

*Program*

# **Carbon-Based Nano-Materials and Devices II**

November 3 – 8, 2013  
Hualien, Taiwan

**Chair:**

**Lain-Jong Li**

Academia Sinica, Taiwan

**Co-Chairs:**

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Academia Sinica, Taiwan

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National Taiwan University, Taiwan

**S. Tong Lee**

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**Sunday, November 3, 2013**

17:30 – 18:30	Conference Check-in
18:30 – 20:30	Welcome Reception

**NOTES**

- Please do not smoke at any conference functions.
- Turn your mobile telephones to vibrate or off during technical sessions.
- Be sure to check your contact information on the Participant List in this program and make any corrections to your name/contact information online. A corrected copy will be sent to all participants after the conference.

**Monday, November 4, 2013**

08:00 – 10:00 Registration

08:50 – 09:00 Opening Remarks  
***Nghi Q. Lam, ECI Liaison***

***Session 1***  
***Chair: David Tomanek***

09:00 – 09:50 **Plenary Lecture**  
**Interesting properties of strained and defective graphene**  
Kian Ping Loh, National University of Singapore, Singapore

09:50 – 10:30 **Invited Talk**  
**Quasi-2D materials for unusual format electronics**  
Jong-Hyun Ahn, Yonsei University, Korea

10:30 – 11:00 Coffee Break

***Session 2***  
***Chair: Daniel Chua***

11:00 – 11:40 **Invited Talk**  
**Graphene Oxide and its Hybrids as Photocatalysts for Solar Fuel**  
Kuei-Hsien Chen, Academia Sinica, Taiwan

11:40 – 12:20 **Invited Talk**  
**Light-matter interaction in 2D materials**  
Ting Yu, Nanyang Technological University, Singapore

12:20 – 14:30 Lunch

***Session 3***  
***Chair: Jong-Hyun Ahn***

14:30 – 14:45 **Oral Presentation**  
**What type of defect is created by scanning probe lithography on graphene in ambient?**  
W.Y. Woon, National Central University, Taiwan

14:45 – 15:00 **Oral Presentation**  
**High Mobility and Low-Strain graphene Grown by Room-temperature Chemical Vapor Deposition**  
Chih-I Wu, National Taiwan University, Taiwan

15:00 – 15:40 **Invited Talk**  
**Exploring Optoelectronic Properties of 2D Materials by Surface Functionalization**  
Wei-Hua Wang, Academia Sinica, Taiwan

**Monday, November 4, 2013 (continued)**

15:40 – 16:20

**Invited Talk**

**Tunable magnetoresistance in organic spin valves**

Jian Shen, Fudan University, China

16:20 – 16:50

Coffee Break

***Session 4***

***Chair : Kuei-Hsien Chen***

16:50 – 17:30

**Invited Talk**

**Deposition and application of 2D materials in electron emitters and fuel cells**

Daniel Chua, National University of Singapore, Singapore

17:30 – 18:10

**Invited Talk**

**Tunable Graphene Based Optics, Electronics and Photonics**

Chun-Wei Chen, National Taiwan University, Taiwan



**Tuesday, November 5, 2013**

**Session 5**  
**Chair: Ching-Yuan Su**

09:00 – 09:50      **Plenary Lecture**  
**New Directions in Materials Science and Technology: Two-Dimensional Crystals**  
Antonio Castro Neto, National University of Singapore, Singapore

09:50 – 10:30      **Invited Talk**  
**Effects of substrate on graphene transport properties**  
Jing Shi, University of California Riverside, USA

10:30 – 11:00      Coffee Break

**Session 6**  
**Chair: Ting Yu**

11:00 – 11:40      **Invited Talk**  
**Beyond Graphene: Unusual Behavior of Carbon nanostructures**  
David Tomanek, Michigan State University, U.S.A

11:40 – 12:20      **Invited Talk**  
**Coherent Phonon Coupled With Excitation in Semiconducting Single Walled Carbon Nanotubes using a Few Cycle Pulse Laser**  
Takayoshi Kobayashi, National Chiao Tung University, Taiwan

13:30 – 15:00      **Lunch and Poster Session**

**Session 7**  
**Chair: Jing Shi**

15:00 – 15:40      **Invited Talk**  
**Energizing carbon quantum dots**  
Zhenhui Kang, Soochow University, China

15:40 – 16:20      **Invited Talk**  
**Exploring Electronic transport in structurally and chemically modified graphene: from fundamentals to applications**  
Stephan Roche, Institut Català de Nanotecnologia, Spain

16:20 – 16:50      Coffee Break

**Tuesday, November 5, 2013 (continued)**

**Session 8**

**Chair: Lain-Jong Li**

16:50 – 17:30

**Invited Talk**

**Enhancement of Spin-Orbit Coupling in Hydrogenated Graphene**

Barbaros Özyilmaz, National University of Singapore, Singapore

17:30 – 17:45

**Oral Presentation**

**Fluorinated Graphene as Gate Dielectric in Graphene-Based Field Effect Transistor**

C. Y. Su, National Central University, Taiwan

18:30 – 20:30

Banquet

**Wednesday, November 6, 2013**

10:00 – 18:00

Excursion

**Thursday, November 7, 2013**

**Session 9**

**Chair: Li Yang**

09:00 – 09:40

**Invited Talk**

**Graphene enabled molecular electronics**

Mario Hofmann, National Cheng Kung University, Taiwan

09:40 – 10:20

**Invited Talk**

**The Manipulation of Spins in Organic Materials**

Stefano Sanvito, Trinity College, Ireland

10:20 – 10:35

**Oral Presentation**

**Surface Functionalized Nanodiamond for Biomedical Application**

A. Krueger, Wuerzburg University, Germany

10:35 – 11:00

Coffee Break

**Session 10**

**Chair : Mario Hofmann**

11:00 – 11:40

**Invited Talk**

**Nanoscale crystalline and polycrystalline carbon films: diamond, graphene, and their hybrids**

Yonhua Tzeng, Auburn University and National Cheng Kung University, USA

11:40 – 11:55

**Oral Presentation**

**Electron Spin Relaxation in Graphene Nanoribbon Quantum dots**

M. Droth, University of Konstanz, Germany

11:55 – 12:10

**Oral Presentation**

**Extrinsic Spin Hall Effect in Graphene**

M. A. Cazalilla, National Tsing Hua University, Taiwan

12:10 – 14:30

**Lunch**

**Session 11**

**Chair : Chia-Liang Cheng**

14:30 – 14:45

**Oral Presentation**

**Materials Simulations using QMC,GWA and BSE**

C.-M. Wei, Academia Sinia, Taiwan

14:45 – 15:00

**Oral Presentation**

**Interlayer Coupling in Graphene Trilayers and Their Effect on Electron Interaction Driven Broken symmetry Phases**

J. Jung, National University of Singapore, Singapore

**Thursday, November 7, 2013 (continued)**

15:00 – 15:40

**Invited Talk**

**Nanodiamond for biotechnology**

Richard Jackman, University College London, England

15:40 – 16:20

**Invited Talk**

**Diamond biotechnology: from medical implants to sensors**

Philippe Bergonzo, Laboratoire Capteurs Diamant, France

16:20 – 16:50

Coffee Break

***Session 12***

***Chair: Richard Jackman***

16:50 – 17:30

**Invited Talk**

**Protein Conjugation on Nanodiamond for Bio/Medical application**

Chia-Liang Cheng, National Dong Hwa University, Taiwan

17:30 – 17:45

**Oral Presentation**

**Influence of Light Intensity on the Efficiency of Organic Solar Cells**

Lordwell Jhamba, University of the Witwatersrand, South Africa

**Friday, November 8, 2013**

***Session 13***

***Chair: Mei-Yin Chou***

08:30 – 09:20

**Plenary Lecture**

**Electronic, Optical and Transport Properties of Carbon-based and Related Nanostructures: Symmetry, Dimensionality, and Many-body Effects**

Steven G. Louie, University of California at Berkeley, USA

09:20 – 10:10

**Plenary Lecture**

**Carbon Nanotubes and NanoCarbon Hybrid Materials**

Hongjie Dai, Stanford University, USA

10:10 – 10:30

Coffee Break

***Session 14***

***Chair: Lain-Jong Li***

10:30 – 11:10

**Invited Talk**

**Excitons in twisted bilayer graphene**

Li Yang, Washington University, USA

11:10 – 11:25

Closing Ceremony (***Chair: Mei-Yin Chou***)

## Poster List

**P1. Double-Walled (6,6)/(11,11) Carbon Nanotube With Multivacancy Defects for Hydrogen Storage**

*Chun-Hsiang Chan, National Chung Hsing University, Taiwan*

**P2. Graphene-Multi-walled Carbon nanotube Hybrid supported on Fluorinated Tin oxide as a COUNTER Electrode of Dye-sensitized solar cells**

*Li-Hsueh Chang, National Tsing Hua University, Taiwan*

**P3. Three-Dimensional Molybdenum Sulfide Sponges for Electrocatalytic Water Splitting**

*Yung-Huang Chang, Academia Sinica, Taiwan*

**P4. Detection of DNA Hybridization Based on Photoluminescence from Graphene/MoS<sub>2</sub> Stacked Films**

*Chang-Hsiao Chen, Academia Sinica, Taiwan*

**P5. Band Structure of Monolayer MoS<sub>2</sub>, MoSe<sub>2</sub>, and WSe<sub>2</sub> Revealed by Ultraviolet Photoelectron Spectroscopy**

*Ming-Hui Chiu, Academia Sinica, Taipei, Taiwan*

**P6. Analysis of Cobalt Island Stacking via Spin-polarized Molecule Bending After Adsorption**

*Yu-Hsun Chu, Department of Physics, National Taiwan University, Taiwan*

**P7. X-RAY Photoelectron Spectroscopy Investigation of 0D, 1D AND 2D Carbon-based Nanomaterials**

*Tamie A.J. Loh, National University of Singapore, Singapore*

**P8. Using Nanodiamond's Spectroscopic Properties in Bioapplications**

*Elena Perevedentseva, National Dong Hwa University, Taiwan*

**P9. Optical Properties of Nitrogen-doped Graphene Thin films Probed by Spectroscopic ellipsometry**

*C. C. Shen, National Taiwan Normal University, Taiwan*

**P10. Band Gap Tunable Molybdenum Sulfide Selenide Monolayer alloy by a synthetic approach**

*Sheng-Han Su, Academia Sinica, Taiwan.*

**P11. Increasing Seebeck coefficient by Absorbing s-triazine on Graphene-Based Thermoelectric Device**

*Chien-Chih Tseng, Academia Sinica, Taiwan*

**P12. Fractal Dimension Analysis of Chemical Vapor Deposition Grown Graphene on copper**

*Wei Yen Woon, National Central University*

**P13. Improved Ionic Conductivity of Solid Polymer Electrolytes by Introducing Polymer-Functionalized Graphene Nanosheets**

*Yun-Sheng Ye, Huazhong University of Science & Technology, China.*

**P14. Digitized Charge Transfer Magnitude Determined by Metal-organic Coordination Number**

*Hung Hsiang Yang, National Taiwan University, Taipei, Taiwan*

**P15. Characterization of Nanodiamond-Glycine-Proteins Heterostructure Complex as Nanoprobe**

*Ashek-I-Ahmed, National Dong Hwa University, Taiwan AND P.N. Lebedev Physics Institute, Russian Academy of Sciences, Russia*

**P16. Templating Molecular Orientation of Pentacene Thin Film on Graphene and in Relation to Charge Transport**

*Kuei-Hsien Chen, National Taiwan University and Academic Sinica, Taiwan*

**P17. Magnetism in Photo-Thermal Reduced Graphene Oxides: STXM and XMCD study**

*Chia-Liang Cheng, Tamkang University, Taiwan*

**P18. Electrical and Optical Study of Low-temperature Reduced Graphene Oxide**

*Ting Chun Lin, National Chung Hsing University, Taiwan*

**P19. Ultra-violet Photoquench of Low-temperature Plasma Reduced Graphene Oxide**

*Ting Chun Lin, National Chung Hsing University, Taiwan*