JOIN US FOR A FABULOUS SYMPOSIUM AT THE 239TH NATIONAL MEETING OF THE AMERICAN CHEMICAL SOCIETY

Measuring and Manipulating Condensed Phase Chemistry in Time and Frequency: Celebrating 50 Years of the Laser

Organized by: V. D. Kleiman and N. E. Levinger

MARCH 21: SUNDAY MORNING

Methods Harnessing New Laser Technology

V. D. Kleiman, Organizer
N. Levinger, Organizer, Presiding

8:15 Introductory Remarks.


9:00 17. Frequency modulation coherent anti-stokes Raman scattering (CARS) microscopy based on spectral focusing of single broadband laser pulses. S.-H. Lim, J. Sung, B.-C. Chen

9:20 18. Control of nonlinear optical processes in the frequency and time domains by multiphoton intrapulse interference and multiple independent comb shaping. M. Dantus

10:00 Break.

10:20 19. Coherent ultrafast multidimensional spectroscopy of vibrational and electronic dynamics: From infrared to X-rays. S. Mukamel

11:00 20. Linear and nonlinear ultrafast spectroscopy in condensed phase systems: The semiclassical initial value representation approach to include quantum dynamical effects. J. Liu, W. H. Miller


We gratefully acknowledge financial support from:

BioPhotonic Solutions, Coherent, CVI-Melles Griot, Newport, OEC, Picoquant
MARCH 21: SUNDAY AFTERNOON

New Nonlinear Laser Spectroscopies

V. D. Kleiman and N. Levinger, Organizers
M. Galperin, Presiding


2:30 155. Coherent frequency combs and spectroscopy. J. Ye

3:10 Break.

3:30 64. Coherent vibrational nonlinear spectroscopy at interfaces. R. A. Bartels


4:50 67. SDS surfactant has a marginal effect on the interfacial tension of nanoscopic oil droplets in water. S. Roke

We gratefully acknowledge financial support from:
BioPhotonic Solutions, Coherent, CVI-Melles Griot, Newport, OEC, Picoquant
MARCH 22: MONDAY MORNING

Coherent Control as a Spectroscopy Tool

N. Levinger, Organizer
V. D. Kleiman, Organizer, Presiding

8:20 107. Coherent control of proton tunneling across Coulombic barriers. V. S. Batista, R. Saha

9:00 108. Solid-like coherent vibronic dynamics in a room temperature liquid: Resonant Raman and absorption spectroscopy of liquid bromine. E. T. Branigan, M. N. van Staveren, V. A. Apkarian

9:20 109. Nonlinear spectroscopy with coherently and incoherently shaped laser pulses. V. Milner

10:00 Break.


11:00 111. 3D-IR spectroscopy of water. P. Hamm, S. Garrett-Roe


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MARCH 22: MONDAY AFTERNOON

Methods Harnessing New Laser Technology

V. D. Kleiman and N. Levinger, Organizers
C. Bardeen, Presiding


2:10 153. Effect of hydrogen bond strength on the vibrational relaxation of interfacial water. A. Eftekhari-Bafrooei, E. Borguet

2:30 154. Computational studies of DNA hydration dynamics. S. A. Corcelli

3:10 Break.

3:30 63. Using resonant pump third-order Raman probe spectroscopy to measure changes in the intermolecular spectral density during dynamics in solution. D. Blank

4:10 156. Electronically resonant molecular hyper-Raman scattering. A. M. Kelley


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MARCH 24: WEDNESDAY MORNING

Coherent Control of Complex Systems

V. D. Kleiman and N. Levinger, Organizers
V. Milner, Presiding

8:20 210. Optical control of molecular reactions in solution. R. J. Sension

9:00 211. Phonon-assisted coherent control of the ablation of GaAs. R. J. Gordon, S. Singha, Z. Hu

9:20 212. Controlling quantum dynamics phenomena with photonic reagents. H. Rabitz

10:00 Break.

10:20 213. Molecular reaction dynamics and quantum control of chemistry using strong fields. L. González

11:00 214. Shining new light on 1,3-cyclohexadiene isomerization. V. S. Petrovic, J. L. White, J. Kim, P. H. Bucksbaum

11:20 110. Nonlinear spectroscopy with tailored femtosecond pulses. M. Motzkus

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MARCH 24: WEDNESDAY AFTERNOON

Multidimensional Spectroscopy

V. D. Kleiman and N. Levinger, Organizers
M. Khalil, Presiding


2:10 249. Quantum-coherent energy transfer: Long-lived quantum superposition states in marine algae. G. D. Scholes

2:30 250. 2D Fourier transform electronic spectroscopy: Applications to understanding the photosystem II reaction center. J. P. Ogilvie, J. A. Myers, K. L. M. Lewis, P. F. Tekavec, F. Fuller

3:10 Break.


4:10 252. Using ultrafast vibrational spectroscopy to watch electrons move in real time. R. D. Pensack, K. M. Banyas, J. B. Asbury


4:50 254. Electrically-modulated 2D IR spectroscopy. A. Massari, A. Eigner

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MARCH 25: THURSDAY MORNING

IR Multidimensional Spectroscopies

V. D. Kleiman and N. Levinger, Organizers
J. Ogilvie, Presiding

8:20 673. Advances in ultrafast 2D spectroscopy using pulse shapers. Ann Woys, M. Zanni

9:00 674. Using 2D IR spectroscopy to understand inter and intra-molecular vibrational interactions of transition metal mixed valence complexes in solution. M. S. Lynch, M. Cheng, B. Van Kuiken, S. Daifuku, M. Khalil

9:20 675. Watching condensed phase reaction dynamics with ultrafast nonequilibrium multidimensional infrared spectroscopy. K. Kubarych

10:00 Break.


11:00 677. Conformational dynamics of a light-activated signaling protein studied using transient 2D infrared spectroscopy. E.-B. W. Lerch, A. Messmer, M. Pescher, J. Bredenbeck


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MARCH 25: THURSDAY AFTERNOON

New Laser Applications in Imaging

V. D. Kleiman and N. Levinger, Organizers
S. Lim, Presiding


2:30 713. Optical nanoimaging with plasmonic probes. **A. V. Bragas**, A. F. Scarpettini, M. Masip

3:10 Break.

3:30 714. Femtosecond fluorescence microscopy: Probing dynamics in complex systems one particle at a time. **P. Piotrowiak**, L. Gundlach


4:50 716. Probing life processes using the duality of the laser: From single molecule live cell imaging to stimulated emission microscopy. **X. S. Xie**

5:30 Concluding Remarks.

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