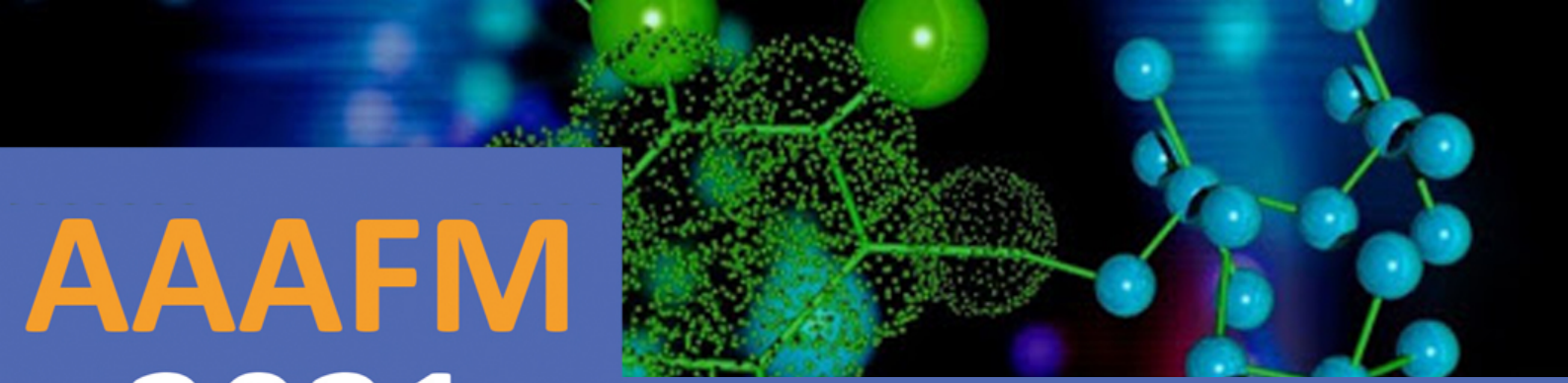
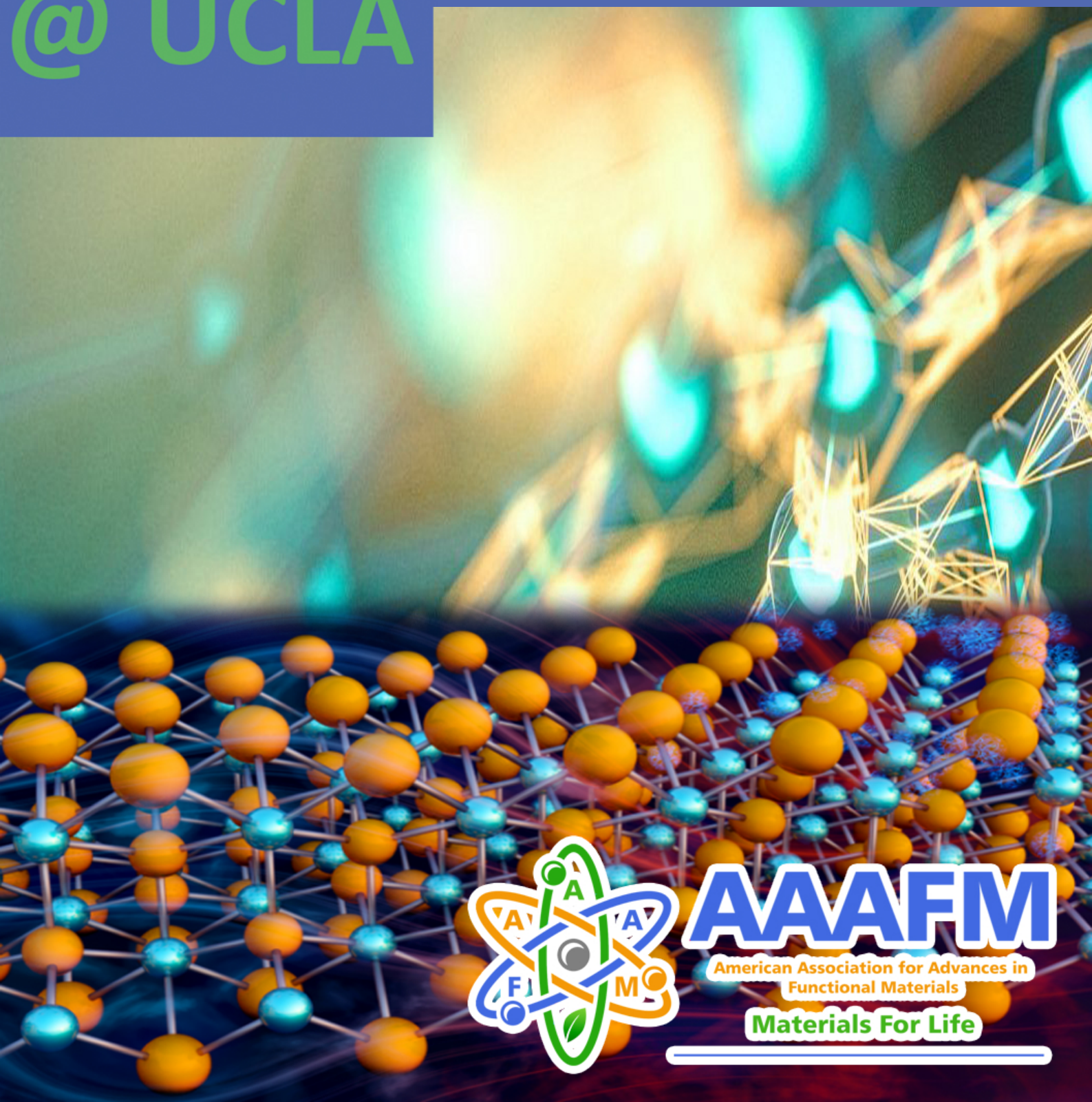


AAAFM 2021 Schedule

August 18-20

@ UCLA



AAAFM

American Association for Advances in Functional Materials

Materials For Life

Date: Wednesday, 18/Aug/2021	
7:00am - 5:00pm Theatre-Lobby	**Registration: Registration**
7:10am - 7:20am Theatre	**Opening Ceremony: Opening Ceremony** Session Chair: **Yu Huang** Session Chair: **Xiangfeng Duan**
7:20am - 10:00am Theatre	**Key-1: Keynote Session-1** Session Chair: **Yury Gogotsi**
8:00am - 10:00am AU 2410	**FESC-1: Functional Materials for Energy Storage and Conversion Devices** Session Chair: **Weibin Chu**
8:00am - 10:00am AU 2412	**FLNM-1: Fabrication of Low dimensional, Nano and 2D materials** Session Chair: **Pengpeng Zhang**
10:00am - 10:20am Theatre-Lobby	**Coffee Break-1: Coffee Break**
10:20am - 12:30pm Theatre	**Key-2: Keynote Session-2** Session Chair: **Yu Huang**
10:20am - 12:00pm AU 2410	**FESC-2: Functional Materials for Energy Storage and Conversion Devices** Session Chair: **Haimei Zheng**
10:20am - 12:30pm AU 2412	**FLNM-INV-1: Fabrication of Low dimensional, Nano and 2D materials** Session Chair: **Albert Wang**
12:00pm - 1:00pm Theatre-Lobby	**Lunch-1: Lunch Break**
1:00pm - 3:00pm AU 2410	**EPMM-1: Electronic, Photonic and Magnetic Materials** Session Chair: **Valentina Benfenati**
1:00pm - 3:00pm AU 2412	**FCM-1: Functional Composite Materials** Session Chair: **Donglei Fan**
1:00pm - 3:00pm Theatre	**Post-1: Poster Session** Session Chair: **Monish Chatterjee**
3:00pm - 3:20pm Theatre-Lobby	**Coffee Break-2: Coffee Break**
3:20pm - 6:30pm AU 2410	**EPMM-2: Electronic, Photonic and Magnetic Materials** Session Chair: **Akshay Nagar**
3:20pm - 6:30pm AU 2412	**FCM-2: Functional Composite Materials** Session Chair: **Liangbo Liang**
3:20pm - 7:20pm Theatre	**FESC-INV-1: Functional Materials for Energy Storage and Conversion Devices** Session Chair: **Elham Sahraei** Session Chair: **Muhammad Imran Shakir**

Date: Thursday, 19/Aug/2021	
8:00am - 8:10am Theatre	**AAAFM-Awards: AAAFM-Award Ceremony** Session Chair: **Yu Huang** Session Chair: **Xiangfeng Duan**
8:10am - 10:10am Theatre	**AAAFM-Awards -1: AAAFM-Awards Presentations-1** Session Chair: **Xiangfeng Duan**
8:10am - 10:00am AU 2410	**FESC-INV-2: Functional Materials for Energy Storage and Conversion Devices** Session Chair: **Elham Sahraei**
8:10am - 10:00am AU 2412	**FLNM-INV-2: Fabrication of Low dimensional, Nano and 2D materials** Session Chair: **Rainer Timm**
10:00am - 10:20am Theatre-Lobby	**Coffee Break-3: Coffee Break**
10:20am - 12:30pm AU 2410	**FESC-3: Functional Materials for Energy Storage and Conversion Devices** Session Chair: **Miaofang Chi**
10:20am - 12:30pm AU 2412	**FLNM-2: Fabrication of Low dimensional, Nano and 2D materials** Session Chair: **Gerd Grau**
10:30am - 12:30pm Theatre	**AAAFM-Awards -2: AAAFM-Awards Presentations-2** Session Chair: **Paul S. Weiss**
12:00pm - 1:00pm Theatre-Lobby	**Lunch-2: Lunch Break**
1:00pm - 3:00pm AU 2410	**EPMM-3: Electronic, Photonic and Magnetic Materials** Session Chair: **Lei Fang**
1:00pm - 3:00pm AU 2412	**FCM-3: Functional Composite Materials** Session Chair: **Swapnil B. Ambade**
1:00pm - 3:00pm Theatre	**Post-2: Poster Session** Session Chair: **KENAN SONG**
3:00pm - 3:20pm Theatre-Lobby	**Coffee Break-4: Coffee Break**
3:20pm - 6:00pm AU 2412	**FCM-4: Functional Composite Materials** Session Chair: **Xiaowu (Shirley) Tang**
3:20pm - 6:40pm AU 2410	**EPMM-4: Electronic, Photonic and Magnetic Materials** Session Chair: **Yang-Ki Hong**
Date: Friday, 20/Aug/2021	
8:00am - 10:00am Theatre	**Key-3: Keynote Session-3** Session Chair: **Richard B. Kaner**
8:00am - 10:00am AU 2410	**EPMM-INV-1: Electronic, Photonic and Magnetic Materials** Session Chair: **Qibing Pei**
8:00am - 10:00am	**EPMM-INV-2: Electronic, Photonic and Magnetic Materials**

AU 2412	Session Chair: **Rizwan Raza** Session Chair: **Mohsin Ali Badshah**
10:00am - 10:20am Theatre-Lobby	**Coffee Break-5: Coffee Break**
10:20am - 12:30pm AU 2410	**EPMM-INV-3: Electronic, Photonic and Magnetic Materials** Session Chair: **Rainer Timm**
10:20am - 12:30pm Theatre	**FCM-INV-1: Functional Composite Materials** Session Chair: **Adam Weber**
10:20am - 12:30pm AU 2412	**FCM-INV-2: Functional Composite Materials** Session Chair: **Alexander Ayzner**
12:00pm - 1:00pm Theatre-Lobby	**Lunch-3: Lunch Break**
1:00pm - 3:00pm Theatre	**Post-3: Poster Session** Session Chair: **Umapada Pal**
1:00pm - 3:30pm AU 2412	**EPMM-INV-4: Electronic, Photonic and Magnetic Materials** Session Chair: **Orion Ciftja**
1:00pm - 3:30pm AU 2410	**FCM-5: Functional Composite Materials** Session Chair: **Mohsin Ali Badshah**

Presentations

Key-1: Keynote Session-1

Time: Wednesday, 18/Aug/2021: 7:20am - 10:00am · *Virtual location:* Theatre
Session Chair: Yury Gogotsi

(Edit Contribution Details, Abstract ID: 1047)

7:20am - 8:00am

Liquid metal 'putty-like' composites, and the path to, and making, F-Diamane

Rodney S. Ruoff
Departments of Chemistry and Materials Science, School of Energy Science and Chemical Engineering Ulsan National Institute of Science & Technology (UNIST) Ulsan 689-798, Republic of Korea; ruofflab@gmail.com

(Edit Contribution Details, Abstract ID: 1053)

8:00am - 8:40am

Graphene and layered materials for photonics and optoelectronics

A.C. Ferrari
Cambridge Graphene Centre, University of Cambridge, Cambridge CB3 OFA, UK; acf26@hermes.cam.ac.uk

(Edit Contribution Details, Abstract ID: 832)

8:40am - 9:20am

Atomically Precise Chemical, Physical, Electronic, and Spin Contacts

Paul S. Weiss
UCLA, Los Angeles, CA 90095, United States of America; psw@cnsi.ucla.edu

(Edit Contribution Details, Abstract ID: 1048)

9:20am - 10:00am

Exploring the Synthesis and Energy Storage Applications of Graphene

Richard B. Kaner
Univerisity of California, Los Angeles; kaner@chem.ucla.edu

FESC-1: Functional Materials for Energy Storage and Conversion Devices

Time: Wednesday, 18/Aug/2021: 8:00am - 10:00am · *Virtual location:* AU 2410
Session Chair: Weibin Chu

(Edit Contribution Details, Abstract ID: 221)

8:00am - 8:10am

Water Photo-splitting for Hydrogen Generation using transition Metal Ion-or Lanthanide Ion-Doped Titanium dioxide Nanoparticle based Photon Up-conversion Materials

RAJAPAKSE MUDIYANSELAGE Gamini RAJAPAKSE[1], Asitha Udayanga Malikaramage[1], Gamaralage Rajanya Ashoka Kumara[2]
[1]University of Peradeniya, Sri Lanka; [2]National Institute of Fundamental Studies, Sri Lanka; rmgr@pdn.ac.lk

(Edit Contribution Details, Abstract ID: 154)

8:10am - 8:20am

Thermodynamic stability of La, Bi, and Sr ferrates : a hybrid DFT study

Eugene Heifets[1,2], Eugene A. Kotomin[2,3], Alexander Bagaturyants[1,4], Joachim Maier[2]
[1]Photochemistry Center, Federal Research Center "Crystallography and Photonics," Russian Academy of Sciences, Novatorov 7a, Moscow, 119421 Russia; [2]Max Planck Institute for Solid State Research, Heisenbergstr. 1, Stuttgart 70569, Germany.; [3]Institute for Solid State Physics, University of Latvia, 8 Kengaraga str., Riga, LV-1586, Latvia; [4]National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Kashirskoye sh. 31, Moscow, 115409 Russia; eheif5719@sbcglobal.net

(Edit Contribution Details, Abstract ID: 181)

8:20am - 8:30am

Exploring the Flatland of 2D materials by Electrochemical STM: visualization of active sites in operando conditions

Stefano Agnoli[1], Tomasz Kosmala[1], Matthias Batzill[2], Gaetano Granozzi[1]
[1]University of Padova, Italy; [2]University of South Florida; stefano.agnoli@unipd.it

(Edit Contribution Details, Abstract ID: 215)

8:30am - 8:40am

Harvesting Up-converted Infrared Radiation for Dye-sensitized Solar Cells to Perform in the Dark

RAJAPAKSE MUDIYANSELAGE GAMINI RAJAPAKSE[1], Asitha Udayanga Malikaramage[1], Gamaralage Rajanya Ashoka Kumara[2]
[1]University of Peradeniya, Sri Lanka; [2]National Institute of Fundamental Studies, Sri Lanka; rmgr@pdn.ac.lk

(Edit Contribution Details, Abstract ID: 483)

8:40am - 8:50am

Structural, Electrochemical and Optical Properties of Small Organic Molecules for Solar Cell Applications

Phuong-Truc Pham, Mamoun M. Bader
Alfaisal University; mbader@alfaisal.edu

(Edit Contribution Details, Abstract ID: 683)

8:50am - 9:05am

In-situ Study of Electrode Electrolyte Interface Phenomena Using Liquid Cell Electron Microscopy

Haimei Zheng
Lawrence Berkeley National Lab, United States of America; hmzheng@lbl.gov

(Edit Contribution Details, Abstract ID: 623)

9:05am - 9:15am

Phase transitions of EMIN TFSI ionic liquide (1-Ethyl-3-methylimidazolium bis (trifluoromethylsulfonyl) imide confined in nanocarbons

Malgorzata Sliwinska-Bartkowiak[1], Konrad Rotnicki[1], Monika Jazdzewska[1], Anatolii Beskrovnyi[2]
[1]Adam Mickiewicz University in Poznan Poland, Poland; [2]2 Frank Laboratory of Neutron Physics, Joint Institute for Nuclear Research, Dubna, Russia; msb@amu.edu.pl

(Edit Contribution Details, Abstract ID: 850)

9:15am - 9:25am

Real-space topological ferroelectricity and self-epitaxial hetero-nanolayers in nickel phosphides

Xiankui Wei[1], Gustav Bihlmayer[2], Yury V. Kolen'ko[3], Lifeng Liu[3], Stefan Blügel[2], Joachim Mayer[1,4], Rafal E. Dunin-Borkowski[1]

[1]Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, Forschungszentrum Jülich GmbH, 52428 Jülich, Germany; [2]Peter Grünberg Institute and Institute for Advanced Simulation, Forschungszentrum Jülich GmbH and JARA, 52428 Jülich, Germany; [3]International Iberian Nanotechnology Laboratory (INL), Braga 4715-330, Portugal; [4]Gemeinschaftslabor für Elektronenmikroskopie (GFE), RWTH Aachen, Ahornstraße 55, 52074 Aachen, Germany; x.wei@fz-juelich.de

(Edit Contribution Details, Abstract ID: 794)

9:25am - 9:40am

Materials and Molecular Modeling, Imaging, Informatics and Integration (M3I3)

Seungbum Hong[1,2], Jong Min Yuk[1], Hye Ryung Byon[3], EunAe Cho[1]

[1]Department of Materials Science and Engineering, KAIST, Daejeon, Republic of (South Korea); [2]KAIST Institute for NanoCentury, KAIST, Daejeon, Republic of (South Korea); [3]Department of Chemistry, KAIST, Korea, Republic of (South Korea); seungbum@kaist.ac.kr

(Edit Contribution Details, Abstract ID: 571)

9:40am - 9:50am

Structure from Darkness: Exploring Ionomer interactions in Fuel-Cell Inks and Resultant Performance Impacts

Adam Weber[1], Sarah Berlinger[1,2], Anamika Chowdhury[1,2], Timothy Van Cleve[3], Ahmet Kusoglu[1], KC Neyerlin[3]

[1]Lawrence Berkeley National Laboratory, United States of America; [2]University of California, Berkeley; [3]National Renewable Energy Laboratory; azweber@lbl.gov

(Edit Contribution Details, Abstract ID: 936)

9:50am - 10:05am

Hybrid Smart Textiles and Devices for Energy Harvesting & Storage: Nanotechnology in Motion towards Self-Powered Technologies

Clara Pereira[1], André M. Pereira[2], Rui S. Costa[1,2], Joana S. Teixeira[1,2], Ana L. Pires[2]

[1]REQUIMTE/LAQV, Departament of Chemistry and Biochemistry, Faculty of Sciences, University of Porto; [2]IFIMUP – Institute of Physics for Advanced Materials, Nanotechnology and Photonics, Faculty of Sciences, University of Porto; clara.pereira@fc.up.pt

FLNM-1: Fabrication of Low dimensional, Nano and 2D materials

Time: Wednesday, 18/Aug/2021: 8:00am - 10:00am · *Virtual location:* AU 2412
Session Chair: Pengpeng Zhang

(Edit Contribution Details, Abstract ID: 185)

8:00am - 8:10am

Homogeneity Region of Palladium (II) Oxide Nanocrystalline Films for Gas Sensors

Goran Karapetrov[1], Alexander Samoylov[2], Dmitry Pelipenko[2], Olga Chuvenkova[3], Sergey Ivkov[3], Sergey Turishchev[3]
[1]Department of Physics and Department of Materials Science and Engineering, Drexel University, United States of America; [2]Department of Chemistry, Voronezh State University, Voronezh, Russian Federation; [3]Department of Physics, Voronezh State University, Voronezh, Russian Federation; goran@drexel.edu

(Edit Contribution Details, Abstract ID: 957)

8:10am - 8:20am

Design of water-soluble fullerene derivatives with promising antiviral properties

Olga A. Kraevaya[1], Alexander S. Peregudov[2], Alexander F. Shestakov[1,3], Dominique Schols[4], Pavel A. Troshin[1]
[1]Institute for Problems of Chemical Physics of RAS, Chernogolovka, Moscow region, Russian Federation; [2]A. N. Nesmeyanov Institute of Organoelement Compounds of RAS, Moscow, Russian Federation; [3]Faculty of Fundamental Physics & Chemical Engineering, Lomonosov Moscow State University, Moscow, Russian Federation; [4]Rega Institute for Medical Research, Leuven, Belgium; okraevaya@inbox.ru

(Edit Contribution Details, Abstract ID: 840)

8:20am - 8:30am

Permethylated two-dimensional Metal-Organic Frameworks - Promising Candidates for Emerging 2D Materials

Alexandru Constantin Stoica, Madalin Damoc, George T Stiubianu, Maria Cazacu
Petru Poni Institute of Macromolecular Chemistry Iasi, Romania, Romania; george.stiubianu@icmpp.ro

(Edit Contribution Details, Abstract ID: 128)

8:30am - 8:40am

Meso-Entropy Materials: From PAH Isomers to Topological Defect of Graphene

Xiaodong Zhuang
Shanghai Jiao Tong University, China, People's Republic of; zhuang@sjtu.edu.cn

(Edit Contribution Details, Abstract ID: 179)

8:40am - 8:50am

Ultrafast Acoustofluidic Exfoliation and Manipulation of Transition Metal Dichalcogenide Crystals

Amgad Rezk, Heba Ahmed, Kourosh Kalantar-Zadeh, Leslie Yeo
RMIT University, Australia; amgad.rezk@rmit.edu.au

(Edit Contribution Details, Abstract ID: 503)

8:50am - 9:00am

Observation of Layer Thinning in Exfoliated Tellurene via Oxygen Annealing: Towards Few Layers Tellurene

Ghadeer Aljalham[1], Sarah Alsaggaf[1], Khalid Alhamdan[1], Sarah Alodan[1,2], Abrar Alhazmi[1,3], Olaiyan Alolaiyan[1], Shahad Albawardi[1], Moh. R. Amer[1,4]
[1]Center of Excellence for Green Nanotechnologies, King Abdulaziz City for Science and Technology, Riyadh, Saudi Arabia; [2]Department of Materials, Imperial College London, London, SW7 2AZ, UK.; [3]Department of Electrical Engineering, University of Michigan, Ann Arbor, MI, USA.; [4]Department of Electrical Engineering, University of California, Los Angeles, USA; galjalham@kacst.edu.sa

(Edit Contribution Details, Abstract ID: 454)

9:00am - 9:10am

A theoretical study of changes in the electronic properties of ZSM-5 zeolite under the transition from bulk 3D to lamellar 2D structure

Joel Antúnez-García, D. H. Galván, Vitalii Petranovskii, Rosario I. Yocupicio-Gaxiola, Fabian N. Murrieta-Rico, Sergio Fuentes
Centro de Nanociencias y Nanotecnología at UNAM, Mexico; joel.antunez@gmail.com

(Edit Contribution Details, Abstract ID: 824)

9:10am - 9:25am

Theory of electronic and optical properties of pristine and defective graphene quantum dots

Tista Basak[1], Tushima Basak[2], Pritam Bhattacharyya[3], Alok Shukla[4]

[1]Mukesh Patel School of Technology Management and Engineering, Mumbai, India; [2]Mithibai College, Mumbai, India; [3]IFW Dresden, Germany; [4]Indian Institute of Technology Bombay, India; shukla@phy.iitb.ac.in

(Edit Contribution Details, Abstract ID: 344)

9:25am - 9:35am

Spectroscopic and Structural Properties of Atomically Thin Yb3+-doped MoS2 films, deposited using near-IR femtosecond pulsed laser source

C Maddi[1], J R Aswin[2], Andrew J Scott[3], Z Aslam[4], E Willneff[5], K V Adarsh[6], Animesh Jha[7]

[1]SCAPE, EPS Faculty, University of Leeds, United Kingdom; [2]Department of Physics, Indian Institute of Science Education and Research (IISER), IISER Bhopal, India; [3]SCAPE, EPS Faculty, University of Leeds, United Kingdom; [4]SCAPE, EPS Faculty, University of Leeds, United Kingdom; [5]SCAPE, EPS Faculty, University of Leeds, United Kingdom; [6]Department of Physics, Indian Institute of Science Education and Research (IISER), IISER Bhopal, India; [7]SCAPE, EPS Faculty, University of Leeds, United Kingdom; a.jha@leeds.ac.uk

(Edit Contribution Details, Abstract ID: 706)

9:35am - 9:50am

Functionalization of Exposed-Core Fibers with CVD-Grown Monolayer Transition Metal Dichalcogenides: Photolumiescence and Nonlinearity

Falk Eilenberger

Institute of Applied Physics, Friedrich Schiller University, Albert-Einstein-Str. 15, 07745 Jena, Germany; falk.eilenberger@uni-jena.de

(Edit Contribution Details, Abstract ID: 395)

9:50am - 10:00am

Chemistry of 2D monoelements beyond graphene

Zdenek Sofer, Tomas Hartman, Jan Luxa, Jiri Sturala

University of Chemistry and Technology Prague, Czech Republic; zdenek.sofer@vscht.cz

(Edit Contribution Details, Abstract ID: 443)

10:00am - 10:10am

Oxidation and stabilization of 2D MXene nanosheets

Xiaofei Zhao, Touseef Habib, Aniruddh Vashisth, Jodie Lutkenhaus, Miladin Radovic, Micah Green

Texas A&M University, United States of America; micah.green@tamu.edu

Key-2: Keynote Session-2

Time: Wednesday, 18/Aug/2021: 10:20am - 12:00pm · *Virtual location:* Theatre
Session Chair: Yu Huang

(Edit Contribution Details, Abstract ID: 1046)

10:20am - 11:00am

Interfacial structure, interparticle forces and assembly dynamics during growth of hierarchical nanomaterials via oriented attachment

J. J. De Yoreo, L. Liu, G. Zhu, S. S. Kerisit, M.L. Sushko, J. Chun, E. Nakouzi, G.K. Schenter, J. Loring, B.A. Legg, K.M. Rosso, C.J. Mundy

Physical Sciences Division, Pacific Northwest National Laboratory, Richland, WA 99352; james.deyoreo@pnnl.gov

(Edit Contribution Details, Abstract ID: 1049)

11:00am - 11:40am

MXenes – A Decade of Discovery and Expansion of 2D Materials

Yury Gogotsi

Department of Materials Science and Engineering, and A. J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104, USA; gogotsi@drexel.edu

FESC-2: Functional Materials for Energy Storage and Conversion Devices

Time: Wednesday, 18/Aug/2021: 10:20am - 12:00pm · *Virtual location:* AU 2410
Session Chair: Haimei Zheng

(Edit Contribution Details, Abstract ID: 525)

10:20am - 10:30am

A study on the meniscus stability of meniscus solution shearing coating for maximizing the crystal size of perovskite at high speed

Dong Soo kim, I Ji Kim, Hyunah Lee, Min hun Jung
Hanbat National University , Korea, Republic of (South Korea); kds671@hanbat.ac.kr

(Edit Contribution Details, Abstract ID: 177)

10:30am - 10:40am

Meta-material made super-capacitor that harvests nuclear particles kinetic energy and delivers it as electricity

Liviu Popa-Simil
LAAS, United States of America; laaos@laaos.org

(Edit Contribution Details, Abstract ID: 948)

10:40am - 10:50am

Bandgap engineering of amorphous sputtered hydrogenated silicon carbide thin films for photoelectrochemical water splitting

Maria Del Carmen Mejia[1], Mario Kurniawman[2], Alvaro Tejada[1,3], Rolf Grieseler[1], Isabel Diaz[4], Magaly Camargo[4], Francisco Rumiche[5], Andreas Bund[2], Jorge Andres Guerra Torres[1]
[1]Departmento de Ciencias, Sección Física, Pontificia Universidad Católica del Perú, 15088, Lima, Peru; [2]Technische Universität Ilmenau, Electrochemistry and Electroplating group 98693, Ilmenau, Germany; [3]Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institut für Silizium-Photovoltaik, 12489, Berlin, Germany; [4]Instituto de Corrosión y Protección, Pontificia Universidad Católica del Perú, 15088, Lima, Peru; [5]Departmento de Ingeniería, Sección Ingeniería Mecánica, Pontificia Universidad Católica del Perú, 15088, Lima, Peru; guerra.jorgea@pucp.edu.pe

(Edit Contribution Details, Abstract ID: 427)

10:50am - 11:00am

Peculiar Defects Behavior in Charge Recombination of Metal Halide Perovskites and Conventional Semiconductors

Weibin Chu[1], Wissam A. Saidi[2], Jin Zhao[3], Oleg V. Prezhdo[1]
[1]University of Southern California, United States of America; [2]University of Pittsburgh, United States of America; [3]University of Science and Technology of China, China; wc_086@usc.edu

(Edit Contribution Details, Abstract ID: 216)

11:00am - 11:10am

Harvesting electrical energy of carbon nanotube yarn in sea water for self-powered devices

Seon Jeong Kim[1], Ray Baughman[2]
[1]Hanyang University, South Korea; [2]University of Texas at Dallas, USA; sjk@hanyang.ac.kr

(Edit Contribution Details, Abstract ID: 905)

11:10am - 11:20am

Synthesis of anatase-rutile mixed phase TiO2 photo-anode for dye-sensitized solar cells

Mian-En Yeoh[1], Kah-Yoong Chan[1], Venkatraman Madurai Ramakrishnan[2], Muthukumarasamy Natarajan[2], Hanabe Chowdappa Ananda Murthy[3], Ruthramurthy Balachandran[4]
[1]Centre for Advanced Devices and Systems, Faculty of Engineering, Multimedia University, 63100 Cyberjaya, Selangor, Malaysia; [2]Department of Physics, Coimbatore Institute of Technology, Coimbatore, India; [3]Department of Applied Chemistry, School of Applied Natural Science, Adama Science and Technology University, P O Box 1888, Adama, Ethiopia; [4]School of Electrical Engineering and Computing, Adama Science and Technology University, P O Box 1888, Adama, Ethiopia; yeohmianen@gmail.com

(Edit Contribution Details, Abstract ID: 572)

11:20am - 11:30am

Synthesis and Characterization of Polyacrylonitrile (PAN) Nanocomposite for Proton Exchange Membrane Materials in Fuel Cells

Seda Köksal Yeğin[1], Mualla Öner[2], Tomáš Remiš[3], Martin Tomáš[3], Tomáš Kovářík[3]

[1]Farel Plastik R&D Center, Çerkezköy, Tekirdağ, Turkey; [2]Yıldız Technical University, Chemical Engineering Department, Davutpaşa, İstanbul, Turkey; [3]Chemical Processes and Biomaterials New Technologies - Research Centre University of West Bohemia Univerzitní 8, 306 14, Pilsen, Czech Republic; oner@yildiz.edu.tr

(Edit Contribution Details, Abstract ID: 885)

11:30am - 11:40am

Synthesis and Characterisation of Few Layer Pristine and Nitrogen Doped CVD Graphene for Supercapacitor Application

Kanupriya Sachdev

Malaviya National Institute of Technology Jaipur, India; ksachdev.phy@mnit.ac.in

(Edit Contribution Details, Abstract ID: 176)

11:40am - 11:50am

Integration of electrostrictive bilayer composites into cantilever systems for mechanical energy harvesting

Annie Colin, Philippe Poulin, Mickael Pruvost

ESPCI, France; mickael.pruvost@espci.fr

(Edit Contribution Details, Abstract ID: 421)

11:50am - 12:00pm

Computational Modeling of Two-Dimensional Materials for Sustainable Energy Storage

Dibakar Datta

New Jersey Institute of Technology (NJIT), United States of America; dibakar.datta@njit.edu

FLNM-INV-1: Fabrication of Low dimensional, Nano and 2D materials

Time: Wednesday, 18/Aug/2021: 10:20am - 12:30pm · *Virtual location:* AU 2412
Session Chair: Albert Wang

(Edit Contribution Details, Abstract ID: 586)

10:20am - 10:35am

Semiconductor to Topological Insulator Transition in Transition Metal Dichalcogenides Core-Shell Lateral Heterostructures

Xi Dong, Wei Lai, Pengpeng Zhang
Michigan State University, United States of America; zhangpe@msu.edu

(Edit Contribution Details, Abstract ID: 705)

10:35am - 10:50am

Ultrafast Mid-infrared Fibre Lasers Based on 2D Nanomaterials

Alexander Fuerbach, Luyi Xu, Gayathri Bharathan
Macquarie University, Australia; alex.fuerbach@mq.edu.au

(Edit Contribution Details, Abstract ID: 788)

10:50am - 11:05am

Molybdenum Disulfide Nanoribbons: Fabrication, Manipulation, Assembly and Beyond

Donglei {Emma} Fan
Materials Science and Engineering Program and Texas Materials Institute, The University of Texas at Austin; Walker Department of Mechanical Engineering, The University of Texas at Austin; dfan@austin.utexas.edu

(Edit Contribution Details, Abstract ID: 854)

11:05am - 11:20am

Semimetals for Nanoelectronics Applications

Farzan Gity, Lida Ansari
Tyndall National Institute, University College Cork (UCC), Ireland; lida.ansari@tyndall.ie

(Edit Contribution Details, Abstract ID: 820)

11:20am - 11:35am

Nanosized semiconductors as functional materials for gas sensing

Vincenzo Guidi, Barbara Fabbri, Matteo Valt
Department of Physics and Earth Sciences, University of Ferrara, Italy; guidi@fe.infn.it

(Edit Contribution Details, Abstract ID: 720)

11:35am - 11:50am

On-surface synthesis of small bandgap graphene nanoribbons

Hironobu Hayashi, Hiroko Yamada
Nara Institute of Science and Technology, Japan; hyamada@ms.naist.jp

(Edit Contribution Details, Abstract ID: 650)

11:50am - 12:05pm

PdSe2: a Pentagonal Layered Material Bridging the Gap Between 2D and 3D Materials

Liangbo Liang, Kai Xiao, Alexander Puretzky, An-Ping Li, David Geohegan, Bobby Sumpter
Oak Ridge National Laboratory, United States of America; liangl1@ornl.gov

(Edit Contribution Details, Abstract ID: 834)

12:05pm - 12:20pm

Ultrafast control in THz graphene-based metasurfaces

Anna TASOLAMPROU[1], Anastasios Koulouklidis[1], Eudokia Kyriakou[1,2], Christina Daskalaki[1], M. Said Ergoktas[3,4], Coskun Kocabas[3,4,5], Maria Kafesaki[1,2], Stelios Tzortzakis[1,2,6]
[1]IESL - FORTH, Greece; [2]Department of Materials Science and Technology, University of Crete, 70013, Heraklion Crete, Greece; [3]Department of Materials, University of Manchester, Manchester, M13 9PL, UK; [4]National Graphene Institute, University of Manchester, Manchester, M13 9PL, UK; [5]Henry Royce Institute for Advanced Materials, University of Manchester, Manchester M13 9PL, UK; [6]Science Program, Texas A&M University at Qatar, P.O. Box 23874 Doha, Qatar; atasolam@iesl.forth.gr

EPMM-1: Electronic, Photonic and Magnetic Materials

Time: Wednesday, 18/Aug/2021: 1:00pm - 3:00pm · *Virtual location:* AU 2410
Session Chair: Valentina Benfenati

(Edit Contribution Details, Abstract ID: 198)

1:00pm - 1:10pm

Magnetocaloric Effect, Magnetothermal and Elastic Properties of SmFe3 and ErFe3Compounds

Mohammed Said Mohammed Abu-Elmagd[1], Fatema Z. Mohammad[2], A. Abdel-Kader Ahmed[3], Tarek Hammad[3], Sherif Yehia[3], Samy H. Aly[2]
[1]Department of physics, Higher Institute of Engineering, Shourok Academy, Egypt; [2]Department of physics, Faculty of Science, Damietta University; [3]Department of physics, Faculty of Science, Helwan University; m.said@sha.edu.eg

(Edit Contribution Details, Abstract ID: 462)

1:10pm - 1:20pm

Particle production and characterization for Transcatheter Arterial Chemoembolization applications: comparison of magnetic nanoparticles and clay mineral particles.

Maide Gökçe Bekaroglu[1], Fuad Nurili[2], Sevim İşçi[1]
[1]Istanbul Technical University, Dept. of Physics, Maslak 34469, Istanbul, Turkey; [2]Department of Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, 10065, USA; bekaroglum@itu.edu.tr

(Edit Contribution Details, Abstract ID: 348)

1:20pm - 1:30pm

Novel Magnetisms in Mixed 3d-5d Transition-Metal Compounds

WEIGUO YIN, A. M. TSVELIK, R. M. KONIK
Brookhaven National Laboratory, United States of America; wyin@bnl.gov

(Edit Contribution Details, Abstract ID: 487)

1:30pm - 1:40pm

Nonlinear optical properties of nanostructured titanium dioxide embedded Poly(methyl methacrylate) using the Z-scan technique

Wazirzada Aslam Farooq, Nafeesah Yaqub, M. S Alsalhi
King Saud University, Saudi Arabia; wafarooq@hotmail.com

(Edit Contribution Details, Abstract ID: 197)

1:40pm - 1:50pm

Access to Fluorescent Organic Push-Pull Chromophores with White Light Emitting Property Using Urea as the Electron Donor

Arif Hassan Dar, Jayamurugan Govindasamy
INST-IISER, India; arif.ph15216@inst.ac.in

(Edit Contribution Details, Abstract ID: 537)

1:50pm - 2:00pm

Achieving Conformational Control in RTP and TADF Emitters by Functionalization of the Central Core

Nadzeya Kukhta[1,2], Rongjuan Huang[2], Andrei Batsanov[2], Martin Bryce[2], Fernando Dias[2]
[1]University of Washington, United States of America; [2]University of Durham, United Kingdom; nadzek@uw.edu

(Edit Contribution Details, Abstract ID: 599)

2:00pm - 2:10pm

Long carbon fibers loaded ultra-porous epoxy composite for planar microwave absorber materials

Hanadi Breiss, Aicha El Assal, Ratiba Benzerga, Ala Sharaiha
IETR, France; ratiba.benzerga@univ-rennes1.fr

(Edit Contribution Details, Abstract ID: 900)

2:10pm - 2:20pm

Long Time-Scale Magnetization Reorientation in Ferromagnetic Thin Films Induced by Chiral Molecules Adsorption

Nir Sukenik[1], Idan Meirzada[2], Galya Haim[1], Shira Yochelis[1], Oded Millo[2], Lech Tomasz Baczewski[3], Nir Bar-Gill[2], Yossi Paltiel[1]

[1]Applied Physics Department, Hebrew University of Jerusalem, Israel; [2]Racah Institute of Physics, The Hebrew University of Jerusalem, Israel; [3]Magnetic Heterostructures Laboratory, Institute of Physics, Polish Academy of Sciences, Poland; nir.sukenik@mail.huji.ac.il

(Edit Contribution Details, Abstract ID: 950)

2:20pm - 2:30pm

Luminescence activation of terbium doped indium tin oxide and its impact on the host's optical and electrical properties

Paul Llontop[1], Miguel Piñeiro[1], Carlos Torres[1], Alvaro Tejada[1,2], Rolf Grieseler[1], Lars Korte[2], Jorge Andres Guerra Torres[1]

[1]Departmento de Ciencias, Sección Física, Pontificia Universidad Católica del Perú, 15088, Lima, Peru; [2]Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institut für Silizium-Photovoltaik, 12489, Berlin, Germany; guerra.jorgea@pucp.edu.pe

(Edit Contribution Details, Abstract ID: 952)

2:30pm - 2:40pm

Optical and electrical properties analysis of sputtered tin-doped indium oxide thin films taking into account growth induced inhomogeneities

MIGUEL PIÑEIRO, ERIK PEREZ, PAUL LLONTOP, ALVARO TEJADA, ROLF GRIESELER, JORGE ANDRES GUERRA

PONTIFICIA UNIVERSIDAD CATOLICA DEL PERU, Peru; miguel.pineiro@pucp.edu.pe

(Edit Contribution Details, Abstract ID: 134)

2:40pm - 2:50pm

Application of analytical modeling in probabilistic design for reliability of electronic and photonic materials, assemblies, packages and systems

Ephraim Suhir

Portland State University, Portland, OR,USA, United States of America; suhire@aol.com

FCM-1: Functional Composite Materials

Time: Wednesday, 18/Aug/2021: 1:00pm - 3:00pm · *Virtual location:* AU 2412
Session Chair: Donglei Fan

(Edit Contribution Details, Abstract ID: 144)

1:00pm - 1:10pm

1D and 2D Nanocarbon Alignment for Multifunctional Composites

Weiheng Xu[1], Sayli Jambhulkar[1], Dharneedar Ravichandran[1], KENAN SONG[2]
[1]Manufacturing Engineering, Arizona State University, Tempe, AZ, USA; [2]Arizona State University, Tempe, AZ, USA Phone: 480-727-2720, E-mail address: kenan.song@asu.edu; KENAN.SONG@ASU.EDU

(Edit Contribution Details, Abstract ID: 225)

1:10pm - 1:20pm

Composite laminate materials with low dielectric loss: theoretical model and dielectric characterization

Maëlle SERGOLLE[1,2], Xavier CASTEL[1], Mohamed HIMDI[1], Philippe BESNIER[1], Patrick PARNEIX[2]
[1]Univ Rennes, CNRS, IETR-UMR 6164, France; [2]Naval Group, France; maelle.sergolle@naval-group.com

(Edit Contribution Details, Abstract ID: 174)

1:20pm - 1:30pm

Ashes characterization to reduce CO2 emissions

Rosa-Hilda Chavez[1], Margarita Marin[1], Javier Guadarrama[2], Araceli Salazar[3]
[1]Instituto Nacional de Investigaciones Nucleares, Mexico; [2]Aires del Pedregal; [3]Tecnológico de Estudios Superiores de Jocotitlán; rosahilda.chavez@inin.gob.mx

(Edit Contribution Details, Abstract ID: 213)

1:30pm - 1:40pm

Built-in-Hole a-IGZO p-i-n Diode for Chip-Scale Temperature Mapping

Cheng Li, Albert Wang, Qi Chen, Mengfu Di, Feilong Zhang
University of California, Riverside, United States of America; aw@ece.ucr.edu

(Edit Contribution Details, Abstract ID: 284)

1:40pm - 1:50pm

Boundary Element Thermomechanical Modeling of Fractional-Order Nonlinear Dual Phase Lag Bio-heat Transfer Problems in Functionally Graded Anisotropic Soft Tissues

Mohamed Abdelsabour Fahmy
Jamoum University College, Umm Al-Qura University, Saudi Arabia; maselim@uqu.edu.sa

(Edit Contribution Details, Abstract ID: 116)

1:50pm - 2:00pm

Effect of Dimensional Parameters on the Mechanical Behavior of Curved Beam Bistable Mechanisms

Lucas Ferreira Lima dos Santos, José Roberto Moraes d'Almeida
Pontifical Catholic University of Rio de Janeiro, Brazil; lucasferreiralimasantos@gmail.com

(Edit Contribution Details, Abstract ID: 182)

2:00pm - 2:10pm

Nano-enabled multilayer coatings with switchable bacteria-killing activities for prevention of catheter-related infections

Kristina Ivanova, Aleksandra Ivanova, Javier Hoyo, Tzanko Tzanov
Universitat Politecnica de Catalunya; kristina.ivanova@upc.edu

(Edit Contribution Details, Abstract ID: 140)

2:10pm - 2:20pm

Buckling of Functionally Graded Plates Subjected to Partially Distributed Edge Loads

Swaminathan K, Sachin Hirannaiah
National Institute of Technology Karnataka, Surathkal, India; swami7192@gmail.com

(Edit Contribution Details, Abstract ID: 577)

2:20pm - 2:30pm

Additive Manufacturing of Polymer-Derived Ceramic Composites

Tobias Schaedler, Kayleigh Porter, Phuong Bui, Katya Stonkevitch, Zak Eckel, Mark O'Masta
HRL Laboratories, United States of America; taschaedler@hrl.com

(Edit Contribution Details, Abstract ID: 651)

2:30pm - 2:40pm

Bacteriabots - motile “stealth” biological carriers of novel nano-antimicrobial actives

Julio Bastos-Arrieta, Aleksandra Ivanova, Kristina Ivanova, Eva Ramon, Tzanko Tzanov
Universitat Politecnica de Catalunya, Spain; julio.bastos@upc.edu

(Edit Contribution Details, Abstract ID: 418)

2:40pm - 2:50pm

De Novo Prediction of Light yet Stiff Disordered Atomic Structures by Machine Learning

Han Liu, Longwen Tang, Mathieu Bauchy
University of California, Los Angeles, United States of America; happylife@ucla.edu

(Edit Contribution Details, Abstract ID: 914)

2:50pm - 3:00pm

Dynamic Behavior of Carbon, Galvanized Iron and Glass Textile Reinforced Concrete Subjected to Impact Loading

MD JAHIDUL ISLAM, Tasnia Ahmed, Sheikh Muhammad Fahad Bin Imam, Mohammad Ifaz
Military Institute of Science and Technology, Bangladesh, People's Republic of; tasnia019@gmail.com

(Edit Contribution Details, Abstract ID: 783)

3:00pm - 3:10pm

Ultrafast laser micro/nano-structured multi-functional carbon fiber reinforced plastic composites for aerospace applications

Dhiraj Kumar, Gerhard Liedl, Andreas Otto, Suhasini Gururaja
Institute of Production Engineering and Photonics Technologies, TU Wien, Austria; dhiraj.kumar@tuwien.ac.at

Post-1: Poster Session

Time: Wednesday, 18/Aug/2021: 1:00pm - 3:00pm · *Virtual location:* Theatre
Session Chair: Monish Chatterjee

(Edit Contribution Details, Abstract ID: 425)

1:00pm - 1:03pm

Decoding the Atomic Structure of Cement Hydrates

Qi Zhou, Mathieu Bauchy
University of Califonia, Los Angeles, United States of America; bauchy@ucla.edu

(Edit Contribution Details, Abstract ID: 192)

1:03pm - 1:06pm

Modulation of Mechanical and Luminescence Properties of BORANILs through Sidechain Engineering

Khalid Naim, Prakash P. Neelakandan
Institute of Nano Science and Technology (INST) Mohali, India; khalid.ph16222@inst.ac.in

(Edit Contribution Details, Abstract ID: 408)

1:06pm - 1:09pm

Three-dimensional model in assessing the pore geometry of a biomaterial intended for implantation

Żaneta Garczyk, Sebastian Stach
Institute of Biomedical Engineering, Faculty of Science and Technology, University of Silesia in Katowice, Poland; zaneta.garczyk@us.edu.pl

(Edit Contribution Details, Abstract ID: 486)

1:09pm - 1:12pm

Additive Manufacturing of Polymer/Nanoparticle Composites

Sayli Jambhulkar[1], Weiheng Xu[1], Dharneedar Ravichandran[1], KENAN SONG[2]
[1]Manufacturing Engineering, Arizona State University, Tempe, AZ, USA; [2]AMAML, Arizona State University, Tempe, AZ, USA; KENAN.SONG@ASU.EDU

(Edit Contribution Details, Abstract ID: 495)

1:12pm - 1:15pm

Synergistic effect of alginate/BMP-2/Umbilical cord serum-coated on 3D-printed PCL biocomposite for mastoid obliteration model

Chul Ho Jang[1], Ji Un Lee[2], Geun Hyung Kim[2]
[1]Department of Otolaryngology, Chonnam National University Medical School, Korea, South Korea; [2]Tissue Engineering lab, Biomechatronics, Sungkeunkwan University, Suwon , South Korea; chulsavio@hanmail.net

(Edit Contribution Details, Abstract ID: 130)

1:15pm - 1:18pm

Atomically Dispersed N-Graphene Quantum Dots-Supported Dinitrosyl Iron Catalyst for Superior Oxygen Evolution Reaction

Chia-Yu Chang[1], Anil A. Kashale[1], Chien-Wei Wu[2], Sih-Ting Chen[1], Chia-Hui Yi[1], Chien-Ming Lee[1], I-Wen Peter Chen[1]
[1]National Taitung University, Taiwan; [2]National Taiwan University, Taiwan; iwchen@nttu.edu.tw

(Edit Contribution Details, Abstract ID: 316)

1:18pm - 1:21pm

Effect of Cu and Mn on the microstructure and magnetic properties of AlNiCoCu(1-x)FeMnx high entropy alloy

Raghavendra Kulkarni[1], Srinivas Veeturi[2], B. S. Murty[3]
[1]Dept. of Physics, Indian Institute of Technology Madras & CVR College of Engineering, India; [2]Dept. of Physics, Indian Institute of Technology Madras; [3]Dept. of Metallurgical and Materials Engineering, Indian Institute of Technology Madras; rkphy2009@yahoo.com

(Edit Contribution Details, Abstract ID: 349)

1:21pm - 1:24pm

Improvement of magnetic properties and flux pinning for YBCO composites bulk

Sang Heon Lee
Sunmoon University, Korea, Republic of (South Korea); shlee1879@hanmail.net

(Edit Contribution Details, Abstract ID: 501)

1:24pm - 1:27pm

Ferroelectric effect in ZnFe2O4-BaTiO3 core-shell nanostructures

Mangamma G.[1], Rajesh A.[1], Ramachandran B.[2,3], Sairam T.N.[1], M.S.R. Rao[2]
[1]Materials Science Group, IGCAR, Homi Bhabha National Institute, Kalpakkam, India; [2]Department of Physics, IIT Madras, Tamil Nadu, India, India; [3]Department of Physics, National Dong Hwa University, Taiwan; gm@igcar.gov.in

(Edit Contribution Details, Abstract ID: 458)

1:27pm - 1:30pm

Green Mirror-less laser from Conjugated Polymer (PFO-co-PPV-MEHB) in Film

MAMDUH JAMIL ALJAAFREH[1], Saradh Prasad Rajendra[1,2], Mohamad Saleh AlSalhi AlSalhi[1,2]
[1]king saud university, Saudi Department of Physics and Astronomy, College of Science, King Saud University; [2]Research Chair on laser diagnosis of cancers, Department of Physics and Astronomy, College of Science, King Saud University; mamdohjaafreh2009@gmail.com

(Edit Contribution Details, Abstract ID: 265)

1:30pm - 1:33pm

Microbian fuel cell electric power generation

Cirlene Fourquet Bandeira[1,2], Mateus Peixoto Oliveira[2], Diogo Morais de Souza[2], Denise Celeste Godoy de Andrade Rodrigues[2], Gilmar Clemente Silva[3], Sérgio Roberto Montoro[2], Michelle Leali Costa[1], Edson Cocchieri Botelho[1]
[1]Paulista State University; [2]Volta Redonda University Center; [3]Federal Fluminense University; cirlenefourquet@yahoo.com.br

(Edit Contribution Details, Abstract ID: 257)

1:33pm - 1:36pm

Development of shuttle adsorbent between the bottom and surface of water for adsorption of pollutants

YOSHIHIRO MIHARA
Hokkaido University of Science, Japan; mihara-y@hus.ac.jp

(Edit Contribution Details, Abstract ID: 474)

1:36pm - 1:39pm

Edge effects for nonradiative recombination in WS2

Ying Wang
University of Southern California, United States of America; wang116@usc.edu

(Edit Contribution Details, Abstract ID: 239)

1:39pm - 1:42pm

Investigation of partial sintering of alumina-containing tetragonal zirconia (ATZ) ceramic composites via temperature-dependent impulse excitation

Eva Gregorova, Willi Pabst
University of Chemistry and Technology, Prague (UCT Prague), Czech Republic; eva.gregorova@vscht.cz

(Edit Contribution Details, Abstract ID: 303)

1:42pm - 1:45pm

Photocatalytic H2 Generation with g-C3N4 and MAl2O4 (M=Ba or Mg)

Takawira Joseph Mumanga, Eduardo Montes, Luis Armando Díaz Torres
Centro de Investigaciones en Óptica, Mexico; takah@cio.mx

(Edit Contribution Details, Abstract ID: 162)

1:45pm - 1:48pm

Recoverable Energy Storage Properties on Pb-based and Pb-free Ferroelectric Thin Films

Martando Rath, Soumen Pradhan, Ramachandra Rao M S
IIT Madras Chennai, India; msrrao@iitm.ac.in

(Edit Contribution Details, Abstract ID: 979)

1:48pm - 1:51pm

Electropolymerized sorbents for determination of potential endocrine disruptors in environmental samples

Justyna Werner, Robert Frankowski, Tomasz Rębiś, Tomasz Grześkowiak, Agnieszka Zgoła-Grześkowiak
Poznan Univerity of Technology, Poland; justyna.werner@put.poznan.pl

(Edit Contribution Details, Abstract ID: 963)

1:51pm - 1:54pm

Functional Pickering Emulsion extractant based on Cyanex 923-chitosan-polyethylene glycol for selective extraction of Yttrium from fluorescent lamp wastes

Byron Gonzalo Lapo Calderon[1,2], Sandra Pavon[3], Martin Bertau[3], Ana Maria Sastre[1]
[1]Technical University of Catalonia, Spain; [2]Technical University of Machala, Ecuador; [3]TU Bergakademie Freiberg, Germany; byron.lapo@upc.edu

(Edit Contribution Details, Abstract ID: 805)

1:54pm - 1:57pm

How the electrode potential selects the dual electronic structure of charged metal-molecule interfaces: Surface-enhanced Raman scattering of cyanide adsorbed on nanostructured silver electrodes

Samuel Valdivia, Daniel Aranda, Francisco García-González, Francisco J. Avila-Ferrer, Juan Soto, Isabel López-Tocón, Juan Carlos Otero
Universidad de Málaga, Andalucía Tech, Departamento de Química Física, Facultad de Ciencias, Málaga, E-29071, Spain.; jc_otero@uma.es

(Edit Contribution Details, Abstract ID: 680)

1:57pm - 2:00pm

Informing Tunable Bio-composite Design with Fiber Formation in Spiders and Silkworms

Hannah Johnson, Katherine Adams, Christofer Layana, Salvador Vallejo, Gregory P. Holland
San Diego State University, United States of America; hjohnson7964@sdsu.edu

(Edit Contribution Details, Abstract ID: 960)

2:00pm - 2:03pm

Investigation on Electrochemical Hydrogen Evolution using different crystal phases of TaS2

Hamid Ghorbani Shiraz
Linköping University, Sweden; hamgh32@liu.se

(Edit Contribution Details, Abstract ID: 463)

2:03pm - 2:06pm

Construction and comparison of several different biopolymer coatings on Fe3O4 core-shell nanoparticles produced for Doxorubicin delivery.

Maide Gökçe Bekaroglu, Sevim İşçi
Istanbul Technical University, Dept. of Physics, Maslak 34469, Istanbul, Turkey; bekaroglum@itu.edu.tr

(Edit Contribution Details, Abstract ID: 1036)

2:06pm - 2:09pm

Engineered biomaterials for combination cancer immunotherapy

James Moon
University of Michigan, United States of America; moonjj@med.umich.edu

(Edit Contribution Details, Abstract ID: 817)

2:09pm - 2:12pm

Ultrasound as Functional Influence Tool on FeB pair Association in Silicon Solar Cells

Oleg Olikh[1], Vitaliy Kostylyov[2], Victor Vlasiuk[2], Roman Korkishko[2]
[1]Taras Shevchenko National University of Kyiv, Ukraine; [2]V. Lashkaryov Institute of Semiconductor Physic of NAS of Ukraine, Kyiv, Ukraine; olegolikh@knu.ua

(Edit Contribution Details, Abstract ID: 816)

2:12pm - 2:15pm

Rechargeable Magnesium Battery Cathodes Based on Fluorine-free MXenes

Frode Håskjold Fagerli[1], Henning Kaland[1], Jacob Hadler-Jacobsen[1], Zhaohui Wang[1,2], Sverre M. Selbach[1], Tor Grande[1], Nils P Wagner[1,3], Kjell Wiik[1]

[1]Norwegian University of Science and Technology, Norway; [2]SINTEF Industry, Metal Production and Processing; [3]SINTEF Industry, Sustainable Energy Technology; frode.h.fagerli@ntnu.no

EPMM-2: Electronic, Photonic and Magnetic Materials

Time: Wednesday, 18/Aug/2021: 3:20pm - 6:30pm · *Virtual location:* AU 2410
Session Chair: Akshay Nagar

(Edit Contribution Details, Abstract ID: 535)

3:20pm - 3:35pm

Passive radiative cooling structures for applications in outdoor-useable, patch-type wearable devices

Young Min Song
Gwangju Institute of Science and Technology, Korea, Republic of (South Korea); ymsong@gist.ac.kr

(Edit Contribution Details, Abstract ID: 787)

3:35pm - 3:50pm

Photon upconversion based on heavy-atom-free thiosquaraines

Cody W. Schlenker
University of Washington, United States of America; schlenk@uw.edu

(Edit Contribution Details, Abstract ID: 616)

3:50pm - 4:05pm

Surface Plasmonic Sensors for Biomedical Applications: aspects of light-biological matter interaction

Ya-Hong Xie[1], Zirui Liu[1], Tieyi Li[1], Xinke Yu[1], Owen Liang[1], Jun Liu[1], Siddharth Srivastava[1], Yuxing Ren[1], Zeyu Wang[2], Tony Jun Huang[2], Feng Li[3], Yong Kim[3], David T. Wong[3]
[1]Department of Materials Science & Engineering, UCLA, United States of America; [2]Department of Mechanical Engineering, Duke University; [3]School of Dentistry, UCLA; yhx@ucla.edu

(Edit Contribution Details, Abstract ID: 856)

4:05pm - 4:20pm

Stretchable Biodegradable Metallic Glass for Transient Electronics

Jae-Young Bae[1,2], Seung-Kyun Kang[1,2]
[1]Department of Materials Science and Engineering, Seoul National University; [2]Research Institute of Advanced Materials (RIAM), Seoul National University; kskg7227@snu.ac.kr

(Edit Contribution Details, Abstract ID: 973)

4:20pm - 4:35pm

Photon avalanching nanoparticles for NIR imaging at 70 nm resolution

Bruce Cohen
Lawrence Berkeley National Laboratory, United States of America; becohen@lbl.gov

(Edit Contribution Details, Abstract ID: 193)

4:35pm - 4:45pm

Molecular band THz detection and imaging structures

Liviu Popa-Simil
LAAS, United States of America; laaos@laaos.org

(Edit Contribution Details, Abstract ID: 640)

4:45pm - 4:55pm

Better Artificial Photosynthesis by Ion Segregation in Oxide Nanoparticles

Douglas Gouvêa
Department of Materials and Metallurgical Engineering, Polytechnical School - University of São Paulo, São Paulo, Brazil; dgouvea@usp.br

(Edit Contribution Details, Abstract ID: 871)

4:55pm - 5:05pm

Composite 3D nanoplatform surface- enhanced Raman scattering and plasmon-enhanced fluorescence detection of serum bilirubin from jaundice

Smruti Ranjan Sahoo, Cheng-Chung Chang, Gou-Jen Wang
National Chung-Hsing University, Taiwan; gjwang@dragon.nchu.edu.tw

(Edit Contribution Details, Abstract ID: 642)

5:05pm - 5:15pm

Hetero-bimetallic phosphorescent IrIII complexes based on carbene scaffolds and their application in light-emitting devices

Anna Bonfiglio, Matteo Mauro

Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), University of Strasbourg & CNRS, France; mauro@unistra.fr

(Edit Contribution Details, Abstract ID: 847)

5:15pm - 5:25pm

Quantum dots for two-photon cell transmembrane electric field imaging

Stijn Jooken[1], Yovan de Coene[2], Olivier Deschaume[1], Daniel Zámbó[4], Tangi Aubert[5,6], Zeger Hens[5], Dirk Dorfs[4], Thierry Verbiest[2], Koen Clays[2], Geert Callewaert[3], Carmen Bartic[1]

[1]Soft Matter and Biophysics, Department of Physics and Astronomy, KU Leuven, 3001 Leuven, Belgium; [2]Molecular Imaging and Photonics, Department of Chemistry, KU Leuven, 3001 Leuven, Belgium; [3]Department of Cellular and Molecular Medicine, KU Leuven Campus Kulak, 8500 Kortrijk, Belgium; [4]Institute of Physical Chemistry and Electrochemistry, Leibniz Universität Hannover, 30167 Hannover, Germany; [5]Department of Chemistry, Ghent University, 9000 Ghent, Belgium.; [6]ICGM, University of Montpellier, CNRS, ENSCM, 34000 Montpellier, France.; stijn.jooken@kuleuven.be

(Edit Contribution Details, Abstract ID: 638)

5:25pm - 5:35pm

Modeling of Magnetorheolological gels: A Study on the particle size effect

Meharthaj H, M S Sivakumar, A Arockiarajan

INDIAN INSTITUTE OF TECHNOLOGY, MADRAS, India; mehar9794@gmail.com

(Edit Contribution Details, Abstract ID: 671)

5:35pm - 5:45pm

Multiplexed multi-responsive microneedle hydrogel sensors for chemical analytics useful in diverse applications in Industry 4.0

Samuel Mugo, Scott Robertson, Weihao Lu, Marika Woods

MacEwan University, Canada; mugos@macewan.ca

(Edit Contribution Details, Abstract ID: 609)

5:45pm - 5:55pm

Partial Leidenfrost Evaporation-Assisted Ultrasensitive Surface-Enhanced Raman Spectroscopy in a Janus Water Droplet on Hierarchical Plasmonic Micro/Nanostructures

Jiangtao Cheng

Virginia Tech, United States of America; jiangtao.cheng@gmail.com

(Edit Contribution Details, Abstract ID: 739)

5:55pm - 6:05pm

Propyne Hydrogenation over a Pd/Cu(111) Single-Atom Alloy Studied using Ambient Pressure Infrared Spectroscopy

Mohammed K. Abdel-Rahman, Michael Trenary

University of Illinois at Chicago, United States of America; mabdelr6@jhu.edu

FCM-2: Functional Composite Materials

Time: Wednesday, 18/Aug/2021: 3:20pm - 6:30pm · *Virtual location:* AU 2412
Session Chair: Liangbo Liang

(Edit Contribution Details, Abstract ID: 334)

3:20pm - 3:30pm

STUDIES ON SYNTHESIS AND CHARACTERIZATION OF NANO-FILMS OF POLYMER BLENDS OF POLY(STYRENE) AND CELLULOSE ACETATE

Srilalitha Sapram[1], Jayaveera K N[2]
[1]ACE Engineering College, Hyderabad, India; [2]Jawaharlal Nehru technological University, Anantapur, India; ssrilalitha@yahoo.com

(Edit Contribution Details, Abstract ID: 108)

3:30pm - 3:40pm

A mass-selective view of local binding and nuclear dynamics in a BaZr0.7Ce0.2Y0.1O3-o proton conductor as observed by neutron diffraction

Maciej Wojciech Krzystyniak
Rutherford Appleton Laboratory, United Kingdom; matthew.krzystyniak@stfc.ac.uk

(Edit Contribution Details, Abstract ID: 190)

3:40pm - 3:50pm

Composite micro-nano-hetro-structures for nuclear power applications

Liviu Popa-Simil
LAAS, United States of America; laaos@laaos.org

(Edit Contribution Details, Abstract ID: 253)

3:50pm - 4:00pm

Hysteresis and dielectric properties of functionalized carbon nanotubes - polymer nanocomposite films

Ajit Kumar Meikap, Amit Kumar Das
National Institute of Technology Durgapur; ajit.meikap@phy.nitdgp.ac.in

(Edit Contribution Details, Abstract ID: 238)

4:00pm - 4:10pm

Empirical mixture rules and their application for estimating the effective conductivity and permittivity of isotropic two-phase composites

Willi Pabst, Eva Gregorova
University of Chemistry and Technology, Prague (UCT Prague), Czech Republic; pabstw@vscht.cz

(Edit Contribution Details, Abstract ID: 122)

4:10pm - 4:20pm

Synthesis and Characterization of Titania Pillared Clay Membranes for Methylene Blue degradation in Textile Wastewater

Tanushree Choudhury
VIT Chennai, India; tanushree.c@vit.ac.in

(Edit Contribution Details, Abstract ID: 104)

4:20pm - 4:30pm

Functional materials for smart plastics, and beyond: Morpholino-poly(piperazinyl-morpholinyl-triazins)

BANSI KAUL
MCA technologies GmbH, Switzerland; KAUL@MCATECHNOLOGIES.COM

(Edit Contribution Details, Abstract ID: 416)

4:30pm - 4:40pm

De Novo Inverse Design of Nanoporous Structures by Machine Learning

Mathieu Bauchy
University of California, Los Angeles, United States of America; bauchy@ucla.edu

(Edit Contribution Details, Abstract ID: 183)

4:40pm - 4:50pm

Enzyme-decorated mesoporous silica nanoparticles for elimination of antibiotic resistant Pseudomonas aeruginosa biofilms

Aleksandra Ivanova, Kristina Ivanova, Tzanko Tzanov
Universitat Politecnica de Catalunya, Spain; aleksandra.asenova@upc.edu

(Edit Contribution Details, Abstract ID: 896)

4:50pm - 5:00pm

Al/Cu laminated wire conductors; effect of stacking sequence on mechanical properties and structural features

Lenka Kuncicka[1,2], Radim Kocich[2]
[1]Czech Academy of Sciences, Czech Republic; [2]VSB - Technical University of Ostrava, Czech Republic; kuncicka@ipm.cz

(Edit Contribution Details, Abstract ID: 546)

5:00pm - 5:10pm

Buckling and Postbuckling responses of composite plates under combined in-plane loads

Shamsher Bahadur Singh, Sudhir Vummadisetti
Birla Institute of Technology and Science Pilani, India; sbsinghbits@gmail.com

(Edit Contribution Details, Abstract ID: 878)

5:10pm - 5:20pm

Electrospinning of PVA/Chitosin/silver nanoparticles, its characterization, and activity on breast cancer

Amreen Khan[1,2], Mayuri Gandhi[2], Jayesh Bellare[3], Rohit Srivastava[1]
[1]BSBE, Indian Institute of Technology Bombay, India; [2]CRNTS,Indian Institute of Technology Bombay, India; [3]Department of Chemical Engineering, Institute of Technology Bombay, India; amreen.khan.mtech@gmail.com

(Edit Contribution Details, Abstract ID: 828)

5:20pm - 5:30pm

Production of Sustainable Bio-Composites from Agro-residue Fibers and Recycled Polypropylene

Khalid Alzebdeh, Mahmoud Nassar, Nasr Al Hinai
Sultan Qaboos University; alzebdeh@squ.edu.om

(Edit Contribution Details, Abstract ID: 784)

5:30pm - 5:40pm

Formulation and polymerization of Pickering emulsions stabilized by stimuli-responsive dextran-based nanoparticles

Valentin Maingret[1,2], Véronique Schmitt[1], Valérie Héroguez[2]
[1]Centre de Recherche Paul Pascal (CRPP) UMR 5031, 115 Avenue du Dr Albert Schweitzer, 33600 Pessac, France; [2]Laboratoire de Chimie des Polymères Organiques (LCPO) Univ. Bordeaux, CNRS, Bordeaux INP, LCPO, UMR 5629, F-33600, Pessac, France; valentin.maingret@u-bordeaux.fr

(Edit Contribution Details, Abstract ID: 835)

5:40pm - 5:50pm

Hybrid materials obtained from the polymerization of Pickering emulsions stabilized by cellulose nanocrystals

Hanaé Dupont[1,2], Valérie Héroguez[1], Véronique Schmitt[2]
[1]Laboratoire de Chimie des Polymères Organiques, France; [2]Centre de Recherche Paul Pascal, France; hanae.dupont@enscbp.fr

(Edit Contribution Details, Abstract ID: 879)

5:50pm - 6:00pm

Interphase characterization of a single glass fiber and epoxy using a tensile test and digital image correlation method

Hossein Hosseini-Toudeshky, Masoud Saber, Azizollah Navaei
Amirkabir University of Technology (Tehran Polytechnic), Iran, Islamic Republic of; hosseini@aut.ac.ir

(Edit Contribution Details, Abstract ID: 886)

6:00pm - 6:10pm

Experimental and numerical damage evolution of polyurethane material using a modified hyper-viscoelastic constitutive model

Hossein Hosseini-Toudeshky, Mina Jahanmardi, Mohammad Saeed Goodarzi

Amirkabir University of Technology (Tehran Polytechnic), Iran, Islamic Republic of; hosseini@aut.ac.ir

(Edit Contribution Details, Abstract ID: 175)

6:10pm - 6:20pm

Soft and highly sensitive capacitive pressure sensors array based on a polymeric foam

Annie Colin, Mickael Pruvost, Anais Gauthier

ESPCI, France; anais.gauthier@espci.fr

FESC-INV-1: Functional Materials for Energy Storage and Conversion Devices

Time: Wednesday, 18/Aug/2021: 3:20pm - 7:20pm · *Virtual location:* Theatre
Session Chair: Elham Sahraei
Session Chair: Muhammad Imran Shakir

(Edit Contribution Details, Abstract ID: 660)

3:20pm - 3:35pm

Cationic and Anionic Redox Chemistry in Oxide-Based Battery Cathodes

Wanli Yang
Lawrence Berkeley National Lab, United States of America; WLYang@lbl.gov

(Edit Contribution Details, Abstract ID: 700)

3:35pm - 3:50pm

Ultra-thin Electrodeposited Noble Metals Layers on Max Phases Based Support for Green Energy Production

Nevenka R. Elezovic
Institute for Multidisciplinary Research University of Belgrade, Serbia; nelezovic@tmf.bg.ac.rs

(Edit Contribution Details, Abstract ID: 580)

3:50pm - 4:05pm

Interfaces in Solid-State Li Batteries

Daniel Rettenwander[1,2]
[1]Department of Material Science and Engineering, NTNU Norwegian University of Science and Technology, Trondheim, Norway; [2]Christian Doppler Laboratory for Solid-State Batteries, NTNU Norwegian University of Science and Technology, Trondheim, Norway; daniel.rettenwander@gmail.com

(Edit Contribution Details, Abstract ID: 959)

4:05pm - 4:20pm

Developing Multifunctional, High Performance Thiazolothiazole Materials for Electronic and Optical Applications

Tyler J. Adams, Nickolas A. Sayresmith, Abhishek Shibu, Andrew Brotherton, Krista Tang, Carly Kwiatkowski, David Diaz, Michael G. Walter
University of North Carolina at Charlotte, United States of America; Michael.Walter@uncc.edu

(Edit Contribution Details, Abstract ID: 930)

4:20pm - 4:35pm

Nanoscale Function in Perovskite and Organic Solar Cells

Jeffrey M. Mativetsky
Binghamton University, United States of America; jmativet@binghamton.edu

(Edit Contribution Details, Abstract ID: 723)

4:35pm - 4:50pm

Theoretical Optimization of bi-facial BIPV Module for Apartment

Seung-Ho Yoo[1], **Hee-Jeong Choi**[2]
[1]Sehan University, Korea, Republic of (South Korea); [2]Catholic Kwandong University, Korea, Republic of (South Korea); energy@unitel.co.kr

(Edit Contribution Details, Abstract ID: 763)

4:50pm - 5:05pm

Thermodynamic interpretation of the open-circuit voltage in energy conversion materials

Mario Einax[1,2]
[1]Department of Physics and Astronomy, Botswana International University of Science and Technology, Palapye, Botswana; [2]School of Chemistry, Tel Aviv University, Tel Aviv, Israel; einaxm@biust.ac.bw

(Edit Contribution Details, Abstract ID: 833)

5:05pm - 5:20pm

Intermediate-temperature solid oxide fuel cells: Fabrication on porous metallic supports. Impregnation of CGO-backbone electrodes for SOFC application.

Didier FASQUELLE, Zeyu Chi, Sarra Belakry
University of Littoral Cote d'Opale, France; didier.fasquelle@univ-littoral.fr

(Edit Contribution Details, Abstract ID: 538)

5:20pm - 5:35pm

Poly-ynes, Poly(metalla-ynes), Coordination Complexes and Polymers for Opto-Electronic (O-E) Applications

Muhammad Khan
Sultan Qaboos University, Oman; msk@squ.edu.om

(Edit Contribution Details, Abstract ID: 823)

5:35pm - 5:50pm

Touching the forming SEI layer on Li-ion battery anodes

Frank Uwe Renner[1,2]
[1]Hasselt University, Belgium; [2]IMEC, Division IMOMEC, Belgium; frank.renner@uhasselt.be

(Edit Contribution Details, Abstract ID: 735)

5:50pm - 6:05pm

Towards Mimicking Light-Harvesting Organelle Function with Water-Soluble Conjugated Polymers

Alexander Ayzner
University of California, Santa Cruz, United States of America; aayzner@ucsc.edu

(Edit Contribution Details, Abstract ID: 366)

6:05pm - 6:20pm

Design of Materials for Advanced Energy Storage

Cengiz Sinan Ozkan
Bourns College of Engineering, University of California, Riverside, United States of America; cozkan@engr.ucr.edu

(Edit Contribution Details, Abstract ID: 808)

6:20pm - 6:35pm

Chemically Bonded 3D Porous Network of Black Phosphorus@MXenes Enables High and Stable Capacitive Energy Storage

John Wang, Zhenghui Pan
National University of Singapore, Singapore; msewangj@nus.edu.sg

(Edit Contribution Details, Abstract ID: 588)

6:35pm - 6:50pm

Electrochemical production of high-purity silicon in molten salts towards energy-related applications

Xingli Zou, Xionggang Lu
State Key Laboratory of Advanced Special Steel & Shanghai Key Laboratory of Advanced Ferrometallurgy & School of Materials Science and Engineering, Shanghai University, Shanghai 200444, China.; xinglizou@shu.edu.cn

(Edit Contribution Details, Abstract ID: 859)

6:50pm - 7:05pm

Modelling Damage in Grain Engineered Voids, Precipitate and Microstructural Distortions during 3D Printing Process

Frank Abdi[1], Amir Eftekharian[1], Dade Huang[1], Kamran Nikbin[2], Yun Hu[2]
[1]AlphaSTAR Corporation, United States of America; [2]Imperial College London, United Kingdom; fabdi@alphastarcorp.com

AAAFM-Awards -1: AAAFM-Awards Presentations-1

Time: Thursday, 19/Aug/2021: 8:10am - 10:10am · *Virtual location:* Theatre
Session Chair: Xiangfeng Duan

(Edit Contribution Details, Abstract ID: 1041)

8:10am - 8:50am

III-Nitride Materials for Full Color Emerging Photonic Applications

Steven Denbaars
Materials Department, Solid State Lighting and Energy Electronics Center, UCSB, Santa Barbara, CA 93106 USA; spdenbaars@ucsb.edu

(Edit Contribution Details, Abstract ID: 1042)

8:50am - 9:30am

Water Harvesting from Air Anytime, Anywhere

Omar M. Yaghi
Department of Chemistry, University of California, Berkeley; yaghi@berkeley.edu

(Edit Contribution Details, Abstract ID: 1043)

9:30am - 10:10am

Chemically Tailored 2D Materials for Electronic and Energy Technologies

Mark C. Hersam
Northwestern University, 2220 Campus Drive, Evanston, IL 60208-3108, USA; m-hersam@northwestern.edu

FESC-INV-2: Functional Materials for Energy Storage and Conversion Devices

Time: Thursday, 19/Aug/2021: 8:10am - 10:00am · *Virtual location:* AU 2410
Session Chair: Elham Sahraei

(Edit Contribution Details, Abstract ID: 551)

8:10am - 8:25am

Engineering of low-cost and environmentally benign catalysts for thermal-assisted photocatalytic hydrogen production

Sergey Nikitenko[1], Sara El Hakim[2], Tony Chave[1]
[1]CNRS, France; [2]University of Montpellier, France; serguei.nikitenko@cea.fr

(Edit Contribution Details, Abstract ID: 698)

8:25am - 8:40am

Beyond structural and chemical imaging in a TEM -- new opportunities for understanding interfaces in energy materials

Miaofang Chi
Oak Ridge National Lab, United States of America; chim@ornl.gov

(Edit Contribution Details, Abstract ID: 825)

8:40am - 8:55am

Anodized metal oxide nanotubular arrays for gas-phase photocatalysis and photo-induced high-purity hydrogen production

Kei Noda
Keio University, Japan; nodakei@elec.keio.ac.jp

(Edit Contribution Details, Abstract ID: 954)

8:55am - 9:10am

Advanced doping techniques for nanostructured solar cells

Rosaria A. Puglisi
Consiglio Nazionale delle Ricerche, Italy; rosaria.puglisi@imm.cnr.it

(Edit Contribution Details, Abstract ID: 670)

9:10am - 9:25am

Laser Scribed Fractal Graphene Capacitors: Scaling Behavior with Respect to Fractal Order and Complexity

Benjamin Barnes[1], Jean Paul Badjo[2], Christopher Blanks[3], Mark Demorra[1], Othman Suleiman[3], Kausiksankar Das[3]
[1]University of Maryland College Park, MD, USA; [2]University of Maryland Baltimore County, MD, USA; [3]University of Maryland Eastern Shore, MD, USA; kdas@umes.edu

(Edit Contribution Details, Abstract ID: 975)

9:25am - 9:40am

Detailed Multiphysics Modeling of a 18650 Cylindrical Lithium-ion Battery

Mohammad Keshavarzi[1], Mehdi Gilaki[1], Youngwon HAHN[2], Ni SUI[2], Junwei XING[2], Victor OANCEA[2], Elham Sahraei[1]
[1]Temple University, United States of America; [2]SIMULIA R&D; keshavarzi@temple.edu

(Edit Contribution Details, Abstract ID: 708)

9:40am - 9:55am

Organic photovoltaic devices for next generation indoor applications

Wing Chung Tsoi
Swansea University, United Kingdom; w.c.tsoi@swansea.ac.uk

(Edit Contribution Details, Abstract ID: 762)

9:55am - 10:10am

Negative Electrode Materials for Supercapacitive Energy Storage: Bottlenecks and Possible Remedies

Abolhassan Noori[1], Richard B. Kaner[2], Mir F. Mousavi[1]
[1]Tarbiat Modares University, Iran, Islamic Republic of; [2]UCLA; mousavim@modares.ac.ir

(Edit Contribution Details, Abstract ID: 996)

10:10am - 10:25am

Merging Nanotechnology & Synthetic Biology toward Directed Evolution of Materials for Photocataysis

Elena A. Rozhkova

Argonne National Laboratory, United States of America; rozhkova@anl.gov

FLNM-INV-2: Fabrication of Low dimensional, Nano and 2D materials

Time: Thursday, 19/Aug/2021: 8:10am - 10:00am · *Virtual location:* AU 2412
Session Chair: Rainer Timm

(Edit Contribution Details, Abstract ID: 935)

8:10am - 8:25am

Colloidal Low-dimensional perovskite: synthetic strategies and optical properties

Raquel E. Galian, Rita Cevallos-Toledo, Ignacio Rosa-Pardo, Julia Pérez-Prieto
University of Valencia, Spain; raquel.galian@uv.es

(Edit Contribution Details, Abstract ID: 797)

8:25am - 8:40am

Fabrication of Polyethyleneimine conjugated fluorescent MXene nanosheets and its cytotoxic evaluation

Mayuri Gandhi[1], Barkha singh[1,2], Rohan Bahadur[2], Rohit Srivastava[2]
[1]CRNTS, Indian Institute of Technology, India; [2]BSBE, Indian Institute of Technology, India; mngandhi@iitb.ac.in

(Edit Contribution Details, Abstract ID: 881)

8:40am - 8:55am

Conjugated Pi-Structures with Different Topologies

Chunyan Chi
National University of Singapore, Singapore; chmcc@nus.edu.sg

(Edit Contribution Details, Abstract ID: 718)

8:55am - 9:10am

Controlling the parity and time-reversal symmetry of graphene Dirac plasmons and its application to terahertz lasers

Taiichi Otsuji[1], Akira Satou[1], Victor Ryzhii[1], Hirokazu Fukidome[1], Koichi Narahara[2]
[1]Tohoku University, Japan; [2]Kanagawa Institute of Technology, Japan; otsuji@riec.tohoku.ac.jp

(Edit Contribution Details, Abstract ID: 753)

9:10am - 9:25am

Silicon nanowires based artificial neuron

Larysa Baraban
Helmholtz Center Dresden Rossendorf, Germany; l.baraban@hzdr.de

(Edit Contribution Details, Abstract ID: 555)

9:25am - 9:40am

Surface functionalization of magnetic nanoparticles for magnetically driven passage through eye tissues for magnetic drug targeting

Silvio Dutz[1], Diana Zahn[1], Katja Klein[1], Patricia Radon[2], Edgar Nagel[1,3], Michael Eichhorn[4], Frank Wiekhorst[2]
[1]Institut für Biomedizinische Technik und Informatik, Technische Universität Ilmenau, Ilmenau, Germany; [2]Physikalisch-Technische Bundesanstalt, Berlin, Germany; [3]Ophthalmic practice, Rudolstadt, Germany; [4]Institut für Anatomie, LSII, Universität Erlangen-Nürnberg, Erlangen, Germany; silvio.dutz@tu-ilmenau.de

(Edit Contribution Details, Abstract ID: 618)

9:40am - 9:55am

Defect Engineering in 2D Materials by Non-equilibrium Synthesis and Processing

Kai Xiao[1], Yiyi Gu[2], Chenze Liu[2], Akinola Oyedele[2], Hui Cai[1], Alexander Puretzky[1], Gerd Duscher[1], Christopher Rouleau[1], David Geohegan[1]
[1]Oak Ridge National Laboratory, United States of America; [2]University of Tennessee at Knoxville; xiaok@ornl.gov

FESC-3: Functional Materials for Energy Storage and Conversion Devices

Time: Thursday, 19/Aug/2021: 10:20am - 12:30pm · *Virtual location:* AU 2410
Session Chair: Miaofang Chi

(Edit Contribution Details, Abstract ID: 962)

10:20am - 10:30am

The origin of the light-induced phase segregation in mixed halide perovskites

Lyubov A. Frolova[1], Sergey Yu. Luchkin[2], Ernst Z. Kurmaev[3,4], Sergey M. Aldoshin[1], Pavel A. Troshin[1]
[1]Institute for Problems of Chemical Physics of RAS, Russian Federation; [2]Skolkovo Institute of Science and Technology, Moscow, Russian Federation; [3]Institute of Physics and Technology, Ural Federal University, Yekaterinburg, Russian Federation; [4]M.N. Mikheev Institute of Metal Physics of Ural Branch of Russian Academy of Sciences, Yekaterinburg, Russian Federation; troshin2003@inbox.ru

(Edit Contribution Details, Abstract ID: 958)

10:30am - 10:40am

Organic redox-active materials for high-capacity and high-rate potassium-ion batteries

Pavel A. Troshin
Institute for Problems of Chemical Physics of RAS, Russian Federation; troshin2003@inbox.ru

(Edit Contribution Details, Abstract ID: 629)

10:40am - 10:50am

Micro and Nano Structures that Enable 'Bubble-Free' Water Electrolysis that is Highly Energy Efficient

Gerhard F. Swiegers, Aaron Hodges, Linh Hoang, George Tsekouras, Klaudia Wagner, Chong-Yong Lee, Gordon G. Wallace
University of Wollongong, Australia, Australia; swiegers@uow.edu.au

(Edit Contribution Details, Abstract ID: 593)

10:50am - 11:00am

Exfoliated and Reassembled Graphite Electrodes for Hygroelectricity

Leandra P. Santos[1], Diana Lermen[3], André Galembeck[2], Fernando Galembeck[1,3]
[1]Galembetech Consultants, Brazil; [2]Federal University of Pernambuco, Brazil; [3]University of Campinas, Brazil; leandrapereiradossantos@gmail.com

(Edit Contribution Details, Abstract ID: 754)

11:00am - 11:15am

Self-Assembling Monolayers - Effective Approach for Efficient Perovskite Solar Cells

Tadas Malinauskas
Kaunas University of Technology, 50254, Lithuania; tadas.malinauskas@ktu.lt

(Edit Contribution Details, Abstract ID: 583)

11:15am - 11:30am

Operando soft x-ray spectroscopy for interfacial characterization of energy-storage materials and chemical transformation

Jinghua Guo
Lawrence Berkeley National Laboratory, United States of America; jguo@lbl.gov

(Edit Contribution Details, Abstract ID: 822)

11:30am - 11:45am

Structural Origin of Reversible Li Insertion in Guest-Free, Type-II Silicon Clathrates for Applications as Li-ion Battery Anodes

Xihong Peng, Andrew Dopilka, Candace K. Chan
Arizona State University, United States of America; xihong.peng@asu.edu

(Edit Contribution Details, Abstract ID: 627)

11:45am - 12:00pm

Is push-coating the adequate solution to solve the sustainability issue of organic solar cells fabrication?

Varun Vohra[1], Shusei Inaba[1], Ayumu Kiyokawa[1], Francesco Galeotti[2]

[1]University of Electro-Communications, Japan; [2]Italian National Research Council, Italy; varun.vohra@uec.ac.jp

(Edit Contribution Details, Abstract ID: 969)

12:00pm - 12:10pm

Developing of Non-graphitizing Carbons as Alternative Materials for Anodes in Li-Ion Batteries

Karolina Jurkiewicz[1], Jakub Kawala[2], Daniel Szlacheta[2], Dorota Zygadło[1], Szymon Smykała[3], Ewa Talik[1], Paweł Gancarz[1], Joanna Grelska[1], Barbara Liszka[1], Stanisław Duber[1], Andrzej Burian[1]

[1]University of Silesia in Katowice, Poland; [2]SGL Graphite Solutions; [3]Silesian University of Technology;
karolina.jurkiewicz@us.edu.pl

(Edit Contribution Details, Abstract ID: 636)

12:10pm - 12:20pm

Ionic Liquids for New Thermoelectrochemical Cells

Veronika Zinovyeva[1], Thomas Salez[2,3], Michel Beaughon[2], Kakoli Bhattacharya[2], Marco Bonetti[2], Sawako Nakamae[2]

[1]IJCLab, CNRS-IN2P3, Université Paris-Saclay, 91406 Orsay Cedex, France; [2]SPEC, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91191 Gif-sur-Yvette Cedex, France; [3]École des Ponts ParisTech, Champs-sur-Marne, F-77455 Marne-la-Vallée, France;
veronika.zinovyeva@universite-paris-saclay.fr

FLNM-2: Fabrication of Low dimensional, Nano and 2D materials

Time: Thursday, 19/Aug/2021: 10:20am - 12:30pm · *Virtual location:* AU 2412
Session Chair: Gerd Grau

(Edit Contribution Details, Abstract ID: 653)

10:20am - 10:30am

Molecular Interactions Between Ti3C2 MXene and Amine Containing Molecules in Aqueous Buffered Solutions

Swapnil B. Ambade[1], Laura A. Kesner[1], Alicia M. Tripp[2], Priyanshu Banerjee[3], Deepa Madan[3], Robert J. Hamers[2], Zeev Rosenzweig[1]

[1]Department of Chemistry and Biochemistry, University of Maryland Baltimore County, Baltimore, Maryland 21250, United States; [2]Department of Chemistry, University of Wisconsin, Madison, Wisconsin 53706, United States; [3]Department of Mechanical Engineering, University of Maryland Baltimore County, Baltimore, MD 21250, United States; swapnila@umbc.edu

(Edit Contribution Details, Abstract ID: 942)

10:30am - 10:40am

2D Perovskites for Color-Tunable Light Emission

Balaji Dhanabalan[1], Giulia Biffi[1], Seda Kutkan[1], Miao-Ling Lin[2], Yu-Chen Leng[2], Ping-Heng Tan[2], Milena Arciniegas[1], Roman Krahne[1]

[1]Italian Institute of Technology; [2]Institute of Semiconductors - Chinese Academy of Sciences; roman.krahne@iit.it

(Edit Contribution Details, Abstract ID: 420)

10:40am - 10:50am

Fabricating Three Dimensional Self-Aligning Nanoparticle-based Structures as Gas Sensor Array

Nishchay A. Isaac, Leslie Schlag, Johannes Reiprich, Pedro H. O. Moreira, Alper K. Soydan, Joerg Pezoldt, Heiko O. Jacobs

TU Ilmenau, Germany; nishchay-angel.isaac@tu-ilmenau.de

(Edit Contribution Details, Abstract ID: 337)

10:50am - 11:00am

Experimental demonstration of absorption enhancement of single layer graphene in optical resonant cavities

Abedin Nematpour, Nicola Lisi, Laura Lancellotti, Rosa Chierchia, Maria Luisa Grilli

ENEA, Italy; marialuisa.grilli@enea.it

(Edit Contribution Details, Abstract ID: 727)

11:00am - 11:15am

Role of carbon Materials in Hydrogen Gas Sensing Application

Shivani Dhall

DAV College, Jalandhar, India; shivani.dhall24@gmail.com

(Edit Contribution Details, Abstract ID: 768)

11:15am - 11:30am

Forming input/output (I/O) interfaces with excitable cells and tissue using nanocarbons

Tzahi Cohen-Karni

Carnegie Mellon University, United States of America; tzahi@andrew.cmu.edu

AAAFM-Awards -2: AAAFM-Awards Presentations-2

Time: Thursday, 19/Aug/2021: 10:30am - 12:30pm · *Virtual location:* Theatre
Session Chair: Paul S. Weiss

(Edit Contribution Details, Abstract ID: 1044)

10:30am - 11:10am

Smart and Programmable Sponges for protection From Bench to Market

Omar K. Farha
Department of Chemistry International Institute for Nanotechnology Northwestern University; omarkfarha@gmail.com

(Edit Contribution Details, Abstract ID: 1050)

11:10am - 11:50am

Tailoring Nanoscale Light with Polaritonic Metasurfaces

Andrea Alù
CUNY Advanced Science Research Center, Photonics Initiative 85 St. Nicholas Terrace, New York, NY 10031, U.S.A; aalu@gc.cuny.edu

(Edit Contribution Details, Abstract ID: 1045)

11:50am - 12:30pm

Skin-inspired organic electronics

Zhenan Bao
Department of Chemical Engineering, Stanford University; zbao@stanford.edu

EPMM-3: Electronic, Photonic and Magnetic Materials

Time: Thursday, 19/Aug/2021: 1:00pm - 3:00pm · *Virtual location:* AU 2410
Session Chair: Lei Fang

(Edit Contribution Details, Abstract ID: 559)

1:00pm - 1:15pm

Applying Computational Materials Science to Crystalline and Nano-Crystalline Magnetic Materials Design

Yang-Ki Hong[1], Minyeong Choi[2], Hoyun Won[2]
[1]Department of Electrical and Computer Engineering and Materials Science Ph.D. Program, The University of Alabama, United States of America; [2]Department of Electrical and Computer Engineering, The University of Alabama, United States of America; ykhong@eng.ua.edu

(Edit Contribution Details, Abstract ID: 778)

1:15pm - 1:30pm

CAN MAGLEV TRANSPORTATION BECOME ONE OF THE MAIN APPICATIONS OF SUPERCONDUCTORS ?

PIERRE BERNSTEIN, JACQUES NOUDEM, YITENG XING
Normandy University, France; pierre.bernstein@ensicaen.fr

(Edit Contribution Details, Abstract ID: 964)

1:30pm - 1:45pm

Computational Design and Optimization of Future Plasmonic Materials and Nanostructures

Jost Adam
University of Southern Denmark, Denmark; jostadam@sdu.dk

(Edit Contribution Details, Abstract ID: 675)

1:45pm - 2:00pm

Highly mismatched alloys as a new platform for mid-IR plasmonics

Hassan Allami, Jacob J Krich
University of Ottawa, Canada; jkrich@uottawa.ca

(Edit Contribution Details, Abstract ID: 716)

2:00pm - 2:15pm

Recent Advances in Donor-Acceptor Type of Intrinsically Conducting and Infrared Emitting Polymers

RAJAPAKSE MUDIYANSELAGE Gamini RAJAPAKSE
University of Peradeniya, Sri Lanka; rmgr@pdn.ac.lk

(Edit Contribution Details, Abstract ID: 977)

2:15pm - 2:30pm

Room-temperature ferromagnetism in 2D vdW Fe3GeTe2 and its potential application

Tianxiao Nie
Fert Beijing Institute, MIIT Key Laboratory of Spintronics, School of Integrated Circuit Science and Engineering, Beihang University, Beijing 100191, China; nietianxiao@buaa.edu.cn

(Edit Contribution Details, Abstract ID: 793)

2:30pm - 2:45pm

Semiconductor Diamond Electronics and MEMS sensors

Meiyong Liao
National Institute for Materials Science, Japan, Japan; meiyong.liao@nims.go.jp

(Edit Contribution Details, Abstract ID: 714)

2:45pm - 3:00pm

Strain engineering of epitaxial oxide heterostructures beyond substrate limitations

Deyang Chen
South China Normal University, China, People's Republic of; dychen1987@gmail.com

FCM-3: Functional Composite Materials

Time: Thursday, 19/Aug/2021: 1:00pm - 3:00pm · *Virtual location:* AU 2412
Session Chair: Swapnil B. Ambade

(Edit Contribution Details, Abstract ID: 864)

1:00pm - 1:15pm

Smart Carbon Fiber Composite Structures Utilizing Printed Electronics

Gerd Grau, Jiefeng Qiu, Mohamad K. Idris
York University, Canada; grau@eecs.yorku.ca

(Edit Contribution Details, Abstract ID: 413)

1:15pm - 1:25pm

Fracture Mechanics of Phase-Separated Glasses by Peridynamics Simulations

Longwen TANG[1], N. M. Anoop Krishnan[2], Jonathan Berjikian[1], Jared Rivera[1], Morten M Smedskjaer[3], John C. Mauro[4], Wei Zhou[5], Mathieu Bauchy[1]
[1]University of California, Los Angeles, United States of America; [2]Indian Institute of Technology Delhi, Hauz Khas, New Delhi 110016, India; [3]Aalborg University, 9220 Aalborg, Denmark; [4]The Pennsylvania State University, University Park, PA 16802, USA; [5]Wuhan University, Wuhan 430072, China; whulongwen@gmail.com

(Edit Contribution Details, Abstract ID: 438)

1:25pm - 1:35pm

Sandwich-structured composite materials for WiFi antenna application

Xavier CASTEL[1], Lilia MANAC'H[1], Mohamed HIMDI[1], Patrick PARNEIX[2]
[1]Université de Rennes 1, France; [2]Naval Group, France; xavier.castel@univ-rennes1.fr

(Edit Contribution Details, Abstract ID: 158)

1:35pm - 1:45pm

Engineering nanomaterials based multi-functional interfaces for cytokine biosensing: from nanosensors to in vivo medical devices

Shengnan Ni[1], Zhuping Shen[1], Jagjit Kaur[2], Laicong Qiao[2], Chaomin Cao[1], Guozhen Liu[1,2]
[1]Central China Normal University; [2]University of New South Wales; guozhen.liu@unsw.edu.au

(Edit Contribution Details, Abstract ID: 342)

1:45pm - 1:55pm

Cellulose nanocrystal-biopolymer hybrid bioink formulation for high-resolution 3D printing of heterogeneous tissue constructs

Yu Wu, Andrew Wenger, Hossein Golzar, Xiaowu {Shirley} Tang
University of Waterloo, Canada; tangxw@uwaterloo.ca

(Edit Contribution Details, Abstract ID: 449)

1:55pm - 2:05pm

Image-based Non-segmentation Finite Element Method for Mechanical Characterization of Composite Materials with Fine Inclusions

Yunhua Luo
University of Manitoba, Canada; Yunhua.Luo@umanitoba.ca

(Edit Contribution Details, Abstract ID: 682)

2:05pm - 2:20pm

A Correlation Between Oxygen Vacancies and Elemental Analysis in Single and Binary Transition Metal Oxide Structures

Fatma Sarf[1], Emin Yakar[2]
[1]Çanakkale Onsekiz Mart University, Turkey; [2]Çanakkale Onsekiz Mart University, Turkey; fatmaozutok@comu.edu.tr

(Edit Contribution Details, Abstract ID: 639)

2:20pm - 2:30pm

Analysis of the adhesive properties and microstructure of epoxy resin coatings modified with waste limestone powder

Agnieszka Chowaniec, Sławomir Czarnecki, Łukasz Sadowski
Wrocław University of Science and Technology, Poland; agnieszka.chowaniec@pwr.edu.pl

(Edit Contribution Details, Abstract ID: 1002)

2:30pm - 2:40pm

Design and Analysis of Epoxy Granite Reinforced with Steel Vertical Machine Center Spindle Housing

S Nallusamy, K Sujatha, M Rajaram Narayanan
Dr. M.G.R. Educational and Research Institute, Chennai - 600 095, Tamil Nadu, India, India; ksnallu@gmail.com

(Edit Contribution Details, Abstract ID: 139)

2:40pm - 2:50pm

Non-equilibrium lipid-A phosphate phases against bacterial and aniviral infections

Henrich Paradies[1,2], Hendrik Reichelt[1], Kurt Zimmermann[3]
[1]The University of Salford, UK; [2]Jacobs University, Germany; [3]SymbioVaccin, Herborn, Germany; HParadies@aol.com

(Edit Contribution Details, Abstract ID: 649)

2:50pm - 3:00pm

3D Printable Poly(N-isopropyl acrylamide-co-acrylamide) Sodium Alginate Double-network Hydrogels for Dermal Drug Delivery

Lukas Alexander Bauman, Songbo Cui, Boxin Zhao
Surface Science and Bio-nanomaterials Laboratory, Waterloo Institute for Nanotechnology, Institute for Polymer Research, Centre for Bioengineering and Biotechnology, Department of Chemical Engineering, University of Waterloo; l6bauman@uwaterloo.ca

Post-2: Poster Session

Time: Thursday, 19/Aug/2021: 1:00pm - 3:00pm · *Virtual location:* Theatre
Session Chair: KENAN SONG

(Edit Contribution Details, Abstract ID: 358)

1:00pm - 1:03pm

Detecting heavy metal ions with ultra-low concentrations based on composite material incorporating reduced graphene oxide and sodium alginate

Xiaolu Zhu, Wenjie Zhao, Hao Cheng
Hohai University, China, People's Republic of; zhuxiaolu@hhu.edu.cn

(Edit Contribution Details, Abstract ID: 403)

1:03pm - 1:06pm

Electronic Structure and Optical Properties of Cubic and Orthorhombic CsPbX3 (X = Cl, Br, I) Perovskite: A Theoretical Understanding from DFT Calculations

Hamid M. Ghaithan, Zeyad Alahmed, Saif Qaid, Abdullah Aldwayyan
King Saud University, Saudi Arabia; hghaithan@ksu.edu.sa

(Edit Contribution Details, Abstract ID: 485)

1:06pm - 1:09pm

Bio-inspired Composite Fibers as Versatile Sensors

Weiheng Xu[1], Sayli Jambhulkar[1], Dharneedar Ravichandran[1], KENAN SONG[2]
[1]Manufacturing Engineering, Arizona State University, Tempe, AZ, USA;; [2]Arizona State University, Tempe, AZ, USA Phone: 480-727-2720, E-mail address: kenan.song@asu.edu; KENAN.SONG@ASU.EDU

(Edit Contribution Details, Abstract ID: 476)

1:09pm - 1:12pm

New Class of Crosslinker-Free Nanofiber Biomaterials from Hydra Nematocyst Proteins

Theresa Bentele[1], Federico Amadei[2], Esther Kimmle[2], Mariam Veschgini[2], Philipp Linke[2], Mariana Sontag-González[2,5], Jutta Tennigkeit[1], Anthony Ho[3,4], Suat Özbek[1], Motomu Tanaka[2,4]
[1]Centre for Organismal Studies, Department of Molecular Evolution and Genomics, Heidelberg University, 69120, Heidelberg, Germany.; [2]Physical Chemistry of Biosystems, Institute of Physical Chemistry, Heidelberg University, 69120, Heidelberg, Germany.; [3]Department of Medicine V, University of Heidelberg, 69120, Heidelberg, Germany; [4]Center for Integrative Medicine and Physics, Institute for Advanced Study, Kyoto University, 606-8501, Kyoto, Japan; [5]School of Earth and Environmental Sciences, Science Medicine and Health, University of Wollongong, NSW 2522, Wollongong, Australia.; federico.amadei90@gmail.com

(Edit Contribution Details, Abstract ID: 439)

1:12pm - 1:15pm

Carbon composite monopole antenna: fabrication and characterization at microwaves

Xavier CASTEL[1], Lilia MANAC'H[1], Mohamed HIMDI[1], Patrick PARNEIX[2]
[1]Université de Rennes 1, France; [2]Naval Group, France; xavier.castel@univ-rennes1.fr

(Edit Contribution Details, Abstract ID: 141)

1:15pm - 1:18pm

Development of flexible semiconductor polymer solar cell capable of environment-friendly process by improving solubility using random arrangement of donor-acceptor structure

Daehwan Lee, Junwoo Lee, Seung Un Ryu, Taiho Park
POSTECH, Korea, Republic of (South korea); dhlee7005@postech.ac.kr

(Edit Contribution Details, Abstract ID: 146)

1:18pm - 1:21pm

Improved Electrical Conductivity of Carbon Fiber Composites for Lightning Strike Protection through Premixing Epoxy Resin with Carbon Nanotube Particles

Wenhua Lin[1], Yousefpour Kamran[2], Chanyeop Park[2], Santanu Kundu[3,4], Dennis Smith[4,5], Yeqing Wang[1,4]
[1]Department of Aerospace Engineering, Mississippi State University, Mississippi State, MS 39762 USA; [2]Department of Electrical and Computer Engineering, Mississippi State University, Mississippi State, MS 39762 USA; [3]Dave C. Swalm School of Chemical Engineering, Mississippi State University, Mississippi State, MS 39762 USA; [4]Advanced Composites Institute, Mississippi State

University, Starkville, MS 39759 USA; [5]Department of Chemistry, Mississippi State University, Mississippi State, MS 39762 USA; yw253@msstate.edu

(Edit Contribution Details, Abstract ID: 405)

1:21pm - 1:24pm

Monolithic Inkjet Printed Multilayer Thin-film Flexible Electronics Fabrication of Conductive, Resistive, and Dielectric Polymers

Bashir Morshed[1], Tomoko Fujiwara[2], Robert W. Hewitt[2], Frank Andrasik[2]
[1]Texas Tech University, Lubbock, TX, United States of America; [2]University of Memphis, Memphis, TN, United States of America; bmorshed@ttu.edu

(Edit Contribution Details, Abstract ID: 869)

1:24pm - 1:27pm

A magnetic chiral dispersive Fresnel lens with controllable foci and dual images

Monish Chatterjee[1], Nagi Buaossa[2]
[1]University of Dayton, United States of America; [2]University of Dayton, United States of America; mchatterjee1@udayton.edu

(Edit Contribution Details, Abstract ID: 587)

1:27pm - 1:30pm

A Multi-Channel Fast Impedance Spectroscopy Instrument for the Quality Assurance of Electric Double Layer Capacitors

Woojin Choi
Soongsil University, Korea, Republic of (South Korea); cwj777@ssu.ac.kr

(Edit Contribution Details, Abstract ID: 589)

1:30pm - 1:33pm

An Efficient Green Mirror-less laser from Conjugated Polymer (PFO-co-PPV-MEHB) in Solution

MAMDUH JAMIL ALJAAFREH, Saradh Prasad rajendra, Mohamad Saleh AlSalhi
king saud university, Saudi Arabia; mamdohjaafreh2009@gmail.com

(Edit Contribution Details, Abstract ID: 598)

1:33pm - 1:36pm

Bio-sourced composites for anechoic chamber absorbers

Ratiba Benzerga[1], Aladdin Kabalan[1,2], Chloé Méjean[1], Antoine Chauloux[2], Ala Sharaiha[1]
[1]IETR, France; [2]CEA Gramat, France; ratiba.benzerga@univ-rennes1.fr

(Edit Contribution Details, Abstract ID: 937)

1:36pm - 1:39pm

Carbon/ReS2 composites as an attractive electrode materials in electrochemical capacitors

Maciej Tobis, Masoud Foroutan Koudahi, Elzbieta Frackowiak
Institute of Chemistry and Technical Electrochemistry, Poznan University of Technology, Poznan, Poland; maciej.p.tobis@doctorate.put.poznan.pl

(Edit Contribution Details, Abstract ID: 961)

1:39pm - 1:42pm

Combined method of thermal stabilization of electronic and energy devices based on graphene hybrid nanostructures with nontrivial capillary hydrodynamics and efficient evaporation

Alex Dmitriev
National Research University “MPEI”, Russian Federation; asdmitriev@mail.ru

(Edit Contribution Details, Abstract ID: 831)

1:42pm - 1:45pm

Effects of Reinforcements on 3D Printed Polymer-Derived SiOC

Ekaterina Stonkevitch, Mark R. O'Masta, Kayleigh A. Porter, Phuong P. Bui, Zak C. Eckel, Tobias A. Schaedler
HRL Laboratories LLC, United States of America; estonkevitch@hrl.com

(Edit Contribution Details, Abstract ID: 724)

1:45pm - 1:48pm

Electrical Bistablity studies on D.C sputtered CdZnTe (CZT) Thin films

rajesh govindaraj
fcfm, university of chile, Chile; rajesh.govind88@gmail.com

(Edit Contribution Details, Abstract ID: 597)

1:48pm - 1:51pm

Glass foam composites for high power microwave absorption

Ratiba Benzerga[1], Vincent Laur[2], Aladdin Kabalan[1], Laurent Le Gendre[1], Ronan Lebullenger[3], Ala Sharaiha[1]
[1]IETR, France; [2]Lab-STICC, France; [3]ISCR, France; ratiba.benzerga@univ-rennes1.fr

(Edit Contribution Details, Abstract ID: 781)

1:51pm - 1:54pm

Hydrogel nanocomposite photoactuator for direct optical to mechanical energy conversion obtained by ionizing irradiation

Nikolina Nikolic, Jelena Spasojevic, Aleksandra Radosavljevic, Vesna Vodnik, Zorica Miomir Kacarevic-Popovic
Vinca Institute of Nuclear Sciences, Serbia; zkacar@vinca.rs

(Edit Contribution Details, Abstract ID: 550)

1:54pm - 1:57pm

Layer models in predicting of Composites' deformability

Alexander Korolev, Maxim Mishnev
South Ural State University, Russian Federation; korolevas@susu.ac.ru

(Edit Contribution Details, Abstract ID: 1003)

1:57pm - 2:00pm

Light-Induced Changes in the Electronic Structure of the Metal/Molecule Junctions: A Computational Modeling of Real and Designed Molecules

Vladyslav Savchenko[1], Olga Guskova[1,2]
[1]IPF Dresden, Dresden, Germany; [2]DCMS, Dresden University of Technology, Dresden, Germany; savchenko@ipfdd.de

(Edit Contribution Details, Abstract ID: 870)

2:00pm - 2:03pm

Mode Distribution and Spectral Characteristics of Chiral Thin Film Resonators under p- and s-Polarization

Monish Chatterjee[1], Akram Muntaser[2]
[1]University of Dayton, United States of America; [2]University of Dayton, United States of America; mchatterjee1@udayton.edu

(Edit Contribution Details, Abstract ID: 169)

2:03pm - 2:06pm

Biodegradation of PHBV Ternary Biocomposites in Different Environments

Pavel Brdlík, Martin Borůvka, Luboš Běhálek, Petr Lenfeld
Technical University of Liberec, Czech Republic; pavel.brdlik@tul.cz

(Edit Contribution Details, Abstract ID: 1021)

2:06pm - 2:09pm

Chiral plasmonics with freezing-directed self-assembly of nanoparticles

Wiktor Lewandowski
University of Warsaw, Poland; wlewandowski@chem.uw.edu.pl

(Edit Contribution Details, Abstract ID: 1024)

2:09pm - 2:12pm

A New Strategy for Efficient Preparation of Helical Assemblies of Gold Nanoparticles

Maciej Bagiński[1], Martyna Tupikowska[1], Guillermo González-Rubio[2], Wiktor Lewandowski[1]
[1]Faculty of Chemistry, University of Warsaw, Poland; [2]BioNanoPlasmonic Laboratory, CIC ciomaGUNE, Spain;
mbaginski@chem.uw.edu.pl

(Edit Contribution Details, Abstract ID: 1033)

2:12pm - 2:15pm

Reconfigurable plasmonic systems based on liquid crystalline nanoparticles

Martyna Tupikowska[1], Maciej Bagiński[1], Guillermo González-Rubio[2], Wiktor Lewandowski[1]

[1]University of Warsaw, Faculty of Chemistry, Poland; [2]BioNanoPlasmonic Laboratory, CIC biomaGUNE, Spain; mtupikowska@chem.uw.edu.pl

(Edit Contribution Details, Abstract ID: 989)

2:15pm - 2:18pm

Investigation of Bioengineering Composite Bone Scaffolds

Anila Teresa Jennet RAJESH KANNA, Zachary Yammer, Kimberly Chennault

Rutgers, the State University of New Jersey, United States of America; cookchen@soe.rutgers.edu

(Edit Contribution Details, Abstract ID: 605)

2:18pm - 2:21pm

Gas-phase nitrogen doping of monolithic TiO2 nanoparticle-based aerogels for efficient visible-light-driven photocatalytic H2 production

Junggou Kwon[1], Kyoungjun Choi[2], Murielle Schreck[1], Tian Liu[1], Elena Tervoort[1], Markus Niederberger[1]

[1]Laboratory for Multifunctional Materials, Department of Materials, ETH Zurich, Switzerland; [2]Department of Mechanical and Process Engineering, ETH Zurich, Switzerland; junggou.kwon@mat.ethz.ch

FCM-4: Functional Composite Materials

Time: Thursday, 19/Aug/2021: 3:20pm - 6:00pm · *Virtual location:* AU 2412
Session Chair: Xiaowu (Shirley) Tang

(Edit Contribution Details, Abstract ID: 419)

3:20pm - 3:30pm

Thin porous PDMS membrane prepared by phase separation method and its applications for cell culture

Jin Hong Yap[1], Hong Zhang[2,3], Yosuke Okamura[2,3], Hiroshi Kimura[1,3]
[1]Department of Mechanical Engineering, Tokai University, Kanagawa, Japan; [2]Department of Applied chemistry, Tokai University, Kanagawa, Japan; [3]Micro/Nano Technology Center, Tokai University, Kanagawa, Japan; jhyappu@gmail.com

(Edit Contribution Details, Abstract ID: 450)

3:30pm - 3:40pm

Bioinspired nacre-like composites as the next-generation of materials for safeguarding stone heritage

Aranzazu Sierra Fernandez[1,2], D. Howard Fairbrother[1], Rafael Fort[2]
[1]Johns Hopkins University (JHU), United States of America; [2]Geosciences Institute (CSIC, UCM), Madrid, Spain; aferna48@jhu.edu

(Edit Contribution Details, Abstract ID: 155)

3:40pm - 3:50pm

Multifunctional Bioactive Hybrid Gelatin Microspheres Carrying Bacteriophages, bFGF and Aggregates of Mesenchymal Stem Cells

Farzaneh Moghtader[1,2,3], Erhan Piskin[1], Erdal Karaoz[2], Yasuhiko Tabata[3]
[1]NanoBMT: Nanobiyomedtek Biyomedikal ve Biyoteknoloji San.Tic.Ltd.Sti., Cyberpark-Bilkent, Ankara, Turkey; [2]Stem Cells and Tissue Engineering Division, Institute of Health, Istinye University, Istanbul, Turkey; [3]Laboratory of Biomaterials, Department of Regeneration Science and Engineering Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan; farzaneh_moghtader@yahoo.com

(Edit Contribution Details, Abstract ID: 212)

3:50pm - 4:00pm

Multiscale simulation on the mechanism of debonding defect detection for concrete-filled steel tubes with piezoelectric materials

Bin Xu[1,2], Jiang Wang[1], Hongbing Chen[3], Y.L. Mo[4]
[1]Huaqiao University, China, People's Republic of; [2]Key Laboratory for Intelligent Infrastructure and Monitoring (Huaqiao University), Xiamen 361021, China; [3]Department of Civil Engineering, Tsinghua University, Beijing 100084, China; [4]Department of Civil and Environmental Engineering, University of Houston, Houston TX 77204-4006, USA; binxu@hqu.edu.cn

(Edit Contribution Details, Abstract ID: 261)

4:00pm - 4:10pm

Sensing of Lead Using Graphene Based Chemiresistive Sensor

Madhurima Deb[1], Sumit Saxena[1], Rajdip Bandyopadhyaya[2], Shobha Shukla[1]
[1]Nanostructures Engineering and Modeling Laboratory, Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, Powai, Mumbai, MH 400076, India; [2]Department of Chemical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai, MH 400076, India; 174360001@iitb.ac.in

(Edit Contribution Details, Abstract ID: 875)

4:10pm - 4:20pm

A vibration assisted nano-syringe structure using Carbon Nano Tube

Se Young Kim, Hae Gon Lee, Joon Sang Lee
Department of Mechanical Engineering, Yonsei University, Seoul 03722, Korea, Korea, Republic of (South Korea); jay328@naver.com

(Edit Contribution Details, Abstract ID: 663)

4:20pm - 4:30pm

Application of new TF-SPME coating materials based on deep eutectic solvents for preconcentration of trace amounts of organic contaminants in environmental sample analysis

Justyna Werner, Agnieszka Zgoła-Grześkowiak
Poznan Univerity of Technology, Poland; justyna.werner@put.poznan.pl

(Edit Contribution Details, Abstract ID: 1000)

4:30pm - 4:40pm

Effect of Composite Filler on Mechanical Properties and Material Homogeneity in Solid Tire Vulcanization for Trolly

Nasruddin Nasruddin, Popy Marlina Marlina

Palembang Institute for Industrial Research and Standardization, Ministry of Industry-Republic of Indonesia, Indonesia; nas.bppi@gmail.com

(Edit Contribution Details, Abstract ID: 655)

4:40pm - 4:50pm

Evaluation of Polymeric Ionic Liquids-Chitosan Beads as An Innovative Adsorbent to Trace Multitarget Analytes from Waste water

Saira Bibi

Hazara University Mansehra, Pakistan, Pakistan; sairabushi@gmail.com

(Edit Contribution Details, Abstract ID: 939)

4:50pm - 5:00pm

High frequency response of biomass-derived carbon in aqueous electrochemical capacitor

Adam Slesinski[1], Justyna Piwek[1], Krzysztof Fic[1], Alen Vizintin[2], Blaz Tratnik[2], Maria Bernechea[3], Robert Dominko[2], Elzbieta Frackowiak[1]

[1]Poznan University of Technology, Poland; [2]National Institute of Chemistry, Ljubljana, Slovenia; [3]CSIC-Universidad de Zaragoza Campus, Zaragoza, Spain; elzbieta.frackowiak@put.poznan.pl

(Edit Contribution Details, Abstract ID: 821)

5:00pm - 5:10pm

Synthesis and characterization of a new highly absorbent material based on carboxymethyl guar gum as an alternative to conventional absorbents in disposable hygiene products

Yahya Bachra[1], Ayoub Grouli[1], Fouad Damiri[1], Loubna Najemi[1], Mohammed Berrada[1], Mohammed Talbi[2]

[1]Laboratory of Biomolecules and Organic Synthesis (BioSynthO), Department of Chemistry, Faculty of Sciences Ben M'Sick, University Hassan II of Casablanca, Casablanca, Morocco; [2]Laboratory of Analytical Chemistry and Physical Chemistry of Materials - Faculty of Sciences Ben M'Sick, University Hassan II of Casablanca, Morocco; yahya.bachra-etu@etu.univh2c.ma

(Edit Contribution Details, Abstract ID: 984)

5:10pm - 5:20pm

Synthesis and characterization of hydroxyapatite-reinforced chitosan composite hydrogel for bone tissue regeneration

Ayoub Grouli, Yahya Bachra, Fouad Damiri, Mohammed Talbi, Mohammed Berrada

University hassan II casablanca Faculty of sciences Ben M'sik, Morocco; grouliayoub@gmail.com

(Edit Contribution Details, Abstract ID: 694)

5:20pm - 5:30pm

STUDY OF MECHANICAL AND CHEMICAL PROPERTIES STABILITY OF INNER TUBES EXPOSED TO GAMMA RADIATION

Sandra Reagina Scagliusi, Elizabeth C. L. Cardoso, Fernando Caviquioli, Ricardo M. Salles, Ademar B. Lugao

IPEN, Brazil; scagliusi@usp.br

(Edit Contribution Details, Abstract ID: 802)

5:30pm - 5:40pm

Design of a lightweight fiberglass stalk for a 'fan palm' camouflaged cellular tower

Yashwantraj Seechurn, Shuntanu Muddoo

University of Mauritius, Mauritius; y.seechurn@uom.ac.mu

EPMM-4: Electronic, Photonic and Magnetic Materials

Time: Thursday, 19/Aug/2021: 3:20pm - 6:40pm · *Virtual location:* AU 2410
Session Chair: Yang-Ki Hong

(Edit Contribution Details, Abstract ID: 346)

3:20pm - 3:30pm

Spectroscopic and Magneto-optic Properties of Tb3+ and Mn2+-doped CdS Q-dots in Silicate Glass for Faraday Rotation

Rajendra P Panmand[1], Natasha Petrou[2], Mohnad El-Murish[3], Shashikant P Tekale[4], Krishna D Darware[5], J G Addis[6], Suresh Gosavi[7], Bharat B Kale[8], Animesh Jha[9]

[1]SCAPE, Faculty of EPS, University of Leeds, Leeds LS2 9JT, United Kingdom; [2]SCAPE, Faculty of EPS, University of Leeds, Leeds LS2 9JT, United Kingdom; [3]Centre for Materials for Electronics Technology (C-MET), Ministry of Electronics and Information Technology (MeitY), Off Pashan Road, Panchawati, Pune, 411008, India; [4]Department of Physics, Savitribai Phule Pune University (SPPU), Pune, 411007, India; [5]Centre for Materials for Electronics Technology (C-MET), Ministry of Electronics and Information Technology (MeitY), Off Pashan Road, Panchawati, Pune, 411008, India; [6]SCAPE, Faculty of EPS, University of Leeds, Leeds LS2 9JT, United Kingdom; [7]Department of Physics, Savitribai Phule Pune University (SPPU), Pune, 411007, India; [8]Centre for Materials for Electronics Technology (C-MET), Ministry of Electronics and Information Technology (MeitY), Off Pashan Road, Panchawati, Pune, 411008, India; [9]SCAPE, Faculty of EPS, University of Leeds, Leeds LS2 9JT, United Kingdom; a.jha@leeds.ac.uk

(Edit Contribution Details, Abstract ID: 490)

3:30pm - 3:40pm

Physical Properties of Nano-crystalline TiO2 thin films prepared by Thermal Evaporation

Mohamed Aslam Manthrammel[1], Amanullah Fatehmulla[2], Eman A Alghamdi[2], Abdullah M Aldhafiri[2]

[1]Department of Physics, College of Science, King Khalid University, Abha, Saudi Arabia; [2]Department of Physics and Astronomy, College of Science, P. O. Box 2455, King Saud University. Riyadh -11451, Saudi Arabia; aman@ksu.edu.sa

(Edit Contribution Details, Abstract ID: 184)

3:40pm - 3:50pm

Organic Functional Materials Derived from Rigid Ladder-Type Molecules and Macromolecules

Lei Fang

Texas A&M University, United States of America; fang@chem.tamu.edu

(Edit Contribution Details, Abstract ID: 222)

3:50pm - 4:00pm

Magnetic impregnation on K0.5Na0.5NbO3 through multiferroic doping

Umi Nuraini[1], Fitriana Fitriana[1], Malik Anjleh Baqiya[1], Pinit Kidkunthod[2], Masatsune Kato[3], Suasmoro Suasmoro[1]

[1]Institute of Technology 'Sepuluh Nopember' Surabaya, Indonesia; [2]Synchrotron Light Research Institute, Nakhon Rattchasima, Thailand; [3]Faculty of Engineering, Tohoku University, Sendai, Japan; suasm@its.ac.id

(Edit Contribution Details, Abstract ID: 908)

4:00pm - 4:10pm

Functional property of adjacent narrow thin film strips with inclined uniaxial magnetic anisotropy

Tomoo Nakai

Industrial Technology Institute, Miyagi Prefectural Government, Japan; nakai-to693@pref.miyagi.lg.jp

(Edit Contribution Details, Abstract ID: 730)

4:10pm - 4:20pm

Elastic properties assessment in the multiferroic BiFeO3 by pump and probe method

Pierre Hemme[1], Philippe Djemia[2], Pauline Rovillain[3], Yann Gallais[1], Alain Sacuto[1], Anne Forget[4], Dorothée Colson[4], Eric Charon[3], Bernard Perrin[3], Laurent Belliard[3], Maximilien Cazayous[1]

[1]Laboratoire Matériaux et Phénomènes Quantiques UMR 7162 CNRS, Université de Paris, Paris, France; [2]Laboratoire des Sciences des Procédés et des Matériaux UPR-CNRS 3407, Université Sorbonne Paris Nord, Villetaneuse France; [3]Sorbonne Université, CNRS UMR 7588, Institut des Nanosciences de Paris, Paris, France; [4]Service de Physique de l'Etat Condensé, DSM/DRECAM/SPEC, CEA Saclay, Gif-sur-Yvette, France; maximilien.cazayous@u-paris.fr

(Edit Contribution Details, Abstract ID: 164)

4:20pm - 4:30pm

Observation of enhanced conductivity in n type nano crystalline diamond implanted with nitrogen and phosphorus

Dhruba Das, Ramachandra Rao M S
IIT Madras Chennai, India; msrrao@iitm.ac.in

(Edit Contribution Details, Abstract ID: 524)

4:30pm - 4:40pm

Revisiting Mossbauer-Spectroscopy Characterization of Magnetic Materials

Yang-Ki Hong[1], Minyeong Choi[1], Hoyun Won[1], Adam Hauser[2], Jung-Kun Lee[3], Yoshitaka Kitamoto[4]
[1]Department of Electrical & Computer Engineering, the University of Alabama, Tuscaloosa, AL 35487, USA; [2]Department of Physics & Astronomy, the University of Alabama, Tuscaloosa, AL 35487, USA; [3]Department of Materials Science & Engineering, University of Pittsburgh, Pittsburgh, PA 15261, USA; [4]Department of Materials Science and Engineering, School of Materials and Chemical Technology, Tokyo Institute of Technology, Midori-ku, Yokohama, 226-8503, Japan; ykhong@eng.ua.edu

(Edit Contribution Details, Abstract ID: 206)

4:40pm - 4:50pm

A New Boundary Element Formulation and Analysis of Fractional-Order Three-Temperature Nonlinear Generalized Thermoelastic Problems of Functionally Graded Magnetic Thermoelectric materials

Mohamed Abdelsabour Fahmy
Jamoum University College, Umm Al-Qura University, Saudi Arabia; maselim@uqu.edu.sa

(Edit Contribution Details, Abstract ID: 556)

4:50pm - 5:00pm

Progresses in Developing Micro-Multilayer Multifunctional Electrical Insulation (MMEI) System for High Voltage Applications

Euy-sik Eugene Shin
Universities Space Research Association (USRA), United States of America; euy-sik.e.shin@nasa.gov

(Edit Contribution Details, Abstract ID: 600)

5:00pm - 5:15pm

Strainoptronics: 2D materials with a twist

Volker J. Sorger
George Washington University; sorger@gwu.edu

(Edit Contribution Details, Abstract ID: 163)

5:15pm - 5:25pm

WGM lasing from Sm 3+ ZnO micro spheres fabricated by laser ablation technique

Fabitha K, Ramachandra Rao M S
IIT Madras Chennai, India; msrrao@iitm.ac.in

(Edit Contribution Details, Abstract ID: 545)

5:25pm - 5:35pm

Elastic, Magnetothermal and Magnetocaloric Effect of YFe3 and HoFe3 Compounds

Mohammed Said Mohammed Abu-Elmagd[1], Fatema Z. Mohammad[2], Tareq Hammad[3], Ahmed Abdel- Kader[3], Nesreen El-Shamy[4], Sherif Yehia[3], Samy H. Aly[2]
[1]Higher Institute of Engineering, Shourok Academy, Egypt; [2]Faculty of Science, Damietta University, New Damietta, Egypt; [3]Faculty of Science, Helwan University, Cairo, Egypt; [4]Faculty of Women, Ain Shams University, Cairo, Egypt; m.said@sha.edu.eg

(Edit Contribution Details, Abstract ID: 645)

5:35pm - 5:45pm

General Trends in Core-shell Preferences for Bimetallic Nanoparticles

Namsoon Eom, Maria Messing, Jonas Johansson, Knut Deppert
Lund University, Sweden; namsoon.eom@ftf.lth.se

(Edit Contribution Details, Abstract ID: 919)

5:45pm - 5:55pm

Imperceptible energy harvesting device and biomedical sensor based on ultraflexible ferroelectric transducers and organic diodes

Barbara Stadlober[1], Andreas Petritz[1,2], Esther Karner-Petritz[1,2], Takafumi Uemura[2,3], Philipp Schäffner[1], Teppei Araki[2,3], Tsuyoshi Sekitani[2,3]
[1]JOANNEUM RESEARCH, Austria; [2]Institute of Scientific and Industrial Research, Osaka University. Japan; [3]AIST Advanced Photo-Bio Lab, Photonics Center Osaka University, Japan; barbara.stadlober@joanneum.at

(Edit Contribution Details, Abstract ID: 967)

5:55pm - 6:05pm

Terbium doping and luminescent activation effects on the optical and luminescent properties of aluminum zinc oxide thin films

Paul Llontop[1], Miguel Piñeiro[1], Alvaro Tejada[1,2], Lars Korte[2], Jorge Andrés Guerra[1]
[1]Departmento de Ciencias, Sección Física, Pontificia Universidad Católica del Perú, Peru; [2]Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institut für Silizium-Photovoltaik, 12489, Berlin, Germany; p.llontop@pucp.edu.pe

(Edit Contribution Details, Abstract ID: 679)

6:05pm - 6:20pm

The Quest for new Thin Films and Heterostructures Multiferroic at Room Temperature

Alain PIGNOLET
INRS, Centre Énergie Matériaux Télécommunications, Canada; pignolet@emt.inrs.ca

(Edit Contribution Details, Abstract ID: 826)

6:20pm - 6:30pm

Three-dimensional plasmon-generating nanostructure for surface- enhanced Raman scattering and plasmon-enhanced fluorescence detection

Yung-Chieh Chan, Gou-Jen Wang, Cheng-Chung Chang
National Chung-Hsing University, Taiwan; ccchang555@dragon.nchu.edu.tw

Key-3: Keynote Session-3

Time: Friday, 20/Aug/2021: 8:00am - 10:00am · *Virtual location:* Theatre
Session Chair: Richard B. Kaner

(Edit Contribution Details, Abstract ID: 106)

8:00am - 8:40am

Water-based and biocompatible 2D Inks: from Fully Inkjet Printed Heterostructures to Biomedical Applications

Cinzia Casiraghi
univ of Manchester, United Kingdom; cinzia.casiraghi@manchester.ac.uk

(Edit Contribution Details, Abstract ID: 1052)

8:40am - 9:20am

Stimuli-Responsive Nanoparticles Controlled by Supramolecular Machines and Caps for Biomedical Imaging and Drug Delivery

Jeffrey I. Zink
Department of Chemistry and Biochemistry University of California, Los Angeles (UCLA) Los Angeles, California 90095 USA; zink@g.ucla.edu

EPMM-INV-1: Electronic, Photonic and Magnetic Materials

Time: Friday, 20/Aug/2021: 8:00am - 10:00am · *Virtual location:* AU 2410
Session Chair: Qibing Pei

(Edit Contribution Details, Abstract ID: 782)

8:00am - 8:15am

Van der Waals heterostructure by stacking engineering

Bin Xiang
University of Science and Technology of China, China, People's Republic of; binxiang@ustc.edu.cn

(Edit Contribution Details, Abstract ID: 789)

8:15am - 8:30am

Van der Waals structures make near-IR quantum cascade lasers

Hai-Yao Deng
Cardiff University, United Kingdom; DengH4@cardiff.ac.uk

(Edit Contribution Details, Abstract ID: 991)

8:30am - 8:45am

Atomic Imaging Functional Heterostructures and Interfaces by Phasing Coherent Bragg Rods for Quantum Materials

Hua Zhou
Advanced Photon Source, Argonne National Laboratory, United States of America; hzhou@anl.gov

(Edit Contribution Details, Abstract ID: 898)

8:45am - 9:00am

A fistful of chemico-physical parameters crucial for 1H-NMR relaxation: the effect of size, shape and coating in iron oxides core-shell nanoparticles

Paolo Arosio[1], Francesco Orsini[1], Manuel Mariani[2], Claudia Innocenti[3,4,5], Claudio Sangregorio[3,4,5], Alessandro Lascialfari[2]
[1]Dipartimento di Fisica - INFN and INSTM RU, Università degli Studi di Milano, 20133 Milano, Italy; [2]Dipartimento di Fisica and INFN, Università degli Studi di Pavia, 27100 Pavia, Italy; [3]Dipartimento di Chimica, Università di Firenze and INSTM, 50019 Sesto Fiorentino (FI), Italy; [4]ICCOM-CNR, 50019 Sesto Fiorentino (FI), Italy; [5]INFN, Sezione di Firenze, 50019 Sesto Fiorentino (FI), Italy.; paolo.arosio@unimi.it

(Edit Contribution Details, Abstract ID: 750)

9:00am - 9:15am

Controlled concentration and transportation of nanoparticles at the interface between a smooth substrate and droplet

JUNHUI HU
Nanjing University of Aeronautics & Astronautics, China, People's Republic of; ejhhu@nuaa.edu.cn

(Edit Contribution Details, Abstract ID: 596)

9:15am - 9:30am

Carbon fibers based epoxy foam composites: from dielectric characterization to electromagnetic absorption application

Ratiba Benzerga[1], Chloé Méjean[1], Laura Pometcu[1,2], Philippe Pouliguen[2], Ala Sharaiha[1]
[1]IETR, France; [2]DGA/DS; ratiba.benzerga@univ-rennes1.fr

(Edit Contribution Details, Abstract ID: 736)

9:30am - 9:45am

Transformative piezoelectric enhancement of electrospun P(VDF-TrFE) by nanoscale dimensional reduction and their potential bio-applications

Youyi Tai[1], Gerardo Ico[1], Karen Low[1], Nosang Myung[2], Jin Nam[1]
[1]University of California, Riverside, United States of America; [2]University of Notre Dame, United States of America; jnam@engr.ucr.edu

(Edit Contribution Details, Abstract ID: 876)

9:45am - 10:00am

Development of High-Frequency β-Ga2O3 Field-Effect Transistors Aiming for Applications to Harsh-Environment Electronics

Masataka Higashiwaki, Takafumi Kamimura

National Institute of Information and Communications Technology, Japan; mhigashi@nict.go.jp

(Edit Contribution Details, Abstract ID: 526)

10:00am - 10:15am

Single nanowire chemoresistor as a gas sensor to assess food quality

Matteo Tonezzer[1,2]

[1]Italian National Research Council, Italy; [2]Fondazione Edmund Mach; matteo.tonezzer@cnr.it

EPMM-INV-2: Electronic, Photonic and Magnetic Materials

Time: Friday, 20/Aug/2021: 8:00am - 10:00am · *Virtual location:* AU 2412
Session Chair: Rizwan Raza
Session Chair: Mohsin Ali Badshah

(Edit Contribution Details, Abstract ID: 940)

8:00am - 8:15am

Glial interfaces: biomaterials, devices and approaches to trigger and monitor the "other brain".

Emanuela Saracino[1], Roberta Fabbri[1], Luca Maiolo[2], Emanuele Treossi[1], Diletta Spennato[1], Tamara Posati[1], Vincenzo Guarino[3], Annalisa Convertino[2], Grazia Paola Nicchia[4], Vincenzo Palermo[1], Michele Muccini[5], Luigi Ambrosio[3], Roberto Zamboni[1], Valentina Benfenati[1]

[1]Consiglio Nazionale delle Ricerche, Italy; [2]Consiglio Nazionale delle Ricerche, IMM, Italy; [3]Consiglio Nazionale delle Ricerche, IPCB, Italy; [4]University of Bari, Bari, Italy; [5]Consiglio Nazionale delle Ricerche, ISMN, Italy; valentina.benfenati@isof.cnr.it

(Edit Contribution Details, Abstract ID: 938)

8:15am - 8:30am

Inducing room temperature Superparamagnetism in iron, manganese and cobalt oxide Spinel nanostructures by Nickel incorporation

Jose Luis Ortíz-Quiñonez, Umapada Pal

Autonomous University of Puebla, Mexico; upal@ifuap.buap.mx

(Edit Contribution Details, Abstract ID: 965)

8:30am - 8:45am

Atomic-scale surface characterization of (opto)electronic III-V semiconductor nanowire devices

Rainer Timm

Lund University, Sweden; rainer.timm@sljus.lu.se

(Edit Contribution Details, Abstract ID: 982)

8:45am - 9:00am

Color Tuning of Single-Fluorophore Emission via Polymerization-Mediated Charge Transfer

Yinyin Bao

Institute of Pharmaceutical Sciences, Department of Chemistry and Applied Biosciences, ETH Zürich, Switzerland; yinyin.bao@pharma.ethz.ch

(Edit Contribution Details, Abstract ID: 867)

9:00am - 9:15am

Detection of small targets using heteroligand-funtionalized plasmonic particles.

Amir Syahir[1,2], Ku Syaridatul Irma[1,2], Nur Khaliesah Jamadon[1,2], Asilah Ahmad Tajudin[1,3]

[1]Nanobiotechnology Research Group, Universiti Putra Malaysia, Malaysia; [2]Department of Biochemistry, Faculty of Biotechnology and Molecular Biosciences, Universiti Putra Malaysia, Malaysia; [3]Department of Microbiology, Faculty of Biotechnology and Molecular Biosciences, Universiti Putra Malaysia; amirsyahir@upm.edu.my

(Edit Contribution Details, Abstract ID: 688)

9:15am - 9:30am

Emerging Applications of Boron Nitride Nanotubes for Advanced Electronics and Bio-imaging

Yoke Khin Yap

Michigan Technological University, United States of America; ykyap@mtu.edu

(Edit Contribution Details, Abstract ID: 721)

9:30am - 9:45am

Magneto responsive surfaces for manipulation of light and liquids

Matija Lovšin[1], Gaia Kravanja[2], Inna Belyaeva[3], Luka Hribar[2], Gašper Glavan[3], Matija Jezeršek[2], Mikhail Shamonin[3], Irena Drevensek-Olenik[1,4]

[1]University of Ljubljana, Faculty of Mathematics and Physics, Jadranska 19, SI-1000, Ljubljana, Slovenia; [2]University of Ljubljana, Faculty of Mechanical Engineering, Aškerčeva 6, SI-1000, Ljubljana, Slovenia,; [3]East Bavarian Centre for Intelligent Materials (EBACIM), Ostbayerische Technische Hochschule (OTH) Regensburg, Seybothstr. 2, 93053 Regensburg, Germany; [4]J. Stefan Institute, Jamova 39, SI-1000, Ljubljana, Slovenia; irena.drevensek@ijs.si

(Edit Contribution Details, Abstract ID: 553)

9:45am - 10:00am

Neutron scattering on yttrium iron garnet under ultrasound injection

Shin-ichi Shamoto[1,2,3,4], Mitsuhiro Akatsu[5], Masato Matsuura[1], Jun'ichi Ieda[3]

[1]Comprehensive Research Organization for Science and Society, Tokai, 319-1106, Japan; [2]National Cheng Kung University, Tainan 701, Taiwan; [3]Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, 319-1195, Japan; [4]Meson Science Laboratory, RIKEN, Wako, Saitama 351-0198, Japan; [5]Department of Physics, Niigata University, Niigata, Niigata 950-2181, Japan; s_shamoto@cross.or.jp

EPMM-INV-3: Electronic, Photonic and Magnetic Materials

Time: Friday, 20/Aug/2021: 10:20am - 12:30pm · *Virtual location:* AU 2410
Session Chair: Rainer Timm

(Edit Contribution Details, Abstract ID: 804)

10:20am - 10:35am

A non-trivial view of the metal-molecule electron transfer: Chemical, electrical and photonic factors

Samuel Valdivia, Daniel Aranda, Francisco J. Avila-Ferrer, Isabel López-Tocón, Juan Soto, Juan Carlos Otero
Universidad de Málaga, Andalucia Tech, Departamento de Química Física,E29071, Málaga,Spain; jc_otero@uma.es

(Edit Contribution Details, Abstract ID: 667)

10:35am - 10:50am

Experimental Observation and Theoretical Modelling of Light Activated Resistance Switching in Single ZnO Nanowire

Justin Derickson Derickson[1], Kausiksankar Das[1], Benjamin Barnes[2]
[1]University of Maryland Eastern Shore, MD, USA; [2]University of Maryland College Park, MD, USA; kdas@umes.edu

(Edit Contribution Details, Abstract ID: 625)

10:50am - 11:05am

Noninvasive analyses for brain disease by monitoring angle-coherent spectra from photonic quantum ring laser of whispering gallery modes

O'Dae Kwon, Gilsang Yoon, Jeongsoo Lee, Yoonyoung Chung
POSTECH, Korea, Republic of (South Korea); odkwon@postech.ac.kr

(Edit Contribution Details, Abstract ID: 838)

11:05am - 11:20am

Overview of spark plasma sintering of functional ceramics

JACQUES NOUDEM[1], Yiteng XING[1], David SOURIOU[1], Pierre BERNSTEIN[1], Sophie RIVOIRARD[2]
[1]Normandie Univ, ENSICAEN, UNICAEN, CNRS, CRISMAT, Caen, France; [2]Université Grenoble Alpes, CNRS, Institut Néel, Grenoble, France; jacques.noudem@ensicaen.fr

(Edit Contribution Details, Abstract ID: 748)

11:20am - 11:35am

Neural Probes and Through-Silicon-Via Interposers: Utilizing High Aspect Ratio Carbon Nanotube Arrays

Guohai Chen[1], Rajyashree Sundaram[1], Atsuko Sekiguchi[1], Robert C. Davis[2], Kenji Hata[1], Don N. Futaba[1]
[1]CNT-Application Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan; [2]Department of Physics and Astronomy, Brigham Young University, USA; guohai-chen@aist.go.jp

(Edit Contribution Details, Abstract ID: 565)

11:35am - 11:50am

Materials processes and characterization of rare earth doped layered ferroelectric ceramics for random access memory devices

Harihara Venkataraman Balasubramanian
BITS - PILANI, Hyderabad Campus, India; tut.hari@gmail.com

(Edit Contribution Details, Abstract ID: 601)

11:50am - 12:05pm

Investigation of PMMA/C60 nanocomposites as nanophotonic materials for potential medical application

Lidija Rudolf Matija[1], Ivana Stankovic[1], Milica Milicic[2], Djuro Koruga[2]
[1]University of Belgrade, Faculty of Mechanical Engineering, Serbia; [2]TFT Nano Centre, Belgrade, Serbia; lmatija@mas.bg.ac.rs

(Edit Contribution Details, Abstract ID: 659)

12:05pm - 12:20pm

Electron-phonon coupling in semiconductor nanostructures: intrinsic and extrinsic tunability demonstrated with ZnTe nanowires

Yong Zhang

University of North Carolina at Charlotte, United States of America; yong.zhang@uncc.edu

FCM-INV-1: Functional Composite Materials

Time: Friday, 20/Aug/2021: 10:20am - 12:30pm · *Virtual location:* Theatre
Session Chair: Adam Weber

(Edit Contribution Details, Abstract ID: 129)

10:20am - 10:35am

Self Sensing Cement-based composites with Short Carbon Fibers

Valeria Corinaldesi, Jacopo Donnini, Nicola Generosi
Università Politecnica delle Marche, Italy; v.corinaldesi@staff.univpm.it

(Edit Contribution Details, Abstract ID: 662)

10:35am - 10:50am

First-Principles Calculations of the Energy Flux for Bioinspired Personalized Thermal Comfort Wearables

George T Stiubianu[1], Alexandra Bargan[1], Mihaela Dascalu[1], Carmen Racles[1], Adrian Bele[1], Codrin Tugui[1], Cristian Ursu[2], Maria Cazacu[1]
[1]Department of Inorganic Polymers, Hybrid and Complex Systems, Petru Poni Institute of Macromolecular Chemistry Iasi, Romania, Romania; [2]Department of Physics of Polymers and Polymeric Materials, Petru Poni Institute of Macromolecular Chemistry, Iasi, Romania; george.stiubianu@icmpp.ro

(Edit Contribution Details, Abstract ID: 619)

10:50am - 11:05am

High-performance silk-based bioplastic from regenerated fibroin

Alessio Bucciarelli[1], Devid Maniglio[2]
[1]Fondazione Bruno Kessler, Italy; [2]University of Trento, Italy; devid.maniglio@unitn.it

(Edit Contribution Details, Abstract ID: 582)

11:05am - 11:20am

Lifetime improvement of anticorrosive hybrid coatings by addition Li and Ce self-healing agents

Peter Hammer, Andressa Trentin, Mayara Uvida
São Paulo State University - UNESP, Brazil; peter.hammer@unesp.br

(Edit Contribution Details, Abstract ID: 771)

11:20am - 11:35am

Making stretchy dielectric, conductive, and semiconductor polymers

Qibing Pei
University of California, Los Angeles, United States of America; qpei@seas.ucla.edu

(Edit Contribution Details, Abstract ID: 693)

11:35am - 11:50am

Microstructure evolution of silicon carbide reinforced PEEK under tribological solicitations

Karl Delbé[1], Marie Doumeng[1], Aurélien Vieu[1], France Chabert[1], Florentin Berthet[2], Olivier Marsan[3], Tiphaine Mérian[1], Jean Denape[1]
[1]Université de Toulouse - ENIT, France; [2]Université de Toulouse, CNRS, Mines Albi, ICA, France; [3]Université de Toulouse, CIRIMAT-ENSIACET-INPT, Francce; karl.delbe@enit.fr

(Edit Contribution Details, Abstract ID: 548)

11:50am - 12:05pm

Developing Lightweight Homogeneously Mixed Heat- and Current-stable Cu/Carbon Nanotube Composite Electric Conductors

Rajyashree Sundaram, Guohai Chen, Takeo Yamada, Don Futaba, Ken Kokubo, Kenji Hata, Atsuko Sekiguchi
National Institute of Advanced Industrial Science and Technology, Japan; rajyashree-meenakshisundaram@aist.go.jp

(Edit Contribution Details, Abstract ID: 576)

12:05pm - 12:20pm

Bio-factory mediated and biomimetic approaches for the synthesis of SiO2- based nanostructures for multiple applications.

Alessandra Aloisi[1], Riccardo Di Corato[1], Gianluca Farinola[2], Paola Nieri[3], Rosaria Rinaldi[1,4]

[1]Institute for Microelectronics and Microsystems (IMM), CNR, Via Monteroni, Lecce 73100, Italy; [2]Chemistry Department, University of Bari “Aldo Moro”, Via Orabona 4, Bari 70126, Italy; [3]Department of Pharmacy, University of Pisa, Via Bonanno Pisano, 56126, Pisa, Italy; [4]Mathematics and Physics “E. De Giorgi” Department, University of Salento, Via Arnesano, Lecce 73100, Italy; ross.rinaldi@unisalento.it

12:20pm - 12:35pm

GFRP Full Adhesive Connections: Mechanical Aspects

Francesco Ascione
University of Salerno, Italy; fascione@unisa.it

FCM-INV-2: Functional Composite Materials

Time: Friday, 20/Aug/2021: 10:20am - 12:30pm · *Virtual location:* AU 2412
Session Chair: Alexander Ayzner

(Edit Contribution Details, Abstract ID: 606)

10:20am - 10:35am

Multi-Scale Materials by Effective Assembly of 1D and 2D Nanomaterials

Fabian Schuett[1], Florian Rasch[1], Lena Marie Saure[1], Armin Reimers[1], Ali Shaygan Nia[2], Yogendra Kumar Mishra[3], Xinliang Feng[2], Rainer Adelung[1]
[1]Kiel University, Germany; [2]Technical University Dresden, Germany; [3]University of Southern Denmark, Denmark; fas@tf.uni-kiel.de

(Edit Contribution Details, Abstract ID: 611)

10:35am - 10:50am

Pathway to "Intelligence": Using Stimuli-Responsive Materials for Constructing Self-powered Autonomous Functional Systems

Siowling Soh
National University of Singapore, Singapore; chessl@nus.edu.sg

(Edit Contribution Details, Abstract ID: 843)

10:50am - 11:05am

Superantiwetting Polymeric Nanocomposite Materials: From Coating to Bulk Material

Stefan Seeger, Shanqiu Liu, Georg Artus, Xiaotian Zhang
University of Zurich, Switzerland; sseeger@chem.uzh.ch

(Edit Contribution Details, Abstract ID: 941)

11:05am - 11:20am

Effects of silica rich biochar on cement mortar hydration kinetics and durability under chloride and sulfate environment

Souradeep Gupta[1], Shravan Muthukrishnan[2], Harn Wei Kua[3]
[1]Indian Institute of Science, India; [2]Swinburne University of Technology, Australia; [3]National University of Singapore, Singapore; bdgkuahw@nus.edu.sg

(Edit Contribution Details, Abstract ID: 811)

11:20am - 11:35am

Dynamic Materials Inspired by Cephalopods

Mohsin Badshah, Erica Leung, Alon Gorodetsky
University of California, Irvine, United States of America; badshahm@uci.edu

(Edit Contribution Details, Abstract ID: 745)

11:35am - 11:50am

High frequency operating shape changing resonators utilizing unique properties of SMA elements for (micro)robotics

Ivo Stachiv
Institute of Physics, Czech Academy of Sciences, Czech Republic; stachiv@fzu.cz

(Edit Contribution Details, Abstract ID: 970)

11:50am - 12:05pm

Self-adjusting boron nitride mask for Reactive-Ion Etching

Konrad Schwanitz, Marco Langenschwarz, Otto Fricke, Lorenz Kehrer
WIKA Alexander Wiegand SE & Co. KG, Germany; konrad.schwanitz@wika.com

(Edit Contribution Details, Abstract ID: 924)

12:05pm - 12:20pm

Fine control of detonation nanodiamond surface chemistry towards functional materials

Hugues Girard
CEA, France; hugues.girard@cea.fr

(Edit Contribution Details, Abstract ID: 554)

12:20pm - 12:35pm

Electric conductivity of CdSeZnS quantum dots dispersed in liquid crystals.

Cristina Cirtoaje, Emil Petrescu, Alina Petrescu-Nita

Politehnica University of Bucharest, Romania; cristina.cirtoaje@upb.ro

Post-3: Poster Session

Time: Friday, 20/Aug/2021: 1:00pm - 3:00pm · *Virtual location:* Theatre
Session Chair: Umapada Pal

(Edit Contribution Details, Abstract ID: 620)

1:00pm - 1:03pm

Nonlinear optical organic-inorganic nano-composite DAST/AAO

Akshay Nagar, Peter Moroshkin, Jin Ho Kim, Jimmy Xu
Brown University, United States of America; akshay_nagar@brown.edu

(Edit Contribution Details, Abstract ID: 946)

1:03pm - 1:06pm

Novel exploitation protocols for capacitor lifetime enhancement

Justyna Piwek, Anetta Platek-Mielczarek, Elzbieta Frackowiak, Krzysztof Fic
Poznan University of Technology, Poland; justyna.piwek@put.poznan.pl

(Edit Contribution Details, Abstract ID: 701)

1:06pm - 1:09pm

On a Novel Magnetoelectric Oxide Cu4O3

Danijel Djurek[1], Aleksandar Živković[2], Nora H. de Leeuw[2], Mladen Prester[3], Djuro Drobac[3], Vilko Mandić[4], Mile Ivanda[5], Tatjana Jurkin[5], Angela Pustak[5], Danijela Bakarić[5]
[1]Alessandro Volta Applied Ceramics (AVAC),Augusta Šenoe 14,49247 Zlatar Bistrica, Croatia; [2]Department of Earth Sciences, Utrecht University, 3548 CB Utrecht, The Netherlands; [3]Institute of Physics, Bijenička cesta 46. 10000 Zagreb, Croatia; [4]Faculty of Chemical Engineering and Technology, University of Zagreb,Marulićev trg 20, 10000 Zagreb, Croatia; [5]Ruđer Bošković Institute, Bijenička cesta. 54, 10000 Zagreb, Croatia; avac@avac.hr

(Edit Contribution Details, Abstract ID: 775)

1:09pm - 1:12pm

Preclinical Efficacy of MECA79-anti-CD3-Nanoparticles in Reversing Type 1 Diabetes

Ousama Rachid[1], Yousef Haik[2], Reza Abdi[3]
[1]College of Pharmacy, QU Health, Qatar University, Qatar; [2]College of North Atlantic-Qatar, Doha, Qatar; [3]Harvard Medical School, Boston, USA; orachid@qu.edu.qa

(Edit Contribution Details, Abstract ID: 661)

1:12pm - 1:15pm

Production of Green Cementitious Composites: Granite Powder Utilization

Adrian Chajec, Łukasz Sadowski
Wroclaw University of Science and Technology, Poland; adrian.chajec@pwr.edu.pl

(Edit Contribution Details, Abstract ID: 647)

1:15pm - 1:18pm

Self-adaptive radiative thermostat to surrounding temperature variation

Se-Yeon Heo, Gil Ju Lee, Do Hyeon Kim, Young Min Song
Gwangju Institute of Science and Technology (GIST), Korea, Republic of (South Korea); seyeon9410@gmail.com

(Edit Contribution Details, Abstract ID: 646)

1:18pm - 1:21pm

Sintering mechanisms of core@shell metal@metal-oxide nanoparticles

Namsoon Eom, Maria Messing, Jonas Johansson, Knut Deppert
Lund University, Sweden; namsoon.eom@ftf.lth.se

(Edit Contribution Details, Abstract ID: 922)

1:21pm - 1:24pm

Study of Hybrid Infrared Detectors with Perovskite Films and Quantum Dots

Mariya Aleksandrova[1], Georgi Kolev[1], Habib Pathan[2], Sandesh R. Jadkar[2], Georgi Dobrikov[1]
[1]Technical Univesrity of Sofia, Bulgaria; [2]Savitribai Phule Pune University, India; m_aleksandrova@tu-sofia.bg

(Edit Contribution Details, Abstract ID: 630)

1:24pm - 1:27pm

Synthesis of innovative chitosan-based functional composite adsorbents: Materials characterization and application in environmental remediation

Tryfon Kekes[1], Georgios Kolliopoulos[2], Constantina Tzia[1]

[1]School of Chemical Engineering, National Technical University of Athens, Greece; [2]Department of Mining, Metallurgical, and Materials Engineering, Université Laval; tryfonaskks@yahoo.com

(Edit Contribution Details, Abstract ID: 595)

1:27pm - 1:30pm

The effect of prolonged exposure to elevated temperatures on the deformability and relaxation of the structure of some thermosetting polymer binders

Maxim Mishnev, Alexander Korolev

South Ural State University, Russian Federation; mishnevmv@susu.ru

(Edit Contribution Details, Abstract ID: 1011)

1:30pm - 1:33pm

Time-displaying Films Composed of Poly(N-methylaniline) and Common Transparent Polymer Films

Jun Yano[1], Chihiro Hashimoto[1], Kaori Tada[2]

[1]National Institute of Technology (KOSEN), Niihama College, Japan; [2]National Institute of Technology (KOSEN), Kochi College, Japan; yano@sci.niihama-nct.ac.jp

(Edit Contribution Details, Abstract ID: 868)

1:33pm - 1:36pm

Towards Highly Efficient Solar Cell Design Using a Dispersive Chiral Lens

Monish Chatterjee[1], Salah Bugoffa[2]

[1]University of Dayton, United States of America; [2]University of Dayton, United States of America; mchatterjee1@udayton.edu

(Edit Contribution Details, Abstract ID: 677)

1:36pm - 1:39pm

Two-dimensional finite quantum Hall clusters of electrons with anisotropic features

Orion Ciftja

Prairie View A&M University, United States of America; ogciftja@pvamu.edu

(Edit Contribution Details, Abstract ID: 561)

1:39pm - 1:42pm

Using Pulverized Waste Tire and its Activated Carbon as Adsorptive Fill Materials

Rahim Shahrokhi, Junboum Park

Seoul National University, Korea, Republic of (South Korea); junbpark@snu.ac.kr

(Edit Contribution Details, Abstract ID: 232)

1:42pm - 1:45pm

Spin–Lattice Interaction in Magnetoelectric α–FeOOH

Victor Genchev Ivanov, Miroslav Vergilov Abrashev, Neno Dimotrov Todorov

Sofia University, Faculty of Physics, Bulgaria; vgi@phys.uni-sofia.bg

(Edit Contribution Details, Abstract ID: 732)

1:45pm - 1:48pm

Optical properties of 1D graded photonic crystals considering linear and quadratic profiles

Danny Manuel Calvo Velasco[1], Robert Sanchez Cano[2]

[1]Universidad Autónoma de Occidente; [2]Universidad Autónoma de Occidente; dmcalvo@uao.edu.co

(Edit Contribution Details, Abstract ID: 602)

1:48pm - 1:51pm

Laser written flexible touch-pressure sensor array based on polyimide substrate

SeungHo Baek, Srinivas Gandla, Sunkook Kim

Sungkyunkwan University, Korea, Republic of (South Korea); baekshoe@naver.com

(Edit Contribution Details, Abstract ID: 1009)

1:51pm - 1:54pm

Zn anode-based electrochromic devices

Wu Zhang[1], Haizeng Li[1,2], Abdulhakem Elezzabi[1]

[1]Ultrafast Optics and Nanophotonics Laboratory, Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, T6G 2V4, Canada; [2]Optics and Thermal Radiation Research Center, Shandong University, Qingdao 266237, China; elezzabi@ualberta.ca

(Edit Contribution Details, Abstract ID: 971)

1:54pm - 1:57pm

Pb–substitution in Eu3Bi2S4F4: A superconductor to insulator transition

Zeba Haque[1], Soumen Ash[2], Moumita Naskar[3], Günter Fuchs[4], Laxmi Chand Gupta[3], Ashok Kumar Ganguli[3]

[1]Jamia Millia Islamia, India; [2]Institute of Nano Science and Technology, Mohali, India; [3]Indian Institute of Technology, New Delhi, India; [4]Leibniz Institute for Solid State and Materials Research, Dresden, Germany; zebahaque08@gmail.com

(Edit Contribution Details, Abstract ID: 1030)

1:57pm - 2:00pm

Fabrication of Uniform Green Perovskite Light-Emitting Diodes via Sandwich Evaporation Technique

Ching-Fuh Lin, Da-Chen Chien

National Taiwan University, Taiwan; r07941113@ntu.edu.tw

(Edit Contribution Details, Abstract ID: 1029)

2:00pm - 2:03pm

Optimization of the MAPbIxCl3-x Perovskite Layer in a High Performance Perovskite Solar Cell via Sandwich Evaporation Technique

Ching-Fuh Lin, Hui-Hung Shen, Shaun L Chen

National Taiwan University, Taiwan; r08941061@ntu.edu.tw

(Edit Contribution Details, Abstract ID: 1013)

2:03pm - 2:06pm

Add Polyvinyl Butyral to make High-Efficiency Rare-Earth-Free Fluorescent Materials

Ching-Fuh Lin, Han-Yu Tsai, Jung-Kuan Huang

National Taiwan University, Taiwan; 60125una@gmail.com

(Edit Contribution Details, Abstract ID: 517)

2:06pm - 2:09pm

Study on the relationship between the degree of deacetylation and electrical and antibacterial properties of chitosan fiber and its composite yarn

Tao Hua, Tian Xiao, Kahei Chan, Tszyin Poon, Wingming Chan, Mingkin Koo

The Hong Kong Polytechnic University, Hong Kong S.A.R. (China); tcthua@polyu.edu.hk

(Edit Contribution Details, Abstract ID: 1018)

2:09pm - 2:12pm

Galvanic displacement and compositional modulation in electrochemically deposited FeCoNiCuZn high entropy alloy thin films

Reddy Kunda Siri Kiran Janardhana, Chokkakula L. P. Pavithra, Suhash Ranjan Dey

Department of Materials Science and Metallurgical Engineering, Indian Institute of Technology - Hyderabad, NH - 65, Kandi, Sangareddy, India - 502285; ms17resch01002@iith.ac.in

(Edit Contribution Details, Abstract ID: 1026)

2:12pm - 2:15pm

Observing and Controlling the Crystallization Process in Reconfigurable Plasmonic Superlattices

Maciej Bagiński, Martyna Tupikowska, Wiktor Lewandowski

Faculty of Chemistry, University of Warsaw, Poland; mbaginski@chem.uw.edu.pl

(Edit Contribution Details, Abstract ID: 1014)

2:15pm - 2:18pm

Influence of Rapid Thermal Annealing Time on ZnO:F Thin Films Deposited by RF Magnetron Sputtering for Solar Cell Applications

Fang-Hsing Wang[1], Mao-Shan Chen[1], Ming-Chien Wu[1], Han-Wen Liu[1], Tsung-Kuei Kang[2]

[1]Department of Electrical Engineering and Graduate Institute of Optoelectronic Engineering, National Chung-Hsing University, Taiwan; [2]Department of Electronic Engineering, Feng-Chia University, Taiwan.; q86219@gmail.com

(Edit Contribution Details, Abstract ID: 584)

2:18pm - 2:21pm

Improvements in the efficiency of p-type bifacial Si solar cells with Cu electrode using galvanic replacement reactions

Wen-Hsi Lee[1], Vincent Lee[2], C.R. Kuo[1]

[1]National Cheng-Kung University, Taiwan; [2]Kaohsiung American School, Taiwan; leewen@mail.ncku.edu.tw

EPMM-INV-4: Electronic, Photonic and Magnetic Materials

Time: Friday, 20/Aug/2021: 1:00pm - 3:30pm · *Virtual location:* AU 2412
Session Chair: Orion Ciftja

(Edit Contribution Details, Abstract ID: 543)

1:00pm - 1:15pm

Embedded metal nanoparticles: shape engineering, electronic and magnetic properties, an experimental and theoretical investigation

SANTANU GHOSH
Indian Institute of Technology, India; santanu1@physics.iitd.ac.in

(Edit Contribution Details, Abstract ID: 547)

1:15pm - 1:30pm

Nanomagnetism and spintronics of Cr2O3 thin-film magnetoelectric antiferromagnets

Denys Makarov
Helmholtz-Zentrum Dresden-Rossendorf e.V., Germany; d.makarov@hzdr.de

(Edit Contribution Details, Abstract ID: 780)

1:30pm - 1:45pm

Cellulose-based composite materials for additive manufacturing in in electrical insulation, automotive and marine industries

Heli Kangas, Kirsi Immonen, Jarmo Ropponen, Sini Metsa-Kortelainen
VTT Technical Research Centre of Finland Ltd, Finland; heli.kangas@vtt.fi

(Edit Contribution Details, Abstract ID: 949)

1:45pm - 2:00pm

PEEK- A high-performance polymer used as patient-specific implants

pinar cevik[1], suleyman cebeci[2]
[1]Gazi University, School of Dentistry, Department of Prosthodontics, Turkey; [2]Gazi University, School of Medicine, Department of Otorhinolaryngology/Head and Neck Surgery, Turkey; dt_pinarcevik@yahoo.com

(Edit Contribution Details, Abstract ID: 573)

2:00pm - 2:15pm

Ferroelectric Phase Transitions in Strained K0.9Na0.1NbO3 Epitaxial Films Studied by in situ X-Ray Diffraction and Three-Dimensional Phase-Field Simulations

Martin Schmidbauer[1], Laura Bogula[1], Bo Wang[2], Michael Hanke[3], Leonard von Helden[1], Adriana Ladera[2,4], Jian-Jun Wang[2], Long-Qing Chen[2], Jutta Schwarzkopf[1]
[1]Leibniz-Institut für Kristallzüchtung, 12489 Berlin, Germany; [2]Materials Research Institute and Department of Materials Science and Engineering, The Pennsylvania State University, Pennsylvania 16803, USA; [3]Paul-Drude Institut für Festkörperelektronik, 10117 Berlin, Germany; [4]Department of Computer Science and Engineering, University of South Florida, Tampa, Florida 33620, USA; martin.schmidbauer@ikz-berlin.de

(Edit Contribution Details, Abstract ID: 1040)

2:15pm - 2:30pm

Using graphene-based devices and interconnects for IC Reliability

Albert Wang, Cheng Li
University of California, Riverside, United States of America, United States of America; aw@ece.ucr.edu

(Edit Contribution Details, Abstract ID: 813)

2:30pm - 2:45pm

Damage assessment of composites using techniques based on guided waves and electromechanical impedance

Paweł Henryk Malinowski
Institute of Fluid Flow Machinery, Polish Academy of Sciences, Poland; pmalinowski@imp.gda.pl

(Edit Contribution Details, Abstract ID: 865)

2:45pm - 3:00pm

Halide perovskites for applications in nanophotonics

Sergey Makarov

ITMO University, Russian Federation; s.makarov@metalab.ifmo.ru

(Edit Contribution Details, Abstract ID: 1015)

3:00pm - 3:15pm

Colloidal Photonic Crystals: Mind the Gap!

Dwaipayan Chakrabarti

University of Birmingham, United Kingdom; d.chakrabarti@bham.ac.uk

FCM-5: Functional Composite Materials

Time: Friday, 20/Aug/2021: 1:00pm - 3:30pm · *Virtual location:* AU 2410
Session Chair: Mohsin Ali Badshah

(Edit Contribution Details, Abstract ID: 799)

1:00pm - 1:10pm

Properties of Carbon Nanotube Buckypaper and Interphase

Masoud Yekani Fard
Arizona State University, United States of America; masoud.yekanifard@asu.edu

(Edit Contribution Details, Abstract ID: 520)

1:10pm - 1:20pm

Preparation of bismuth series visible light catalyst and its mechanism for removing Cr(VI) and organophosphorus flame retardants

Jin Tang[1], Zhili Chen[1], Walter Z. Tang[2], Wenjing Xie[1], Yuan Xi[1], Jiang Lv[1]
[1]Guilin University of Technology, China; [2]Florida International University, USA; jintang117@qq.com

(Edit Contribution Details, Abstract ID: 830)

1:20pm - 1:30pm

PLA- and PHBV-based Bio-composites: Improvement of the Mechanical Properties by Fiber Surface Treatment with Natural Waxes

Maria Cristina Righetti[1], Patrizia Cinelli[1,2], Maurizia Seggiani[2], Vito Gigante[2], Laura Aliotta[2], Andrea Lazzeri[1,2]
[1]National Research Council (CNR), Institute for Chemical and Physical Processes, Pisa, Italy; [2]University of Pisa, Department of Civil and Industrial Engineering, Pisa, Italy; cristina.righetti@pi.ipcf.cnr.it

(Edit Contribution Details, Abstract ID: 842)

1:30pm - 1:40pm

Structural Design and Manufacturing of Three-Dimensional Porous Superstructures with Additive and Subtractive Electrochemistry for Flexible Self-Powered Electronics, Nanoelectromechanical Devices, and Water Purification

Weigu Li, Yifei Liu, Xianfu Luo, Donglei {Emma} Fan
The University of Texas at Austin, United States of America; dfan@austin.utexas.edu

(Edit Contribution Details, Abstract ID: 610)

1:40pm - 1:50pm

Spider Silks as Model Systems for the Design of Functional Protein-based Materials and Composites

David Onofrei, Dillan Stengel, Hannah Johnson, Brittany Puzio, Gregory P Holland
San Diego State University, Department of Chemistry and Biochemistry, United States of America; gholland@sdsu.edu

(Edit Contribution Details, Abstract ID: 621)

1:50pm - 2:00pm

Small-Nanostructure-Size-Limited Phonon Transport within composite films made of single-wall carbon nanotubes and reduced graphene oxide sheets

Qing Hao[1], Qiyu Chen[1], Xiaolu Yan[2], Leyuan Wu[2], Yue Xiao[1], Sien Wang[1], Guoan Cheng[2], Ruiting Zheng[2]
[1]UNIVERSITY OF ARIZONA, United States of America; [2]Beijing Normal University, P. R. China; qinghao@arizona.edu

(Edit Contribution Details, Abstract ID: 772)

2:00pm - 2:10pm

Simulation of Fracture in Graphene-Polymer Nanocomposites using Molecular Dynamics

Samit Roy, Tanvir Sohail
University of Alabama, United States of America; sroy@eng.ua.edu

(Edit Contribution Details, Abstract ID: 692)

2:10pm - 2:20pm

Cell Membrane-Covered Hybrid Nanocomposites for Target Photothermal Cancer Therapy

Valéria Marangoni, Juliana Cancino, Valtencir Zucolotto

University of Sao Paulo, Brazil; zuco@ifsc.usp.br

(Edit Contribution Details, Abstract ID: 999)

2:20pm - 2:30pm

Development of Novel Self-Centering Polyurethane Piston Based Bracing

Anas Issa, Shahria Alam
The University of British Columbia, Canada; anas.issa@alumni.ubc.ca

(Edit Contribution Details, Abstract ID: 574)

2:30pm - 2:40pm

Evaluation of impurities concentration with hot probe method and optical constants of nanostructured titanium dioxide embedded polymer thin films

Nafeesah Abdulrahim Yaqub, Aslam Farooq Wazirzada, Mohammad Al Salihi
King Saud University, Saudi Arabia; 437203488@student.ksu.edu.sa

(Edit Contribution Details, Abstract ID: 697)

2:40pm - 2:55pm

Ferroelectric Nanocrack-based Nanoelectromechanical Switches for Memory and Complementary Logic

Yaodong Guan, Zhe Guo, Qiang Luo, Jeongmin Hong, Long You
Huazhong University of Science and Technology, China, People's Republic of; lyou@hust.edu.cn

(Edit Contribution Details, Abstract ID: 401)

2:55pm - 3:05pm

STUDY OF EFFICIENCY OF IONIZING RADIATION IN PBAT/PLA BLEND REINFORCED WITH BIO-EGGSHELL

Elizabeth Carvalho Leite Cardoso, Duclerc Fernandes Parra, Sandra Regina Scagliusi, Ademar Benevolo Lugão
Instituto de Pesquisas Energéticas e Nucleares - IPEN, Brazil; eclcardo@ipen.br