



**International Conference on New Materials,  
Nanotechnology and New Green Energy 2014**  
(EITA-New Materials 2014) or (EITA-EITC 2014)

**"Recent Research Advances in New Materials,  
Nanotechnology and New Green Energy"**

**The Y. S. Sun Green Building Research Center  
National Cheng Kung University  
Tainan, Republic of China (Taiwan)**

**Saturday-Sunday, November 22-23, 2014**

## **Program**

(Draft as of 11/20/14)

***Day 1 (Saturday, November 22, 2014)***

**11/22 (Sat) 8:00 am - 4:00 pm: Registration**

Room: Chung Hwa Hall Atrium (2F)

**11/22 (Sat) 10:00 am - 10:30 am: Opening Session**



Chair: **Dr. Ta-Hui Lin**, Distinguished Professor. Department of Mechanical Engineering and Director, the Research Center for Energy Technology and Strategy, National Cheng Kung University (成功大學機械工程學系兼能源科技與策略研究中心主任林大惠特聘教授)

Room: Chung Hwa Hall (2F)

**Opening Remarks:**



**Dr. Hwung-Hweng Hwung**  
President, National Cheng Kung University  
(成功大學黃煌輝校長)

## Opening Remarks:



### **Dr. Yueh-Min Huang**

Distinguished Professor, Department of Engineering Science  
Associate Dean, College of Engineering  
National Cheng Kung University

(成功大學工程科學系兼工學院副院長黃悅民特聘教授)

## **Plenary Sessions:**

### **11/22 (Sat) 10:30 am - 11:10 am: Plenary Session (I):**



Chair: **Dr. Fang-Chung Chen**, Professor, Department of Photonics, National  
Chiao Tung University (交通大學光電工程學系陳方中教授)

Room: Chung Hwa Hall (2F)

### **Plenary Speaker:**

“Resolve the Mystery of Interfacial Water and Water Splitting by Using Advanced Nano-Imaging and Sensing Technologies”



### **Dr. Chi-Kuang Sun**

Distinguished Professor, Department of Electrical Engineering and  
Chief Director, Molecular Imaging Center  
National Taiwan University

(台灣大學電機工程學系與分子生醫影像研究中心主任孫啟光特聘教授)

### **11/22 (Sat) 11:10 am - 11:30 am: Coffee Break**

Room: Chung Hwa Hall Atrium (2F)

### **11/22 (Sat) 11:30 am – 12:10 pm: Plenary Session (II)**



Chair: **Dr. Pei-Wen Li**, Professor, Department of Electrical Engineering,  
Director, Center for NANO Science and Technology, and Associate Dean of  
Academic Affairs, National Central University (中央大學電機工程學系兼奈米科技  
研究中心主任兼副教務長李佩雯教授)

Room: Chung Hwa Hall (2F)

**Plenary Speaker:**

“Chances and challenges for Taiwan in low carbon and green energy”



**Dr. Chin Pan**

Distinguished Professor, Institute of Nuclear Engineering and Science and  
Department of Engineering and System Science  
National Tsing Hua University

(清華大學核子工程與科學研究所與工程與系統科學系潘欽特聘教授)

**11/22 (Sat) 12:10 pm - 1:30 pm: Lunch Break**

Room: Chung Hwa Hall Atrium (2F)

**11/22 (Sat) 1:30 pm – 2:10 pm: Plenary Session (III)**



Chair: **Dr. Ching-Fuh Lin**, Distinguished Professor, Department of Electrical  
Engineering and Director, Innovative Photonics Research Center, National  
Taiwan University (台灣大學電機工程學系光電創新研究中心主任林清富特聘教授)

Room: Chung Hwa Hall (2F)

**Plenary Speaker:**

“Overview of Phase II of Taiwan’s National Energy Program”



**Dr. Faa-Jeng Lin**

Chair Professor, Department of Electrical Engineering, National Central  
University

Committee Chair, National Energy Plan (NEP-II) Smart Grid Focus Center  
Ministry of Science and Technology, R.O.C. (Taiwan)

(中央大學電機工程學系兼科技部第二期能源國家型科技計畫智慧電網主軸計畫召集人林  
法正講座教授)

**Parallel Sessions:**

**11/22 (Sat) 2:10 pm – 3:30 pm: Technical Session D1-W1-T1: Bio-  
Materials, Bio-SoC, Bio-Nanotech, Bio-NEMS/Bio-MEMS, and Water  
Purification Technology**



Chair: **Dr. Cheng-Hsien Liu**, Professor, Department of Power Mechanical  
Engineering, Chief Executive Officer, Industrial Liaison Program, College of  
Engineering, National Tsing Hua University (清華大學動力機械工程學系暨工學院  
產學聯盟執行長劉承賢教授)

Room: Conference Room I (3F)



**Dr. Da-Jeng Yao**

Professor and Director, The Institute of NanoEngineering and MicroSystems  
National Tsing Hua University

(清華大學奈米工程兼微系統研究所所長饒達仁教授)

“Blood flow improvement by stents with biocompatible material”



**Dr. Aichi Chien**

Assistant Professor, Department of Radiological Sciences, Ronald Reagan  
UCLA Medical Center

David Geffen School of Medicine at UCLA

(加州大學洛杉磯分校大衛格芬醫學院簡艾琪教授)

“Using Patterned Physical Confinement to Develop Lipid Bilayer Platforms Insensitive to Air Bubbles”



**Dr. Ling Chao**

Assistant Professor, Department of Chemical Engineering  
National Taiwan University

(臺灣大學化學工程學系趙玲教授)

“Control Gaseous Microenvironments in vitro: Microfluidic Cell Culture”



**Dr. Yi-Chung Tung**

Associate Research Fellow, Research Center for Applied Sciences  
Academia Sinica

(中央研究院應用科學研究中心董奕鍾博士)

**11/22 (Sat) 2:10 pm – 3:30 pm: Technical Session D1-W2-T1: Electronic, Photonic, and Magnetic Materials, Organic Polymer and Soft Materials**

Chair: **Dr. Fang-Chung Chen**, Professor, Department of Photonics, National  
Chiao Tung University (交通大學光電工程學系陳方中教授)

Room: Conference Room II (3F)



“Tunable graphene based optics, electronics and photonics”



**Dr. Chun-Wei Chen**

Distinguished Professor, Department of Materials Science and Engineering  
National Taiwan University

(臺灣大學材料科學與工程學系陳俊維特聘教授)

“Carbon Nanotubes as Penetrating Electrodes for Promoting the Efficiency of Organic Solar Cells”



**Dr. Pen-Cheng Wang**

Associate Professor, Department of Engineering and System Science  
National Tsing Hua University

(清華大學工程與系統科學系王本誠教授)

“Controlled Growth of Strained Si in Silicide/Silicon Nanoheterostructures from Point Contact Reactions”



**Dr. Gordon Kuo-Chang Lu**

Assistant Professor, Department of Materials Science and Engineering  
National Cheng Kung University

(成功大學材料科學及工程學系呂國彰教授)

“Plasmonic Nanostructures for Light Trapping in Organic Photovoltaic Devices”



**Dr. Fang-Chung Chen**

Professor, Department of Photonics  
National Chiao-Tung University

(交通大學光電系陳方中教授)

**11/22 (Sat) 2:10 pm – 3:30 pm: Technical Session D1-W3-T1: New Green Energy Materials, Ceramic Materials, Metallurgy and Materials**



Chair: **Dr. Ching-Fuh Lin**, Distinguished Professor, Department of Electrical Engineering and Director, Innovative Photonics Research Center, National Taiwan University (台灣大學電機工程學系光電創新研究中心主任林清富特聘教授)  
Room: Conference Room III (3F)

“ZnO-based Nanostructures for Sensing Devices”



**Dr. Bohr-Ran Huang**

Distinguished Professor and Vice Dean, College of Electrical Engineering & Computer Science

National Taiwan University of Science and Technology

(台灣科技大學光電工程研究所兼電資學院副院長黃柏仁特聘教授)

“Organic/Inorganic Thermoelectric Chips: from Quantum Mechanics to System Dynamics”



**Dr. Che-Wun Hong**

Professor, Department of Power Mechanical Engineering

National Tsing Hua University

(清華大學動力機械工程學系洪哲文教授)

“Rational Molecular Design of Efficient Porphyrins for Dye-Sensitized Solar Cells”



**Dr. Chen-Yu Yeh**

Professor, Department of Chemistry

National Chung Hsing University

(中興大學化學系葉鎮宇教授)

“High-Efficiency Hybrid Organic/Silicon Nanowire Heterojunction Solar cells”



**Dr. Peichen Yu**

Professor, Department of Photonics

National Chiao Tung University

(交通大學光電學系余沛慈教授)

**11/22 (Sat) 2:10 pm – 3:30 pm: Technical Session D1-W4-T1: Smart Grid Technologies and Network Communications, New Green Energy Technologies and Green Building**



Chair: **Dr. Pei-Wen Li**, Professor, Department of Electrical Engineering,

Director, Center for NANO Science and Technology, and Associate Dean of

Academic Affairs, National Central University (中央大學電機工程學系兼奈米科技

研究中心主任兼副教務長李佩雯教授)

Room: Conference Room IV (3F)

“Strategies on Development of Offshore Wind Technology”



**Dr. Jing-Tang Yang**

Distinguished Professor, Department of Mechanical Engineering  
National Taiwan University

(台灣大學機械工程學系楊鏡堂特聘教授)



**Dr. Tsai-Fu Wu**

Professor and Director of Elegant Power Electronics Applied Research  
Laboratory (EPEARL)

Department of Electrical Engineering  
National Tsing Hua University

(清華大學電機工程學系精緻電力電子應用研究室主持人吳財福教授)

“The Self-Adaptation MPPT Method for a PV System”



**Dr. Yie-Tone Chen**

Professor, Department of Electrical Engineering  
National Yunlin University of Science and Technology

(雲林科技大學電機工程學系陳一通教授)

“Power Quality and Development of Smart Grid”



**Dr. Cheng-I Chen**

Assistant Professor, Department of Electrical Engineering  
National Central University

(中央大學電機工程學系陳正一教授)

**11/22 (Sat) 3:30 pm – 3:50 pm: Coffee Break**

Room: Chung Hwa Hall Atrium (2F)

**Parallel Sessions:**

**11/22 (Sat) 3:50 pm – 5:10 pm : Technical Session D1-W1-T2: Bio-Materials, Bio-SoC, Bio-Nanotech, Bio-NEMS/Bio-MEMS, and Water Purification Technology**



Chair: **Dr. Da-Jeng Yao**, Professor and Director, The Institute of NanoEngineering and MicroSystems, National Tsing Hua University (清華大學 奈米工程兼微系統研究所所長饒達仁教授)  
Room: Conference Room I (3F)

“Biomimetic surface treatment and some novel applications”



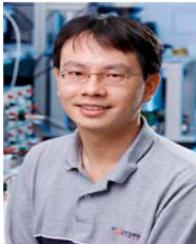
**Dr. Yi-Chang Chung**  
Professor, Department of Chemical and Materials Engineering,  
National University of Kaohsiung  
(高雄大學化學工程及材料工程學系鍾宜璋教授)

“Manipulation of Hydrogel Bio-Materials on an Electromicrofluidic Platform”



**Dr. Shih-Kang Fan**  
Associate Professor, Department of Mechanical Engineering  
National Taiwan University  
(台灣大學機械工程學系范士岡教授)

“Novel Bio-Inspired Zwitterion Dopamine Molecule for Anti-Biofouling and Photocleavable Properties”



**Dr. Chun-Jen Huang**  
Assistant Professor, Graduate Institute of Biomedical Engineering  
National Central University  
(中央大學生物醫學工程研究所黃俊仁教授)

“CMOS-CHIP BASED PARTICLE DEPOSITION FOR SYNTHESIS OF HIGH-DENSITY PEPTIDE ARRAYS”



**Dr. Yun-Chien Cheng**  
Assistant Professor, Department of Medical Engineering  
National Chiao-Tung University  
(交通大學機械工程學系鄭雲謙教授)

**11/22 (Sat) 3:50 pm – 5:10 pm: Technical Session D1-W2-T2: Electronic, Photonic, and Magnetic Materials, Organic Polymer and Soft Materials**



Chair: **Dr. Chun-Wei Chen**, Distinguished Professor, Department of Materials Science and Engineering, National Taiwan University (臺灣大學材料科學與工程學系陳俊維特聘教授)

Room: Conference Room II (3F)

“Control of Morphology and Charge Recombination Kinetics for Perovskite Solar Cells”



**Dr. Eric Wei-Guang Diao**

Professor, Department of Applied Chemistry  
National Chiao Tung University  
(交通大學應用化學系刁維光教授)

“Rational Design of Interfacial Materials for Solid-State Dye-Sensitized Solar Cells”



**Dr. Lee-Yih Wang**

Professor of Polymer Science and Engineering  
Associate Research Fellow of Condensed Matter Sciences  
National Taiwan University  
(臺灣大學高分子研究所王立義教授)

“Pd-Catalyzed Direct C-H Arylation of Thieno[3,4-c]pyrrole-4,6-dione (TPD): A Step-Economical Synthetic Alternative to Access TPD-Centred p-Functional Materials”



**Dr. Ching-Yuan Liu**

Assistant Professor, Department of Chemical and Materials Engineering  
National Central University  
(中央大學化學工程與材料工程學系劉青原教授)

“Exploration of piezophotocatalyst of ZnSnO<sub>3</sub> nanowires using two-step hydrothermal synthesis “



**Dr. Kao-Shuo Chang**

Assistant Professor, Department of Materials Science and Engineering  
National Cheng Kung University  
(成功大學材料科學及工程學系張高碩教授)

**11/22 (Sat) 3:50 pm – 5:10 pm : Technical Session D1-W3-T2: New Green Energy Materials, Ceramic Materials, Metallurgy and Materials**



Chair: **Dr. Bohr-Ran Huang**, Distinguished Professor and Vice Dean, College of Electrical Engineering & Computer Science, National Taiwan University of Science and Technology (台灣科技大學光電工程研究所兼電資學院副院長黃柏仁特聘教授)

Room: Conference Room III (3F)

“Application of DFT methods to design highly efficient organic sensitizers for Dye-Sensitized Solar Cells”



**Dr. Jyh-Chiang Jiang**

Professor and Vice Chairman, Department of Chemical Engineering  
National Taiwan University of Science and Technology  
(臺灣科技大學化學工程學系兼副系主任江志強教授)

“Fabrication of Colloidal Crystals and Their Inverse Opals for Engineering Applications”



**Dr. Pu-Wei Wu**

Professor, Department of Materials Science and Engineering  
National Chiao-Tung University  
(交通大學材料科學與工程學系吳樸偉教授)



**Dr. Hsing-Yu Tuan**

Professor, Department of Chemical Engineering  
National Tsing Hua University  
(清華大學化學工程學系段興宇教授)



**Dr. Cheng-Che(Jerry) Hsu**

Associate Professor, Department of Chemical Engineering  
National Taiwan University  
(臺灣大學化學工程學系徐振哲教授)

**11/22 (Sat) 3:50 pm – 5:10 pm : Technical Session D1-W4-T2: Smart Grid Technologies and Network Communications, New Green Energy Technologies and Green Building**



Chair: **Dr. Faa-Jeng Lin**, Chair Professor, Department of Electrical Engineering, National Central University and Committee Chair, National Energy Plan (NEP-II) Smart Grid Focus Center, Ministry of Science and Technology, R.O.C. (Taiwan) (中央大學電機工程學系兼科技部第二期能源國家型科技計畫智慧電網主軸計畫召集人林法正講座教授)  
Room: Conference Room IV (3F)

“Development and Implementation of Remote Supervisory Control System for Transmission Line Under Pollution of Weather and Salt-Fog Invasion”



**Dr. Ming-Yuan Cho**  
Distinguished Professor, Department of Electrical Engineering  
Dean, College of Electrical Engineering and Computer Science  
National Kaohsiung University of Applied Sciences  
(高雄應用科技大學電機工程系兼電資學院院長卓明遠特聘教授)

“Current Status of Smart and Green Technology Development in Taipower”



**Dr. Jin-Shyr Yang**  
Deputy General Manager, Taiwan Power Research Institute  
Taiwan Power Company  
(台灣電力公司綜合研究所副所長楊金石博士)



**Dr. Shyh-Jier Huang**  
Distinguished Professor, Department of Electrical Engineering  
National Cheng Kung University  
(成功大學電機工程學系黃世杰特聘教授)

“Electromagnetic Interference (EMI) Noise Reduction Techniques in Switching Power Circuits for Renewable Energy Applications”



**Dr. Hung-I Hsieh**  
Assistant Professor, Department of Electrical Engineering  
National Chiayi University  
(嘉義大學電機系謝宏毅教授)

**Day 2 (Sunday, November 23, 2014)**

**11/23 (Sun) 8:00 am - 4:00 pm: Registration**

Room: Chung Hwa Hall Atrium (2F)

**11/23 (Sun) 9:30 am - 10:10 am: Plenary Session (IV): Panel Discussions**



Moderator: **Dr. Cheng-Hsien Liu**, Professor, Department of Power Mechanical Engineering, Chief Executive Officer, Industrial Liaison Program, College of Engineering, National Tsing Hua University (清華大學動力機械工程學系暨工學院產學聯盟執行長劉承賢教授)

Room: Chung Hwa Hall (2F)

**Panelists:**



**Dr. Ching-Yao (Hank) Huang**

Professor, Department of Electronics Engineering  
Associate Dean, College of Electrical and Computer Engineering  
Director, Center of Industry Accelerator and Patent Strategy  
National Chiao Tung University  
Chairman, Chinese Business Incubation Association

(交通大學電子工程學系兼電機學院副院長兼產業加速器暨專利開發策略中心主任及中華創業育成協會理事長黃經堯教授)



**Dr. Sheng-Jye Hwang**

Professor and Associate Head of Department  
Department of Mechanical Engineering  
National Cheng-Kung University

(成功大學機械工程學系兼副系主任黃聖杰教授)



**Dr. Cheng-Hsien Liu**

Professor, Department of Power Mechanical Engineering  
Chief Executive Officer, Industrial Liaison Program, College of Engineering  
National Tsing Hua University

(清華大學動力機械工程學系暨工學院產學聯盟執行長劉承賢教授)

**Parallel Sessions:**

**11/23 (Sun) 10:10 am – 11:30 am: Technical Session D2-W1-T1: Bio-Materials, Bio-SoC, Bio-Nanotech, Bio-NEMS/Bio-MEMS, and Water Purification Technology**



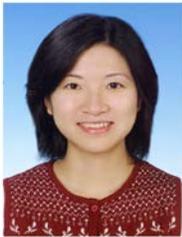
Chair: **Dr. Cheng-Hsien Liu**, Professor, Department of Power Mechanical Engineering, Chief Executive Officer, Industrial Liaison Program, College of Engineering, National Tsing Hua University (清華大學動力機械工程學系暨工學院產學聯盟執行長劉承賢教授)  
Room: Conference Room I (3F)

“Screening of microalgae with different lipid contents by using dielectrophoretic microfluidic device”



**Dr. Yi-Je Juang**  
Associate Professor, Department of Chemical Engineering  
National Cheng Kung University  
(成功大學化學工程學系莊怡哲教授)

“Paper-based immunoaffinity devices for accessible isolation and characterization of extracellular vesicles”



**Dr. Chihchen Chen**  
Assistant Professor, Institute of NanoEngineering and MicroSystems (NEMS)  
National Tsing Hua University  
(清華大學奈米工程與微系統研究所陳致真教授)

“Microelectrode Array Biosensors for the Near Real-Time Monitoring of Glutamate in Vitro and in Vivo”



**Dr. Tina T.-C. Tseng**  
Assistant Professor, Department of Chemical Engineering  
National Taiwan University of Science and Technology  
(台灣科技大學化學工程學系曾婷芝教授)

**11/23 (Sun) 10:10 am – 11:30 am: Technical Session D2-W2-T1:**  
**Electronic, Photonic, and Magnetic Materials, Organic Polymer and Soft Materials**



Chair: **Dr. Fang-Chung Chen**, Professor, Department of Photonics, National Chiao Tung University (交通大學光電工程學系陳方中教授)  
Room: Conference Room II (3F)

“Nickel oxide p-type electrode interlayer in CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> perovskite/fullerene planar-heterojunction hybrid solar cells”



**Dr. Tzung-Fang Guo**

Distinguished Professor and chairman, Department of Photonics  
National Cheng Kung University

(成功大學光電科學與工程學系兼系主任郭宗枋特聘教授)

“Passivation of Cu(In, Ga)Se<sub>2</sub> solar cell with Trioctylphosphine Sulfide”



**Dr. Jiun-Haw Lee**

Professor, Graduate Institute of Photonics and Optoelectronics  
National Taiwan University

(臺灣大學光電工程學研究所李君浩教授)

“Stretched Contact Printing of One-Dimensional Nanostructures for Nano and Organic Transistors”



**Dr. Chien-Wen Hsieh**

Assistant Professor, Institute of Lighting and Energy Photonics  
National Chiao Tung University

(交通大學照明與能源光電所謝建文教授)

“GeSn waveguide light-detectors and emitters for Si micron- and nano-photonics”



**Dr. Guo-En Chang**

Assistant Professor, Department of Mechanical Engineering  
National Chung-Cheng University

(中正大學機械工程學系張國恩教授)

**11/23 (Sun) 10:10 am – 11:30 am: Technical Session D2-W3-T1: New Green Energy Materials, Ceramic Materials, Metallurgy and Materials**



Chair: **Dr. Ching-Fuh Lin**, Distinguished Professor, Department of Electrical Engineering and Director, Innovative Photonics Research Center, National Taiwan University (台灣大學電機工程學系光電創新研究中心主任林清富特聘教授)

Room: Conference Room III (3F)



**Dr. Chih-Huang Lai**

Distinguished Professor and Chair  
Department of Materials Science and Engineering  
National Tsing Hua University

(清華大學材料科學工程系兼系主任賴志煌特聘教授)

“Photocatalysis and Photoluminescence of Graphene Oxide Quantum Dots”

**Dr. Hsi-Sheng Teng**

Professor, Department of Chemical Engineering  
National Cheng Kung University

(成功大學化學工程學系鄧熙聖教授)



“Heterostructure & strain-enhanced performance of ZnO-based photodetectors”

**Dr. Ruey-Chi Wang**

Professor, Department of Chemical and Materials Engineering  
National University of Kaohsiung

(高雄大學化學工程及材料工程學系王瑞琪教授)



“Microstructured Cobalt Sulphide in Photoelectrochemical Water Splitting”

**Dr. Chia-Yu Lin**

Assistant Professor, Department of Chemical Engineering  
National Cheng Kung University

(成功大學化學工程學系林家裕教授)



**11/23 (Sun) 10:10 am – 11:30 am: Technical Session D2-W4-T1: Smart Grid Technologies and Network Communications, New Green Energy Technologies and Green Building**



Chair: **Dr. Pei-Wen Li**, Professor, Department of Electrical Engineering, Director, Center for NANO Science and Technology, and Associate Dean of Academic Affairs, National Central University (中央大學電機工程學系兼奈米科技研究中心主任兼副教務長李佩雯教授)

Room: Conference Room IV (3F)

“Characterization and Activity of S,Zn Co-doped TiO<sub>2</sub> with Visible Light”



**Dr. Hsin Chu**

Distinguished Professor and Fellow  
National Cheng Kung University  
Department of Environmental Engineering and Academy of Educators  
(成功大學環境工程學系朱信特聘教授)

“Design of a SOFC/GT hybrid power generation system by consuming greenhouse gases”



**Dr. Wei Wu**

Professor, Department of Chemical Engineering  
National Cheng Kung University  
(成功大學化學工程學系吳煒教授)

“Using microfluidic and optical technologies to aid the optimization and integration of bioenergy production processes”



**Dr. Hsiang-Yu Wang**

Associate Professor, Department of Engineering and System Science  
National Tsing Hua University  
(清華大學工程與系統科學系王翔郁教授)



**Dr. Si-Yu Li**

Assistant Professor, Department of Chemical Engineering  
National Chung Hsing University  
(中興大學化學工程學系李思禹教授)

**11/23 (Sun) 11:30 am – 1:00 pm: Lunch Break**

Room: Chung Hwa Hall Atrium (2F)

**Parallel Sessions:**

**11/23 (Sun) 1:00 pm – 2:20 pm: Technical Session D2-W1-T2: Bio-Materials, Bio-SoC, Bio-Nanotech, Bio-NEMS/Bio-MEMS, and Water Purification Technology**



Chair: **Dr. Cheng-Hsien Liu**, Professor, Department of Power Mechanical Engineering, Chief Executive Officer, Industrial Liaison Program, College of Engineering, National Tsing Hua University (清華大學動力機械工程學系暨工學院產學聯盟執行長劉承賢教授)  
Room: Conference Room I (3F)

“A novel micro/nano hybrid structured chitosan nerve conduit for proliferation enhancement and growth direction guidance of neuroblastoma B35”



**Dr. Gou-Jen Wang**  
Distinguished Professor, Department of Mechanical Engineering and Graduate Institute of Biomedical Engineering  
National Chung-Hsing University  
(中興大學機械工程學系王國禎特聘教授)

“Effect of anions on the redox reaction of hydrogen peroxide of the nanostructured gold”



**Dr. Chiun-Jye Yuan**  
Professor, Department of Biological Science and Technology  
National Chiao Tung University  
(交通大學分子醫學與生物工程研究所袁俊傑教授)



**Dr. Hsu-Wei Fang**  
Professor, Department of Chemical Engineering and Biotechnology  
National Taipei University of Technology  
(台北科技大學化學工程與生物科技系方旭偉教授)

“Mass spectrometry sensitivity and selectivity enhancement on nanostructured silicon surface”



**Dr. Chia-Wen (Kevin) Tsao**  
Associate Professor, Department of Mechanical Engineering  
National Central University  
(中央大學機械工程學系曹嘉文教授)

**11/23 (Sun) 1:00 pm – 2:20 pm: Technical Session D2-W2-T2: Electronic, Photonic, and Magnetic Materials, Organic Polymer and Soft Materials**



Chair: **Dr. Tzung-Fang Guo**  
Distinguished Professor and Chairman, Department of Photonics  
National Cheng Kung University  
(成功大學光電科學與工程學系兼系主任郭宗枋特聘教授)  
Room: Conference Room II (3F)

“Good light based on organic light-emitting diodes”



**Dr. Jwo-Huei Jou**  
Professor, Department of Materials Science and Engineering  
National Tsing Hua University  
(清華大學材料工程學系周卓輝教授)



**Dr. Zingway Pei**  
Associate Professor, Graduate Institute of Optoelectronic Engineering &  
Department of Electrical Engineering  
Director, Center for Research and Development of Engineering Technology,  
National Chung Hsing University  
(中興大學電機工程學系暨光電工程研究所裴靜偉教授)

“New Alternatives of Contact Materials for Transistor”



**Dr. Cheng-Lun Hsin**  
Assistant Professor, Department of Electrical Engineering  
National Central University  
(中央大學電機工程學系辛正倫教授)

“An Epitaxy Approach to Explore Photoelectrochemistry of Complex Oxide Heterostructures”



**Dr. Ying-Hao Eddie Chu**  
Assistant Professor, Department of Materials Science and Engineering  
National Chiao Tung University  
(交通大學材料科學與工程學系所朱英豪教授)

**11/23 (Sun) 1:00 pm – 2:20 pm: Technical Session D2-W3-T2: New Green Energy Materials, Ceramic Materials, Metallurgy and Materials**



Chair: **Dr. Chih-Huang Lai**  
Distinguished Professor and Chair  
Department of Materials Science and Engineering  
National Tsing Hua University  
(清華大學材料科學工程系兼系主任賴志煌特聘教授)  
Room: Conference Room III (3F)

“Solar energy harvesting scheme utilizing three-dimensional hierarchical nano- and micro-structures”



**Dr. Yu-Lun Chueh**  
Associate Professor, Department of Material Science and Engineering  
National Tsing Hua University  
(清華大學材料科學工程學系關郁倫教授)

“First Principles Study of Band Alignment at the Rutile-Anatase TiO<sub>2</sub> Interface”



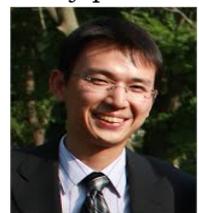
**Dr. Chin-Lung Kuo**  
Associate Professor, Department of Materials Science and Engineering  
National Taiwan University  
(台灣大學材料科學與工程學系郭錦龍教授)

“Investigation on the photocatalytic characteristics of Ag and B doped TiO<sub>2</sub> nanophotocatalysts”



**Dr. Chun-Pei Cho**  
Assistant Professor, Department of Applied Materials and Optoelectronic Engineering  
National Chi Nan University  
(暨南國際大學應用材料及光電學系卓君珮教授)

“Alloy phase stability under current stressing”



**Dr. Shih-kang Lin**  
Assistant Professor, Department of Materials Science and Engineering  
National Cheng Kung University  
(成功大學材料科學及工程學系林士剛教授)

**11/23 (Sun) 1:00 pm – 2:20 pm: Technical Session D2-W4-T2: Smart Grid Technologies and Network Communications, New Green Energy Technologies and Green Building**



Chair: **Dr. Hsin Chu**, Distinguished Professor and Fellow, National Cheng Kung University, Department of Environmental Engineering and Academy of Educators (成功大學環境工程學系朱信特聘教授)  
Room: Conference Room IV (3F)

“Photocatalytic conversion of sunlight to renewable energy”



**Dr. Jeffrey Chi-Sheng Wu**  
Professor, Department of Chemical Engineering  
National Taiwan University  
(臺灣大學化學工程學系吳紀聖教授)

“Recent Studies on Vanadium Redox Flow Battery for Energy Storage Applications”



**Dr. Kan-Lin Hsueh**  
Associate Professor and Department Head, Department of Energy Engineering  
National United University  
(聯合大學能源工程學系系主任薛康琳教授)

“Metabolic Engineering for the production of renewable fuel and chemical”



**Dr. Claire Roa-Pu Shen**  
Assistant Professor, Department of Chemical Engineering  
National Tsing Hua University  
(清華大學化學工程系沈若樸教授)

“Heterogeneous catalysis in biomass conversion to fuels and chemicals”



**Dr. Yu-Chuan Lin**  
Assistant Professor, Department of Chemical Engineering  
National Cheng Kung University  
(成功大學化學工程系林裕川教授)

## **Parallel Sessions:**

### **11/23 (Sun) 2:20 pm – 3:40 pm: Technical Session D2-W1-T3: Bio-Materials, Bio-SoC, Bio-Nanotech, Bio-NEMS/Bio-MEMS, and Water Purification Technology**



Chair: **Dr. Gou-Jen Wang**

Distinguished Professor, Department of Mechanical Engineering and Graduate Institute of Biomedical Engineering  
National Chung-Hsing University

(中興大學機械工程學系王國禎特聘教授)

Room: Conference Room I (3F)

“A CMOS Based Polysilicon Nanowire Biosensor Platform for Biomarkers of Heart Disease”



**Dr. Chih-Ting Lin**

Associate Professor, Department of Electrical Engineering  
National Taiwan University

(台灣大學電機工程學系林致廷教授)

“Novel Filter-like SERS Substrate for Biomedical Application”



**Dr. Chi-Chang Lin**

Associate Professor, Department of Chemical and Materials Engineering  
Tunghai University

(東海大學化學工程與材料工程學系林其昌教授)

“Organic Conductive Biointerfaces for Cell Engineering”



**Dr. Shyh-Chyang Luo**

Assistant Professor, Department of Materials Science and Engineering  
National Cheng Kung University

(成功大學材料科學及工程學系羅世強教授)

“Engineered Tissue on Lab Chip”



**Dr. Cheng-Hsien Liu**

Professor, Department of Power Mechanical Engineering  
Chief Executive Officer, Industrial Liaison Program, College of Engineering  
National Tsing Hua University

(清華大學動力機械工程學系暨工學院產學聯盟執行長劉承賢教授)

**11/23 (Sun) 2:20 pm – 3:40 pm: Technical Session D2-W2-T3: Electronic, Photonic, and Magnetic Materials, Organic Polymer and Soft Materials**



Chair: **Dr. Jiun-Haw Lee**  
Professor, Graduate Institute of Photonics and Optoelectronics  
National Taiwan University  
(臺灣大學光電工程學研究所李君浩教授)  
Room: Conference Room II (3F)

“Effects of Characteristic Photoelectrode and Mixed Dyes on Dye-Sensitized Solar Cells”



**Dr. Chien-Hsin Yang**  
Professor, Department of Chemical and Materials Engineering  
National University of Kaohsiung  
(高雄大學化學工程及材料工程學系楊乾信教授)

“SiGe-based nanomaterials for thermoelectric applications”



**Dr. Sheng-Wei Lee**  
Associate Professor, Institute of Materials Science and Engineering  
National Central University  
(中央大學材料科學工程研究所李勝偉教授)

"Design of ionic liquids-based polymers and composite materials for optoelectronic applications"



**Dr. Tzi-yi Wu**  
Assistant, Professor, Department of Chemical and Materials Engineering  
National Yunlin University of Science and Technology  
(雲林科技大學化學工程與材料工程系吳知易教授)

“The Growth of GaN Nanodots on Si (111) by Droplet Epitaxy”



**Dr. Ing-Song Yu**  
Assistant Professor, Department of Materials Science and Engineering  
National Dong Hwa University  
(東華大學材料科學與工程學系余英松教授)

**11/23 (Sun) 2:20 pm – 3:40 pm: Technical Session D2-W3-T3: New Green Energy Materials, Ceramic Materials, Metallurgy and Materials**



Chair: **Dr. Hsi-Sheng Teng**, Professor, Department of Chemical Engineering,  
National Cheng Kung University (成功大學化學工程學系鄧熙聖教授)  
Room: Conference Room III (3F)

“Gadolinia-doped Ceria Nanoparticles as Electrolytes by Atmospheric Pressure Plasma Jet”



**Dr. Yu-Lin (Joseph) Kuo**  
Associate Professor, Department of Mechanical Engineering (Materials  
Division) and Vice Dean of Student Affairs Office  
National Taiwan University of Science and Technology  
(台灣科技大學機械系材料組兼學生事務處副學務長郭俞麟教授)

“Symbiotic’ Semiconductors: Unusual and counter-intuitive Ge/Si interactions!”



**Dr. Thomas George**  
Department of Electrical Engineering  
National Central University



**Dr. Mei-Li Hsieh**  
Associate Professor, Department of Photonics  
National Chiao Tung University  
(交通大學光電學系謝美莉教授)

“Thermally-Assisted-Occupation Density Functional Theory”



**Dr. Jeng-Da Chai**  
Associate Professor, Department of Physics  
National Taiwan University  
(臺灣大學物理學系蔡政達教授)

“Modeling Anode Gas Distribution of Proton Exchange Membrane Fuel Cells with a Dead-Ended Anode”



**Dr. Yong-Song Chen**

Assistant Professor, Department of Mechanical Engineering  
National Chung Cheng University

(中正大學機械工程學系陳永松教授)

**11/23 (Sun) 2:20 pm – 3:40 pm: Technical Session D2-W4-T3: Smart Grid Technologies and Network Communications, New Green Energy Technologies and Green Building**



Chair: **Dr. Jeffrey Chi-Sheng Wu**, Professor, Department of Chemical Engineering, National Taiwan University (臺灣大學化學工程學系吳紀聖教授)  
Room: Conference Room IV (3F)

“The Evolution to Smart Grid of Taiwan Power System”



**Dr. Bruce Yen-Feng Hsu**

Senior Specialist, Electric Power Research Lab.  
Taiwan Power Research Institute, Taiwan Power Company

(台灣電力公司綜合研究所電力研究室許炎豐博士)

“Communication-Efficient Decentralized Demand Side Management: A Dual Consensus ADMM Approach”



**Dr. Tsung-Hui Chang**

Assistant Professor, Department of Electronic and Computer Engineering,  
National Taiwan University of Science and Technology

(台灣科技大學電子工程學系張縱輝教授)

“The Study and Development of Smart Grid Standards in Taiwan”



**Dr. Shih-Che (Anthony) Hsu**

Assistant Professor, Department of Electrical Engineering  
Chung Yuan Christian University

(中原大學電機工程學系許世哲助理教授)

“The offshore wind resources assessment application of floating LiDAR in the Taiwan Strait”



**Dr. Chung-Yao Hsuan**

Assistant Researcher, Research Center for Energy Technology and Strategy  
National Cheng Kung University

(成功大學能源科技與策略研究中心宣崇堯宣崇堯博士)

**11/23 (Sun) 3:40 pm – 4:00 pm: Coffee Break**

Room: Chung Hwa Hall Atrium (2F)

**Parallel Sessions:**

**11/23 (Sun) 4:00 pm – 5:20 pm: Technical Session D2-W1-T4: Bio-Materials, Bio-SoC, Bio-Nanotech, Bio-NEMS/Bio-MEMS, and Water Purification Technology**



Chair: Dr. Chih-Ting Lin, Associate Professor, Department of Electrical Engineering, National Taiwan University (台灣大學電機工程學系林致廷教授)

Room: Conference Room I (3F)

“Biomedical Diagnosis and Detection in Resource-Limited Settings”



**Dr. Chien-Fu (Steve) Chen**

Assistant Professor, Graduate Institute of Biomedical Engineering  
National Chung Hsing University

(中興大學生醫工程研究所陳建甫教授)

“Multifunctional Gold Nanostructures in Biomedical Engineering”



**Dr. Dehui Wan**

Assistant Professor, Institute of Biomedical Engineering  
National Tsing Hua University

(清華大學生物醫學工程研究所萬德輝教授)

“Optoelectrokinetically-Enabled Signal Enhancement for a Bead-Based FRET Fluorescence Immunoassay”



**Dr. Han-Sheng (Oswald) Chuang**

Assistant Professor, Department of Biomedical Engineering  
National Cheng Kung University

(國立成功大學 生物醫學工程系莊漢聲教授)



**Dr. Chia-Yuan Chen**

Assistant Professor, Department of Mechanical Engineering  
National Cheng Kung University

(成功大學機械工程學系陳嘉元教授)

**11/23 (Sun) 4:00 pm – 5:20 pm: Technical Session D2-W2-T4: Electronic, Photonic, and Magnetic Materials, Organic Polymer and Soft Materials**



Chair: **Dr. Jwo-Huei Jou**

Professor, Department of Materials Science and Engineering  
National Tsing Hua University

(清華大學材料工程學系周卓輝教授)

Room: Conference Room II (3F)

“Nanostructure Conducting Polymer for Energy-Related Applications”



**Dr. Chih-Wei Chu**

Research Fellow, Research Center for Applied Sciences  
Academia Sinica

(中央研究院應用科學研究中心朱治偉博士)

“Lead-free ZnS Nanogenerator and Active Sensor”



**Dr. Jyh Ming Wu**

Associate Professor, Department of Materials Science and Engineering  
National Tsing Hua University

(清華大學材料工程學系吳志明教授)

“Spintronic Materials Explored by Modern X-ray Absorption Spectroscopy”



**Dr. Yuan-Chieh Tseng**

Associate Professor, Department of Materials Science and Engineering  
National Chiao Tung University

(交通大學材料科學與工程學系曾院介教授)

“Inorganic Nanotube-Polymer Composite Membranes for Separation Technology”



**Dr. Dun-Yen Kang**

Assistant Professor, Department of Chemical Engineering  
National Taiwan University

(臺灣大學化學工程學系康敦彥教授)

**11/23 (Sun) 4:00 pm – 5:20 pm: Technical Session D2-W3-T4: New Green Energy Materials, Ceramic Materials, Metallurgy and Materials**



Chair: Dr. Ching-Fuh Lin, Distinguished Professor and Director, Innovative Photonics Advanced Research Center, Graduate Institute of Photonics and Optoelectronics, National Taiwan University (台灣大學光電工程學研究所所長暨電機工程學系林清富特聘教授)

Room: Conference Room III (3F)

“Designer germanium quantum dots for functional sensing/metrology devices”



**Dr. Pei-Wen Li**

Professor, Department of Electrical Engineering  
Director, Center for NANO Science and Technology  
Associate Dean of Academic Affairs  
National Central University

(中央大學電機工程學系兼奈米科技研究中心主任兼副教務長李佩雯教授)



**Dr. Chuan-Feng Shih**

Associate Professor, Department of Electrical Engineering  
National Cheng Kung University

(成功大學電機工程學系施權峰教授)

“Sequential Vacuum Sublimation: A New Method to Fabricate Perovskite Solar Cells”



**Dr. Hao-Wu Lin**

Associate Professor, Advanced Optoelectronic Materials Research Group  
Department of Materials Science and Engineering  
National Tsing Hua University

(清華大學材料工程學系林皓武教授)

“Environmentally Benign and Health-caring Fluorescence Nano-composites for Warm-white Lighting”



**Dr. Ching-Fuh Lin**

Distinguished Professor and Director  
Innovative Photonics Advanced Research Center  
Graduate Institute of Photonics and Optoelectronics  
National Taiwan University

(台灣大學光電工程學研究所所長暨電機工程學系林清富特聘教授)

**11/23 (Sun) 4:00 pm – 5:20 pm: Technical Session D2-W4-T4: Smart Grid Technologies and Network Communications, New Green Energy Technologies and Green Building**



Chair: **Dr. Ta-Hui Lin**

Distinguished Professor, Department of Mechanical Engineering and  
Director, the Research Center for Energy Technology and Strategy  
National Cheng Kung University

(成功大學機械工程學系兼能源科技與策略研究中心主任林大惠特聘教授)

Room: Conference Room IV (3F)



**Dr. Ching-Ming Lai**

Assistant Professor, Department of Vehicle Engineering  
National Taipei University of Technology

(台北科技大學車輛工程系賴慶明教授)

“Transportation and living by green energy in campus”



**Dr. Jih-Hsin Liu**

Assistant Professor, Department of Electrical Engineering  
TungHai University

(東海大學電機工程學系劉日新教授)

“A large-eddy simulation framework for wind energy studies”



**Dr. Yu-Ting Wu**

Assistant Professor, Department of Engineering Science  
National Cheng Kung University

(成功大學工程科學系吳毓庭教授)

“Development and Optimization of a New Energy-saving Glass”



**Dr. Yu-Bin Chen**

Associate Professor, Department of Mechanical Engineering  
National Cheng Kung University

(成功大學機械工程學系陳玉彬教授)