The EITA Conference on New Materials, Nanotechnology and New Energy 2017 (EITA-New Materials 2017)

"Recent Research Advances in New Materials, Nanotechnology and New Energy: Challenges, Opportunities and Future Directions"

Taubman A Alfred Biomedical Science Research Building (BSRB)
The University of Michigan
Ann Arbor, Michigan, U.S.A.

Saturday, July 1, 2017

Program

(Draft as of 6/28/17)

Building Abbreviations and Addresses (the U-M, Ann Arbor):

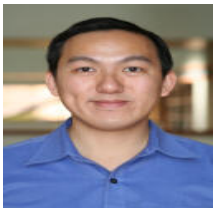
- **BSRB** (Taubman A Alfred Biomedical Science Research Building): 109 Zina Pitcher PL, Ann Arbor, Michigan

Day 1 (Saturday, July 1, 2017)

7/1 (Sat) 9:00 am - 5:30 pm: Registration

Room: **Seminar Room A, BSRB**

7/1 (Sat) 9:30 am - 9:50 am: Opening Session



Chair: **Dr. Pei-Cheng Ku** (古培正), Associate Professor, Department of Electrical Engineering & Computer Science, The University of Michigan, Ann Arbor
Room: **Seminar Room A, BSRB**

Welcome Remarks:

Mr. Calvin Chen-huan Ho
Director General
Taipei Economic and Cultural Office in Chicago
(駐芝加哥台北經濟文化辦事處何震寰處長)

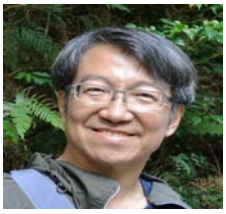
Plenary Sessions:

7/1 (Sat) 9:50 am - 10:40 am: Plenary Session (I):

Chair: **Dr. Pei-Cheng Ku** (古培正), Associate Professor, Department of Electrical Engineering & Computer Science, The University of Michigan, Ann Arbor
Room: **Seminar Room A, BSRB**

Plenary Speaker:

"Noninvasive Dermatological Micro-Imaging of Melanin for Histopathological Diagnosis and Treatment Assessment"



Dr. Chi-Kuang Sun (孫啟光)
Distinguished Professor, Department of Electrical Engineering and
Chief Director, Molecular Imaging Center
National Taiwan University

7/1 (Sat) 10:40 am - 10:50 am: Break

7/1 (Sat) 10:50 am – 11:40 am: Plenary Session (II):

Chair: **Dr. Chun-Chi (Richard) Liang** (梁駿騏), Research Assistant Professor, Department of Neurology, The University of Michigan, Ann Arbor
Room: **Seminar Room A, BSRB**

Plenary Speaker:

"Connected and Automated Vehicles"

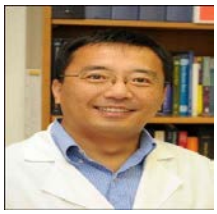
Dr. Huei Peng (彭暉)
Professor, Mechanical Engineering
US Director, US-China Clean Energy Research Center-Clean Vehicle Consortium
Roger L. McCarthy Professor
The University of Michigan, Ann Arbor

7/1 (Sat) 11:40 pm - 1:00 pm: Lunch

Parallel Sessions:

7/1 (Sat) 1:00 pm – 2:20 pm: Technical Session D1-W1-T1: Emerging Technologies and Applications in Materials for Health & Medicine: Bio-Materials, Bio-SoC, Bio-Nanotech, Bio-NEMS/Bio-MEMS, Mobile Health, Biomedical Optics and Imaging, Biomedical Engineering and Systems

Chair: **Dr. Aichi Chien** (簡艾琪)**,** Associate Professor, Division of Interventional Neuroradiology, Department of Radiological Sciences, Biomedical Physics IDP, David Geffen School of Medicine at UCLA, Ronald Reagan UCLA Medical Center
Room: **Seminar Room A, BSRB**

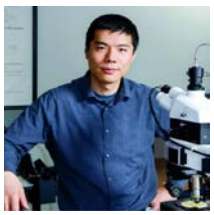


Dr. Liqun (Andrew) Gu
Associate Professor, Department of of Bioengineering and
Dalton Cardiovascular Research Center
University of Missouri

"Electroactive Polypyrrole Actuators for Implantable Devices"

Dr. Liang Guo
Assistant Professor, Department of Electrical and Computer Engineering, Department of Neuroscience
The Ohio State University

"Nanowire Nano-Bioelectronics Devices and Systems"



Dr. Wei Zhou
Assistant Professor, Department of Electrical & Computer Engineering
Virginia Tech

"Bio-Inspired Design of Multiscale Structures via Assembly of Nanoscale Building Blocks"

Dr. Po-Yen Chen (陳柏彥)
Assistant Professor, Department of Chemical and Biomolecular Engineering
National University of Singapore (NUS)

7/1 (Sat) 1:00 pm – 2:20 pm: Technical Session D1-W2-T1: Emerging Technologies and Applications in Electronic, Photonic, and Magnetic Materials, Ceramic Materials, Organic Polymer and Soft Materials

Chair: **Dr. Fang-Chung Chen** (陳方中), Professor, Department of Photonics, National Chiao Tung University
Room: **Seminar Room B, BSRB**

"Engineering light at the nanoscale: structural colors and broadband perfect absorbers"

Dr. L. Jay Guo
Professor, Department of Electrical Engineering and Computer Science
Mechanical Engineering, Macromolecular Science & Engineering, and Applied Physics, The University of Michigan, Ann Arbor

"Phosphor-Free InGaN/AlGaN Core-Shell Nanowire Light-Emitting Diode Arrays on Si and Flexible Substrates"

Dr. Hieu P T Nguyen
Assistant Professor, Department of Electrical and Computer Engineering
New Jersey Institute of Technology

"From Nanolaser to Photonic Integrated Circuits"

Dr. Qing Gu
Assistant Professor, Department of Electrical and Computer Engineering
The University of Texas at Dallas

Dr. Dong Meng
Assistant Professor, Swalm School of Chemical Engineering
Mississippi State University

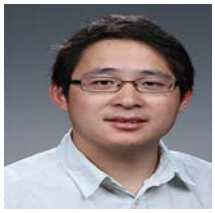
7/1 (Sat) 1:00 pm – 2:20 pm: Technical Session D1-W3-T1: Emerging Technologies and Applications in New Energy Materials and Devices, Smart Energy Systems, Energy Storage and Utilization, and Clean Vehicle Technologies

Chair: **Dr. Pei-Cheng Ku** (古培正), Associate Professor, Department of Electrical Engineering & Computer Science, The University of Michigan, Ann Arbor
Room: **Seminar Room C, BSRB**

"Thermo-electrochemical conversion of low-grade heat into electricity"

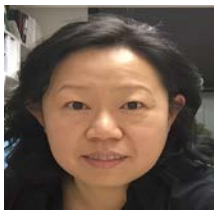
Dr. Shien-Ping Feng (馮憲平)
Assistant Professor, Department of Mechanical Engineering
The University of Hong Kong

"Advanced Organic Redox Flow Batteries for Grid Energy Storage"



Dr. Xiaoliang Wei (魏晓亮)
Staff Scientist, Energy Processes and Materials Division
Pacific Northwest National Laboratory

"Revealing Li-Ion Battery Processes Using Neutrons"



Dr. Anne Co
Assistant Professor, Department Of Chemistry and Biochemistry
The Ohio State University

Dr. Vincent (C.) Tung (童俊智)
Assistant Professor, Department of Materials Science and Engineering
University of California, Merced

7/1 (Sat) 2:20 pm – 2:35 pm: Break

Parallel Sessions:

7/1 (Sat) 2:35 pm – 3:55 pm: Technical Session D1-W1-T2: Emerging Technologies and Applications in Materials for Health & Medicine: Bio-Materials, Bio-SoC, Bio-Nanotech, Bio-NEMS/Bio-MEMS, Mobile Health, Biomedical Optics and Imaging, Biomedical Engineering and Systems

Chair: **Dr. Allen Po-Chih Liu,** Assistant Professor, Department of Mechanical Engineering, Department of Biomedical Engineering, University of Michigan, Ann Arbor
Room: **Seminar Room A, BSRB**

"Implantable, MEMS-based, Multimodal Neural Interfaces for Brain Research"

Dr. Wen Li
Associate Professor, Department of Electrical & Computer Engineering
Michigan State University

"Nanoengineering of Transparent Graphene for Wireless Biosensing"

Dr. Mark Ming-Cheng Cheng
Associate Professor, Department of Electrical and Computer Engineering
Wayne State University

"Fabricating patterned neuroectoderm tissue from human pluripotent stem cells"

Dr. Yubing Sun
Assistant Professor, Department of Mechanical and Industrial Engineering
University of Massachusetts, Amherst

Dr. Chun-Chi (Richard) Liang (梁駿騏)
Research Assistant Professor, Department of Neurology
The University of Michigan, Ann Arbor

"3D biomimetic environment for functional angiogenic assays"

Dr. Yi Zheng
NSERC Postdoctoral Fellow, Department of Mechanical Engineering
The University of Michigan, Ann Arbor

7/1 (Sat) 2:35 pm – 3:55 pm: Technical Session D1-W2-T2: Emerging Technologies and Applications in Electronic, Photonic, and Magnetic Materials, Ceramic Materials, Organic Polymer and Soft Materials

Chair: **Dr. L. Jay Guo**, Professor, Department of Electrical Engineering and Computer Science, Mechanical Engineering, Macromolecular Science & Engineering, and Applied Physics, The University of Michigan, Ann Arbor
Room: **Seminar Room B, BSRB**

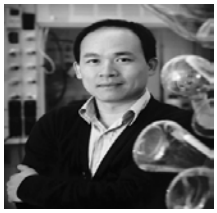
"Emerging Photovoltaic Devices for low-power indoor applications"

Dr. Fang-Chung Chen (陳方中)
Professor, Institute of Electro-Optical Engineering
National Chiao-Tung University

"Dynamic *kirigami* structures for solar energy conversion"

Dr. Max Shtein
Associate Professor, Department of Materials Science and Engineering
The University of Michigan, Ann Arbor

"Organic-Inorganic Hybrid Bulk Quantum Materials: Bridging Molecules to Crystals"



Dr. Biwu Ma
Associate Professor, Department of Chemical & Biomedical Engineering
Materials Science Program
Florida State University

"Self-assembled 2D Materials"

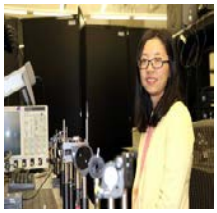
Dr. Zhengdong Cheng
Associate Professor, The Artie McFerrin Department of Chemical Engineering
Texas A&M University

7/1 (Sat) 2:35 pm – 3:55 pm: Technical Session D1-W3-T2: Emerging Technologies and Applications in New Energy Materials and Devices, Smart Energy Systems, Energy Storage and Utilization, and Clean Vehicle Technologies

Chair: **Dr. Meng-Ju Renee Sher** (佘孟儒), Assistant Professor of Physics, Wesleyan University
Room: **Seminar Room C, BSRB**

"Optimizing Discharge Capacity of Li-O2 Batteries by Design of Air-electrode Porous Structure: Multifidelity Modeling and Optimization"

Dr. Wenxiao Pan
Assistant Professor, Department of Mechanical Engineering
University of Wisconsin-Madison



Dr. Zhiting Tian
Assistant Professor, Department of Mechanical Engineering
Virginia Tech

"Nanostructured Inorganic Materials for Thermal Storage and Thermoelectricity Made Via Solution-Phase Synthesis"

Dr. Robert Wang
Assistant Professor, Department of Mechanical Engineering
Arizona State University

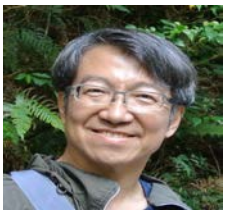
"Algae-Based Sustainable Urban-Wastewater Reclamation Ecosystem (aSURE): An Integrated Approach to Sustaining Food-Energy-Water Supply"

Dr. Yongli Zhang
Assistant Professor, Department of Civil and Environmental Engineering
Wayne State University

7/1 (Sat) 3:55 pm – 4:10 pm: Break

Parallel Sessions:

7/1 (Sat) 4:10 pm – 5:30 pm: Technical Session D1-W1-T3: Emerging Technologies and Applications in Materials for Health & Medicine: Bio-Materials, Bio-SoC, Bio-Nanotech, Bio-NEMS/Bio-MEMS, Mobile Health, Biomedical Optics and Imaging, Biomedical Engineering and Systems



Chair: **Dr. Chi-Kuang Sun (**孫啟光), Distinguished Professor, Department of Electrical Engineering and Chief Director, Molecular Imaging Center, National Taiwan University
Room: **Seminar Room A, BSRB**

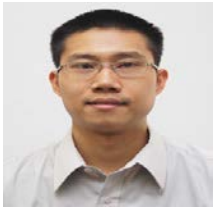
"Drug-delivery Nanoparticles"

Dr. Ying Liu
Associate Professor, Department of Chemical Engineering
Department of Biopharmaceutical Sciences
University of Illinois at Chicago

"Smartphone-Based Imaging and Sensing Devices for Cost-Effective Molecular Diagnostics"

Dr. Qingshan Wei
Assistant Professor, Department of Chemical and Biomolecular Engineering
North Carolina State University

"Synthetic biology approach for building artificial cell"



Dr. Allen Po-Chih Liu
Assistant Professor, Department of Mechanical Engineering
Department of Biomedical Engineering
The University of Michigan, Ann Arbor

"Self-clearing implantable sensors and actuators for neurological applications"

Dr. Hyowon (Hugh) Lee
Assistant Professor, Weldon School of Biomedical Engineering
Purdue University

Dr. Aichi Chien (簡艾琪)
Associate Professor, Division of Interventional Neuroradiology, Department of Radiological Sciences, Biomedical Physics IDP
David Geffen School of Medicine at UCLA, Ronald Reagan UCLA Medical Center

7/1 (Sat) 4:10 pm – 5:30 pm: Technical Session D1-W2-T3: Emerging Technologies and Applications in Electronic, Photonic, and Magnetic Materials, Ceramic Materials, Organic Polymer and Soft Materials

Chair: **Dr. Max Shtein,** Associate Professor, Department of Materials Science and Engineering, The University of Michigan, Ann Arbor
Room: **Seminar Room B, BSRB**

"Ultrafast and Nanoscale Interfacial Charge Transport"

Dr. Peng Zhang
Assistant Professor, Department of Electrical and Computer Engineering
Michigan State University

"III-V Compound Semiconductor Devices for Future Electronics"

Dr. Yuping Zeng
Assistant Professor, Department of Electrical and Computer Engineering
University of Delaware

"Graphene: A Versatile Material for Mid-infrared and Terahertz Photonic and Optoelectronic Applications"

Dr. Peter Qiang Liu
Assistant Professor, Department of Electrical Engineering
University at Buffalo, the State University of New York

"Local Strain Engineering and its Applications in GaN Optoelectronics"

Dr. Pei-Cheng Ku (古培正)
Associate Professor, Department of Electrical Engineering & Computer Science
The University of Michigan, Ann Arbor

7/1 (Sat) 4:10 pm – 5:30 pm: Technical Session D1-W3-T3: Emerging Technologies and Applications in New Energy Materials and Devices, Smart Energy Systems, Energy Storage and Utilization, and Clean Vehicle Technologies

Chair: **Dr. Shien-Ping Feng** (馮憲平), Assistant Professor, Department of Mechanical Engineering, The University of Hong Kong

"Distribution Management and Emerging Automation Technologies"

Dr. Chee-Wooi Ten
Associate Professor, Department of Electrical and Computer Engineering
Michigan Technological University

"Terahertz spectroscopy: tracking charge carrier motions in organic solar cells"

Dr. Meng-Ju Renee Sher (佘孟儒)
Assistant Professor of Physics
Wesleyan University

“Energy Internet and Emerging Technologies”

Dr. Wencong Su
Assistant Professor, Department of Electrical and Computer Engineering
The University of Michigan, Dearborn