

# Femtosecond Electron Imaging and Spectroscopy Workshop 2017

## Final Program

### **Sunday, June 11, 2017**

13:00 - 22:00 Registration

### **Monday, June 12, 2017**

08:30 - 09:00 Registration

09:00 - 09:15 Opening

#### **Session 1 In Memory of Ahmed Zewail** (Chair: Xijie Wang)

09:15 - 09:45 **Dongping Zhong** (Ohio State University and SJTU)

*Femtochemistry and Femtobiology: A Tribute to Ahmed Zewail*

09:45 - 10:15 **Chong-Yu Ruan** (Michigan State University)

*Advances in femtosecond imaging and spectroscopy with high-brightness beams*

10:15 - 10:45 Coffee break

10:45 - 11:15 **Jianming Cao** (Florida State University and SJTU)

*Ultrafast Gas-Phase Electron Diffraction*

11:15 - 11:30 **Jianbo Hu** (Chinese Academy of Engineering Physics)

*Endless passion for science: all the moments with Dr. Zewail in his last 4 years*

11:30 - 12:00 **Jerry Hastings** (SLAC National Accelerator Laboratory)

*Ultrafast x-ray and electron scattering: complementary or competition*

12:00 - 14:00 Lunch break

#### **Session 2 UED/UEM and detectors** (Chair: Yimei Zhu)

14:00 - 14:30 **Xijie Wang** (SLAC National Accelerator Laboratory)

*Scientific opportunities & technical challenges of MeV ultrafast electron diffraction and imaging*

14:30 - 15:00 **Bryan Reed** (Integrated Dynamic Electron Solutions, Inc.)

*The Continuum of Time Resolution for Transmission Electron Microscopy*

15:00 - 15:30 **Jinfeng Yang** (Osaka University)

*Ultrafast Electron Microscopy using a MeV-energy Femtosecond-pulse Electron Beam*

15:30 - 15:45 **Dao Xiang** (Shanghai Jiao Tong University)

*Status of the MeV ultrafast electron diffraction and microscopy project at Shanghai Jiao Tong University*

15:45 - 16:15 Coffee break

16:15 - 16:45 **Shuyun Zhou** (Tsinghua University)

*Ultrafast electronic dynamics of topological material revealed by time- and angle-resolved photoemission spectroscopy*

16:45- 17:15 **Nigel Browning** (PNNL and University of Washington)

*Observations of Dynamic Processes in Liquids – Combined Hardware and Software Solutions for Increasing Image Speedy*

17:15 - 17:30 **Xiaoxiao Cao** (Gatan Inc.)

*The recent advancement in direct detection camera at Gatan*

17:30 - 17:45 **Liang Jin** (Direct Electron LP)

*CMOS Direct Electron Detector development for ultrafast electron microscope*

18:00 - 20:00 BBQ Dinner

## **Tuesday, June 13, 2017**

**Session3** *Strongly correlated electron materials* (Chair: Jianming Cao)

09:00 - 09:30 **Bradley Siwick** (McGill University)

*Ultrafast Electron Diffraction Probes More Than Just Lattice Structure*

09:30 - 10:00 **Nanlin Wang** (Peking University)

*Revealing Extremely Low Energy Amplitude Modes in the Charge-Density-Wave Compound LaAgSb<sub>2</sub>*

10:00 - 10:30 **Hermann Durr** (SLAC National Accelerator Laboratory)

*Momentum-space imaging of ultrafast electron-phonon coupling in functional materials*

10:30 - 11:00 Coffee break

11:00 - 11:30 **Yimei Zhu** (Brookhaven National Laboratory)

*Revealing Charge, Orbital and Lattice Dynamics and Interplay in Strongly Correlated Systems with Ultrafast Electrons*

11:30 - 12:00 **Jianqi Li** (Institute of Physics, CAS)

*Four-dimensional ultrafast TEM: Developments and applications*

12:00 - Free afternoon & UED/UEM lab tour (optional)

## **Wednesday, June 14, 2017**

**Session4** *AMO and chemical dynamics* (Chair: Dongping Zhong)

09:00 - 09:30 **Martin Centurion** (University of Nebraska-Lincoln)

*Femtosecond Electron Diffraction from Molecules in the Gas Phase*

09:30 - 10:00 **Jian Wu** (East China Normal University)

*Spatiotemporal visualization of molecular rotational dynamics in femtosecond laser pulses*

10:00 - 10:15 **Tian-Min Yan** (Shanghai Advanced Research Institute)  
*Quantum state tomography of high temporal resolution with THz streaking-assisted photoelectronic momentum distribution*

10:15 - 10:30 **Kang Lin** (East China Normal University)  
*Two-dimensional Directional Bond Breaking by Tailored Femtosecond laser pulses*

10:30 - 10:50 Coffee break

10:50 - 11:20 **Wenkai Zhang** (Beijing Normal University)  
*Ultrafast X-ray Spectroscopy Studies of Electronic Excited States Dynamics in Coordination Chemistry*

11:20 - 11:50 **Weiqing Zhang** (Dalian Institute of Chemical Physics)  
*Dalian Coherent Light Source*

11:50 - 12:05 **Yizhu Zhang** (Shanghai Advanced Research Institute)  
*Precise phase determination in two-dimensional electronic spectroscopy*

12:05 - 12:20 **Xiaochun Gong** (East China Normal University)  
*Strong field double ionization of hydrocarbon molecules*

12:20 - 14:00 Lunch break

**Session 5** *Advanced concepts and beam optics* (Chair: Chong-Yu Ruan)

14:00 - 14:30 **Jom Luiten** (Eindhoven University of Technology)  
*Ultracold and ultrafast electron technology*

14:30 - 15:00 **Phillip Duxbury** (Michigan State University)  
*N-particle and PIC simulations of dense electron bunch dynamics: High emittance rings and the dynamics of crossover*

15:00 - 15:15 **Yingpeng Qi** (East China Normal University)  
*Improving the temporal resolution in RF compression based Coulomb interaction dominated keV ultrafast electron diffraction*

15:15 - 15:45 Coffee break

15:45 - 16:15 **Wenxin Tang** (Chongqing University)  
*Towards Ultrafast Spin-Polarized Low Energy Electron Microscopy*

16:15 - 16:30 **Liguo Zhu** (Chinese Academy of Engineering Physics)  
*Generation and detection of 50 MV/cm terahertz pulsed electric field from LiNbO<sub>3</sub> with 800 nm femtosecond laser*

16:30 - 16:45 **Feng Liu** (Shanghai Jiao Tong University)  
*Measurement of transient electric field in laser produced plasma by an electron beam*

16:45 - 17:00 Closing