

MONia • Poster I a - Applications

Poster Area

18:00–20:00

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MONia.1 • 18:00

Multiphoton Microscopy by Multiexcitonic Ladder Climbing in Colloidal Quantum Dots, Nir Rubin Ben-Haim and Dan Oron; Dept. of Physics of Complex Systems, Weizmann Institute of Science, Rehovot, Israel.

Depth resolved multiphoton microscopy is performed by collecting the fluorescent emission of two-exciton states in colloidal quantum dots. This process involves two consecutive resonant absorption events, thus requiring unprecedented low excitation energy and peak power.

MONia.2 • 18:00

Real-time wave-packet engineering using a sensitive wave-packet spectrometer and a pulse-shaper, Kazuhiko Misawa and Kengo Horikoshi; Department of Applied Physics, Tokyo University of A&T, Koganei, Japan.

Real-time wave-packet engineering was demonstrated by full capture of the phase-controlled wave-packet motions. Optimal pulses were obtained for selective excitation of either twisting or bending motion in a cyanine dye molecule.

MONia.3 • 18:00

Lensless Imaging at 70nm Resolution using Tabletop Coherent Soft X-rays, Richard L. Sandberg¹, Changyong Song², Przemyslaw W. Wachulak³, Daisy A. Raymondson¹, Ariel Paul¹, Anne E. Sakdinawat⁴, Chan La-O-Vorakiat¹, William F. Schlotter⁵, Mario C. Marconi³, Carmen S. Menoni³, Margaret M. Murnane¹, Jorge J. Rocca³, Henry C. Kapteyn¹, and Janwei Miao²; ¹Department of Physics and JILA, University of Colorado and NIST, Boulder, Colorado, USA, ²Department of

Physics & Astronomy and California NanoSystems Institute, University of California, Los Angeles, California, USA, ³Department of Electrical and Computer Engineering, Colorado State University, Fort Collins, Colorado, USA, ⁴Center for X-ray Optics at Lawrence Berkeley National Laboratory, Berkeley, California, USA, ⁵Stanford Synchrotron Radiation Laboratory, SLAC, Menlo Park, California, USA.

We use curvature correction and high-numerical-aperture imaging to demonstrate a soft-x-ray diffraction microscope with 70-90 nm resolution using two tabletop coherent sources. The near-diffraction-limited resolution demonstrated is a first for x-ray diffractive imaging.

MONia.4 • 18:00

Grating Enhanced Ponderomotive Scattering for Characterization of Femtosecond Electron Pulses,

Christoph T. Hebeisen, German Sciaini, Maher Harb, Ralph Ernstorfer, Thibault Dartigalongue, Sergei G. Kruglik, and R. J. Dwayne Miller; Institute for Optical Sciences and Departments of Chemistry and Physics, University of Toronto, 80 St. George St., Toronto, ON, M5S 3H6 Canada.

We demonstrate a method for measuring the duration of femtosecond electron pulses capable of 10 fs accuracy, using the ponderomotive force of the intensity grating produced by counterpropagating laser pulses in the microjoule energy range.

MONia.5 • 18:00

CARS microspectrometer with a suppressed nonresonant background, Ruben Zadoyan, Michael Karavitis, Tommaso Baldacchini, and John Carter; Technology and Applications Center, Newport Corp. 1791 Deere ave. Irvine, CA 92606.

We describe a multiplex CARS microspectrometer utilizing a photonic crystal fiber. Enhanced contrast is achieved by subtracting the nonresonant signal in real time. The approach is demonstrated on the images of polystyrene beads.