

Femtochemistry, Femtobiology, and Femtophysics  
- *Frontier in Ultrafast Science and Technology*

- The 9<sup>th</sup> international conference on fundamental ultrafast processes in chemistry, biology, and physics

# *Program*

August 8 (Saturday) – 13 (Thursday), 2009

**Overseas Exchange Center**

*(Yingjie Exchange Center)*

Peking University  
Beijing, China

<http://web5.pku.edu.cn/femto9>

Aug 8, 2009 (Sat.)  
Registration (Lake View, 10am-9pm) & Reception (Lake View, 7pm-9pm)

Aug. 9, 2009 (Sun.)

Chair: Gong, Qihuang

8:30 – 8:40

Open ceremony

8:40 – 9:40 am Zewail, Ahmed H.

4D ultrafast electron microscopy—developments and applications

9:40 – 10:20 am Zhang, Jie

4D imaging of formation of fast evolving plasmas

Picture taken & Break

Chair: DiMauro, Louis F.

10:40 – 11:10 am Murnane, Margaret M.

Ultrafast molecular dynamics probed by coherent electrons and X-rays

11:10 – 11:40 am Kapteyn, Henry C.

Coherent X-rays from ultrafast lasers, and applications - attosecond science meets nonlinear optics

11:40 – 12:10 am Baskin, J. Spencer

Time-dependent molecular alignment in spectroscopy and diffraction

12:10 – 12:30 am Gedik, Nuh

Ultrafast electronic and structural dynamics in superconductors

Lunch

Chair: Santamaría, Jesus

1:45 – 2:15 pm Chergui, Majed

X-ray and optical studies of ultrafast molecular processes in solutions

2:15 – 2:35 pm Ruan, Chong-Yu

Dynamical imaging of nanomaterials and interfaces

2:35 – 2:55 pm Baum, Peter

Visualization of nuclear and electron motion by ultrafast electron diffraction

2:55 – 3:15 pm Bisgaard, Christer

Femtochemistry from the molecule's point of view: time-resolved photoelectron imaging of fixed-in-space molecules

3:15 – 3:30 pm Ihee, Hyotcherl

Solution-phase reaction dynamics visualized by time-resolved X-ray solution scattering

Break

Chair: Kong, Fanao

3:50 – 4:20 pm Dantus, Marcos

Applications of ultrashort shaped pulses: from pulse characterization to proteomics

4:20 – 4:40 pm Baumert, Thomas

Ultrafast laser control of coherent and incoherent photoinduced processes

4:40 – 5:00 pm Bañares, Luis

Real time bond breaking in molecules and clusters by femtosecond imaging

5:00 - 5:15 pm Wu, Chengyin

Population and alignment control of molecular rotational wave-packet

5:15 – 5:30 pm Sølling, Theis

Predissociative conformational changes

Dinner

Aug. 10, 2009 (Mon.)

Chair: Herek, Jennifer L.

8:30 – 9:00 am	Manz, Jörn	Quantum control by laser pulses: from nuclear to electron dynamics, and back
9:00 – 9:30 am	Yang, Xueming	Femtosecond two-photon photoemission spectroscopy on methanol on a stoichiometric TiO <sub>2</sub> (110) surface
9:30 – 9:50 am	Fielding, Helen	Ultrafast dynamics of the S <sub>1</sub> excited state of benzene
9:50 – 10:05 am	Zhang, Bing	Dynamics of electronically excited molecules by femtosecond photoelectron imaging
10:05 – 10:20 am	Cheng, Po-Yuan	Coherent vibrational motion in azobenzene cation studied by femtosecond pump-probe ion fragmentation spectroscopy

Break

Chair: Sun, Zhenrong

10:40 – 11:10 am	Hynes, James T. (Casey)	Dynamics of water reorientation around hydrophobic and hydrophilic solutes
11:10 – 11:40 am	Lee, David Philips	Time-resolved spectroscopy studies of P-Hydroxyphenacylester phototrigger compounds
11:40 – 12:10 am	Tominaga, Keisuke	Vibrational frequency fluctuations in solutions studied by infrared nonlinear spectroscopy
12:10 – 12:30 am	Joo, Taiha	Chemical reaction dynamics by impulsive excitation of vibration

Lunch

Chair: Wang, Shufeng

1:45 – 2:15 pm	Nibbering, Erik T. J.	Ultrafast infrared spectroscopy of aqueous proton transfer to small ions
2:15 – 2:45 pm	Kim, Dongho	Ultrafast excitation energy migration processes in various porphyrin arrays
2:45 – 3:05 pm	Tahara, Tahei	Observing structural evolution of reacting molecules: ultrafast photoisomerization of cis-stilbene
3:05 – 3:25 pm	Yartsev, Arkady	Photo-generation and recombination of charges in polymer-based solar cell materials
3:25 – 3:40 pm	Diau, Eric W.	Femtosecond relaxation dynamics of porphyrins on nanostructural thin-films for dye-sensitized solar cells
3:40 – 3:55 pm	Yang, Yanqiang	The energy relaxation and vibrational coherence coupling in $\pi$ -conjugated polymer of MEH-PPV

Break

Chair: Zhao, Guozhong

4:15 – 4:45 pm	Douhal, Abderrazzak	Ultrafast dynamics of ensemble and ps-observation of a single molecule interacting with mesoporous nanochannels
4:45 – 5:15 pm	Chou, Pi-Tai	Some new insights into the excited state dynamics
5:15 – 5:35 pm	Kobayashi, Takayoshi	Direct observation of molecular structural change during intersystem crossing by real-time spectroscopy with a few optical cycle laser
5:35 – 5:55 pm	Bernhardt, Thorsten M.	Surface-aligned femtochemistry: real-time investigation of photoinduced uni- and bimolecular surface reaction dynamics
5:55 – 6:10 pm	Pozdnyakov, Ivan P.	Photophysics of salicylic acid derivatives in aqueous solution

Night poster session

Aug. 11, 2009 (Tue.)

Chair: Zhong, Dongping

8:30 – 9:00 am	Boxer, Steven G.	Excited state dynamics of green fluorescent protein (GFP) and photosynthetic reaction centers
9:00 – 9:20 am	Sun, Chi-Kuang	In vivo molecular-resonance enhanced third harmonic generation imaging based on a femtosecond IR laser
9:20 – 9:40 am	Gai, Feng	Ultrafast Protein Folding Dynamics
9:40 – 10:00 am	Clementi, Cecilia	Prediction of protein functional states by multi-resolution protein modeling
10:00 – 10:15 am	Lin, Su	Light-harvesting role of $\beta$ -carotene in the photosystem I of eukaryotic green alga <i>Chlamydomonas reinhardtii</i>

Break

Chair: Zhang, Jianping

10:35 – 11:05 am	Changenet-Barret, Pascale	Photoisomerization of a biomimetic cyclodextrin model of photoactive yellow protein
11:05 – 11:25 am	Kohler, Bern	Ultrafast photodynamics in diverse DNA structures from A-tracts to Z-DNA
11:25 – 11:45 am	Fiebig, Torsten	Femtosecond dynamics in the molecules of life – from basic research to medical applications
11:45 – 12:00 am	Landes, Christy F.	Aptamers: dynamic structure-function relationships in a weak DNA hairpin structure

Lunch

Afternoon – visiting (tour)

Night banquet

Aug. 12, 2009 (Wed.)

Chair: Ai, Xicheng

8:30 – 9:00 am	Zhong, Dongping	Ultrafast protein dynamics probed by intrinsic tryptophan
9:00 – 9:20 am	Zhang, Jianping	On the excitation-trap dynamics, red absorption and thermal stability of the LH1-RC complex from photosynthetic bacterium <i>thermochromatium tepidum</i>
9:20 – 9:40 am	Miller, Thomas	Direct simulation of coupled electronic and nuclear dynamics in complex systems
9:40 – 9:55 am	Pang, Yoonsoo	Excited state dynamics of 8'-apo- $\beta$ -caroten-8'-al and 7',7'-dicyano-7'-apo- $\beta$ -carotene studied by femtosecond time-resolved infrared spectroscopy

Break

Chair: Li, Yan

10:15- 10:45 am	Yamanouchi, Kaoru	Frontiers in attosecond chemistry: ultrafast hydrogen migration in hydrocarbon molecules in intense laser fields
10:45 – 11:05 am	Lian, Tianquan	Multiple exciton dissociation in QDs by ultrafast interfacial electron transfer

11:05 – 11:25 am	Zhang, Xinping	Multi-photon transient absorption and photoconductivity in semiconductor polymers
11:25 – 11:45 am	Ghosh, Hiren N.	Ultrafast interfacial electron transfer dynamics from nonthermalized and thermalized donor states of Ru(II)/Os(II)-polypyridyl complexes coupled strongly to TiO <sub>2</sub> semiconductor nanoparticles
11:45 – 12:05 am	Ji, Wei	Nonlinear interaction between femtosecond laser pulses and nano-composite materials

**Lunch**

**Chair: Dai, Hai-Lung**

1:45 – 2:15 pm	Weng, Yuxiang	NOPA gated femtosecond time-resolved fluorescence spectra: a new method for ultra-sensitive transient fluorescence spectroscopy
2:15 - 2:30 pm	Gundlach, Lars	Ultrafast spatially-resolved carrier dynamics in single CdSSe nanobelts
2:30 - 2:45 pm	Qian, Pu	Energy transfer in hybrid bio-inorganic light emitting structures
2:45 – 3:00 pm	Sliwa, Michel	Ultrafast photodynamics of fluorescent and photochromic nanoparticles
3:00 – 3:15 pm	Lai, Tianshu	Spin diffusion transport in bulk GaAs studied by circularly dichromatic absorption of spin gratings

**Break**

**Chair: Wei, Zhiyi**

3:35 - 4:05 pm	DiMauro, Louis F.	Laser-atom physics in the classical limit
4:05 – 4:25 pm	Zeng, Heping	Repulsion and attraction of intense ultrafast light bullets
4:25 – 4:45 pm	Jiang, Hongbing	Tuning frequency of few-cycle femtosecond laser pulses by molecular phase modulation
4:45 – 5:05 pm	Cheng, Ya	Mid-infrared high field laser physics
5:05 - 5:20 pm	Dao, Lap Van	Extreme ultraviolet radiation for coherent diffractive imaging with high spatial resolution

**Concluding remarks & Chinese folk performance**

**Aug 13, 2009 (Thu.)  
End of Conference**