

PacSurf 2022 Program Key

BI	Biomaterial Surfaces & Interfaces
CF	Charles S. Fadley Memorial Session
EH	Energy Harvesting & Storage
NM	Nanomaterials
PS	Plasma Processing
TF	Thin Films

Key to Session/Paper Numbers

Sessions are labeled with topic acronyms (e.g. **BI**), then then a dash followed by the first two characters of the day of the week:

Monday, **T**uesday, **W**ednesday, **T**hursday, **F**riday, then a single letter for **M**orning, **A**fternoon, **E**vening, **P**oster, then a number to indicate the first or second session within that session block (e.g. Mo**M1**, Tu**E2**), and finally a dash followed by a number indicating the starting time slot for the paper.

Example: TF-MoM1-5 (Thin Films, Monday morning, 9:20 am).

PacSurf 2022 Program Overview

Room /Time	Naupaka Salon 1-3	Naupaka Salon 4	Naupaka Salon 5-7
MoM		TF-MoM1: Innov. in the Dev. of Multifunct TF/Nano & Surf. Morph Evol: Exper. & Theory BI-MoM2: Biofunctional Surfaces and Coatings	EH-MoM2: Surfaces and Interfaces for Efficient Power Conversion and Batteries
MoE		CF-MoE1: Charles S. Fadley Mem Sess I: Adva. in X-ray Spectroscopy and Analysis CF-MoE2: Charles S. Fadley Mem Sess: Ambient-Press. XPS	
TuM		PS-TuM1: Plasma Modification of Surfaces and Materials BI-TuM2: Novel Biomaterials	CF-TuM1: Charles S. Fadley Memorial Session III: Hard X-ray Photoelectron Spectroscopy
TuP	Poster Sessions		
TuE		NM-TuE1: NanoCatalysis PS-TuE2: Practical Applications of Plasma	TF-TuE: Next-generation Protective Coatings and Tribological Applications
WeM		NM-WeM1: Nanocharacterization NM-WeM2: Nanocomposites	EH-WeM1: Surfaces and Interfaces for Solar Cells and Solar Fuels EH-WeM2: Surf. & Interfaces for Environmental Processes
WeP	Poster Sessions		
WeE		BI-WeE1: Bioimaging and Bionanotechnology	TF-WeE: Emerging Topics: Growth and Properties of Electronic Materials, 2D Layers, and Metallic-glass Thin Films
ThM		BI-ThM1: Bacteria Biomaterial Interactions NM-ThM2: Nanofabrication and Nanodevices	TF-ThM: Nanostructured Surfaces and Thin Films: Synthesis and Characterization

Monday Morning, December 12, 2022

Room Naupaka Salon 4	
8:00am	TF-MoM1-1 Hybrid Technologies to achieve Multifunctional Properties, <i>Pierre Collignon</i> , PD2-I, France; <i>A. Schuetze</i> , ACT
8:20am	TF-MoM1-2 Multifunctional Hybrid Optical Coatings for Flexible Substrates, <i>Ludvik Martinu</i> , <i>J. Klemberg-Sapieha</i> , <i>O. Zabeida</i> , Polytechnique Montréal, Canada
8:40am	INVITED: TF-MoM1-3 High-Sensitivity UV Photoemission Spectroscopy Using Low Energy Photon to Probe the Electronic Structures of Semiconductors, Insulators and Biomolecules, <i>Hisao Ishii</i> , Chiba University, Japan
9:00am	
9:20am	TF-MoM1-5 Stress Corrosion Cracking Simulation of FCC Type High Entropy Alloy via Reactive Molecular Dynamics Method, <i>Jo Watanabe</i> , Institute for Materials Research, Tohoku University, Japan; <i>Q. Chen</i> , New Industry Creation Hatchery Center, Tohoku University, Japan; <i>Y. Asano</i> , Institute for Materials Research, Tohoku University, Japan; <i>Y. Ootani</i> , Institute for Materials Research, Tohoku University, Japan; <i>N. Ozawa</i> , New Industry Creation Hatchery Center, Tohoku University, Japan; <i>M. Kubo</i> , Institute for Materials Research, Tohoku University, Japan
9:40am	
10:00am	BREAK
10:20am	INVITED: BI-MoM2-8 Structure in Lipid Films: From Biophysical Models to Drug Delivery, <i>Christine DeWolf</i> , Concordia University, Canada
10:40am	
11:00am	BI-MoM2-10 Ways to Synthesize Silicone Nanobodies with Complex Shape and Their Applications as Coatings, <i>K. Chen</i> , <i>Stefan Seeger</i> , University of Zurich, Switzerland
11:20am	BI-MoM2-11 Isolation and Label-Free Detection of Circulating Tumour Cells by Fluidic Diffraction Chips with a Reflective Laser Beam System, <i>F. Lin</i> , National Taiwan University of Science and Technology, Taiwan; <i>H. Hsu</i> , National Defense Medical Center, Taiwan; <i>Jem-Kun Chen</i> , National Taiwan University of Science and Technology, Taiwan
11:40am	BI-MoM2-12 Designer Silk: Plasma-Based Strategies to Customize Surface Properties of Silk Fibroin Films, <i>Morgan Hawker</i> , California State University, Fresno

Thin Films
Session TF-MoM1
Innovations in the Development of Multifunctional Thin Films/Nanostructural and Surface Morphological Evolution: Experiment and Theory
Moderator:
Jolanta Klemberg-Sapieha, Polytechnique Montréal, Canada

Biomaterial Surfaces & Interfaces
Session BI-MoM2
Biofunctional Surfaces and Coatings
Moderator:
Buddy D. Ratner, University of Washington

Monday Morning, December 12, 2022

Room Naupaka Salon 5-7		
8:00am		Energy Harvesting & Storage Session EH-MoM2 Surfaces and Interfaces for Efficient Power Conversion and Batteries Moderator: David Ginger , University of Washington
8:20am		
8:40am		
9:00am		
9:20am		
9:40am		
10:00am	BREAK	
10:20am	EH-MoM2-8 Fabrication of Proton-conductive BaCeZrYO _{3-d} Coatings by Solution Precursor Plasma Spray (SPPS) Method, Yen-Yu Chen , W. Zeng , C. Liu , G. Yao , Chinese Culture University, Taiwan	
10:40am	EH-MoM2-9 Metal Exsolution and Nanoparticle Self-Assembly Dynamics at Complex Oxide Surfaces, Moritz Lukas Weber , Forschungszentrum Juelich GmbH, Lawrence Berkeley National Laboratory, RWTH Aachen University, Juelich-Aachen Research Alliance; B. Šmíd , Charles University, Czech Republic; H. Kersell , Lawrence Berkeley National Laboratory (LBNL); U. Breuer , Forschungszentrum Jülich GmbH, Germany; M. Rose , Forschungszentrum Jülich GmbH, RWTH Aachen University, Juelich-Aachen Research Alliance (JARA-FIT, Germany); N. Menzler , Forschungszentrum Jülich GmbH, RWTH Aachen University, Germany; R. Dittmann , Forschungszentrum Jülich GmbH, Juelich-Aachen Research Alliance (JARA-FIT, Germany); R. Waser , Forschungszentrum Jülich GmbH, RWTH Aachen University, Juelich-Aachen Research Alliance (JARA-FIT), Germany; O. Guillon , Forschungszentrum Jülich GmbH, RWTH Aachen University, Juelich-Aachen Research Alliance (JARA-Energy), Germany; C. Lenser , Forschungszentrum Jülich GmbH, Germany; S. Nemšák , Lawrence Berkeley National Laboratory (LBNL); F. Gunkel , Forschungszentrum Jülich GmbH, Juelich-Aachen Research Alliance (JARA-FIT), Germany	
11:00am	EH-MoM2-10 Characterization of Surfaces and Interfaces in Polymer Electrolyte Membrane Electrolyzers, Svitlana Pylypenko , Colorado School of Mines	
11:20am	EH-MoM2-11 Design and Manufacture of Air-Silicon Batteries and the Impact of Plasma-Processed Silicon on the Efficiency of These Batteries, Marziyeh Gholami , Shahid Beheshti University, Iran (Islamic Republic of)	
11:40am	EH-MoM2-12 Insights into the Interfacial Reactions of High Voltage MgV ₂ O ₄ Cathodes for Rechargeable Magnesium Batteries, D. Nguyen , V. Prabhakaran , Pacific Northwest National Laboratory, Joint Center for Energy Storage Research (JCESR); V. Shutthanandan , Pacific Northwest National Laboratory; J. Hu , Pacific Northwest National Laboratory, Joint Center for Energy Storage Research; G. Alexander , J. Cabana-Jimenez , University of Illinois at Chicago, Joint Center for Energy Storage Research; K. Mueller , Pacific Northwest National Laboratory, Joint Center for Energy Storage Research; Vijayakumar Murugesan , Pacific Northwest National Laboratory, Joint Center for Energy Storage Research	

Monday Evening, December 12, 2022

Room Naupaka Salon 4	
5:40pm	INVITED: CF-MoE1-1 Pursuing Chuck Fadley's Ideas a Scientific Lifetime: Photoelectron Recording with Maximum Parallelization, <i>Gerd Schönhense</i> , Institut für Physik, Johannes Gutenberg-Universität, Germany
6:00pm	
6:20pm	CF-MoE1-3 The State of Interpretation for Multiplet Splitting and Shake-Up Satellites in Transition Metal Compound XPS: Fe ₂ O ₃ and NiO, <i>Christopher R. Brundle</i> , C. R. Brundle and Associates; <i>B. Crist</i> , XPS Library; <i>P. Bagus</i> , University of North Texas
6:40pm	CF-MoE1-4 Zinc and Cadmium: Chemical State Determination Through XPS Analyses of Standard Samples, <i>Jeffrey D. Henderson</i> , <i>S. Buchanan</i> , <i>L. Grey</i> , <i>M. Biesinger</i> , Surface Science Western, Canada
7:00pm	CF-MoE1-5 X-Ray Spectroscopic Identification of Strain and Structure-Based Resonances in a Series of Saturated Carbon-Cage Molecules: Adamantane, Twistane, Octahedrane, and Cubane, <i>Trevor Willey</i> , <i>J. Lee</i> , Lawrence Livermore National Laboratory; <i>D. Brehmer</i> , <i>O. Paredes Mellone</i> , SLAC National Accelerator Laboratory; <i>L. Landt</i> , Lawrence Livermore National Laboratory; <i>P. Schriener</i> , <i>A. Fokin</i> , <i>B. Tkachenko</i> , Institute of Organic Chemistry, Justus Liebig University, Germany; <i>A. de Meijere</i> , <i>S. Kozhushkov</i> , Institute for Organic and Biomolecular Chemistry, Georg-August-University, Germany; <i>T. van Buuren</i> , Lawrence Livermore National Laboratory
7:20pm	BREAK
7:40pm	INVITED: CF-MoE2-7 Catching a Wave: From Quantum Materials to Liquid Chemistry, <i>Slavomir Nemsak</i> , Lawrence Berkeley National Laboratory, USA
8:00pm	
8:20pm	CF-MoE2-9 High Pressure Hard X-ray XPS Studies of Operando Catalytic Reactions for CO ₂ and N ₂ Reduction, <i>Anders Nilsson</i> , Stockholm University, Sweden
8:40pm	CF-MoE2-10 Initial Oxidation of Ternary Amorphous Metal Alloy Surfaces Under Ambient Oxygen Pressures, <i>Gregory Herman</i> , Oregon State University; <i>P. Alzaga</i> , HP Inc.; <i>T. Diulus</i> , <i>R. Addou</i> , Oregon State University; <i>W. Stickle</i> , HP Inc.; <i>J. Jenkins</i> , <i>R. Elzein</i> , Oregon State University

**Charles S. Fadley Memorial Session
Session CF-MoE1
Charles S. Fadley Memorial Session I: Advances in
X-ray Spectroscopy and Analysis
Moderators:
Gregory S. Herman, Oregon State University,
Boris Sinkovic, University of Connecticut**

**Charles S. Fadley Memorial Session
Session CF-MoE2
Charles S. Fadley Memorial Session II: Ambient-
Pressure X-ray Photoelectron Spectroscopy
Moderators:
Christopher R. Brundle, C.R. Brundle and Associates,
Alexander Gray, Temple University**

Tuesday Morning, December 13, 2022

Room Naupaka Salon 4		
8:00am		Plasma Processing Session PS-TuM1 Plasma Modification of Surfaces and Materials Moderator: Morgan Hawker, California State University, Fresno
8:20am	PS-TuM1-2 Development of Novel High-Entropy-Alloy Powders and Their Plasma-Sprayed Coatings, <i>Shih-Hsun Chen</i> , National Taiwan University of Science and Technology, Taiwan	
8:40am	PS-TuM1-3 Surface Fenicral Medium-Entropy-Alloy Coating to Enhance High-Temperature Air-Oxidation Resistance of a Plain Carbon Steel, <i>W. Kai, I. Yang</i> , National Taiwan Ocean University, Taiwan; <i>C. Chu</i> , National Taiwan Ocean University, Taiwan; <i>S. Chen</i> , National Taiwan University of Science and Technology, Taiwan; <i>J. Kai</i> , City University of Hong Kong	
9:00am	PS-TuM1-4 Synthesis of Carbon-Based Thin Films by PECVD and Their Nanostructure Control, <i>Shinsuke Mori, F. Bahlooli, N. Nedjad, A. ANAGRI</i> , Tokyo Institute of Technology, Japan	
9:20am	PS-TuM1-5 Tunable Photoluminescence from Carbon-Based Nanostructures, <i>Frank Güell</i> , Universitat de Barcelona, Spain	
9:40am	PS-TuM1-6 Cold Plasma and Artificial Intelligence Synergistic Effects on Future Domestic Food Security: A Prospective Study, <i>M. Bakhshi</i> , Department of Cellular and Molecular Biology, Faculty of Advanced Science and Technology, Tehran Medical Sciences, Islamic Azad University, Iran (Islamic Republic of); <i>F. Ostovarpour, Mohammad Sadegh Abbassi Shanbehbazari</i> , Laser and Plasma Research Institute (LAPRI), Shahid Beheshti University, Iran (Islamic Republic of); <i>A. Bakhshi</i> , School of Physics, Institute for Research in Fundamental Sciences (IPM), Iran (Islamic Republic of)	
10:00am	BREAK	
10:20am	BI-TuM2-8 Moving Towards Intracellular and Enzyme Catalyzed Molecule Synthesis with Mesoporous Materials, <i>Brian Trewyn</i> , Colorado School of Mines	Biomaterial Surfaces & Interfaces Session BI-TuM2 Novel Biomaterials Moderator: Michael Grunze, Max Planck Institute for Medical Research, Germany
10:40am	BI-TuM2-9 QCM-D Characterization of Competitive Plasma Protein Adsorption on Low-Fouling Fluoropolymers for Thromboresistant Biomaterials, <i>Sherry Liu, B. Ratner</i> , University of Washington	
11:00am	BI-TuM2-10 Hierarchical Surface Restructuring for Next Generation Implantable Neural Interfacing Applications, <i>Shahram Amini</i> , Pulse Technologies Inc., S. Shahbazmohamadi, University of Connecticut	
11:20am	BI-TuM2-11 Blood Compatibility Assessment of Biomaterial Surface Chemistries to Reduce the Intrinsic Coagulation Pathway Activation, <i>Kyung-Hoon Kim, B. Ratner</i> , University of Washington	
11:40am	BI-TuM2-12 Innate Immune Response an Integral Part of Acorn Barnacle Surface Adhesion, <i>Kenan Fears, J. J. Schultzhous</i> , US Naval Research Laboratory	

Tuesday Morning, December 13, 2022

Room Naupaka Salon 5-7	
8:00am	<p>INVITED: CF-TuM1-1 Probing Quantum Materials Interfaces with HAXPES at the GALAXIES Beamline, SOLEIL Synchrotron, <i>Jean-Pascal Rueff</i>, Synchrotron SOLEIL, France</p>
8:20am	
8:40am	<p>CF-TuM1-3 Hard X-ray Photoemission Spectroscopy (HAXPES) at the Advanced Photon Source: A Legacy of Charles S. Fadley, <i>Jeff Terry</i>, Illinois Institute of Technology</p>
9:00am	<p>CF-TuM1-4 Bulk Sensitive PhotoElectron Spectroscopy on Metal Hydrides, <i>G. Panaccione</i>, IOM- Consiglio Nazionale delle Ricerche (CNR), Italy; <i>Curran Kalha</i>, <i>A. Regoutz</i>, University College London, UK; <i>L. Ratcliff</i>, University of Bristol, UK; <i>F. Offi</i>, Università Roma III, Italy; <i>C. Schlueter</i>, <i>A. Gloskovskii</i>, DESY, Germany; <i>J. Osterwalder</i>, University of Zurich, Switzerland; <i>G. Colombi</i>, Technical University of Delft - TU Delft, Netherlands</p>
9:20am	<p>INVITED: CF-TuM1-5 Synergies between Synchrotron and Lab-Based X-Ray Techniques for the Studies of Complex Materials and Interfaces, <i>Alexander Gray</i>, Temple University</p>
9:40am	
10:00am	<p>BREAK</p>
10:20am	<p>CF-TuM1-8 In Situ Observation of Electrochemical Lithiation and Delithiation in Silicon Electrodes in All-solid-state Battery Configuration, <i>Takuya Masuda</i>, National Institute for Materials Science, Japan</p>
10:40am	<p>CF-TuM1-9 Structural Investigation of Ruthenium Silicide Si 2p Core Level Surface States Using X-Ray Photoelectron Diffraction, <i>Jonathan Denlinger</i>, Lawrence Berkeley National Laboratory</p>

Charles S. Fadley Memorial Session
Session CF-TuM1
Charles S. Fadley Memorial Session III: Hard X-ray Photoelectron Spectroscopy
Moderators:
Gerd Schönhense, Johannes Gutenberg-Universität, Germany,
Trevor Willey, Lawrence Livermore Laboratory

Biomaterial Surfaces & Interfaces

Room Naupaka Salon 1-3 - Session BI-TuP

Biomaterial Interfaces Poster Session

4:00pm

BI-TuP-1 Cell-Mimetic Biosensors for Detecting Avian Influenza Virus Through the Viral-Fusion Mechanism, **Jong-Woo Lim**, College of Veterinary Medicine, Research Institute for Veterinary Science, Seoul National University, Republic of Korea; **G. Park, C. Park**, Department of Chemical and Biomolecular Engineering, Yonsei University, Republic of Korea; **M. Yeom**, College of Veterinary Medicine, Research Institute for Veterinary Science, Seoul National University, Republic of Korea; **S. Lee**, Department of Chemical and Biomolecular Engineering, Yonsei University, Republic of Korea; **K. Lyoo**, College of Veterinary Medicine, Jeonbuk National University, Republic of Korea; **S. Haam**, Department of Chemical and Biomolecular Engineering, Yonsei University, Republic of Korea; **D. Song**, College of Veterinary Medicine, Research Institute for Veterinary Science, Seoul National University, Republic of Korea

BI-TuP-2 Using Cinnamaldehyde Plasma Treatment to Develop an Antioxidant Coating, **Ashley N. Keobounnam, M. Hawker**, California State University, Fresno

BI-TuP-3 Modifying Commercially-Available Wound Dressing Materials with Continuous and Pulsed 1,8-Cineole Plasma, **Mia Rose Kayaian, M. Hawker**, California State University, Fresno

BI-TuP-4 Fractional Analysis Process of Surface-Adsorbed Proteins Using Sds-Page, **Naofumi Ohtsu**, Kitami Institute of Technology, Japan

BI-TuP-5 Advanced Surface Analysis of Porous Bioactive Polymer Coatings on a TiAl6V4 Substrate Prepared by Supercritical Foaming for Orthopedic Applications, **Katja Andrina Kravanja, M. Finšgar, Ž. Knez, M. Marevc Knez**, University of Maribor, Slovenia

BI-TuP-6 PEG-b-PLA-NHS based Self Assembled Vaccine Platform as an Adjuvant-free Influenza Virus Vaccine, **Jaehyun Hwang**, Chonnam National University, Republic of Korea; **G. Park**, Yonsei University, Republic of Korea; **J. Lim**, Seoul National University, Republic of Korea; **E. Ga, S. Moon**, Chonnam National University, Republic of Korea; **C. Park**, Yonsei University, Republic of Korea; **H. Kim**, Kangwon National University, Republic of Korea; **D. Song**, Seoul National University, Republic of Korea; **S. Haam**, Yonsei University, Republic of Korea; **W. Na**, Chonnam National University, Republic of Korea

BI-TuP-7 Polymersome Based Co-Delivery System of Antigen and Immunostimulant for Improvement of Humoral Immune Response, **Eulhae Ga**, Chonnam National University, Republic of Korea; **J. Lim**, Seoul National University, Republic of Korea; **J. Hwang, S. Moon**, Chonnam National University, Republic of Korea; **M. Yeom, D. Song**, Seoul National University, Republic of Korea; **W. Na**, Chonnam National University, Republic of Korea

BI-TuP-8 Rapid and Effective Intradermal Application of Canine Influenza Vaccine Without Removal of Hair Using Patchless Insertion-Responsive Microneedle (Irmn) and Its *in Vivo* Efficacy Evaluation, **Suyun Moon, E. Ga, J. Hwang**, Chonnam National University, Republic of Korea; **A. Kang**, QuadMedicine R&D Centre, QuadMedicine, Republic of Korea; **S. Baek**, QuadMedicine R&D Centre, QuadMedicine, Inc., Republic of Korea; **H. Jun**, QuadMedicine R&D Centre, QuadMedicine, Inc., Seongnam, Republic of Korea; **S. Choi**, QuadMedicine R&D Centre, QuadMedicine, Inc., Republic of Korea; **J. Lim, M. Yeom**, Seoul National University, Republic of Korea; **J. Park**, Gachon University, Republic of Korea; **H. Kim**, Kangwon National University, Republic of Korea; **D. Song**, Seoul National University, Republic of Korea; **W. Na**, Chonnam National University, Republic of Korea

BI-TuP-9 Probing Bacterial Membrane Composition in the Study of Antibacterial Resistance using GCIB-SIMS, **John Fletcher**, University of Gothenburg, Sweden

BI-TuP-10 Soft, Precision Engineered Porous, Hydrogel Scaffolds Mechanically Tailored towards Applications in the Central Nervous System, **Ningjing Chen, B. Ratner**, University of Washington

BI-TuP-11 Zwitterionic Copolymer for the Bio-Compatible Coating on Medical Devices to Prevent Protein Fouling and Complement System Activation, **Kan Wu, B. Ratner**, University of Washington

BI-TuP-12 Enhanced Antithrombogenicity of 3D Templated Artificial Vascular Grafts Through Heparin Complex Conjugated with PEG Spacer, **ChaeHwa Kim**, Advanced Textile R&D Department, Korea Institute of Industrial Technology, Republic of Korea; **J. Kim**, Material & Component Convergence R&D Department, Korea Institute of Industrial Technology, Republic of Korea; **J. Lee, T. Kim**, Advanced Textile R&D Department, Korea Institute of Industrial Technology, Republic of Korea

BI-TuP-13 Impact of Amino Acid Conformation on the Efficacy of Antimicrobial Cyclic Peptides Against Medically- and Industrially-Relevant Microbes, **Q. Lu, D. Regan, D. Barlow, Kenan Fears**, US Naval Research Laboratory

Plasma Processing

Room Naupaka Salon 1-3 - Session PS-TuP

Plasma Processing Poster Session

4:00pm

PS-TuP-1 Flexible Atmospheric Pressure Plasma Jet Device with Built-in Electrodes for Operation in Wet Environments, **Jae Young Kim, G. Bae, E. Jung, H. Tae**, Kyungpook National University, Republic of Korea

PS-TuP-2 Enhanced Hydrogen Production from the Cracking of Waste Hydrocarbons Using Liquid-Phase Plasma, **Kyong-Hwan Chung**, Suncheon National University, Republic of Korea; **S. Ki**, Gyeongsang National University, Republic of Korea; **J. Yun**, Jeonnam Bioindustry Foundation, Republic of Korea; **S. Jung**, Suncheon National University, Republic of Korea

PS-TuP-3 Tailoring of Mg Thin-Film Corrosion Properties with Dielectric Barrier Discharge Plasma Treatment, **Lisa Hanke, T. Hartig, F. Weisheit, T. Tjardts**, Kiel University, Germany; **M. Valtiner**, Vienna University of Technology, Austria; **F. Faupel, E. Quandt**, Kiel University, Germany

PS-TuP-4 Improvement of Reliability in a-IGTO Thin-Film Transistors by H₂S Plasma Treatment, **Jin-Hwan Hong, D. Kim, B. Choi**, Sungkyunkwan University (SKKU), Republic of Korea

PS-TuP-5 Effects of Plasma Induced by Extreme Ultraviolet (EUV) Radiation on the Material Surfaces, **Juyoung Jung, J. Hong**, Sungkyunkwan University (SKKU), Republic of Korea; **H. Park, Y. Jung**, Samsung Electronics Co., Inc., Republic of Korea; **B. Choi**, Sungkyunkwan University (SKKU), Republic of Korea

PS-TuP-6 Effects of Ambient Air Conditions on Characteristics of Decomposing Aqueous Phosphorus Compounds by a Pin-to-Liquid Dielectric Barrier Discharge, **Gyu Tae Bae, J. Kim, E. Jung, H. Jang**, Kyungpook National University, Republic of Korea; **D. Kim, H. Lee**, Electronics and Telecommunications Research Institute, Republic of Korea; **H. Tae**, Kyungpook National University, Republic of Korea

PS-TuP-7 Influences of Asymmetric Bipolar Voltage Pulse on Film Properties of Polypyrrole Prepared by Solution Plasma Process, **Hyo Jun Jang, E. Jung, J. Kim, G. Bae, H. Tae**, Kyungpook National University, Republic of Korea

PS-TuP-8 Liquid Crystal Alignment Effect in Inorganic Alignment Layer Applied with Atmospheric Pressure Plasma, **Jin-Ah Kim, S. Choi**, Department of Smart Manufacturing Engineering, Changwon National University, Republic of Korea; **H. Park**, Department of Electrical, Electronic, Control Engineering, Changwon National University, Republic of Korea

PS-TuP-9 Effect of Atmospheric Plasma - Rubbing Treatment on the Liquid Crystal Alignment on Inorganic Layer, **Se-Hoon Choi, J. Kim**, Department of Smart Manufacturing Engineering, Changwon National University, Republic of Korea; **H. Park**, Department of Electrical, Electronic, Control Engineering, Changwon National University, Republic of Korea

PS-TuP-10 Deposition and Characterization of Carbon Nanowalls Synthesized by Microwave Discharge System Using Different Carbon Sources, **K. KWAK, Abdessadk ANAGRI, F. BOHLOOL, S. MORI**, Dept. of Chemical Science and Engineering, Tokyo Institute of Technology, Japan

Tuesday Evening, December 13, 2022

Room Naupaka Salon 4		
5:40pm	NM-TuE1-1 Layered Iron Vanadate Electrocatalyst for Large Current Density Water Splitting, <i>Fitri Nur Indah Sari, J. Ting</i> , National Cheng Kung University (NCKU), Taiwan	Nanomaterials Session NM-TuE1 NanoCatalysis Moderator: Ellen Fisher , Colorado State University
6:00pm	NM-TuE1-2 Size Dependence of the N-Doped Graphene Nanocluster on the Oxygen Reduction Reaction Activity, <i>H. Matsuyama</i> , The University of Electro-Communications (UEC Tokyo), Japan; <i>L. Arellano Sartorius</i> , The University of Electro-Communications (UEC Tokyo) and Instituto Politécnico Nacional, Mexico; <i>Jun Nakamura</i> , The University of Electro-Communications (UEC Tokyo), Japan	
6:20pm	NM-TuE1-3 a New High Entropy Glycerate for High Performance Oxygen Evolution Reaction, <i>Thi Xuyen Nguyen, Y. Su, C. Lin, J. Ruan, J. Ting</i> , National Cheng Kung University, Taiwan	
6:40pm	NM-TuE1-4 Shape Matters, Nanostructured Materials with Unique Properties in Carbon Capture and Catalysis, <i>Ryan Richards</i> , Colorado School of Mines	
7:00pm	NM-TuE1-5 Molecular Single Iron and Cobalt Catalysts Over Carbon Nanotubes for Electrochemical CO ₂ Reduction and H ₂ Production, <i>Paulina R. Martinez-Alanis</i> , Institut de Recerca en Energia de Catalunya, Spain; <i>A. Berlanga</i> , Universidad Nacional Autonoma de Mexico; <i>G. Montaña, K. Mejía</i> , Institut de Recerca en Energia de Catalunya, Spain; <i>F. Güell</i> , Universitat de Barcelona, Spain; <i>I. Castillo</i> , Universidad Nacional Autónoma de México; <i>A. Cabot</i> , Institut de Recerca en Energia de Catalunya, Spain; <i>T. Kallio</i> , Aalto University, Finland	
7:20pm	BREAK	
7:40pm	INVITED: PS-TuE2-7 VHF Plasma Enhanced Atomic Layer Deposition of SiN _x , <i>Y. Ji, H. Kim</i> , Sungkyunkwan University (SKKU), Republic of Korea; <i>A. Ellingboe</i> , Dublin City University, Ireland; <i>Geun Young Yeom</i> , Sungkyunkwan University (SKKU), Republic of Korea	Plasma Processing Session PS-TuE2 Practical Applications of Plasma Moderators: Mia Rose Kayaian , California State University, Fresno, Ashley N. Keobounnam , California State University, Fresno
8:00pm		
8:20pm	PS-TuE2-9 Instant Inactivation of Infectious Bioaerosols by Plasma Filter Technologies, <i>Seunghun Lee</i> , Korea Institute of Materials Science, Republic of Korea; <i>K. Baek</i> , Korea Institute of Materials Science, Republic of Korea; <i>S. Jung, J. Park, E. Byeon, D. Kim</i> , Korea Institute of Materials Science, Republic of Korea; <i>S. Ryoo</i> , Masan National Tuberculosis Hospital, Republic of Korea; <i>S. Lee</i> , Korea Conformity Laboratories, Republic of Korea	
8:40pm	PS-TuE2-10 Fabrications of High-Adhesion Copper-Coated Fiber for Antibacterial and Antiviral Filter by Ion-Beam Irradiation, <i>Sunghoon Jung</i> , Korea Institute of Materials Science, Republic of Korea	

Tuesday Evening, December 13, 2022

Room Naupaka Salon 5-7	
5:40pm	INVITED: TF-TuE-1 Functional Coatings for Aerospace Applications – Perspectives and Sustainable Development, <i>Jolanta-Ewa Klemberg-Sapieha</i> , Polytechnique Montréal, Canada
6:00pm	
6:20pm	TF-TuE-3 How to Manage Friction and Wear of Diamond-Like Carbon Coatings Lubricated with ZDDP Additive by Tuning Their Mechanical Properties, <i>Maria Isabel De Barros Bouchet</i> , LTDS - Ecole Centrale de Lyon , France
6:40pm	TF-TuE-4 Corrosive Properties of Y ₂ SiO ₅ Environmental Barrier Coatings, <i>Byung-Koog Jang</i> , Kyushu University, Japan
7:00pm	TF-TuE-5 The Effect of Morphology in the Diffusion of Ag Inside Hard Coatings, <i>Diogo Cavaleiro</i> , University of Coimbra, Portugal; <i>F. Fernandes</i> , Instituto Superior Engenharia do Porto, Portugal
7:20pm	BREAK
7:40pm	TF-TuE-7 Comparison of Mechanical and Tribological Properties of Diamond-Like Carbon Coatings Doped with Europium and Gadolinium Produced by HiPiMs, <i>M. Fontes</i> , Federal Institute of Education, Science and Technology of Sao Paulo, Brazil; <i>A. Cavaleiro</i> , <i>Fábio Ferreira</i> , University of Coimbra, Portugal
8:00pm	TF-TuE-8 Reactive Molecular Dynamics Simulation Study on the Chemical Reactions Induced at the Diamond-Like Carbon/Fe Sliding Interface and Their Effects of Friction and Wear, <i>Mizuho Yokoi</i> , <i>M. Kawaura</i> , Institute for Materials Research, Tohoku University, Japan; <i>Q. Chen</i> , New Industry Creation Hatchery Center, Tohoku University, Japan; <i>Y. Asano</i> , <i>Y. Ootani</i> , Institute for Materials Research, Tohoku University, Japan; <i>N. Ozawa</i> , New Industry Creation Hatchery Center, Tohoku University, Japan; <i>M. Kubo</i> , Institute for Materials Research, Tohoku University, Japan
8:20pm	INVITED: TF-TuE-9 High-Entropy Configuration Strategy for the Synthesis of Oxide, Glycerate, and Sulfide Catalysts for Oxygen Evolution Reaction in Water Splitting, <i>Jyh-Ming Ting</i> , National Cheng Kung University (NCKU), Taiwan; <i>T. Nguyen</i> , National Cheng Kung University (NCKU), Taiwan, Viet Nam; <i>Y. Liao</i> , <i>C. Lin</i> , <i>Y. Su</i> , National Cheng Kung University (NCKU), Taiwan
8:40pm	
Thin Films Session TF-TuE Next-generation Protective Coatings and Tribological Applications Moderator: Hisao Ishii , Chiba University, Japan	

Wednesday Morning, December 14, 2022

Room Naupaka Salon 4		
8:00am	NM-WeM1-1 Phase Transition Study of 2D NbSe ₂ by in-situ TEM/STEM, <i>Moon Kim</i> , The University of Texas at Dallas	Nanomaterials Session NM-WeM1 Nanocharacterization Moderator: Byron Gates , Simon Fraser University, Canada
8:20am	INVITED: NM-WeM1-2 Development of Atomic Holography Microscope CoDELMA, <i>Hiroshi Daimon</i> , Toyota Physical and Chemical Research Institute, Japan; <i>H. Momono</i> , National Institute of Technology, Japan; <i>H. Matsuda</i> , Institute for Molecular Science, Japan; <i>L. Tóth</i> , University of Debrecen, Hungary; <i>Y. Masuda</i> , <i>K. Moriguchi</i> , <i>K. Ogai</i> , APCO Ltd., Japan; <i>Y. Hashimoto</i> , <i>T. Matsushita</i> , Nara Institute of Science and Technology, Japan	
8:40am		
9:00am	NM-WeM1-4 Development of a Nanocomposite Based Films with Antifungal Properties and Containing Encapsulated Nanoemulsion Based on Essential Oils: Effect of Combined Treatment with γ -Irradiation, <i>Monique Lacroix</i> , INRS, Canada	
9:20am	NM-WeM1-5 Tuning Spin Interactions of Magnetic Molecules on Au(111) by Atomic Adsorbates, <i>Min Hui Chang</i> , Korea University, Republic of Korea; <i>Y. Chang</i> , Korea Advanced Institute of Science and Technology, Republic of Korea; <i>N. Kim</i> , <i>Y. Kim</i> , Korea advanced Institute of Science and Technology, Republic of Korea; <i>S. Kahng</i> , Korea University, Republic of Korea	
9:40am	NM-WeM1-6 Critical Utilization of Scan Probe Microscopy (Spm) Methods for 2d Materials Research, <i>Jason Tresback</i> , <i>J. Deng</i> , Harvard University	
10:00am	BREAK	
10:20am	INVITED: NM-WeM2-8 Tuning the Surfaces of Nanomaterials: From a Diverse Chemical Functionality to Applications in Assembly and Imaging, <i>Byron Gates</i> , <i>R. Ali</i> , <i>M. Radford</i> , <i>H. Kang</i> , <i>G. Cheema</i> , Simon Fraser University, Canada	Nanomaterials Session NM-WeM2 Nanocomposites Moderator: Ellen Fisher , Colorado State University
10:40am		
11:00am	NM-WeM2-10 Preparation of Fluorinated Oligomeric Silica/Magnetite Composites: Application to Selective Removal of Fluorinated Aromatic Compounds from Aqueous Solution under Magnetic Field, <i>Hideo Sawada</i> , <i>S. Okada</i> , <i>K. Yamashita</i> , Hirosaki University, Japan	
11:20am	NM-WeM2-11 Dielectric Characteristics Comparison between Graphene- and Mxene-Incorporated Composites, <i>S. Jun</i> , Korea Institute of Industrial Technology, Republic of Korea; <i>K. Ahn</i> , <i>SeGi Yu</i> , Hankuk University of Foreign Studies, Republic of Korea	
11:40am	NM-WeM2-12 The Thermal Stability of Separated Configurations in Surface-Segregated Nanoparticles: Atomistic Modeling of Pd-Ir Nanophase Diagrams, <i>Micha Polak</i> , <i>L. Rubanovich</i> , Ben-Gurion University of the Negev, Israel	

Wednesday Morning, December 14, 2022

Room Naupaka Salon 5-7		
8:00am		Energy Harvesting & Storage Session EH-WeM1 Surfaces and Interfaces for Solar Cells and Solar Fuels Moderator: Svitlana Pylypenko, Colorado School of Mines
8:20am		
8:40am	INVITED: EH-WeM1-3 Surface Recombination and Surface Passivation in Halide Perovskite Semiconductors, David Ginger , University of Washington	
9:00am		
9:20am	INVITED: EH-WeM1-5 Passivating Interfaces in Thin Film Photovoltaics, Craig Perkins, D. McGott , NREL; E. Colegrove , NREL, United States Minor Outlying Islands (the); A. Hattori , UC Santa Barbara; M. Reese , NREL	
9:40am		
10:00am	BREAK	
10:20am	EH-WeM2-8 Effect of Carbon Support Structures on Electrode Reaction Activity of Catalyst Layer in Polymer Electrolyte Fuel Cell: Large-scale Reactive Molecular Dynamics Simulations, Tetsuya Nakamura, R. Otsuki, Y. Asano, Q. Chen, Y. Ootani, N. Ozawa, M. Kubo , Tohoku University, Japan	Energy Harvesting & Storage Session EH-WeM2 Surfaces and Interfaces for Environmental Processes Moderator: Craig Perkins, National Renewable Energy Laboratory
10:40am	EH-WeM2-9 Large Scale Molecular Dynamics Simulation Study on Ionomer Coating of Pt Nanoparticles of Polymer Electrolyte Fuel Cells, Riku Otsuki, T. Nakamura , Institute for Materials Research, Tohoku University, Japan; Q. Chen , New Industry Creation Hatchery Center, Tohoku University, Japan; Y. Asano, Y. Ootani , Institute for Materials Research, Tohoku University, Japan; N. Ozawa , New Industry Creation Hatchery Center, Tohoku University, Japan; M. Kubo , Institute for Materials Research, Tohoku University, Japan	
11:00am	EH-WeM2-10 Studying Corrosion Processes of Aluminum Alloys in Diverse Aqueous Environments, Micha Ben-Naim, A. Ivanovskaya, S. Cho, C. Orme, M. Bagge-Hansen , Lawrence Livermore National Laboratory	

Energy Harvesting & Storage

Room Naupaka Salon 1-3 - Session EH-WeP

Energy Harvesting and Storage Poster Session, 4:00- 5:30pm

EH-WeP-1 Spintronic Diode as a Signal Detector and RF Energy Harvester, *Andrei Slavin*, Oakland University

EH-WeP-2 Strain Imaging of a LiTi₂O₄ Anode in a Li-Ion Battery, *Keiji Takata*, Kansai University, Japan

EH-WeP-3 A Novel Doping Strategy of PTAA for High-Performance Inverted Perovskite Solar Cell, *Jihyeon Heo, H. Park, H. Park*, Hanyang University, Korea

EH-WeP-4 The Role of Artificial Intelligence in Minimizing Analysis Errors, Illustrated with EXAFS, Nanoindentation, and Core Level Photoemission, *Jeff Terry*, Illinois Institute of Technology

EH-WeP-5 In Situ Cryo-Xps Analysis of Intercalation Mechanism in Aqueous Zn-MnO₂ Batteries, *Bhuvana M. Sivakumar, H. Chang, K. Hankins, M. Fayette, V. Shutthanandan, V. Murugesan, D. Choi, X. Li, D. Reed*, Pacific Northwest National Lab

EH-WeP-6 High-Generating Electrical Power of Chemo-Mechanical Energy Harvesters from Carbon Nanotube Yarn Twist, *Seongjae Oh*, Department of Energy Science Sungkyunkwan University, Republic of Korea; *S. Kim*, Department of Advanced Textile R&D Korea Institute of Industrial Technology, Republic of Korea

EH-WeP-7 TOF-SIMS Analysis for Power Semiconductors, *Jaeyeong Lee, Y. Jeong, H. Moon, J. Jin*, Korea Basic Science Institute, Korea (Democratic People's Republic of)

Nanomaterials

Room Naupaka Salon 1-3 - Session NM-WeP

Nanomaterials Poster Session, 4:00 – 5:30pm

NM-WeP-1 Array of Freestanding Graphene Variable Capacitors on 100 nm Silicon Wafers for Vibration-Based Energy Harvesting Applications, *Paul Thibado, F. Harerimana, J. Mangum*, University of Arkansas

NM-WeP-2 On the Theory of the Energetic Spectrum of Lateral Superlattices (lsl) on Vicinal Planes: The Role of Crystal Potential, *Victor Petrov*, Institute of Radio Engineering and Electronics Russian Academy of Sciences, Russian Federation

NM-WeP-3 Fabrication and Physicochemical Analyses of Core-Shell Fe₃O₄-TiO₂ Particles Applicable to Plasmid DNA Purification, *Gye Seok An, J. Kim*, Kyonggi University, Republic of Korea; *J. Shin*, Hanyang University, Republic of Korea

NM-WeP-4 Synergistic Effects of Carbon Nanotube and Modified Reduced Graphene Oxide Covalently Bonded Hybrid and 3d-Foam on Electromagnetic Interference Shielding Properties of Polymer Composites, *Keun-Byoung Yoon, S. Lee, J. Kang, D. Lee*, Kyungpook National University, Republic of Korea

NM-WeP-5 Synthesis of Vertically Aligned Carbon Nanotubes Using Carbon Monoxide as a Carbon Source, *Kosuke Homma, S. Mori, M. Endo*, Tokyo Institute of Technology, Japan; *H. Nakamura*, Tokyo Institute of Technology / Yaskawa Electric Corporation, Japan; *S. Tanaka*, Yaskawa Electric Corporation, Japan

NM-WeP-6 Electrical Characteristics of Multi-Layer Germanium Telluride Switching Device, *Chae Ho Lim, J. Park, S. Park, H. Kim*, Sungkyunkwan University (SKKU), Republic of Korea

NM-WeP-7 Vertically Enhanced Ferroelectric α -In₂Se₃/GaN Heterostructure for Steep Switching High Electron Mobility Transistors, *M. Yeom, J. Yang, Geonwook Yoo*, Soongsil University, Republic of Korea

NM-WeP-8 Electrochemical Powered Nano-Actuator from Carbon Nanoscroll, *Chae-Lin Park*, HYU-KITECH Joint Department, Republic of Korea; *K. Kim, S. Kim*, KITECH, Republic of Korea

NM-WeP-9 Nanopattern Transferred Oxide and UV Curable Polymer Hybrid Films for Liquid Crystal Systems, *Da-Bin Yang, D. Seo*, Yonsei University, Korea

NM-WeP-10 Advanced Nanostructured Architectures via Nanoimprint Lithography on Hybrid Sol-Gel of SnGaO Thin Films, *Jin Young Oh, D. Seo*, Yonsei University, Korea

NM-WeP-11 First Demonstration of the Fully Euv Patterned Dram Capacitor, *Seung Jin Kim, J. Hong, B. Choi*, Sungkyunkwan University (SKKU), Republic of Korea

Thin Films

Room Naupaka Salon 1-3 - Session TF-WeP

Thin Films Poster Session, 4:00 – 5:30pm

TF-WeP-1 Fabricating Optical Coatings on Complex Surface Using Atomic Layer Deposition, *Liange Xu*, Harbin Institute of Technology, China

TF-WeP-2 Gas Encapsulating Layer for Stretchable Electronics by Selective Infiltration of Al₂O₃ in Polymer Films, *Sangho Cho*, Korea Institute of Science and Technology, Republic of Korea

TF-WeP-3 Background Removal Limitations on Absolute Accuracy in XPS of Homogeneous Materials, *C. Richard Brundle*, C. R. Brundle and Associates; *B. Crist*, The XPS Library; *P. Bagus*, University of North Texas

TF-WeP-4 Electrical Properties of Metal-dual Insulator Type Buried Channel Array Transistor, *INKYUM Lee*, Sungkyunkwan University, Korea

TF-WeP-5 Effects of Ga Doping on the Optical Properties of Tetrahedral Amorphous Carbon Coatings Synthesized by FCVA & Sputter Hybrid PVD Process, *HoeKun Kim*, Korea Aerospace University, Republic of Korea; *J. Kim*, University of Incheon, Republic of Korea; *S. Lee*, Korea Aerospace University, Republic of Korea

TF-WeP-6 Improved Leakage Currents of ALD ZrO₂ by Controlling Surface Reaction with Plasma Source, *Il-Kwon Oh*, Ajou University, Republic of Korea; *H. Kim*, Korea Electronics Technology Institute (KETI), Republic of Korea

TF-WeP-7 High Performance Amorphous Oxide Semiconductor Thin-film Transistors with HfO₂/Al₂O₃ Gate Insulator Deposited by Low Temperature ALD, *Se-Hyeong Lee, S. Bak, C. Park, D. Baek, M. Yi*, Pusan National University, Republic of Korea

TF-WeP-8 Advanced Surface Analysis of Very Thin Surface Coatings, *MATJAŽ FINŠGAR*, University of Maribor, Slovenia

TF-WeP-9 Temperature Dependence of Dielectric Function for WSe₂, *X. Nguyen, Tae Jung Kim*, Kyung Hee University, Republic of Korea; *V. Le, H. Nguyen*, Vietnam Academy of Science and Technology, Viet Nam; *Y. Kim*, Kyung Hee University, Republic of Korea

TF-WeP-10 Surface-treated ZnO/Ag/ZnO Mesh Electrodes for High-efficiency Blue TADF OLEDs, *Ho Jin Lee, N. Kim*, Korea University, Republic of Korea; *W. Ren*, Korea University, China; *S. Hong, H. Kim, T. Kim*, Korea University, Republic of Korea

TF-WeP-11 Low Power Consumption in Superlattice-Like NiOx/GeSb Multilayer Film for Phase Change Memory Application, *Tae Ho Kim, T. Kim, K. Yoo, H. Lee, S. Park, D. Kim, J. Choi, T. Kim*, Korea University, Republic of Korea

TF-WeP-12 Hydrothermally Deposited Biochar Coating on the Surface of a Plain Steel, *Yong Gan, C. Negrete*, California State Polytechnic University Pomona; *W. Hung, K. Anderson*, California State Polytechnic University, Pomona; *J. Gan*, University of California, Los Angeles; *C. Grice*, University of Toledo

TF-WeP-13 Comparison of Continuous and Pulsed Low Power DC Sputtered Ti Thin Films, *Anna Maria Reider*, University of Innsbruck, Austria

TF-WeP-14 Sputter-Deposited High Entropy Alloy Thin Film Electrocatalyst for Enhanced Oxygen Evolution Reaction Performance, *Siang-Yun Li*, National Cheng Kung University (NCKU), Taiwan; *T. Nguyen*, National Cheng Kung University (NCKU), Taiwan, Viet Nam; *Y. Su, C. Lin, Y. Huang, Y. Shen, C. Liu, J. Ruan, K. Chang, J. Ting*, National Cheng Kung University (NCKU), Taiwan

TF-WeP-15 Fabrication of Antimicrobial and High Transparency TiO₂ Thin Films by Superimposed High Power Impulse and Medium Frequency Magnetron Sputtering, *Bih-Show Lou*, Chang Gung University, Taiwan; *W. Chen, J. Lee*, Ming Chi University of Technology, Taiwan, Republic of China; *W. Diyatmika*, Leibniz Institute of Surface Engineering, Germany; *J. Lu*, Ming Chi University of Technology, Taiwan, Republic of China; *C. Chang, P. Chen*, Institute of Nuclear Energy Research, Taiwan

TF-WeP-16 Annealing Effects of Multi-Layered Titanium Dioxide (TiO₂) Thin Film by Sol-Gel Method, *Moniruzzaman Syed, J. Gibson, D. White*, LeMoyné-Owen College

TF-WeP-17 Impact of Micron Structures, Substrates and Protective Covering on the Thermochromic Property of Vanadium Dioxide Grown by Magnetron Sputtering, *Jazmyne Smith, A. Adedeji*, Elizabeth City State University

TF-WeP-18 Topology Phase Diagram of Metal Oxides Nanoflake in Skyrmion-based Spintronic Devices, *D. Huang, Y. Lai*, Dept. Materials Sci & Eng., National Cheng Kung University, Taiwan; *C. Kaun*, Research Center for Applied Sciences, Academia Sinica, Taiwan; *Yen-Hsun Su*, Dept. Materials Sci & Eng., National Cheng Kung University, Taiwan

Wednesday Evening, December 14, 2022

	Biomaterial Surfaces & Interfaces Room Naupaka Salon 4 - Session BI-WeE1 Bioimaging and Bionanotechnology Moderator: David G. Castner, University of Washington	Thin Films Room Naupaka Salon 5-7 - Session TF-WeE Emerging Topics: Growth and Properties of Electronic Materials, 2D Layers, and Metallic-glass Thin Films Moderator: Ludvik Martinu, Polytechnique Montréal, Canada
5:40pm	INVITED: BI-WeE1-1 Machine Learning for Prediction of TOF-SIMS Spectra of Peptides, <i>Satoka Aoyagi</i> , Seikei University, Japan	INVITED: TF-WeE-1 Recent Development of Biocompatible Thin Film Metallic Glasses and High Entropy Alloy Coatings, <i>B. Lou</i> , Chang Gung University, Taiwan; <i>Jyh-Wei Lee</i> , <i>S. Ho</i> , Ming Chi University of Technology, Taiwan, Republic of China; <i>Y. Yang</i> , National Taipei University of Technology, Taiwan; <i>J. Chu</i> , National Taiwan University of Science and Technology, Taiwan
6:00pm		
6:20pm	BI-WeE1-3 Strategy for Constructing Accurate 3D NanoSIMS Depth Profiling Images of Cells Despite Lateral Variations in Surface Erosion, <i>M. Brunet</i> , <i>B. Gorman</i> , Mary L. Kraft , University of Illinois Urbana-Champaign	TF-WeE-3 Influence of Relatively High Density Background Carriers on Photo-Dember Effects at the Surfaces of <i>n</i> -type and <i>p</i> -type InSb Single Crystals Observed with the Use of Terahertz Time-Domain Spectroscopy: A Study on Ultrafast Photogenerated Carrier Diffusion, <i>Hideo Takeuchi</i> , Osaka Metropolitan University (formerly Osaka City University), Japan; <i>T. Sumioka</i> , Osaka City University, Japan
6:40pm	BI-WeE1-4 Multimodal Studies of Cellular Membrane Chemistry using GCIB-SIMS, <i>John Fletcher</i> , University of Gothenburg, Sweden	TF-WeE-4 Theoretical Analysis on Alternative Pathway for Low Temperature Atomic Layer Deposition of Nitrides, <i>J. Lee</i> , <i>S. Lee</i> , Bonggeun Shong , Hongik University, Republic of Korea
7:00pm	BI-WeE1-5 Self-assembling Antimicrobial Peptide Coatings for Prevention of Infections, <i>Zhou Ye</i> , The University of Hong Kong	TF-WeE-5 Morphology and Statistics of Wet-Etched Gallium Oxides (Doped and Undoped) Deposited by RF Magnetron Sputtering, <i>Jazmyne Smith</i> , <i>A. Adedeji</i> , Elizabeth City State University
7:20pm	BREAK	BREAK
7:40pm	BI-WeE1-7 Development of a Process for Flame Retardant Coating of Textiles with Bio-Based Anchor Peptides, <i>Rahel Krause</i> , <i>I. Bettermann</i> , <i>R. Paul</i> , <i>T. Gries</i> , Institut of Textiltechnik of RWTH Aachen University, Germany; <i>M. Nöth</i> , <i>L. Feng</i> , <i>U. Schwaneberg</i> , Institute of Biotechnology of RWTH Aachen University, Germany; <i>C. Hummelsheim</i> , <i>L. Kampas</i> , Klevers GmbH & Co. KG, Germany	TF-WeE-7 Spectroscopic Evidence of Highly Correlated Electrons in VSe ₂ , <i>T. Yilmaz</i> , <i>E. Vescovo</i> , National Synchrotron Light Source II, Brookhaven National Lab; <i>J. Sadowski</i> , Center for Functional Nanomaterials, Brookhaven National Lab; Boris Sinkovic , University of Connecticut
8:00pm	BI-WeE1-8 Impact of UV-C Exposure on Single-use Mask Integrity for Reuse to Address PPE Shortages Within At-Risk Communities, <i>S. Ananthakrishnan</i> , <i>E. Rhoades-Clark</i> , <i>V. Mitchell</i> , Heather Canavan , University of New Mexico	TF-WeE-8 Exploring the Magnetoelectric Coupling at the Composite Interfaces of BaTiO ₃ /CoFe ₂ O ₄ /BaTiO ₃ Heterostructures, Venkata Puli , Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; <i>R. Katiyar</i> , University of Puerto Rico; <i>A. Reed</i> , <i>M. McConney</i> , Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; <i>S. Heidger</i> , Air Force Research Laboratory, USA, United Arab Emirates
8:20pm		TF-WeE-9 Structural stability of 2D II-V compounds, Lucia Guadalupe Arellano Sartorius , The University of Electro-Communications (UEC Tokyo) and Instituto Politécnico Nacional, Mexico; <i>T. Suga</i> , <i>T. Hazama</i> , <i>T. Takashima</i> , The University of Electro-Communications (UEC Tokyo), Japan; <i>M. Cruz Irissou</i> , Instituto Politécnico Nacional, Mexico; <i>J. Nakamura</i> , The University of Electro-Communications (UEC Tokyo), Japan

Thursday Morning, December 15, 2022

Room Naupaka Salon 4	
8:00am	INVITED: BI-ThM1-1 Why Mechanism Matters for Antimicrobial Biomaterials, <i>Bryan Coad</i> , The University of Adelaide, Australia
8:20am	
8:40am	BI-ThM1-3 High Throughput Screening for Antibiotics Using Droplet Microarrays, <i>W. Lei, A. Popova</i> , Karlsruhe Institute of Technology (KIT), Germany; Michael Grunze , Max Planck Institute for Medical Research, Germany; <i>P. Levkin</i> , Karlsruhe Institute of Technology (KIT), Germany
9:00am	BI-ThM1-4 NAP-XPS Studies of a <i>Pseudomonas fluorescens</i> Bacterial Cell-Envelope and Other Biomaterial Surfaces, Paul Dietrich , SPECS Surface Nano Analysis GmbH, Germany; <i>N. Wasio, J. Hilton</i> , SPECS-TII, Inc.; <i>A. Thissen</i> , SPECS Surface Nano Analysis GmbH, Germany
9:20am	BI-ThM1-5 Tungsten Disulfide Bio-Nanofabrication Using Dissimilatory Metal-Reducing Bacteria <i>Shewanella oneidensis</i> MR-1, Lauren Brady , <i>J. Rees, S. Sawyer</i> , Rensselaer Polytechnic Institute
9:40am	BI-ThM1-6 Nanoengineered Implant Surfaces with Enhanced Osteogenic and Antimicrobial Properties, <i>R. Shahbazian</i> , University of Illinois Chicago; Tolou Shokuhfar , University of Illinois at Chicago
10:00am	BREAK
10:20am	NM-ThM2-8 Harnessing Quantum Effects to Control Nanoscale Properties and Carrier Dynamics in Heterojunction Nanowires, Bryan Wong , University of California, Riverside
10:40am	NM-ThM2-9 A New Tool for Quantum and Nanoscale Materials Engineering, Kate McHardy , <i>A. Bellew, G. Aresta, P. Blenkinsopp</i> , Ionoptika, UK
11:00am	NM-ThM2-10 On-Surface Synthesis of Higher Acenes and Their Derivatives, <i>R. Zuzak</i> , Jagiellonian University, Poland; <i>R. Dorel</i> , Institut Català d'Investigació Química, Spain; <i>I. Izydorczyk</i> , Jagiellonian University, Poland; <i>O. Stoica, R. Bliczek</i> , Institut Català d'Investigació Química, Spain; <i>M. Krawiec</i> , Maria Curie-Skłodowska University, Poland; <i>A. Echavarren</i> , Institut Català d'Investigació Química, Spain; Szymon Godlewski , Jagiellonian University, Poland
11:20am	NM-ThM2-11 Nanotechnology in Plant Protection Applications, Ahmet Ozan Gezerman , Toros Agri- Industry, Turkey

Biomaterial Surfaces & Interfaces
Session BI-ThM1
Bacteria Biomaterial Interactions
Moderator:
Sally M. McArthur, Swinburne University of Technology, Australia

Nanomaterials
Session NM-ThM2
Nanofabrication and Nanodevices
Moderator:
Moon Kim, The University of Texas at Dallas

Thursday Morning, December 15, 2022

Room Naupaka Salon 5-7		
8:00am	INVITED: TF-ThM-1 Electronic Interaction in Graphene/WS ₂ Assisted by the Interlayer Rotation Angle, <i>Cecelia Noguez</i> , UNAM Mexico	Thin Films Session TF-ThM Nanostructured Surfaces and Thin Films: Synthesis and Characterization Moderator: Jyh-Wei Lee , Ming Chi University of Technology, Taiwan
8:20am		
8:40am	TF-ThM-3 Atomic-Scale Probing of Chemically Modified Borophene via Tip-Enhanced Raman Spectroscopy, <i>Nan Jiang</i> , University of Illinois - Chicago	
9:00am	TF-ThM-4 Thin Film Combinatorial Sputtering of Al-Ce Alloys for Mechanical Alloy Design, <i>Reece Emery</i> , <i>M. Thompson</i> , <i>O. Rios</i> , University of Tennessee Knoxville; <i>D. Weiss</i> , Eck Industries; <i>P. Rack</i> , University of Tennessee Knoxville	
9:20am	TF-ThM-5 Quantum Decoherence of Superconducting Quantum Circuit Interfaces: Niobium on Silicon, <i>Frank Ogletree</i> , <i>V. Altoé</i> , Lawrence Berkeley Laboratory; <i>A. Schwartzberg</i> , <i>C. Song</i> , Lawrence Berkeley Lab; <i>D. Santiago</i> , <i>I. Siddiqi</i> , Lawrence Berkeley Lab, University of California, Berkeley	
9:40am	TF-ThM-6 Structural Analysis of Few-Atomic Layered Hexagonal Boron Nitride Nanosheets Synthesized with Magnetron Sputtering and Heat Annealing Process, <i>Yuki Hirata</i> , <i>K. Yoshii</i> , <i>M. Yoshizato</i> , <i>H. Akasaka</i> , <i>N. Ohtake</i> , Tokyo Institute of Technology, Japan	
10:00am	BREAK	
10:20am	INVITED: TF-ThM-8 High-Throughput Magnetron Sputtering for Microstructure and Alloy Design, <i>Andrea Hodge</i> , University of Southern California	
10:40am		
11:00am	TF-ThM-10 Magnetron-sputtered MgLi Coatings and Freestanding Thin Films for Neurological Implants – Preparation and Degradation Process, <i>Lisa Hanke</i> , Kiel University, Germany; <i>K. Bhat</i> , Helmholtz Zentrum hereon, Germany; <i>L. Kalchgruber</i> , <i>M. Valtiner</i> , Vienna University of Technology, Austria; <i>R. Willumeit-Römer</i> , Helmholtz Zentrum hereon, Germany; <i>E. Quandt</i> , Kiel University, Germany	
11:20am	TF-ThM-11 The Importance of Interface Chemistry and Island Morphology in Granular Metal Thin Films, <i>Simeon Gilbert</i> , <i>M. Meyerson</i> , <i>S. Rosenberg</i> , <i>P. Kotula</i> , <i>N. Madden</i> , <i>P. Sharma</i> , <i>J. Flicker</i> , <i>M. McGarry</i> , <i>T. Kmiecik</i> , <i>M. Siegal</i> , <i>L. Biedermann</i> , Sandia National Laboratories	

Bold page numbers indicate presenter

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