THUIIIf • Poster III f - Chemistry

Poster Area
16:15–18:15
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THUIIIf.1 • 16:15
Ultrafast Dynamics of Dansylated POPAM Dendrimers and Energy Transfer in their Dye Complexes, •*Jukka Aumanen[1], Tero Kesti[2], Villy Sundström[2], Fritz Vögtle[3]*, and *Jouko Korppi-Tommola[1]*; *[1]Department of Chemistry, Nanoscience Center, P.O. Box 35, FIN-40014 University of Jyväskylä, Finland, [2]Department of Chemical Physics, Lund University, Chemical Center, Box 124, SE-22100 Lund, Sweden, [3]Kekulé-Institut für Organische Chemie und Biochemie der Rheinischen Friedrich-Wilhelms-Universität Bonn, Gerhard-Domagk Strasse 1, D-53121 Bonn, Germany*.
We have studied internal dynamics of dansylated poly(propyleneamine) dendrimers of different generations in solution and excitation energy transfer from dansyl chromophores to xanthene dyes that form van der Waals complexes with the dendrimers.

THUIIIf.2 • 16:15
Broadband femtosecond fluorescence up-conversion and Photon Echo experiments in the UV, •*Olivier Bräm, Andrea Cannizzo, Ahmad Ajdarzadeh Oskouei, Andreas Tortschanoff, Frank van Mourik*, and *Majed Chergui*; *Ecole Polytechnique Fédérale de Lausanne (EPFL), Laboratoire de Spectroscopie Ultrarapide, ISIC, FSB, BSP; CH-1015 Lausanne,Switzerland*.
The study of a small UV dye in different solvents with fluorescence up-conversion and photon-echo techniques in the UV range provides new insight in cooling relaxation and solvation dynamics of non-polar molecules in polar solvents.

THUIIIf.3 • 16:15
Propagation and beam geometry effect on 2D Fourier transform spectra of multi-level systems, •*Byungmoon Cho, Michael Yetzbacher, Katherine Kitney, Eric Smith*, and *David Jonas*; *Department of Chemistry and Biochemistry, University of Colorado, Boulder, Colorado, 80308, USA*.
We calculate 4-level two-dimensional (2D) Fourier transform relaxation spectra including propagation and beam geometry distortions which are 14% for optical density of 0.2 and 25% for crossing angle of 10 degrees.

THUIIIf.4 • 16:15
Probing Photodynamics of Retinal Protonated Schiff-Base with 7 fs Impulsive Vibrational Spectroscopy, •*Oshrat Bismuth[1], Noga Friedman[2], Mordechai Sheves[2]*, and *Sanford Ruhman[1]*; *[1]Department of Physical Chemistry and Farkas Center for Light Induced Processes, The Hebrew University, Jerusalem 91904, Israel., [2]Department of Oraganic Chemistry, The Weizmann Institute of Science, Rehovot 76100, Israel.*.
Frequency of C=C coherences following impulsive excitation of Retinal Protonated Schiff-Base blue shifts over time ending near that of S0. Assignment of this feature and relevance to the elusive S1 C=C frequency are discussed.

THUIIIf.5 • 16:15
The 2DIR Spectroscopy on CD Modes of Leucine-d10 Side Chain, •*Sri Ram G Naraharisetty[1], Valeriy M Kasyanenko[1], Jörg Zimmermann[2], Megan Thielges[2], Floyd E Romesberg[2]*, and *Igor V Rubtsov[1]*; *[1]Tulane University, New Orleans, LA 70118, USA, [2]The Scripps Research Institue , La jolla, CA-9203, USA*.
We show that perdeuterated side chain of leucine amino acid and related compounds can serve as a useful structural reporter, suitable for studying proteins using 2DIR spectroscopy. Strong direct-coupling and relaxation-assisted C-D/C=O and C-D/Am-II cross-peaks were measured.

THUIIIf.6 • 16:15
A Time-resolved Vibrational Spectroscopy Study on Adenine/Thymine Based Nucleic Acid Systems, •*Susan Quinn[1], Gerard W. Doorley[1], David A. McGovern[1], Anthony W. Parker[2], Kate L. Ronayne[2], Mike Towrie[2]*, and *John M. Kelly[1]*; *[1]School of Chemistry and Centre for Chemical Synthesis and Chemical Biology, Trinity College, Dublin 2, Ireland, [2]Central Laser Facility, Science and Technology Research Council, Rutherford Appleton Laboratory, Chilton, Didcot, Oxfordshire. OX11 OQX, UK*.
The excited state properties of adenine and thymine in nucleotide, dinucleotide and polynucleotides (single and double-strands) are probed using ultrafast transient infrared spectroscopy. The differing deactivation processes and the involvement of excimers/exciplexes are considered.

THUIIIf.7 • 16:15
Electron Transfer in a Donor/Acceptor System Coupled to the Surface of Semiconductor Nanoparticles: Direct Electron Transfer vs. Electron Transfer Through Surface, •*Victor Matylitsky, Lars Dworak*, and *Josef Wachtveitl*; *Institute for Physical and Theoretical Chemistry, J. W. Goethe-University Frankfurt, Max-von-Laue-Strasse 7, D-60438 Frankfurt am Main, Germany*.
Photophysics of molecular donor/acceptor pair coupled to surface of semiconductor nanoparticles was studied via transient absorbance spectroscopy. Competition between electron injection to semiconductor nanoparticle and direct electron transfer in donor/acceptor pair through space was observed.

THUIIIf.8 • 16:15
Intramolecular Vibrational Energy Redistribution Measured by Femtosecond Pump-Probe Experiments in a Hollow Waveguide, •*Alexander Kushnarenko, Vitaly Krylov, Eduard Miloglyadov, Martin Quack*, and *Georg Seyfang*; *Laboratory of Physical Chemistry, ETH-Zurich, Wolfgang-Pauli-Strasse 10, 8092 Zurich, Switzerland*.
In femtosecond pump-probe experiments the intramolecular vibrational energy redistribution was investigated in the gas phase for CF3CHFI, CHBrFI, CHBrClF, C6H6. To increase the measured probe signal the experiments have been performed in a hollow waveguide.

THUIIIf.9 • 16:15
Ultrafast Vibrational Dynamics of Homo- and Hetero-Dimers of Excited-State-Proton-Transfer Compounds, •*Poul B. Petersen, Sean T. Roberts, Matthew Kanan, Krupa Ramasesha, Daniel G. Nocera*, and *Andrei Tokmakoff*; *Department of Chemistry, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139, USA*.
The poster has been withdrawn by the authors.

THUIIIf.10 • 16:15
Femtosecond Time-Resolved Fluorescence Spectroscopy of N^6,N^6-Dimethyladenine: New Explanation of the "Dual

Fluorescence"Dynamics from Decay and Rise Time Measurements at Threshold, ●*Nina Schwalb* and *Friedrich Temps*; *Institut für Physikalische Chemie, Christian-Albrechts-Universität zu Kiel, Olshausenstr. 40, 24098 Kiel, Germany*.
Femtosecond measurements of the fluorescence-time profiles of N^6,N^6-dimethyladenine in a wide wavelength range following excitation at threshold and much higher show identical dynamics, requiring a new explanation for the so-called "dual fluorescence"of the molecule.

THUIIIf.11 • 16:15
Coherent Control of the Efficiency of an Artificial Light-Harvesting Complex, ●*Janne Savolainen[1,2]*, *Riccardo Fanciulli[2]*, *Niels Dijkhuizen[2]*, *Ana Moore[3]*, *Jürgen Hauer[4]*, *Tiago Buckup[4]*, *Marcus Motzkus[4]*, and *Jennifer Herek[1]*; *[1]Optical Sciences, University of Twente, The Netherlands, [2]FOM Institute AMOLF, Amsterdam, The Netherlands, [3]Dept. of Chemistry and Biochemistry, Arizona State University, Tempe, USA, [4]Physichalische Chemie, Philipps-Universität, Marburg, Germany*.
Coherent control over the branching ratio between competing pathways for energy flow is realised for artificial light-harvesting complex. Direct insights to the mechanism featuring quantum interference of a low-frequency mode are presented.

THUIIIf.12 • 16:15
Assignment of the Excited-State Infrared-Spectra in the Course of the Ring Opening Reaction of a Photochromic Dihydroazulene, ●*Tobias E. Schrader[1]*, *Uli Schmidhammer[2]*, *Wolfgang J. Schreier[1]*, *Florian O. Koller[1]*, and *Igor Pugliesi[1]*; *[1]LS für BioMolekulare Optik, LMU München, Oettingenstr. 67, D-80538 Munich, Germany, [2]Laboratoire de Chimie Physique, UMR8000 CNRS-Université Paris Sud, Bât 349, F-91405 Orsay, France*.
With femtosecond infrared spectroscopy and ab initio calculations we could assign the transient spectrum at 1 ps to the ring opened product of the dihydroazulene photo induced reaction. Thus, ring-opening proceeds within 1 ps.

THUIIIf.13 • 16:15
Time-resolved Coincidence Imaging of Ultrafast Molecular Dynamics, ●*Arno Vredenborg*, *Wim G. Roeterdink*, and *Maurice H.M. Janssen*; *Laser Centre and Department of Chemistry, Vrije Universiteit, De Boelelaan 1083, 1081 HV Amsterdam, The Netherlands*.
Time-resolved coincidence imaging of ultrafast molecular dynamics is exemplified on NO2 photodissociation. The combination of coincidence imaging with pulse shaping to study mechanisms in coherent control will be presented.

THUIIIf.14 • 16:15
Ultrafast time and frequency domain vibrational dynamics of the CaF2/H2O interface, *Ali Eftekhari-Bafrooei*, *Satoshi Nihonyanagi*, and ●*Eric Borguet*; *1901 N, 13th Street, Philadelphia PA, 19122, USA*.
The structure of water at the CaF2/KOH interface was studied by vibrational sum-frequency-generation (SFG) spectroscopy and ultrafast SFG-Free Induction Decay, suggesting the presence of weakly hydrogen bonded OH at high pH.