

MONIe • Poster I e - Chemical Physics

Poster Area

18:00–20:00

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MONIe.1 • 18:00

Non-Condon vibronic coupling of coherent molecular vibration in MEH-PPV induced by a visible few-cycle pulse laser, •Takayoshi Kobayashi^{1,2}, Jun Zhang¹, and Zhuan Wang¹;

¹Department of Applied Physics and Chemistry and Institute for Laser Science, The University of Electro-Communications, Chofu, Tokyo, 182-8585, Japan, ²Department of Electrophysics, National Chiao Tung University, 1001 Hsin-Chu 3005, Taiwan.

The dependence of coherent vibrational amplitudes at 128 wavelengths in MEH-PPV (EL polymer) with 1-fs resolution gave the evidence of non-Condon effect due to 11Bu-exciton strongly coupled with m-1Ag state essential in the third-order nonlinearity.

MONIe.2 • 18:00

Discriminating Nearly Identical Biomolecules with Optimal Control, •Véronique Boutou¹, Matthias Roth², Laurent Guyon¹,

Jon Roslund², François Courvoisier^{1,3}, Luigi Bonacina³, Ariana Rondi³, Jerome Extermann³, Herschel Rabitz², and Jean-Pierre Wolf^{1,3}; ¹Université Lyon 1, LASIM, UMR CNRS 5579, 43 bd du 11 Novembre 1918, F69622 Villeurbanne Cedex, France,

²Department of Chemistry, Princeton University, Princeton, NJ 08544, USA, ³GAP, University of Geneva, 20 rue de l'Ecole de Medecine, CH 1211 Geneva 4, Switzerland.

We demonstrate that discriminating between the optical emission of nearly identical flavins in solution is possible by shaping the UV part of a complex multipulse control field, consistent with the concept of optimal dynamic discrimination.

MONIe.3 • 18:00

Specific Channel of Energy Dissipation in Carotenoids:

Coherent Spectroscopic Study, •Masazumi Fujiwara¹, Kensei Yamauchi¹, Mitsuru Sugisaki¹, Andrew Gall², Bruno Robert², Cogdell Richard³, and Hideki Hashimoto¹; ¹CREST-JST and Department of Physics, Graduate School of Science, Osaka City University, 3-3-138 Sugimoto, Sumiyoshi-ku, Osaka 558-8585,

Japan, ²Commissariat a l'Energie Atomique (CEA), Institut de Biologie et Technologies de Saclay (iBiTecS) and Centre National de la Recherche Scientifique (CNRS), Gif-sur-Yvette, F-91191, France, ³Institute of Biomedical & Life Sciences, Glasgow Biomedical Research Centre, University of Glasgow, Glasgow G12 8QQ, Scotland, UK.

We investigated transient grating signals in β -carotene homologues which were measured using sub-20-fs optical pulses. The results clearly show that the central C=C stretching mode is the major channel of energy dissipation to the environment.

MONIe.4 • 18:00

Ultrafast dynamics of light-harvesting function of β -carotene

in carbon nanotubes, •Masayuki Yoshizawa^{1,2}, Kenta Abe¹, Daisuke Kosumi¹, Kazuhiro Yanagi³, Yasumitsu Miyata³, and Yutaka Kataura^{2,3}; ¹Department of Physics, Graduate School of Science, Tohoku University, Sendai 980-8578, Japan, ²JST, CREST, Kawaguchi, Saitama, 332-0012, Japan, ³Nanotechnology Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, 305-8562, Japan.

Ultrafast dynamics of β -carotene encapsulated in single-walled carbon nanotubes (SWCNTs) was investigated by femtosecond absorption spectroscopy. Energy transfer from the excited states of β -carotene to SWCNTs (light-harvesting function) has been observed.

MONIe.5 • 18:00

Dissociative Ionization Dynamics of Ethanol Molecule with High Intensity Femtosecond Pump-Probe Excitation, •Hiroki

Yazawa¹, Hiroshi Hashimoto¹, Kannari Fumihiko¹, Itakura Ryuji², and Yamanouchi Kaoru²; ¹Department of Electronics and Electrical Engineering, Keio University, ²Department of Chemistry, School of Science, The University of Tokyo, 113-0033, Japan.

Using various types of intense femtosecond pump-probe excitation, the vibrational wavepacket dynamics and the deformation of laser-induced potential energy surface relevant to C-C bond and C-O bond breaking reaction of ethanol molecules was experimentally studied.