: Functionalized Gold Nanoparticles in Polymersome Complex Nanocarriers for pH-Controlled Drug Delivery	<b>Tsitsilianis Constantinos</b> University of Patras, Greece

15:05-15:30	A34: Nanoparticle-Based Magnetic Resonance Imaging in Stem Cell Application	<b>Xiaoming Yang</b> University of Washington, USA
<b>15:30-16:00</b>	<b>Session Break &amp; Poster</b>	
<b>Poster</b>	P01: Dynamics of 1-D (necklace-like) self-assembled nanostructures of core-shells	<b>Evangelia Sarantopoulou</b> National Hellenic Research Foundation, Greece
	P02: Non-functionalized rare-earth fluoride nanoparticles promote tumor growth in vitro	<b>Evangelia Sarantopoulou</b> National Hellenic Research Foundation, Greece
	P03: Entwinement of Single-Stranded DNA onto Nucleobase-Functionalized Carbon Nanotubes	<b>Susan Shwu-Chen Tsay</b> National Tsing Hua University, Taiwan
	P04: Electronic structures and plasmon modes in monolayer MoS <sub>2</sub>	<b>Hai-Ming Dong</b> China University of Ming and Technology, China
	P05: Structural and optical properties of fluorescent carbon quantum dots fabricated by the hydrothermal reaction of lemon juice	<b>Hai-Ming Dong</b> China University of Ming and Technology, China
	P06: Preparation of 1-D WO <sub>3</sub> @BiVO <sub>4</sub> Nanostructured Heterojunction Film for Photoelectrochemical Water Oxidation	<b>Kyo-Seon Kim</b> Kangwon National University, South Korea
	P07: Morphology control of 1-D nanostructured tungsten oxide thin films by AFD process	<b>Kyo-Seon Kim</b> Kangwon National University, South Korea
	P08: Grain stability in the structure of Nano- and Ultrafine grained Ni <sub>3</sub> Al-based foils	<b>Zbigniew Bojar</b> Military University of Technology, Poland
	P09: Engineering materials and devices by nano-InAs/GaSb superlattices	<b>Yan-li shi</b> Yunnan University, China
	P10: Diffusion mechanism for GaAs nanowire growth	<b>Min Sun Yeom</b> Korea Institute of Science and Technology Information, Korea
<b>Session: Perovskite Solar Cells    Chair: Peter Ehrhard</b>		
16:00-16:25	A35: Enhanced Efficiency Solar Energy to Electrical Energy by Upconversion and DownConversion Phosphors: Application in Dye-Sensitized and Perovskite Solar Cells	<b>Young Soo Kang</b> Sogang University, Republic of Korea
16:25-16:50	A36: Oxide Layers for Organo-Lead and Lead-Free Perovskite Solar Cells	<b>Thierry Pauporte</b> PSL Research University, France
16:50-17:15	A37: Impedance spectroscopic analysis of perovskite manganite films for resistance switching devices	<b>Toshihiro Nakamura</b> Osaka Electro-Communication University, Japan

17:15-17:40	A38: Solution-processed assembly of flexible electronic circuits	<b>Takeo Minari</b> National Institute for Materials Science, Japan
17:40-18:05	A39: Terahertz radiation influence in nanorings	<b>Henrikh Baghramyan</b> University of Tarapaca, Chile
<b>18:05</b>	<b>Dinner Social</b>	

<b>Friday Morning, 05<sup>th</sup> May</b> <b>Room B</b>		
<b>Keynote Address Chair: Yuval Yaish</b>		
08:05-08:50	B01: Fractals nature and nano-micro structure within the energy frontiers	<b>Vojislav Mitic</b> University of Nis, Serbia
<b>Session: Nanowires II Chair: Yuval Yaish</b>		
08:50-09:15	B02: Low-temperature cathodoluminescence investigations of III-V and III-nitride nanowires	<b>Anders Gustafsson</b> Lund University, Sweden
09:15-09:40	B03: Modeling of Nanoparticle Growth on and Evaporation off Nanotubes	<b>Vladimir Privman</b> Clarkson University, USA
09:40-10:05	B04: Thermodynamic Understanding of VLS Growth of Nanowires	<b>Jonas Johansson</b> Lund University, Sweden
<b>10:05-10:20</b>	<b>Session Break</b>	
<b>Session: Nanowires III Chair: Vladimir Privman</b>		
10:20-10:45	B05: Strain Engineering in Silicon Nanowires	<b>Yuval Yaish</b> Technion Israel Institute of Technology, Israel
10:45-11:10	B06: Recent advances in modeling length distributions of III-V nanowire ensembles and growth strategies for improving the length uniformity	<b>Vladimir Dubrovskii</b> Saint Petersburg Academic University, Russia
11:10-11:35	B07: Structured Semiconducting Nanowires for Thermoelectricity	<b>Dhruv Singhal</b> Institut Néel, CNRS, Grenoble, France
<b>12:00-13:30</b>	<b>Lunch Break</b>	

<b>Friday Afternoon, 05<sup>th</sup> May Room B</b>		
<b>Session: General Chair: Sónia Carabineiro</b>		
13:55-14:20	B08: EELS assessment of oxidation state in Bismuth Oxide	<b>Pau Torruella Besa</b> University of Barcelona, Spain
14:20-14:45	B09: Oxygen reduction reaction mechanism of carbon-related cathode catalysts for PEFC based on HAXPES, XAFS and RIXS results	<b>Masaharu Oshima</b> The University of Tokyo, Japan
14:45-15:05	B10: Application and Metal Synergies in New Nanobimetallic Unalloyed Materials with Silica	<b>Jaroslav Polanski</b> University of Silesia, Poland
15:05-15:30	B11: Ultrasonic Monitoring of Biocatalysis in Solutions and Complex Dispersions	<b>Vitaly Buckin</b> University College Dublin, Ireland
<b>15:30-16:00</b>	<b>Session Break &amp; Poster</b>	
<b>Session: General II Chair: Jonathan Bloh</b>		
16:00-16:25	B12: Supported gold nanoparticles as reusable catalysts for oxidation reactions of industrial significance	<b>Sónia Carabineiro</b> University of Porto, Portugal
16:25-16:50	B13: CO <sub>2</sub> reduction using Cu-based bimetallic electrode	<b>Kazuhiro Takanabe</b> King Abdullah University of Science and Technology, Saudi Arabia
16:50-17:15	B14: Catalysis of Steam Methane Reforming: From Electronic Properties to Thermodynamics	<b>Ryan Lacdao Arevalo</b> National Institute of Technology, Japan
<b>Session: Photocatalysis Chair: Kazuhiro Takanabe</b>		
17:15-17:40	B15: Photocatalytic Water Oxidation with Molecular and Solid Cobalt-based Catalysts	<b>Greta R. Patzke</b> University of Zurich, Switzerland
17:15-17:40	B16: RGO/MWCNTs/CuxO-CeO <sub>2</sub> catalysts for preferential CO oxidation in Hydrogen-rich streams	<b>Shanghong Zeng</b> Inner Mongolia University, China
<b>18:05</b>	<b>Dinner Social</b>	

<b>Saturday Morning, 06<sup>th</sup> May Room A</b>		
<b>Keynote Address Chair: Hagen Hofmann</b>		

08:15-09:00	A40: Spontaneous Morphogenesis in Artificial Materials	<b>Stoyan Smoukov</b> University of Cambridge, UK
<b>Session: NanoMaterials &amp; Devices III Chair: Stefan Helfert</b>		
09:00-09:25	A41: Sensitive terahertz-wave detection by novel hetero-barrier rectifier	<b>Hiroshi Ito</b> Kitasato University, Japan
09:25-09:50	A42: Micro-structural and Electrical Properties of Metal-to-insulator-transition VO <sub>2</sub> /ZnO Nanostructures	<b>Sang-Wook Han</b> Jeonbuk National University, S. Korea
09:50-10:15	A43: Nanostructured Ni <sub>3</sub> Al-based intermetallic foils – structure, properties and potential application	<b>Pawel Jozwik</b> Military University of Technology, Poland
<b>10:15-10:25</b>	<b>Session Break</b>	
<b>Session: NanoMaterials &amp; Devices IV Chair: Stoyan Smoukov</b>		
10:25-10:50	A44: Nanobioceramics Production From Sea Shells and Their Outstanding Properties in Nanobiocomposite Applications	<b>Yeşim Müge Şahin</b> Istanbul Arel University, Turkey
10:50-11:15	A45: A facile and economical approach for synthesizing fluorescent carbon quantum dots from tofu wastewater	<b>Wen Xu</b> Institute of Solid State Physics, Chinese Academy of Sciences, China
11:15-11:40	A46: Carrier Type Control in Transition Metal Dichalcogenide Semiconductors toward CMOS Applications	<b>Shu Nakaharai</b> National Institute for Materials Science, Japan
11:40-12:05	A47: Highly flexible, erosion resistant and Nitrogen doped hollow SiC fibrous mats for high temperature thermal insulator	<b>Hak Yong Kim</b> Chonbuk National University, South Korea
<b>12:05</b>	<b>Lunch Break</b>	

<b>Saturday Afternoon, 06<sup>th</sup> May</b> <b>Room A</b>		
<b>Session: NanoPhotonics &amp; Computational Modelling Chair: David Field</b>		
13:30-13:55	A48: Quantum effects on photoluminescence in 2D materials	<b>Seong Chan Jun</b> Yonsei University, Korea

13:55-14:20	A49: Study of the angular momentum of light from plasmonic crystals	<b>Daniel H. C. ONG</b> The Chinese University of Hong Kong
14:20-14:45	A50: Computational modelling of nanoscale interactions at the solid/liquid interface	<b>David M. Smith</b> Ruder Boskovic Institute, Croatia
14:45-15:05	A51: First Principle modelling of materials and processes in solar energy and solar fuels device	<b>Mariachiara Pastore</b> CNRS & University of Lorraine, France
15:05-15:30	A52: Polarization Conversion with Metallic Nanostructures: Simulations and Experiments	<b>Stefan Helfert</b> University of Hagen, Germany
<b>15:30-15:40</b>	<b>Session Break</b>	
<b>Session: General III                      Chair: David M. Smith</b>		
15:40-16:05	A53: Understanding Metallic Nanoparticles by Advanced Transmission Electron Microscopy	<b>Paulo Ferreira</b> The University of Texas, USA
16:05-16:30	A54: 2D Material Fluid Nanocomposites for Optoelectronics and Si Photonics	<b>Baldycheva Anna</b> University of Exeter, UK
16:30-16:55	A55: The spontaneously electrical form of matter: spontelectrics	<b>David Field</b> Aarhus University, Denmark
16:55-17:20	A56: Injectable nanoapatite-gelatin nanocomposite microparticles for tissue regeneration	<b>Izabela-Cristina Stancu</b> University Politehnica of Bucharest, Romania
17:20-17:45	A57: Application of carbon aerogel nanomaterials in removal of textile dyes staining to fabrics with ozone	<b>Songmin Shang</b> Hong Kong Polytechnic University, Hong Kong
17:45-18:10	A58: Effective description of dynamical properties of magnetic nanostructures	<b>Roberto Zivieri</b> University of Ferrara, Italy
<b>18:10</b>	<b>Dinner Social</b>	

<b>Saturday Morning, 06<sup>th</sup> May Room B</b>		
<b>Session: Bioelectronics &amp; Nanocarriers for Biomedical Applications III    Chair: Mariachiara Pastore</b>		
08:05-08:30	B17: Fluorescent performance of carbon quantum dots synthesized by pyrolysis of	<b>Jin Zhang</b> Yunnan University, China



	citric acid	
08:30-08:55	B18: Biomineralization of 3D Bioprintable Biomimetic Orthopedic Nanotubes	<b>Tolou Shokuhfar</b> University of Illinois at Chicago, USA
08:55-9:20	B19: Synthesis of gelatin stabilised high aspect ratio gold nanorods with enhanced biological stability as effective photothermal agent for cancer therapy	<b>Oluwatobi Oluwafemi</b> University of Johannesburg, South Africa
09:20-09:45	B20: Graphene and graphene derivatives for anti-bacterial applications	<b>Venkata Raghu Mokkalapati</b> Chalmers University of Technology, Sweden
09:45-10:15	B21: Cancer/Diabetes therapeutics and wound healing	<b>Rohini Kitture</b> Defence Institute of Advanced Technology, India
<b>10:15-10:25</b>	<b>Session Break</b>	
<b>Session: Organometallic Catalysis    Chair: Rosario Fernández</b>		
10:25-10:50	B22: Toward a useful catalytic transformation of N <sub>2</sub> O using group 9 organometallic complexes	<b>Thomas L. Gianetti</b> ETH Zürich, Switzerland
10:50-11:15	B23: Dual Metal Catalysts vs the Traditional Monometal catalysis	<b>Albert Poater</b> Universitat de Girona, Spain
11:15-11:40	B24: Exploring Catalysis in the Search of Biologically Intriguing Small Molecules	<b>Kamal Kumar</b> Max Planck Institute of Molecular Physiology, Germany
11:40-12:05	B25: An unexpected reaction mechanism in N-heterocyclic carbene organocatalysis	<b>Oldamur Holloczki</b> University of Bonn, Germany
<b>12:05</b>	<b>Lunch Break</b>	

<b>Saturday Afternoon, 06<sup>th</sup> May Room B</b>		
<b>Session: Organometallic catalysis II    Chair: Albert Poater</b>		
13:30-13:55	B26: Hydrazone-based reagents and ligands: A Structural Game in Asymmetric Catalysis	<b>Rosario Fernández</b> University of Seville, Spain

13:55-14:20	B27: Atroposelective Synthesis of Axially Chiral Heterobidentate N/X (X = P, N, olefin) Ligands	<b>José M. Lassaletta</b> Instituto de Investigaciones Químicas, Spain
<b>Session: Nanowires IV Chair: Dipti Rani</b>		
14:20-14:45	B28: Germanium nanowires in an amorphous alumina matrix	<b>Maja Buljan</b> Ruđer Bošković Institute, Croatia
14:45-15:05	B29: Charge carrier recombination dynamics in III-V nanowires	<b>Arkady Yartsev</b> Lund University, Sweden
15:05-15:30	B30: Correlation of Morphology, Cathodoluminescence and EBIC Contrast in (Al,Ga)N/GaN Light emitting Diodes	<b>Anna Reszka</b> Institute of Physics, Polish Academy of Sciences, Warsaw, Poland
<b>15:30-15:40</b>	<b>Session Break</b>	
<b>Session: Nanowires V Chair: Arkady Yartsev</b>		
15:40-16:05	B31: Label-free detection of biomolecules using highly reproducible silicon nanowire transistor arrays	<b>Dipti Rani</b> University of Applied Sciences, Germany
16:05-16:30	B32: Resonant-Like Cathodoluminescence From ZnO Microrods Grown by Ultra-Fast Hydrothermal Method – Experiment and FDTD Simulation	<b>Bogdan Kowalski</b> Institute of Physics, Polish Academy of Sciences, Warsaw, Poland
16:30-16:45	B33: Low-temperature cathodoluminescence investigations of III-V and III-nitride nanowires	<b>Shiyun Xiong</b> Soochow University, China
16:45-17:10	B34: In-depth and in-plane profiling of light emission properties from axial ZnO/ZnMgO quantum wells on vertical ZnO microrods	<b>Agnieszka Pieniazek</b>
17:10-17:35	B35: Single nanowire photodetector based on radial p-n junction	<b>Khayrudinov Vladislav</b> Aalto University, Finland
17:35-18:00	B36: Quantum Optics with Nanowires	<b>Val Zwiller</b> KTH, Sweden & TU Delft, The Netherlands
<b>18:10</b>	<b>Dinner Social</b>	

**May 07, 2017**

**One day Academic exchange & Excursion**