

# Symposium Program

## Materials Science and Engineering [MSE]

Symposium Chair: Yongho Sohn (University of Central Florida)

Co-Chairs: Gwan-Hyoung Lee (Yonsei University), YeonWoong Jung (University of Central Florida)

August 10, Thursday, 8:00-9:40AM at Prince William

MSE Session: Frontiers of Materials Science - I

Chair: Minseo Park (Auburn University)

8:00 AM	<b>[Keynote] Functional High Yield Molecular-scale Electronic Device</b> Takhee Lee (Seoul National University)
8:30 AM	<b>[Invited] Ultrahigh Elastic Strain Energy Storage in Organic-Inorganic Hybrid Polymer Nanopillars Generated by Metal Oxide Infiltration Synthesis</b> Chang-Yong Nam (Brookhaven National Laboratory)
9:00 AM	<b>Two-Dimensional Transition Metal Dichalcogenide Hybrid Atomic Layers: 2D Van der Waals Heterostructures to Mixed Dimensional Materials</b> , YeonWoong Jung (University of Central Florida)
9:20 AM	<b>Two-dimensional Materials and van der Waals Heterostructures for Future Electronics</b> Gwan-Hyoung Lee (Yonsei University)

August 10, Thursday, 1:10-3:20PM at Prince William

MSE/MAN Interdisciplinary Session: Additive Manufacturing / 3D Printing

Chair: Yongho Sohn (University of Central Florida)

1:15 PM	<b>Group Photo</b>
1:20 PM	<b>[INVITED] ARL Center for Materials and Manufacturing Sciences</b> Kyu C. Cho (U.S. Army Research Laboratory)
1:50 PM	<b>[INVITED] Polymer Physics of Materials Extrusion 3D Printing</b> Kalman Migler (National Institute of Standards and Technology)
2:20 PM	<b>[INVITED] Additive Manufacturing of Metals: Building Unreliable Microstructures 20 Microns at a Time</b> , Lyle Levine (National Institute of Standards and Technology)
2:50 PM	<b>[INVITED] Fabrication of NiTi Scaffolds via Additive Manufacturing and Gas-Phase Alloying</b> Ashley Paz Y Puente (University of Cincinnati)

August 10, Thursday, 3:40-5:50AM at Prince William

MSE Session: Frontiers of Materials Science - II

Chair: Gwan-Hyoung Lee (Yonsei University)

3:40 PM	<b>[INVITED] Plasmon Hybridization in Self-Assembled 3D Graphene Nanostructures</b> Jeong-Hyun Cho (University of Minnesota)
4:10 PM	<b>Functionalization and Dispersion Stability Study of Graphene Materials</b> Melissa Wunch (University of Texas at Dallas)
4:30 PM	<b>[INVITED] Novel contact strategy for two-dimensional materials</b> Younghun Jung (Columbia University)

5:00 PM	<b>[Invited] Observation of bright visible light emission from electrically biased 2D materials heterostructures devices</b> , Sanghoon Chae (Columbia University)
5:30 PM	<b>Diffusion and Defect Nature in Solid</b> Jong-Hee Park (The Electrochemical Engine)

**August 10, Thurs., 3:40-5:40PM at Jefferson**  
**MAN/MSE Interdisciplinary Session: Nano-Micro Fabrication for Energy/Material**  
**Chair: Seok-min Kim (Chung-Ang Univ.)**

3:40 PM	<b>Modeling and analysis of segmented thermoelectric generator performance considering parasitic losses</b> Heonjoong Lee (Virginia Polytechnic Institute and State University)
3:55 PM	<b>Membraneless Water Filtration using CO<sub>2</sub></b> Sangwoo Shin (University of Hawaii at Manoa)
4:10 PM	<b>[INVITED] An integrated microfluidic processor for space exploration</b> Jungkyu Kim (Texas Tech University)
4:30 PM	<b>From nanofibrils to nanosheets, mechanical characterization of amyloid biomaterials using molecular scale simulations</b> , Gwonchan Yoon (Texas Tech University)
4:45 PM	<b>Electrostatically Actuated Microshutter Array for Space Exploration</b> Kyowon Kim (NASA)
5:00 PM	<b>Fiber Optic Sensor for Sensing Carbon Dioxide Gas</b> Martin Byung-Guk Jun (University of Victoria / Purdue University)
5:15 PM	<b>Fabrication of glass molded microfluidic devices with vitreous carbon mold</b> Seok-min Kim (Chung-Ang University)

**August 11, Friday, 8:00-9:40AM at Prince William**  
**MSE Session: Materials Engineering - I**  
**Chair: YeonWoong Jung (University of Central Florida)**

8:00 AM	<b>[Invited] Effect of Gamma-Ray Irradiation on AlGaIn/GaN HEMTs</b> Minseo Park (Auburn University)
8:30 AM	<b>Origin of the wet chemical resistance in silicon nitride films</b> Harrison Kim (University of Texas at Dallas)
8:50 AM	<b>Anodized Stainless Steel for Omniphobicity and Anti-corrosion</b> Junghoon Lee (Stevens Institute of Technology)
9:10 AM	<b>[Invited] Effects of Ultrasonic Treatments on the Adhesion of Electroless Copper Plating on Non-Conductive Substrate</b> , Jae-Ho Lee (Hongik University)

**August 11, Friday, 1:20-3:20PM at Prince William**  
**MSE Session: Materials Engineering - II**  
**Chair: Jeong-Hyun Cho (University of Minnesota)**

1:20 PM	<b>3D Printing of Metallic Alloys: Alloy development research</b> Yongho Sohn (University of Central Florida)
1:40 AM	<b>Volumetric Efficiency and Processing Dilemma in Multilayer Ceramic Capacitors</b> Burtrand Lee (American Chemical Society)

2:00 PM	<b>Development of High Mn Steels Metallurgy for Erosion Resistant Slurry Pipeline Applications,</b> Hyunwoo Jin (ExxonMobil Research and Development Company)
2:20 PM	<b>Revisiting the Phase Equilibria in Al-Cu Binary System</b> Choong-Un Kim (University of Texas at Arlington)
2:40 PM	<b>Simultaneous Measurement of Self- and Interdiffusion Coefficients in Metallic Alloys</b> Yongho Sohn (University of Central Florida)
3:00 PM	<b>Planning Meeting for UKC 2018 MSE Symposium</b>