MONIg • Poster I g - Biology

Poster Area
18:00–20:00
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MONIg.1 • 18:00
Coherent Control of Chirality-Induced 2D Electronic Spectroscopy Signals, •*Dmitri Voronine*[1], *Darius Abramavicius*[2], and *Shaul Mukamel*[2]; [1]*Physikalisches Institut, Universitaet Wuerzburg, Germany*, [2]*University of California Irvine, California, USA.*
Chirality-induced 2D electronic spectra, calculated to first order in k, reveal new spectral features. Coherent control is used to optimize resolution of energy transfer pathways in Fenna-Matthews-Olson complex from photosynthetic green sulfur bacteria.

MONIg.2 • 18:00
Two Photon Two Color Generation of Zeaxanthin Radical Cation in CP29 Light Harvesting Complex, •*Sergiu Amarie*[1], *Laura Wilk*[2], *Tiago Barros*[2], *Werner Kühlbrandt*[2], *Andreas Dreuw*[1], and *Josef Wachtveitl*[1]; [1]*Institute for Physical and Theoretical Chemistry, Johann Wolfgang Goethe-University Frankfurt, Max von Laue-Str. 7, 60438 Frankfurt am Main, Germany*, [2]*Max Plank Institute of Biophysics, Department of Structural Biology, Max von Laue-Str. 3, 60438 Frankfurt am Main, Germany*.
Recent theoretical and experimental studies reveal the central role of zeaxanthin radical cations in regulation of photosynthetic light harvesting. Two-color two-photon spectroscopy on LHC-II protein CP29 reveals the in-situ photodynamics of zeaxanthin radical cations.

MONIg.3 • 18:00
Rebinding of Proximal Histidine in the Cytochrome c' from Alcaligenes xylosoxidans Acts as a Molecular Trap for Nitric Oxide, •*Byung-Kuk Yoo*[1], *Jean-Louis Martin*[1], *Colin R. Andrew*[2], and *Michel Negrerie*[1]; [1]*Laboratory for Optics and Biosciences, INSERM U696, CNRS UMR 7645, Ecole Polytechnique, 91128 Palaiseau cedex, France*, [2]*Department of Chemistry and Biochemistry, Eastern Oregon University, La Grande, Oregon 97850, USA.*
Transient absorption on cytochrome c' was recorded to identify the formation of 5-coordinate(5c)-NO and 5c-His hemes from 4c-heme (99% and 1% amplitudes; 7-ps and 100-ps time constants). We demonstrated that proximal histidine precludes NO rebinding.

MONIg.4 • 18:00
Two-Dimensional Electronic Spectroscopy of the Low-Light Adapted Light Harvesting Complex 4, •*Elizabeth L. Read*[1,2], *Gabriela S. Schlau-Cohen*[1,2], *Gregory S. Engel*[3], *Toni Georgiou*[4], *Miroslav Z. Papiz*[4], and *Graham R. Fleming*[1,2]; [1]*Department of Chemistry, University of California, Berkeley, CA 94720, USA*, [2]*Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA*, [3]*Current Address: Department of Chemistry, The University of Chicago, Chicago, IL, 60637, USA*, [4]*Department of Synchrotron Radiation, STFC Daresbury Laboratory, Warrington, Cheshire WA4 4AD, United Kingdom.*
Two-dimensional electronic spectroscopy of Light Harvesting Complex 4 from photosynthetic bacteria reveals excited state dynamics on two different timescales and the presence of weakly absorbing states that mediate energy transfer to other complexes.

MONIg.5 • 18:00
Three-pulse photon echo spectroscopy as a probe of flexibility and conformational heterogeneity in protein folding, •*Emily A. Gibson* and *Ralph Jimenez*; *JILA and Department of Chemistry & Biochemistry, University of Colorado, Boulder USA.*
Abstract: We investigate the equilibrium unfolding of Zn-cytochrome c by three-pulse photon echo peak shift (3PEPS) spectroscopy, revealing denaturant-dependent timescales of protein motion and inhomogenous broadening. Results are consistent with a two-state model.

MONIg.6 • 18:00
Ultrafast rebinding of CO to carboxymethyl cytochrome c probed by femtosecond vibrational spectroscopy, *Jooyoung Kim*, *Jaeheung Park*, *Taegon Lee*, and •*Manho Lim*; *Department of Chemistry and Chemistry institute for Functional Materials, Pusan National University, Busan, 609-735 Korea*.
The relationships between protein dynamics, structure and function is elucidated by comparing femtosecond vibrational spectra of CO photolyzed from carboxymethyl cytochrome c in aqueous solution with those from ligand binding heme proteins.