

**4th International Conference
on Nanotechnology,
Nanomaterials & Thin Films
for Energy Applications**

NANOENERGY 2017

26-28 July 2017

Programme Booklet

Aalto University, Finland

CHAIRMAN:
Professor Peter Lund (Finland)

Welcome to NANOENERGY 2017:

It is a great pleasure to welcome delegates from all around the world (25 countries of the world) to the **4th International NANOENERGY 2017 Conference** held here at Aalto University, Finland. This is the first time that NANOENERGY conference has been organised and held outside the United Kingdom. The first three NANOENERGY conferences were held in the following UK cities: London (in 2014), Manchester (2015) and Liverpool (2016). NANOENERGY conference is an off-shoot from the major NANOSMAT congress (www.nanosmat-conference.com), which has been established since 2005.

Nanomaterials and nanotechnologies open up fascinating new opportunities for improving energy technologies, not only increasing their performance and reducing costs, but also creating totally new avenues for novel energy devices. The application of nanotechnology is becoming a standard tool in next generation solar cells, batteries, hydrogen technologies, and energy harvesting devices, amongst others.

NANOENERGY 2017 will cover all key areas on nanomaterials and nanotechnology for energy applications. Materials issues both from theoretical and experimental view-points will be discussed, applied to different technologies where nanotechnology could provide a major impact. Device engineering, scaling-up and manufacturing of nanoenergy applications are also covered.

We received over 200 abstracts for NANOENERGY 2017 for presentation as either oral talks or posters. The first day will hold invited talks in one session plus a poster session in the afternoon, whereas, during days 2 and 3 the oral talks will be conducted in 2 parallel sessions. The posters will further be presented during the refreshment breaks and lunch on days 2 and 3 of the conference (27, 28 July). During 27th July, a special expert panel discussion on “*Future of fuel cell research and development - EU-China symposium on advanced fuel cells*” will be held where experts from Finland, China and other international countries will be discussing important issues relating to fuel cell research.

Selected papers will be published in a Special Issue in the International Journal of Hydrogen Energy (Elsevier) and in the International Journal of Energy Research (Wiley). Furthermore, the delegates can submit papers to “Nano Energy Systems” journal, which is an open access journal published by One Central Press (UK).

There will be tours of the Aalto University labs on 28th July.

We would like to extend our warmest thanks to our invited speakers, sponsors (Aalto University, Espoo Innovation Garden, The NANOSMAT Society, One Central Press) and all people involved with the organisation for their valuable work in making the conference successful.

Welcome to NANOENERGY 2017!

Conference Chair:

Professor Peter Lund (Aalto University, Finland)



26 July

08:00 onwards	Registration
09:00 - 09:30	<p>Welcome Note: Conference Chairs Room: Hall A</p> <p>Professor Peter Lund, Aalto University, Finland Dr Nasar Ali, The NANOSMAT Society, UK Dr Muhammad Imran Asghar, Aalto University, Finland</p>
09:30 - 10:15	<p>Plenary Lecture: (2017 Global NANOENERGY Prize Lecture) PLN-1: Professor Zhong Lin Wang, Georgia Tech, USA <i>"From Maxwell's displacement current to nanogenerator driven self-powered systems and blue energy"</i></p>
10:15 - 10:45	<p>ENR-150: Professor John Wang, National University of Singapore, Singapore <i>"Flexible Solid-state Supercapacitors of Transition Metal Oxide/Phosphides -Carbon Network with High Energy and Power Density"</i></p>
10:45 - 11:05	Refreshment break
11:05 - 11:35	<p>INV-5: Professor Yongdan Li, Tianjin University, China <i>"Recent process on anode materials for direct hydrocarbon solid oxide fuel cells"</i></p>
11:35 - 12:05	<p>INV-8: Professor Markku Leskelä, Helsinki University, Finland <i>"Atomic Layer Deposited Materials for Energy Applications"</i></p>
12:05 - 12:35	<p>INV-16: Professor Sining Yun, Xi'an University of Architecture and Technology, China <i>"Nano-structured Carbon Materials Derived from Waste Biomass and Their Applications in DSSC/AD Systems"</i></p>
12.30 - 13.30	Lunch
13:30 - 14:00	<p>INV-11: Professor Albert Nasibulin, Skolkovo Institute of Science and Technology, Russia <i>"Single-walled carbon nanotubes for energy applications"</i></p>
14:00 - 14:30	<p>INV-10: Professor Bin Zhu, KTH, Sweden <i>"Nano energy R&D from Semiconductor-ionics to Topoionics"</i></p>
14:30 - 15:00	<p>ENR-21: Professor Manfred Stamm, Leibniz-Institut für Polymerforschung Dresden e.V., Germany <i>"Nanoporous Cathodes from Copolymers for High-Energy-Density LiS-Batteries"</i></p>
15:00 - 15:30	<p>INV-15: Professor Meng Ni, The Hong Kong Polytechnic University, Hong Kong <i>"Development of nanostructured electrodes for solid oxide fuel cells"</i></p>
15:30 - 17:30	Poster Session 1 (with refreshments)
17:45 - 22:00	<p>Welcome Reception Buses leave at 18.00 from the front door of the conference building (Otaakari 1, Espoo) for Espoo City Reception at Haltia. Buses leave Haltia at 21:30 to conference venue and Helsinki city center.</p>

27 July

09:00	Room: Hall A		
-	INV-3: Professor Fernando Marques , University of Aveiro, Portugal		
09:30	<i>"Microstructural characteristics and performance of composite membranes for energy applications"</i>		
09:30	INV-2: Professor Suddhasatwa Basu , IIT-Dehli, India		
-	<i>"LSCT Anode for Direct hydrocarbon solid oxide fuel cell"</i>		
10:00			
Fuel cell Chair(s): Prof. Yongdan Li Room: Hall A		Energy storage and batteries Chair(s): Prof. Manfred Stamm Room: Hall B	
10:00	ENR-142: Muhammad Imran Asghar , Aalto University, Finland	10:00	ENR-21: Manfred Stamm , Leibniz-Institut für Polymerforschung Dresden e.V., Germany
-	<i>"In search for breakthroughs in low-temperature ceramic nanocomposite fuel cells"</i>	-	<i>"Nanoporous Cathodes from Copolymers for High-Energy-Density LiS-Batteries"</i>
10:15		10:15	
10:15	ENR-22: Tom Mitchell-Williams , University of Cambridge, UK	10:15	ENR-33: Bitna Choi , Sungkyunkwan University, Korea
-	<i>"The importance of sequence in dual infiltrated LSCF/CGO nanostructured cathodes"</i>	-	<i>"Effects of Pulse Plating on Lithium Electrodeposition for Lithium ion Batteries"</i>
10:30		10:30	
10:30	ENR-141: Wenjing Dong , Hubei University, China	10:30	ENR-34: Jung Yong Seo , Sungkyunkwan University, Korea
-	<i>"Multifunctional roles of semiconductors in solid oxide fuel cells"</i>	-	<i>"A study on the non-aqueous symmetric redox flow battery"</i>
10:45		10:45	
10:45	ENR-1: Rizwan Raza , COMSATS, Lahore, Pakistan	10:45	ENR-78: D. De Sloovere , Hasselt University, Belgium
-	<i>"Catalytic studies of nanocomposites electrodes {Ni_{0.5}Zn_{0.5-x}Ce_x & Ni_{0.5-x}Zn_{0.5}Ce_x where x = 0,0.1,0.2,0.3,0.4&0.5} for natural gas fed fuel cells"</i>	-	<i>"Low-temperature synthesized agglomerated nanoparticles of Li₄Ti₅O₁₂ for energy storage"</i>
11:00		11:00	
11:00	Refreshment break (with Poster Displays)		
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11:30		11:30	
11:30	ENR-155: Chen Xia , KTH Royal Institute of Technology, Sweden	11:30	ENR-166: Christian Weinberger , University of Paderborn, Germany
-	<i>"Solid Oxide Fuel Cells Using Doped CeO₂/SrTiO₃ Heterostructure Membrane with Strongly Enhanced Conductivity"</i>	-	<i>"Selective Pore Filling in Bimodal Mesoporous CMK-5 Carbon: Sulphur and SnO₂ for Lithium Battery Electrodes"</i>
11:45		11:45	

11:45 - 12:00	ENR-158: Yan Wu , China University of Geosciences, China <i>"Advanced fuel cells using the correlated SmNiO₃ in two-phase composite system"</i>	11:45 - 12:00	ENR-39: Changshui Huang , Chinese Academy of Sciences, China <i>"Graphdiyne for High Capacity and Long-Life Lithium Storage"</i>
12:00 - 12:15	ENR-31: Lee Choong-Gon , Hanbat National University, Korea <i>"Oxidation of Solid Fuels in a Molten Carbonate Fuel Cell"</i>	12:00 - 12:15	ENR-91: Maxim Gudkov , Semenov Institute of Chemical Physics of Russian Academy, Russia <i>"Electrode materials for supercapacitors based on reduced graphene oxide aerogel"</i>
12:15 - 12:30	ENR-173: Kang Yuan , BGRIMM, China <i>"Plasma Spray Technology in the Coating Applications for Low-Temperature SOFCs"</i>	12:15 - 12:30	ENR-131: He Chuanxin , Shenzhen University, China <i>"A novel method to prepare Pt-Au alloy and its electrochemical performance as oxygen reduction reaction catalyst in alkaline solution"</i>
12.30 - 13.30	Lunch (with Poster Displays)		

Expert Panel Discussion Sponsored by "Academy of Finland". "Future of fuel cell research and development - EU-China symposium on advanced fuel cells"

Chairman: Professor Peter Lund

Room: Hall A

13.30 - 16.00	<p>LIST OF PANELISTS:</p> <p>Finland members: Prof. Peter Lund, Aalto University Prof. Esko Kauppinen, Aalto University Prof. Markku Leskelä, University of Helsinki Prof. Albert Nasibulin, Skolkovo Institute of Science and Technology Prof. Tanja Kallio, Aalto University</p> <p>Chinese members: Prof. Bin Zhu, Hubei University Prof. Yongdan Li, Tinjian University Prof. Hao Wang, Hubei University Prof. Sining Yun, Xi'an University of Architecture and Technology Prof. Meng Ni, The Hong Kong Polytechnic University Prof. Liangdong Fan, Shenzhen University Prof. Yan Wu, China University of Geosciences Prof. He Chuanxin, Shenzhen University Prof. Gang Chen, Northeastern University Mr. Haorong Xu, Nanjing HiTech Zone Prof. Wenyi Tan, Nanjing Institute of Technology Prof. Yan Wu, China University of Geosciences Prof. Jun Wang, Southeast China University</p> <p>Other members: Prof. Fernando Marques, University of Aveiro, Portugal Prof. Suddhasatwa Basu, Indian Institute of Technology - Delhi Dr. Ibrahim Pamuk, Vestel, Turkey Prof. Rizwan Raza, COMSAT University, Pakistan</p>
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	<p>Topics of discussion:</p> <ul style="list-style-type: none"> - Advanced nanomaterials - New device structures - Advanced characterization and manufacturing - Topoionics - Stability of new fuel cell materials
16.00 - 16.30	Refreshment break (with Poster Displays)

<p>Photovoltaics Chair(s): Dr. Kati Miettunen Room: Hall B</p>	
13.30 - 13.45	<p>ENR-101: Armi Tiihonen, Aalto University, Finland <i>"Critical review on state-of-the-art of stability tests of dye and perovskite solar cells and suggestions for improvements"</i></p>
13.45 - 14.00	<p>ENR-165: Jan-Henrik Smått, Åbo Akademi University, Finland <i>"Utilizing Dip Coating to Prepare Uniform and Reproducible Perovskite Solar Cells"</i></p>
14.00 - 14.15	<p>ENR-147: Janne Halme, Aalto University, Finland <i>"Energy Harvesting Color Prints Based on Dye Solar Cell Technology"</i></p>
14.15 - 14.30	<p>ENR-23: Amir Sa'ar, The Hebrew University of Jerusalem, Israel <i>"One-Dimensional Organo-Metal Halide Perovskite Nanorods and Nanowires: Applications to Photovoltaic Solar Cells"</i></p>
14.30 - 14.45	<p>ENR-168: Muhammad Talha Masood, Åbo Akademi University, Finland <i>"Impact of film thickness of dip-coated compact TiO₂ layers on the performance of mesoscopic perovskite solar cells"</i></p>
14.45 - 15.00	<p>ENR-153: Ghufraan Hashmi, Aalto University, Finland <i>"High performance and stable carbon based fully printed perovskite solar cell technology"</i></p>
15.00 - 15.15	<p>ENR-14: Pramod M Rajanna, Skolkovo Institute of Science and Technology, Russia <i>"Carbon based thin film heterojunction solar cells"</i></p>
15.15 - 15.30	<p>ENR-96: Holly Edwards, The University of Liverpool, UK <i>"Synthesis and Characterisation of Kesterite Thin Films by a Wet Chemical Method"</i></p>
16.00 - 16.30	Refreshment break (with Poster Displays)

Hydrogen production, technology/Photocatalysis Chair(s): Dr. Muhammad Imran Asghar Room: Hall A		Photovoltaics / Solar thermal Chair(s): Dr. Janne Halme Room: Hall B	
16.30 - 16.45	ENR-10: Jongsoo Jurng , Korea University, Korea <i>"Synthesis and Characterization of MnOx/TiO2 Nano catalyst particles"</i>	16.30 - 16.45	ENR-73: Paravee Vas-Ummuay , Chulalongkorn University, Thailand <i>"Synthesis of Cu2ZnSnS4 Thin Films as an Absorber Layer for Thin Film Solar Cells Prepared by Highly Efficient Convective Deposition"</i>
16.45 - 17.00	ENR-85: Lixia Sang , Beijing University of Technology, China <i>"Cu2O/TiO2 nanotube arrays film with controlled morphology for photoelectrochemical water splitting"</i>	16.45 - 17.00	ENR-28: Anna Wojdyla-Cieslak , TWI Ltd, UK <i>"Innovative Smart Coatings for thin Films Solar Cells PV Cells"</i>
17.00 - 17.15	ENR-5: S.A. Hassanzadeh-Tabrizi , Islamic Azad University, Iran <i>"Synthesis and characterization of samarium doped nano ZnO-Ag and its application to photocatalysis"</i>	17.00 - 17.15	ENR-92: Cong Wang , Beihang University, China <i>"Solar Selective Absorbing Coatings for Concentrated Solar Thermal Power"</i>
17.15 - 17.30	ENR-75: Xuesen Wang , National University of Singapore, Singapore <i>"Investigations of Photocatalysis-related Properties of Fe-doped and Mo-Fe co-doped Bismuth Vanadate"</i>	17.15 - 17.30	ENR-133: Emmanuel OLLIER , Institute of New Energy Technologies and Nanomaterials LITEN, France <i>"Durability of advanced structured ceramic solar absorbers for high temperature operation"</i>
17.30 - 17.45	ENR-98: Roie Yerushalmi , The Hebrew University of Jerusalem, Israel <i>"Band Gap Engineering and Defect Design of Metal Oxides using Molecular Layer Deposition"</i>	17.30 - 17.45	ENR-104: Ying Chen , Guangdong University of Technology, China <i>"Synthesis and Size-control of Microencapsulated Phase Change Materials by Using a Microfluidic Device"</i>
17.45 - 18.00	ENR-56: Naveed Kausar Janjua , Quaid-i-Azam University, Pakistan <i>"Fabrication of CoIrx/γ-Al2O3 modified electrode and use in electrochemical oxidation of hydrazine"</i>	17.45 - 18.00	ENR-146: Jan Goetz , Aalto University, Finland <i>"Single-electron tunneling as a tool for quantum environment engineering"</i>
19:00	Conference Dinner and musical performance (Venue: Hanasaari - https://www.hanaholmen.fi/en/culturalcentre/) Buses leave at 18.30 from the front door of the conference building (Otaakari 1, Espoo) to Hanasaari. Buses leave Hanasaari at 22:30 to conference venue and Helsinki city center.		

28 July

09:00 - 09:30	Room: Hall A INV-9: Dr Jung-Sik Kim , Loughborough University, UK <i>"THERMONO©: a thin film multi-sensing array that reads SOFCs"</i>		
Session: Fuel cell Chair(s): Dr Jung-Sik Kim Room: Hall A		Session: Thin films & nano-scale materials / Thermoelectrics Chair(s): Prof. Albert Nasibulin Room: Hall B	
09:30 - 09:45	ENR-159: Jing Zhang , China University of Geosciences, China <i>"Electrical and electrochemical properties of insulating Sm₂O₃ and semiconductor NiO"</i>	09:30 - 09:45	ENR-59: Byung-Koog Jang , National Institute for Materials Science (NIMS), Japan <i>"Corrosion Behavior of Y₂SiO₅ Environmental Barrier Coatings by CMAS (CaO–MgO–Al₂O₃–SiO₂)"</i>
09:45 - 10:00	ENR-41: Ho-Suk Choi , Chungnam National University, Korea <i>"Surfactant-free Synthesis of 3D PtNi Nanosponges Wrapped with Graphene-dots and their Application to Effective Catalysts for Oxygen Reduction Reaction"</i>	09:45 - 10:00	ENR-45: Wouter Marchal , Hasselt University, Belgium <i>"Ultrasonically spray coated silver layers from designed precursor inks for flexible electronics"</i>
10:00 - 10:15	ENR-64: Yanyan Liu , Royal Institute of Technology (KTH), Sweden <i>"Sm³⁺, Pr³⁺ and Nd³⁺ Triple-Doped Ceria Applied for Low Temperature Solid Oxide Fuel Cells"</i>	10:00 - 10:15	ENR-48: Hamide Kavak , Cukurova University, Turkey <i>"Annealing Effect on The Spin Coated CZTS Thin Films"</i>
10:15 - 10:30	ENR-99: Liangdong Fan , Shenzhen University, China <i>"SDC-Na₂CO₃ nanocomposite: one step synthesis and electrochemical performances for low temperature ceramic fuel cells"</i>	10:15 - 10:30	ENR-51: Alexander Kukharchik , Saint-Petersburg Electrotechnical University, Russia <i>"Modification of the LCD devices interface and body by carbon nanotubes and lanthanides"</i>
10:30 - 10:45	ENR-127: Ki-Jeong Lee , Hanbat National University, Korea <i>"Analysis of Cell Life and Performance of Molten Carbonate Fuel Cells with Li-Na and Li-K Carbonate Electrolytes"</i>	10:30 - 10:45	ENR-61: Ken Elen , Imec - division Imomec, Belgium <i>"Silver nanowire networks: prospects towards printed energy applications"</i>
10:45 - 11:15	Refreshment break (with Poster Displays)		
11:15 - 11:30	ENR-70: Gang Chen , Northeastern University, China <i>"Insight into the oxygen ion conduction mechanism of Gd_{0.2}Ce_{0.8}O₂ electrolytes with different microstructures"</i>	11:15 - 11:30	ENR-74: Kaspars Pudzs , University of Latvia, Latvia <i>"Tetrathiotetracene as a base of planar thermoelectric generator"</i>

11:30 - 11:45	ENR-62: Yunhan Ling , Tsinghua University, China <i>"Hydrogen efficient sensor based on Schottky barrier diode of the point contact between PdxO decorated TiO2 nanotube arrays"</i>	11:30 - 11:45	ENR-76: A. Shakun , Tampere University of Technology, Finland <i>"Minimization of losses in latex-nanodiamond films for dielectric energy harvesting"</i>
11:45 - 12:00	ENR-30: Jei-Pil Wang , Pukyong National University, Korea <i>"Fabrication of Nanosized Nickel Powder from Nickel Sulfate(NiSO4)"</i>	11:45 - 12:00	ENR-97: Jean-Pierre SIMONATO , Univ. Grenoble Alpes, France <i>"Silver Nanowire based Percolating Networks for Transparent Flexible Thin Films Synthesis, Nanoscale Characterization and Integration into Functional Devices"</i>
12:00 - 12:15	ENR-84: Parameswar Hari , University of Tulsa, USA <i>"Cobalt Doping Efficiency in ZnO Nanostructures"</i>	12:00 - 12:15	ENR-164: Tahereh Fanaei Sheikholeslami , University of Sistan & Baluchestan, Iran <i>"Effect of The Source Component Fraction on Quality of The Synthesized PVDF Nanofibers using Electrospinning Method"</i>
12:15 - 12:30	ENR-103: Lisi Jia , Guangdong University of Technology, China <i>"Effect of Ultrasound on Solidification of TiO2 Nanoparticle Suspensions"</i>	12:15 - 12:30	ENR-134: Emil Pincik , Institute of Physics, SAS, Slovakia <i>"About complex refractive index of black Si and standard porous Si"</i>
12:30 - 12:45	ENR-177: Neha Garg , IIT-Dehli, India <i>"Nanostructured Nickel cobaltites and their shape dependent electrochemical properties"</i>	12:30 - 12:45	ENR-113: Yuliang Li , Institute of Chemistry, Chinese Academy of Sciences, China <i>"Molecule -Based Materials From 1 Dimension to 2 Dimension Nanostructures"</i>
12:45 - 14:00	Lunch (with Poster Displays)		
Session: Fuel cell / Catalysis Chair(s): Dr. Muhammad Imran Asghar Room: Hall A		Session: Nanoenergy Chair(s): Paolo Di Sia Room: Hall A	
14:00 - 14:15	ENR-167: Suddhasatwa Basu , Indian Institute of Technology, India <i>"Synthesis of Calcium Gadolinium Co-doped Cerium Carbonate Nano-Composite electrolytes for Low Temperature Solid Oxide Fuel Cells"</i>	14:00 - 14:15	ENR-52: Min Yang , Chinese Beijing Institute of Technology, China <i>"The reaction energy, mechanical behavior and impact insensitivity of core-shell Al-PTFE/W composites"</i>
14:15 - 14:30	ENR-72: Sami Tuomi , Aalto University, Finland <i>"Nitrogen Functionalized Carbon Nanotubes for Hydrogen Evolution Reaction"</i>	14:15 - 14:30	ENR-81: Zhongliang Hu , University of Leeds, UK <i>"Experiment Investigation of Nanoparticle-assisted Enhanced Oil Recovery and Oil Reservoir Characterization"</i>
14:30 - 15:00	Closing remarks and best poster presentation award ceremony		
15:00	Lab Tours @ Aalto University		

Posters - 26 July

ENR-6: Svetlana Lukic-Petrovic, University of Novi Sad, Serbia

"ZnO/SnO₂ PMMA Nanocomposites for Photocatalytic Applications"

ENR-7: Svetlana Lukic-Petrovic, University of Novi Sad, Serbia

"Ellipsometric Characterization of Ag-As-S-Se Chalcogenide Thin Films"

ENR-8: Ling XU, Nanjing University, China

"Silicon-based Organic-inorganic Hybrid Solar Cell with High Photon-to-Electron Conversion Efficiency"

ENR-9: Yu Yao, Nanjing University, China

"Substantial Improvement of Short Wavelength Response in n-Silicon Nanowire Hybrid Solar Cells"

ENR-11: Aimin Wu, Dalian University of Technology, China

"Surface Modification of Stainless Steel Bipolar Plates of PEMFC: the Basic Materials Design and Its Application in Fuel Cell Vehicles"

ENR-12: Guoqiang Lin, Dalian University of Technology, China

"The Atomic-scale Enhancement Mechanism of Nitrogen Vacancies Concentration Dependent Mechanical and Electrical Properties of Rocksalt ZrN_x Films"

ENR-29: Anna Wojdyla-Cieslak, TWI Ltd, UK

"Innovative Smart Coatings for thin Films Solar Cells PV Cells"

ENR-32: Yongjun Li, Beijing National Laboratory for Molecular Science (BNLMS), China

"A Method for Controlling the Synthesis of Stable Twisted Two-Dimensional Conjugated Molecules"

ENR-36: A. X. Wei, Guangdong University of Technology, China

"Study of Carbon-based hole transport material (HTM)-free perovskite solar cells"

ENR-37: D. H. Chen, Sun Yat-Sen University, China

"Synthesis of Cu₂ZnSn(S_xSe_{1-x})₄ nanocrystalline thin films directly on transparent conductive glass substrates by Solvothermal method"

ENR-38: L. Luo, Guangdong University of Technology, China

"The influence of annealing atmosphere on structure, ferroelectric and photovoltaic performance of BiFeO₃ thin films"

ENR-42: Ho-Suk Choi, Chungnam National University, Korea

"N-Cdot/Pd Nanosponge with Enhanced Electrocatalytic Activity for Hydrogen Evolution Reaction and Methanol Oxidation Reaction"

ENR-46: Yu Zhao, Guangdong University of Technology, China

"Catalytic synthesis of MoSe₂ nanorods on TiO₂ nanoparticles by hydrothermal method"

ENR-47: Moo Hwan Cho, Yeungnam University, Korea

"Ag-ZnO@C Nanocomposite for Visible Light Photocatalysis"

ENR-54: REN JIANHUA, Chengdu Textile College, China

"Application of Supercritical Carbon Dioxide Fluid Technology in Textiles"

ENR-60: Sang-Chul Jung, Sunchon National University, Korea

"Enhancement of Photocatalytic Hydrogen Production by Liquid Phase Plasma Irradiation on Metal-loaded TiO₂/Carbon Nanofiber Photocatalysts"

ENR-62(2): Yunhan Ling, Tsinghua University, China

"Hydrogen interaction properties of Cr₂O₃ passive films upon Helium ions irradiation"

ENR-129: T. Wenyi, Nanjing Institute of Technology, China

"A novel composite cathode material containing natural nanomineral material for solid oxide fuel cell"

ENR-137: Hiroyuki Kagami, Fujita Health University, Japan

"Further improvement of the unevenness of the edge portion of the coating film after drying by controlling the evaporation rate of the edge's side surface of the coating liquid film during drying"

ENR-170: Antonella CRISTIANO-TASSI, EDF R&D, France

"Study of the durability of a hydrophobic resin to be used as coating on condensers in a Nuclear Power Plant"

Posters - 27 July

ENR-24: Haekyoung Kim, Yeungnam University, Korea

"Thin film composite layer for electrochromic devices"

ENR-25: Haekyoung Kim, Yeungnam University, Korea

"Low energy consuming electrochromic devices using low temperature process"

ENR-67: Su Jae Kim, Pusan National University, Korea

"Enhanced Adhesion Strength of Polymer on Inverse-Opal based Metal"

ENR-68: Chae Ryong Cho, Pusan National University, Korea

"Synthesis of MoS₂/TiNb₂O₇ Nanostructures and Their Electrochemical Performance for Li-Ion Battery anodes"

ENR-20: Naoki Ohtani, Doshisha University, Japan

"Transmission Electron Microscope Observation of Al- and Ga-doped ZnO Multi-Layer Transparent Conductive Films Fabricated by Wet Process"

ENR-80: Amir Fakeeh, University of Cambridge, United Kingdom

"Electrochemical performance of the infiltrated Ni-Fe/YSZ anodes in the ScSZ supported IT-SOFCs for H₂ and ethanol fuels"

ENR-83: Shima Moosakhani, Amirkabir University of Technology, Iran

"Earth-abundant and Indium Free CuSbS₂ for solar cell applications"

ENR-88: Dereje Seifu, Morgan State University, USA

"Proximity Induced magnetism in Graphene for Energy Storage Application"

ENR-89: Dereje Seifu, Morgan State University, USA

"Shape anisotropy and hybridization enhanced magnetization in nanowires"

ENR-107: T. Hadjersi, Centre de Recherche en Technologie des Semi-conducteurs pour l'Energétique (CRTSE), Algeria

"Photocatalytic degradation of cationic and anionic dyes in water using hydrogen- terminated silicon nanowires as catalyst"

ENR-115: Kyung-Ho Bae, Chungnam National University, Korea

"Effect of Ethylene Oxide Unit Number on Thickness and Ionic Conductivity of Ionic-based Polymer Electrolytes"

ENR-116: Nguyen Van-Toan, Chungnam National University, Korea

"Simple one-pot Aqueous Synthesis of PtMo Sponge-like Nanoporous/Ultrathin N,S-Co-doped Carbon Dot Enhanced Electrocatalytic Activity for Hydrogen Evolution Reaction and Oxygen Reduction Reaction"

ENR-117: Quoc Chinh Tran, Chungnam National University, Korea

"Polyhedral Gold Nanocrystals/Polyelectrolyte Composite Film: One-Pot Synthesis via Interfacial Liquid Plasma Polymerization"

ENR-118: Van-Tien Bui, Chungnam National University, Korea

"Pt-coated cylindrical micropatterned honeycomb Petri dishes as an efficient TCO-free counter electrode in liquid junction photovoltaic devices"

ENR-19: Naoki Ohtani, Doshisha University, Japan

"Fabrication of Molybdenum Trioxide Thin Films Using Precursors by Wet Process and Examination of Annealing Conditions"

ENR-121: Khalid M. Abu-Salah, King Abdullah International Medical Research Center, Saudi Arabia

"A facile method to synthesize TiO₂/Graphene- metal nanocomposites via microwave irradiation (MWI) technique for solar energy harvesting"

ENR-122: Zicheng Zuo, Institute of Chemistry, Chinese Academy of Sciences, China

"Bottom-Up Constructing N-doped Graphdiyne for High-Performance Supercapacitors"

ENR-135: Dong-Chul Kim, Silla University, Korea

"Enhanced Electrical Conductivity of the Carbon Coils by Surface Modification"

ENR-136: Na-Young Lee, Silla University, Korea

"Formation of the Aligned Carbon Microcoils"

ENR-169: Tak-Hyoung Lim, Korea Institute of Energy Research, Korea

"Performance characteristics of tubular solid oxide co-electrolysis cells for syngas production by electrochemical conversion of H₂O/CO₂"

Posters - 28 July

ENR-123: Sami Jouttijärvi, Aalto University, Finland

"Microscopic techniques as a tool to investigate ceramic nanocomposite fuel cells"

ENR-124: Sami Jouttijärvi, Aalto University, Finland

"Fabrication of advanced nanocomposite fuel cells using screen printing"

ENR-125: Lin Monica, Aalto University, Finland

"Analysis of potential materials for single components fuel cells"

ENR-140: Ayushi Goyal, Ressun Lukio IB World School 001419, Finland

"Fuelling the future with fuel cell technologies at the forefront of innovation"

ENR-144: Eleonora Hochreiner, Aalto University, Finland

"Synthesis of core-shell structures for advanced ceramic nanocomposite fuel cells"

ENR-145: Julie Tavernier, Aalto University, Finland

"3D structures for efficient ceramic nanocomposite fuel cells"

ENR-148: Pyry Mäkinen, Aalto University, Finland

"Theoretical Efficiency Limits of Colored Photovoltaics"

ENR-154: Muhammad Afzal, KTH Royal Institute of Technology, Sweden

"Analysis of perovskite-ceria functional layer-based electrolyte-layer free fuel cell"

ENR-171: Paolo Di Sia, Free University of Bolzano, Italy

"On the Use of Hydrogen in the Automotive Sector"

ENR-172: Chin-Chi Hsu, National United University, Taiwan

"Droplet on hot mixed wettability surface"

ENR-53: Saima Ali, Aalto University, Finland

"Photocatalytic degradation of Organic Dyes with Titania Nanotube and Nanorod powders prepared by Rapid Breakdown Anodization"

ENR-79: Sorsa Olli, Aalto University School Chemical Engineering, Finland

"Polyaniline Coated Carbon Nanotubes as Positive Electrode Material in Asymmetric Supercapacitor"

ENR-120: Taneli Rajala, Aalto University, Finland

"Single-walled carbon nanotubes decorated with platinum nanoparticles electrocatalysing hydrogen evolution and oxidation"

ENR-106: Sakari Lepikko, Aalto University, Finland

"Outdoor testing station for studying performance and stability of solar cells"

ENR-110: Riina Jokiranta, Aalto University, Finland

"A ceramic nanocomposite fuel cell model for studying internal phenomena in a fuel cell"

ENR-109: Salla Puupponen, Aalto University, Finland

"Comparison of thermal conductivity measurement techniques with silver nanofluids"

ENR-63: B.J. Kim, Korea Institute of Carbon Convergence Technology, Korea

"Effect of H₂O Activation on the Electrochemical Performance of Pitch-based Activated Carbon Fibers for EDLC"

ENR-63(2): B.J. Kim, Korea Institute of Carbon Convergence Technology, Korea

"Electrochemical Behaviors LDPE-based Activated Carbon by Steam Activation"

ENR-63(3): B.J. Kim, Korea Institute of Carbon Convergence Technology, Korea

"Preparation and analysis of paraffin-based phase change material using aluminum nitride as the reinforcing agent"

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