

CONFERENCE SCHEDULE



George Washington University,
Washington, D.C, USA
July 22-24, 2019

Advances
in Functional Materials
<https://functionalmaterials.org/afm2019/>



AFM-19: Program at Glance

Date: Monday, 22/July/2019

2:00pm - 6:00pm

Lobby

Reg: Registration

Date: Tuesday, 23/July/2019

8:00am – 6:00pm

Lobby

Reg: Registration

8:20am - 8:30am

Grand Ballroom

OPC: Opening Ceremony

Dae Joon Kang, Lijie Grace Zhang

8:30am - 10:30am

Grand Ballroom

Plen: Plenary Session

10:30am - 11:00am

Grand Ballroom

Coffee Break

11:00am - 1:00pm

Grand Ballroom

KEY: Keynote Session

1:00pm - 2:00pm

Grand Ballroom

Lunch Break

2:00pm - 4:00pm

Grand Ballroom

KEY: Keynote Session

4:00pm - 4:15pm

Grand Ballroom

Coffee Break

4:15pm - 6:00pm

Grand Ballroom

Oral Talks

4:15pm - 6:00pm

Marvin Center 302

Oral Talks

Date: Wednesday, 24/July/2019

8:00am – 6:00pm

Lobby

Reg: Registration

8:00am - 10:30am

Grand Ballroom

Plen: Plenary Session

10:30am - 11:00am

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Marvin Center 302

Oral Talks

1:00pm - 2:00pm

Grand Ballroom

Lunch Break

2:00pm - 4:30pm

Grand Ballroom

Oral Talks

2:00pm - 4:30pm

Marvin Center 302

Oral Talks

Presentations

Plen: Plenary Session:

Time: Tuesday, 23/July/2019: 8:30am - 10:30am · Location: Grand Ballroom

Session Chair: Lijie Grace Zhang,

8:30am - 9:10am

Nanoscale Synthesis and Assembly to Smart Optical Materials

Yadong Yin

University of California, Riverside, CA, 92521, USA

9:10am - 9:50am

Electrochemical Artificial Muscle Yarns And Textiles That Harvest And Store Environmentally Available Energies

Ray H. Baughman

Alan G. MacDiarmid NanoTech Institute, University of Texas at Dallas, Richardson, TX 75080

9:50am - 10:30am

MXenes for Functional Applications

Michel W. Barsoum

College of Engineering, Drexel University

10:30am - 11:00am Coffee break

KEY: Keynote Session:

Time: Tuesday, 23/July/2019: 11:00am - 1:00pm · Location: Grand Ballroom

Session Chair: Dae Joon Kang,

11:00am - 11:40am

Low energy bandgap semiconducting materials and their Applications

Hyoyoung Lee^{1,2}

¹Center for Integrated Nanostructure Physics (CINAP), Institute for Basic Science (IBS),

²Department of Chemistry, Sungkyunkwan University

Republic of Korea

11:40am - 12:20pm

Quantum-Sized Metal Nanoparticles Catalyzing the Selective Photon-to-Chemical Energy Conversion

Yugang Sun

Department of Chemistry, Temple University, 1901 North 13th Street, Philadelphia, Pennsylvania 19122, USA

12:20pm - 1:00pm

Cell-Matrix Interactions in Cancer and Fibrosis: Multiscale Chemo-Mechanical Models

Vivek Shenoy

School of Engineering and Applied Sciences, University of Pennsylvania

1:00pm - 2:00pm Lunch Break

KEY: Keynote Session:

Time: Tuesday, 23/July/2019: 2:00pm - 4:00pm · *Location:* Grand Ballroom

Session Chair: Yugang Sun,

2:00pm - 2:40pm

Goodbye Hospitals: Hello Implantable Nanosensors

Thomas J. Webster

Art Zafiropoulo Chair, Department Chair, Chemical Engineering, Northeastern University

2:40pm - 3:20pm

Lasers and their Applications in Materials

W Aslam Farooq

Department of Physics and Astronomy, King Saud University, Riyadh, KSA .

3:20pm - 4:0pm

**Our ability to beat cancer cells to death and stop their migration by using hot gold nano-
rods**

El-Sayed, Mostafa A

Julius Brown Chair and Regents Professor, Department of Chemistry and Biochemistry, Georgia Tech.

4:00am - 4:30am Coffee break

ABB: Advances in Biosensors and Biomaterials

Time: Tuesday, 23/July/2019: 4:30pm - 6:30pm · Location: Grand Ballroom

Session Chair: Prof. Vivek Shenoy,

4:30pm - 4:45pm

Meridian whispering gallery mode sensing with a deformed microdroplet on a superhydrophobic chip surface

Meng Zhang¹, Weifeng Cheng², Zheng Zheng¹, Jiangtao Cheng² and Jiansheng Liu¹

¹School of Electronic and Information Engineering, Beihang University, 37 Xueyuan Rd, Beijing 100083, China. ²Department of Mechanical Engineering, Virginia Polytechnic Institute and State University, 635 Prices Fork Road, Blacksburg, VA 24061, USA.

4:45pm - 5:00pm

Multifunctional pH Responsive Hyaluronic Acid based Nanoparticles for Targeted Combinational Atherosclerosis Therapy

Nihad Cheraga, Zheng Ye, Ning-Cong Sun, Ning-Ping Huang

State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, Nanjing, China

5:00pm - 5:15pm

Novel auto crosslinked chitosan-based microgels for glucose-responsive insulin delivery systems

F. DAMIRI, Y. BACHRA, C. BOUNACIR, A. LAARAIBI, N. KNOUZI, A. BENNAMARA, M. BERRADA

Department of Chemistry, Laboratory of Biomolecules and Organic Synthesis (BIOSYNTHO), Faculty of Sciences Ben M'sik, University Hassan II of Casablanca, Morocco

5:15pm - 5:30pm

Physicochemical properties of collagen films with PLGA nanocapsules inside fabricated by electrospinning with and without crosslinking

Liliana María Agudelo Gómez^{1,2}, Jesús Antonio Carlos Cornelio², Gabriel Jaime Colmenares Roldán^{1,2}, Lina Marcela Hoyos Palacio^{1,2}

¹Grupo de Investigación en Biología de Sistemas, Escuela de Ciencias de la Salud, Facultad de Medicina Universidad Pontificia Bolivariana, Calle 78B 72A-109 Robledo, Bloque B 5° piso, Medellín, Antioquia, Colombia. ²Grupo de Investigación en Nanotecnología y Materiales, Nanomat, Medellín, Antioquia, Colombia.

5:30pm - 5:45pm

Nanostructured Diatom Biosilica for Photonic and SERS Biosensing Applications

Paul LeDuff¹, Alan X. Wang², Gregory L. Rorrer¹

¹School of Chemical, Biological, and Environmental Engineering, Oregon State University, Corvallis, OR, 97331, ²School of Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR, 97331

5:45pm - 6:00pm

Antibacterial and Aggregation-Induced Imaging Properties of Broad-Spectrum Amphiphilic Cationic Polymers

JING QIAO, May P. Xiong

University of Georgia

6:00pm - 6:15pm

From nature-inspired all-in-one platforms to a versatile family of nanorattles: bio/cat applications of passion fruit-like nano-architectures

Melissa Santi

Istituto Italiano di Tecnologia

6:15pm - 6:30pm

Electrostriction, capacitive susceptibility, and neuromorphic computing in biomembranes

Charles Patrick Collier

Oak Ridge National Laboratory

AC: Advances in Catalysis

Time: Tuesday, 23/July/2019: 4:30pm - 6:15pm · Location: Marvin Center 302

Session Chair: Hyoyoung Lee,

4:30pm - 4:45pm

Rational design of metal cocatalyst on electron lifetime and photocatalytic hydrogen evolution

Ji Yong Choi, Bumjin Park, Hyunjoon Song

Department of Chemistry, Korea Advanced Institute of Science and Technology, Daejeon 34141, Republic of Korea

4:45pm - 5:00pm

Catalytic CO₂ Conversion and photocatalytic reaction of I-deficient BiOI

Chechia Hu, Hui-Xin Huang, and Yi-Feng Lin

Department of Chemical Engineering and R&D center for Membrane Technology Chung Yuan Christian University, Taoyuan 32023 Taiwan

5:00pm - 5:15pm

Copper(I) oxide included colloidal hybrid nanocatalysts for selective photocatalytic carbon dioxide conversion

Chan Kyu (Lim), Hyunjoon (Song)*

Department of Chemistry, KAIST, Daejeon, Korea

5:15pm - 5:30pm

Pt/Ni bimetallic catalysts planted onto TiO₂ nanotube array bed and their electrocatalytic properties

Hongyi Li, Shaojing Liu, Anran Wu, Guannan Zu, Jinshu Wang

¹Grupo Key Laboratory of Advanced Functional Materials, Education Ministry of China School of Materials and Engineering, Beijing University of Technology, Beijing, 100124, P.R. China.

5:30pm - 5:45pm

Preparation, Characterization and CO Oxidation Performance of Ag₂O/ γ -Al₂O₃ and (Ag₂O+RuO₂)/ γ -Al₂O₃ Catalysts

Antony Ananth, Hyeon-Jin Seo, Rak Hyun Jeong, Jin-Hyo Boo*

Department of Chemistry, Sungkyunkwan University, Suwon 16419, Republic of Korea.

5:45pm - 6:00pm

Mechanistic Study on Metal-Semiconductor Hybrid Nanocatalyst for Photocatalytic Hydrogen Evolution

Ji Yong Choi, Hyunjoon Song*

Department of Chemistry, Korea Advanced Institute of Science and Technology, Daejeon 34141, Republic of Korea

6:00pm - 6:15pm

An efficient protocol for highly selective tetrahydropyranlation/depyranlation of alcohols and phenols using mesoporous polymeric acid catalyst

Lalthazuala Rokhum

National Institute of Technology Silchar (An institute of National Importance)

Plen: Plenary Session:

Time: Wednesday, 24/July/2019: 8:00am - 10:40am · Location: Grand Ballroom

Session Chair: Ray Baughman,

8:00am - 9:00am

Dimensional Crossover of Spin Ordering in Artificial Oxide Superlattices

Woo Seok Choi

Department of Physics, Sungkyunkwan University, Suwon 16419, Republic of Korea

9:00am -10:00am

Tailored Nanostructures for Photo/Photothermal Energy Conversion Functionalities

Ho Ghim Wei

National University of Singapore (NUS)

10:30am - 11:00am Coffee break

KEY: Keynote Session:

Time: Wednesday, 24/July/2019: 11:00am - 11:40am · Location: Grand Ballroom

Session Chair: Anthony Guiseppi-Elie,

11:00am - 11:40am

Conjugated Nanostructured Polyaniline for Emergent Membrane Technologies

Richard B. Kaner

University of California, Los Angeles, USA

SPPC: Spintronics, Photonics, Polymers and Ceramics

Time: Wednesday, 24/July/2019: 11:40am - 1:00pm · Location: Marvin Center 302

Session Chair: Prof. Imran Shakir,

11:40am - 11:55am

Skyrmion Hosting Cu_2OSeO_3 Nanostructures

Priya R. Baral¹, Benoît Truc¹, Wen-Hua Bi¹, Victor Ukleev², J.W. Seo³, Ivica Zivkovic¹, Henrik M. Ronnow¹, Jonathan S. White², Oleg Yazyev¹, Arnaud Magrez¹

¹Institute of Physics, Ecole Polytechnique Fédérale de Lausanne, Switzerland, ²Paul Scherrer Institut, Villigen, Switzerland, ³University of Leuven, Belgium.

11:55pm - 12:10pm

Strong and weak coupled fluorophores on DNA based molecular photonic wires for directed energy transfer

S. A. Díaz¹, S. M. Oliver², D. Mathur¹, D. A. Hastman^{1,3}, P. D. Cunningham⁴, J. S. Melinger⁴, P. M. Vora², and I. L. Medintz¹

Department of Chemical Engineering and R&D center for Membrane Technology Chung Yuan Christian University, Taoyuan 32023 Taiwan

12:10pm - 12:25pm

A Broadband Absorber Based on One-dimensional Plasmonic Radial Sandwich Structures

Yang, Gui, Mao*, Wang

Institute of Microelectronics of Chinese Academy of Sciences, Beijing, P. R. China

12:25pm - 12:40pm

Thermal Property and Molecular Dynamics of Liquid Crystalline Polymers

Gi Tae Park, Jong Won Kim, Jin-Hae Chang*

Department of Polymer Science and Engineering, Kumoh National Institute of Technology, Gumi 39177, Korea

12:40pm - 12:55pm

Plasma characterization of polyvinylchloride and methyl methacrylate polymers used in manufacturing of water and food containers using Laser Induced Breakdown Spectroscopy

W.A.Farooq¹, Awatef. S. Al-Johani¹, M. S. Alsalhi¹, Walid Tawfiq², R. Qindeel¹

¹Department of Physics and Astronomy College of Science King Saud University Riyadh Saudi Arabia, ²Department of Environmental Applications, NILES National Institute of Laser, Cairo University Cairo, Egypt

12:55pm - 1:10pm

Contemplating charge transport by modeling of DNA nucleobases based nano structures

Rajan Vohra, Ravinder Singh Sawhney, Guru Nanak Dev

University, Amritsar, India | Guru Nanak Dev University, Amritsar, India

1:00pm - 2:00pm Lunch Break

MCEC: Multifunctional Composite Materials, Energy Storage and Conversion Devices

Time: Wednesday, 24/July/2019: 11:40am - 1:00pm · Location: Grand Ballroom

Session Chair: Ghim Wei Ho,

11:40am - 11:55am

A Long Cycle-Life and High-Rate Magnesium-Ion Battery Anode Enabled by Self-Healing through Near-Room-Temperature Solid-Liquid Phase Transition

Lin Wang¹, Sam Welborn¹ and Eric Detsi^{1,2,*}

¹Department of Materials Science & Engineering, University of Pennsylvania, Philadelphia PA, 19104-6272, USA. ²Vagelos Institute for Energy Science and Technology (VIEST), Philadelphia, PA 19104, USA

11:55pm - 12:10pm

Enhancement of the performance of solar water splitting based on high-density single-crystal Fe₂O₃ nanowire-array fabricated by stress-induced atomic-diffusion method

Pei Pei, Yiyuan Xie, Yuhki Toku, Yang Ju

Department of Micro-Nano Mechanical Science and Engineering, Graduate School of Engineering, Nagoya University, Nagoya 464-8603, Japan.

12:10pm - 12:25pm

Triboelectric Direct Current Generation based on Charge-conveying System

Minki Kang, Hong-Joon Yoon, Sang-Woo Kim*

School of Advanced Materials Science and Engineering, Sungkyunkwan University (SKKU), Suwon 16419, Republic of Korea

12:25pm - 12:40pm

Fabrication and characterization of magnetic drug-loaded osteoinductive Fe₃O₄/CaCO₃ hybrid microspheres system

Jingyi Xue¹, Jiahong Lv¹, Wei Wang², Xiaolei Li¹, Qianli Li¹, Lin Zhuang², Yue Xu¹

¹Department of Orthodontics, Guanghua School of Stomatology, Hospital of Stomatology, Sun Yat-sen University, Guangdong Provincial Key Laboratory of Stomatology, Guangzhou, China.

²School of Physics, State Key Laboratory of Optoelectronic Materials and Technologies, Guangdong Provincial Key Laboratory of Photovoltaics Technologies, Institute for Solar Energy Systems, Sun Yat-sen University, Guangzhou, China

12:40pm - 12:55pm

Photo-patternable SU8-C Nanostructures Composites

Maryam Majidian, Claudio Grimaldi, Laszlo Forro, Arnaud Magrez

Institute of Physics, Ecole Polytechnique Fédérale de Lausanne, Switzerland.

12:55pm - 1:10pm

Synthesis of magnetic CaCO₃ microspheres for bone regeneration

Mingjie Zhang, Han Lin, Xiaolei Li, Qianli Li, Lin Zhuang, Yue Xu

Department of Orthodontics, Guanghua School of Stomatology, Hospital of Stomatology, Guangdong Provincial Key Laboratory of Stomatology, Sun Yat-sen University, Guangzhou, 510055, People's Republic of China

1:00pm - 2:00pm Lunch Break

Time: Wednesday, 24/July/2019: 2:00pm - 6:00pm · Location: 302

Session Chair: W.A.Farooq,

2:00pm - 2:15pm

Design of multifunctional composites and their multi-material additive manufacturing

Therriault, Dermanaki Farahani

Laboratory of Multiscale Mechanics, Mechanical Engineering Department, Polytechnique Montreal, C.P. 6079 Succ. Centre-ville, Montreal, QC, Canada, H3C 3A7.

2:15pm - 2:30pm

Preparation and Properties of An Eco-friendly Polyurethane Conductive Composite Coating Modified with MWCNTs

Fangfang Wang¹, Lajun Feng^{1,2,*}, Ali Lei¹

¹School of Materials Science and Engineering, Xi'an University of Technology, China, ²Key Laboratory of Corrosion and Protection of Shaanxi Province, China.

2:30pm - 2:45pm

Evaluation of long-term behavior of CFRP tendons in prestressed near surface mounted reinforcement girder

Hee Beom Park, Woo-tai Jung, Jong-sup Park, and Jae-Yoon Kang

Department of Infrastructure Safety Research, Korea Institute of Civil Engineering and Building Technology, Goyang, Republic of Korea.

2:45pm - 3:00pm

A re-centering deformation-amplified SMA damper for mitigating seismic response of structures

Hongnan Li

State Key Laboratory of Coastal and Offshore Engineering, Dalian University of Technology, Dalian 116023, China

3:00pm - 3:15pm

Auxetic Composite Made of Three-dimensional Fiber Structure for Impact Protection

Hong Hu, Lin Zhou, Jifang Zeng

Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hung Hom, Hong Kong.

3:15pm - 3:30pm

Colorless and Transparent Copolyimide Nanocomposite Films for Flexible Display Substrates

Jong Won Kim, Jin-Hae Chang*

Department of Polymer Science and Engineering, Kumoh National Institute of Technology, Gumi 39177, Korea.

3:30pm - 3:45pm

Injectable and hemostatic composite hydrogel of N, O-carboxymethyl chitosan/oxidized chondroitin sulfate for wound dressing

Hongbin (Li), Feng (Cheng), Xingjing (Wei), Xiaotong Yi, Jinmei (He)*

School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang 150010, China

3:45pm - 4:00pm

DGEBA Epoxy Based Polymer Nano Composites: A study on mechanical, Thermal, Morphological, Chemical properties

Manoj Kumar Shukla^{1*}, Archana Misra², Moksh Shukla³, Kavita Srivastava⁴ and Deepak Srivastava^{5*}

^{1*}Department of Plastic Tech., Govt. Polytechnic College, Kota, Rajasthan, India,²Department of Plastic Tech., Govt. Polytechnic College, Kota, Rajasthan, India,³B.Tech. Scholar, Department of Chemical Engineering, IIT, Kanpur, U.P., India.⁴Department of Chemistry, V. S. S. D. College, Kanpur, U.P., India, ^{5*}School of Chem. Tech. Department of Plastic Technology, H.B.T. U. , Kanpur, U.P., India.

4:00pm - 4:15pm

Structure, dielectric, ferroelectric and piezoelectric properties of KNN- based perovskite ceramics

E.D. Politova¹, G.M. Kaleva¹, A.V. Mosunov¹, S. Yu. Stefanovich¹, D.A. Kiselev²,

¹L.Ya.Karpov Institute of Physical Chemistry; Vorontsovo pole, 10, Moscow 105064, Russia, ²National University of Science and Technology "MISiS", Leninskii pr. 4, Moscow, Russia

4:15pm - 4:30pm

Layered Double Hydroxides Functionalized with Organic Chromophores Utilized for Stamping of Polymer Profiles

Zăvoianu¹, Șerban¹, Pavel¹, Bacalum¹, Vlad², Bîrjega²

¹University of Bucharest, Faculty of Chemistry, Department of Organic Chemistry, Biochemistry & Catalysis, Blv. Regina Elisabeta No. 4-12, S3, 030018, Bucharest, ROMANIA, ²National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Str., 77125 Bucharest-Magurele, ROMANIA.

4:30pm - 4:45pm

Field Application of Prestressed Near-Surface-Mounted Carbon-Fiber-Reinforced-Polymer Tendon for Concrete Bridge

Woo-tai Jung

Korea Institute of Civil engineering and building Technology

4:45pm - 5:00pm

Electron transfer mechanism of carbon dots and nickel-²⁺mesoporous silica nanoparticles for fluorescent detection probe

Yilin Yu, Xiaolei Li, Lin Zhuang

Department of Prosthodontics, Guanghua School of Stomatology, Hospital of Stomatology, Guangdong Provincial Key Laboratory of Stomatology, Sun Yat-sen

5:00pm - 5:15pm

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

Liangbo Liang, Kai Xiao, Alexander A. Puzov, Giang Nguyen, An-Ping Li, David B. Geohegan, Bobby G. Sumpter,

Oak Ridge National Laboratory

5:15pm - 5:30pm

Lignin as a raw material of activated carbon for supercapacitor electrodes

Zulamita Zapata-Benabithé, Giovanna Diosa, Chris D. Castro, Germán Quintana

Grupo de Energía y Termodinámica, Facultad de Ingeniería Química, Universidad Pontificia Bolivariana, Medellín 050031, Colombia, Grupo Pulpa y Papel, Facultad de Ingeniería Química, Universidad Pontificia Bolivariana, Circular 1No 70-01, Medellín 050031, Colombia

5:30pm - 5:45pm

Preparation of hyperbranched polymers of oxidized lignin modified with triazine for removal of heavy metals

Viviana Gómez | Zulamita Zapata-Benabithé | Jorge Valásquez | Germán Quintana | Grupo Pulpa y Papel, Facultad de Ingeniería Química, Universidad Pontificia Bolivariana, Circular 1No 70-01, Medellín 050031, Colombia | Grupo de Energía y Termodinámica, Facultad de Ingeniería Química, Universidad Pontificia Bolivariana, Circular 1No 70-01, Medellín 050031, Colombia | Grupo Pulpa y Papel, Facultad de Ingeniería Química, Universidad Pontificia Bolivariana, Circular 1No 70-01, Medellín 050031, Colombia | Grupo Pulpa y Papel, Facultad de Ingeniería Química, Universidad Pontificia Bolivariana, Circular 1No 70-01, Medellín 050031, Colombia

5:45pm - 6:00pm

Extremely tough and versatile cyclic peptide nanopolymers

Manoj Kolel-Veetil and Kenan P. Fears

Chemistry Division, US Naval Research Laboratory, Washington DC 20375

LDNT: Low Dimensional, Nano and 2d Materials and Thin Films

Time: Wednesday, 24/July/2019: 2:00pm - 6:30pm · Location: Grand Ballroom

Session Chair: Dae Joon Kang and Imran Shakir,

2:00pm - 2:15pm

Molecular Organometallic Resists for EUV (13.5 nm) Lithography

Brian (Cardineau), Michael (Murphy) , Robert L. (Brainard)*

Colleges of Nanoscale Science and Engineering, SUNY Polytechnic Institute; Albany NY 12203

2:15pm - 2:30pm

Electric-field control of magnetism in multiferroic heterostructures

Y. G. Zhao¹, A. T. Chen^{1,5}, Y. Ba¹, Y. Liu¹, P. S. Li^{1,2}, S. Zhang^{1,2}, X. F. Han³, J. W. Cai³, D. T. Pierce⁴, John Unguris⁴, X. X. Zhang⁵, and C. W. Nan⁶

¹Department of Physics and State Key Laboratory of Low-Dimensional Quantum Physics, Tsinghua University, Beijing 100084, China, ²College of Mechatronics and Automation, National University of Defense Technology, Changsha 410073, China, ³Beijing National Laboratory for Condensed Matter Physics, Chinese Academy of Sciences, Beijing 100190, China, ⁴Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, Maryland 20899, USA, ⁵Physical Science and Engineering Division, King Abdullah University of Science and Technology, Thuwal 23955-6900, Kingdom of Saudi Arabia, ⁶School of Materials Science and Engineering and Key Laboratory of Advanced Materials (MOE), Tsinghua University, Beijing 100084, China.

2:30pm - 2:45pm

Bioinspired gradient micro- and nanostructured surfaces with controllable wettability

Yongmei Zheng

Beihang University, Xueyuan Road 37, Haidain District, Beijing, 100191, China.

2:45pm - 3:00pm

Crystal growth, Structural Properties, and Molecular Dynamics in Perovskite -Type (C₂H₅NH₃)₂ZnCl₄ Crystals

Seong Eun Jang^{1,3}, Mi Jung Kim^{1,3} Ae Ran Lim^{1,2,*}

¹Analytical Laboratory of Advanced Ferroelectric Crystals, Jeonju University, Jeonju 55069, South Korea, ²Department of Science Education, Jeonju University, Jeonju 55069, South Korea, ³Department of Carbon Fusion Engineering, Jeonju University, Jeonju 55069, South Korea

3:00pm - 3:15pm

Quasi-Solid-State Single-Atom Transistor

Fangqing Xie^{1*}, Andreas Peukert¹, Thorsten Bender¹, Christian Obermair¹, Florian Wertz¹, Philipp Schmieder¹, and Thomas Schimmel^{1,2,3}

¹Institute of Applied Physics, Karlsruhe Institute of Technology (KIT), Campus South, 76131 Karlsruhe, Germany, ²Institute of Nanotechnology, KIT, Campus North, 76344 Eggenstein-

Leopoldhafen, Germany, ³Material Research Center for Energy Systems (MZE), KIT, Campus South, Karlsruhe, Germany

3:15pm - 3:30pm

Piezoelectric acoustic sensor based on two dimensional MoS₂

Hyoung Taek Kim, Ahrum Sohn, Jae Hwan Jung, Sang-Woo Kim*

School of Advanced Materials Science and Engineering, Sungkyunkwan University (SKKU), Suwon 16419, Republic of Korea

3:30pm - 3:45pm

Solution Processing of Functional Hybrid Inorganic Macromolecules

Mengwen Yan, Kelly G. Walter, Audrey Crom, Jeremy I. Feldblyum

Chemistry Department, The University at Albany, SUNY, Albany, NY, 12222

3:45pm - 4:00pm

Photoluminescence Trend in Carbon Quantum Dots

Jose Luis Casas Espinola

Instituto Politecnico Nacional

4:00pm - 4:15pm

Resistance Switching in a Single ZnO Nano-Wire

Kausik S Das¹, Benjamin Barnes^{1,2}, Eguono Wayne Omagamre¹

¹Department of Natural Sciences, University of Maryland Eastern Shore, Princess Anne, MD, USA, ²Department of Chemistry, University of Maryland College Park, College Park, MD, USA.

4:15pm - 4:30pm

Constructing transferrable electronics on functionalized graphene

Keith Whitener, Woo Lee, Jeremy Robinson, Paul Sheehan

Naval Research Laboratory

4:30pm - 4:45pm

A METHOD TO FABRICATE HIGH RESOLUTION AFM TIPS USING NANOSCALE CHEMICAL TEMPLATING TECHNIQUE

Maha M Khayyat

Saudi Arabia

4:45pm - 5:00pm

Charge Transfer Dynamics controlled by the band alignment at ZnPc-MoS₂ Interface: Monolayer vs Bulk

Tika Kafle, Bhupal Kattel, Wai-Lun Chan

University of Kansas

5:00pm - 5:15pm

Pulsed Anodic Arc Discharge for the Synthesis of Carbon Nanomaterials

Carles Corbella, Sabine Portal, Denis B. Zolotukhin, Luis Martinez, Li Lin, Madhusudhan N. Kundrapu, Michael Keidar
George Washington University

5:15pm - 5:30pm

2D thermoelectric materials: Role of the lattice thermal conductivity

Udo Schwingenschlogl

King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division (PSE), Thuwal 23955-6900, Saudi Arabia

5:30pm - 5:45pm

Control of metal-insulator transition temperature in VO₂ thin films by strain modification via various buffer layers

Heungsoo Kim, Nicholas A. Charipar, Alberto Piqué
Naval Research Laboratory

5:45pm - 6:00pm

Phase transition-based Terahertz and Infrared Devices

Nicholas Charipar, Heungsoo Kim, Ray Auyeung, Scott Mathews, Kristin Charipar , Alberto Pique
Naval Research Laboratory

6:00pm - 6:15pm

Exciton emissions in quasi onedimensional layered KP15

Nan Tian, Danmin Liu, Yongzhe Zhang and Guoqing Zhang

Institute of Microstructure and Property of Advanced Materials, Beijing University of Technology, Beijing, China | Institute of Microstructure and Property of Advanced Materials, Beijing University of Technology, Beijing, China | College of Materials Science and Engineering, Beijing University of Technology, Beijing, China. | Institute of Microstructure and Property of Advanced Materials, Beijing University of Technology, Beijing, China