Friday, August 21, 2015

Registration open: 7.30AM

Inauguration: 8.12 – 8.30AM
8.12 - 8.15: Saiful Khondaker, Workshop Chair
8.15-8.20: MJ Soileau, Vice President for Research and Commercialization, UCF
8.20-8.23: Michael Johnson, Dean, College of Sciences, UCF
8.23-8.26: Bahaa Saleh, Dean, College of Optics and Photonics (CREOL), UCF
8.26-8.29: Michael Georgiopoulos, Dean, College of Engineering and Computer Science, UCF

Session A: Plenary Session I
Chair: Masa Ishigami (UCF)
A1. 8.30-9.30AM: Mark C. Hersam (Northwestern University): Integration Challenges and Opportunities for 2D Materials

Coffee break: 9.30-9.45AM (sponsored by Thorlabs)

Session B: Growth, Synthesis and Characterization
Chairs: Laurene Tetard (UCF) and Humberto Rodriguez Gutierrez (USF)
B1. 9.45-10.25 AM: Ludwig Bartels (University of California, Riverside): Transition Metal Dichalcogenides: Growth, Characterization and Modification (Invited)
B2. 10.25- 11.05 AM: Peter Dowben (University of Nebraska-Lincoln): The Symmetry-Resolved Surface-Derived Electronic Structure of MoS2 and WSe2 (Invited)
B3. 11.05-11.45 AM: Humberto Terrones (Rensselaer Polytechnic Institute): Beyond graphene: Graphene foams and transition metal dichalcogenides (Invited)
B4. 11.45AM-12.15 PM: Kai Wang (Oak Ridge National Lab): Synthesis and Processing of Twisted WSe2/WS2 Type-II Heterobilayers with Strong Interlayer Coupling

Lunch break: 12.15 - 1.00 PM, Lunch will be provided (sponsored by Witec)

Session C: Plenary Session II
Chair: Richard Klemn (UCF)

C1. 1.00 – 2.00 PM: Steven G. Louie (University of California at Berkeley): Novel Interaction and Correlation Effects in Quasi 2D Materials

Session D: Theory and modeling
Chairs: Jing Guo (UF) and Michael Leuenberger (UCF)
D1. 2.00-2.45 PM: David Tománek (Michigan State University): Unexpected electronic properties of layered semiconductors beyond graphene (Invited)
D2. 2.45- 3.30 PM: Boris Yakobson (Rice University), From the first principles: On growth, grain boundaries, and electronic consequences for graphene, h-BN, TMDC (Invited)

Coffee break: 3.30 - 3.45 PM (sponsored by Raith Nanofabrication)

D3. 3.45-4.05 PM: Andor Kormányos (University of Konstanz, Germany): Spin-orbit coupling, quantum dots and magnetoconductance oscillations in monolayer transition metal dichalcogenides
D4. 4.05-4.25 PM: Benjamin Revard (Cornell University) : Computational Discovery of Novel Two-Dimensional Materials with an Evolutionary Algorithm
D5. 4:25-4.45 PM: Sadegh Mehdi Aghaei (Florida International University): Effects of periodic nanoholes on the energy band gap of armchair silicene nanoribbons: a density functional theory study

Session E: Summary and Discussion of day 1: 4.45-5.30PM
Discussion Leaders: Ludwig Bartels (University of California, Riverside ) and Boris Yakobson (Rice University)
Discussion Topic: Challenges and opportunities in growth, characterizations and modelling

Session F: Poster and reception: 5.30 - 7.30 PM (sponsored in part by Horiba)
Chairs: Lei Zhai (UCF) and Irene Calizo (FIU)

7.30 PM: Workshop adjourns for Day 1
**Saturday, August 22, 2015**

**Session G: Electronics and devices**
Chairs: Luis Balicas (FSU) and Saiful Khondaker (UCF)
G1. 8.00-8.38 AM: Huili Grace Xing (Cornell University) : Challenges and Opportunities in 2D Crystals: graphene and beyond (Invited)
G2. 8.38- 9.16 AM: Xiangfeng Duan (University of California, Los Angeles): Electronic and Optoelectronic Devices from Two-Dimensional Materials and their Heterostructures (Invited)
G3. 9.16 -9.54 AM: Eric Vogel (Georgia Tech): Symmetric 2D Vertical Heterostructure Devices: Simulation and Experiment (Invited)
G4. 9.54-10.32 AM: Emanuel Tutuc (University of Texas at Austin): Electron Transport and Tunneling in Graphene-based Heterostructures (Invited)

**Coffee break: 10.32-10.45AM (jointly sponsored by MBraun and Nanoscale)**

**Session H: Optoelectronics and Photonics**
Chairs: Abdelkader Kara (UCF) and Denis Karaiskaj (USF)
H1. 10.45 – 11.23 AM: Fengnian Xia (Yale University): Graphene and Beyond for Nanophotonics (Invited)
H2. 11.23 - 12.01 PM: Han Wang (University of Southern California): Bridging the Gap – Rediscovering Black Phosphorus as an Anisotropic Layered Material for Electronics and Optoelectronics (Invited)

**Lunch break: 12.01 PM-12.45 PM, Lunch will be provided (sponsored by Nanobase Inc., Korea)**

H3. 12.45-1.23 PM: Linyou Cao (North Carolina State University) : Engineering the Light-Matter Interactions at 2D TMDC Materials (Invited)
H4. 1.23-2.00 PM: Dan H Huang (Air Force Research Laboratory): Coupled Model and Theory for Graphene Based Multi-Functional Devices (Invited)

**Session J: Energy and Catalysis**
Chairs: Jayan Thomas (UCF) and Matthias Batzill (USF)
J1. 2.00-2.40 PM: Peter Sutter (University of Nebraska-Lincoln): Nanostructures and Heterostructures of 2D Materials (Invited)
J2. 2.40 - 3.20 PM: Talat Rahman (University of Central Florida): Tailoring properties of single-layer transition metal dichalcogenides: looking beyond graphene (invited)

**Coffee break: 3.20-3.35 PM**

J3. 3.35 - 4.15 PM Aditya Mohite (Los Alamos National Laboratory): Phase engineering of Transition Metal Di-chalcogenides for optoelectronic applications (Invited)
J4. 4.15 - 4.45 PM Shahriar Memaran (Florida State University): Pronounced photovoltaic response from p-n junctions based on multi-layered MoSe2

**Session K: Summary and Discussion of Day 2: 4.45-5.30 PM**
Discussion leaders: Talat Rahman, Huili Grace Xing and Dan H Huang
Discussion Topic: Challenges and opportunities in electronic, energy and photonic devices

5.30 PM: Workshop adjourns

Sponsors:

Office of Research and Commercialization
College of Science
College of Optics and Photonics
College of Engineering and Computer Science
Department of Physics

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