

CONFERENCE PROGRAM

July 10

18:00 Welcome reception

July 11

- 9:00 **Keynote talk. Graham R. Fleming**, *Non-linear and single photon spectroscopies and photosynthetic light harvesting*
- 9:30 **Keynote talk. Rienk van Grondelle**, *How charge transfer states control the primary processes of photosynthesis*
- 10:00 Break
- 10:30 **Invited talk. Akihito Ishizaki**, *Effects of dephasing upon quantum dynamical phenomena in condensed phase molecular processes*
- 10:50 Donatas Zigmantas, *Energy transfer-induced coherence shift mechanism for long-lived coherences in photosynthesis*
- 11:05 Doran I. G. Bennett, *Vibronic coherence in photosynthesis?*
- 11:20 David Hutchinson, *Structure in dissipation and dephasing rates and the role of coherence in energy transport in photosynthesis*
- 11:35 Joachim Seibt, *Treatment of Herzberg-Teller and non-Condon effects in optical spectra with "hierarchical equations of motion" (HEOM)*
- 11:50 Lunch
- 13:00 **Invited talk. Tomáš Polívka**, *Tuning carotenoid excited states by interaction with protein as the main mechanism of non-photochemical quenching in photosynthesis*
- 13:20 Sergei Kozyrev, *Dark states in quantum photosynthesis*
- 13:35 Elena Meneghin, *Coherence in carotenoid-to-chlorophyll energy transfer*
- 13:50 Václav Perlík, *Vibronically mediated excitation transfer in orthogonal and parallel perylene dyads*
- 14:05 Maxim F. Gelin, *Theory of femtosecond single-molecule spectroscopy: Application to light harvesting complexes*
- 14:20 Break
- 15:00 **Invited talk. Ryszard Jankowiak**, *Impact of single point mutations on the excitonic structure and dynamics in Fenna-Matthews-Olson complex from green sulfur bacterium Chlorobaculum tepidum*
- 15:20 Julian Adolphs, *Theory of difference fluorescence line narrowing spectroscopy on multi-chromophoric systems: Application to the water-soluble chlorophyll binding protein*

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- 15:35 André Anda, *Two-dimensional electronic spectroscopy of anharmonic molecular potentials*
- 15:50 Eglè Bukartė, *Dynamic band-shift signal in two-dimensional electronic spectroscopy*
- 16:05 Break
- 16:30 Nicholas Werren, *Non-Markovian dynamics of open quantum systems in a biological context*
- 16:45 Shmuel Gurvitz, *New approach to noise assistant transport in presence of vibrational degrees of freedom*
- 17:00 Andrea Mattioni, *Dark state protected energy transfer between nanostructured unit cells*
- 17:15 Yonatan Dubi, *Environment assisted quantum transport – insight from two simple models*

July 12

- 9:00 **Keynote talk. Shaul Mukamel**, *Multidimensional spectroscopy of molecular complexes with X-ray pulses and quantum light*
- 9:30 **Keynote talk. Jasper Knoester**, *Spectroscopy and dynamics of excitons in natural and synthetic tubular light-harvesting antennae*
- 10:00 Break
- 10:30 **Invited talk. Alex W. Chin**, *Studying light-harvesting models with superconducting circuits*
- 10:50 Thomas Renger, *Exciton theory of circular dichroism for the refinement of Hamiltonians and structural models of photosynthetic pigment-protein complexes*
- 11:05 David F. Coker, *First principles model Hamiltonian ensembles for light harvesting and direct calculation of non-linear 2D electronic spectroscopy*
- 11:20 Andrius Gelzinis, *Simulations of optical spectra of molecular complexes: Applications to photosystem II reaction center*
- 11:35 Thorsten Hansen, *Coherent spectroscopy of electron transfer*
- 11:50 Lunch
- 13:00 **Invited talk. Michael Thorwart**, *Quantum coherence in the dynamics of biomolecular excitons – revisited*
- 13:20 Yoshitaka Tanimura, *An exciton-coupled electron transfer process controlled by non-Markovian environments*
- 13:35 Anton Trushechkin, *Extending the projector operator formalism: How to compute coherences in the Förster, modified Redfield, and polaron transformation approaches*
- 13:50 Raffaele Borrelli, *Dynamics and spectroscopy of molecular systems at finite temperature: A thermo-field dynamics approach*

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- 14:05 Brendon W. Lovett, *Efficient non-Markovian energy transfer dynamics using time-evolving matrix product operators*
- 14:20 Break
- 15:00 Francesco Tacchino, *Open quantum system approach to the Q-cycle mechanism of electron and proton energy transport through cellular membranes*
- 15:15 Lipeng Chen, *Visualization of dissipative wavepacket dynamics at conical intersections*
- 15:30 Andrew H. Marcus, *Spectroscopic studies of exciton-coupled cyanine dimers (Cy3)₂ in double-stranded DNA*
- 15:45 Poster session
- 18:30 Conference dinner

July 13

- 9:00 **Keynote talk. Jürgen Hauer**, *Vibronic coupling explains the ultrafast carotenoid-to-bacteriochlorophyll energy transfer rate*
- 9:30 **Keynote talk. Peter J. Hore**, *Influence of radiofrequency electromagnetic fields on avian magnetoreception*
- 10:00 Break
- 10:30 **Invited talk. Arvi Freiberg**, *Phenomenal robustness of photosynthetic excitons*
- 10:50 Erling Thyrgaug, *Unravelling coherences in the FMO complex*
- 11:05 Howe-Siang Tan, *The temperature dependence of excitation energy transfer processes in light harvesting complex II*
- 11:20 Tjaart Krüger, *Reduced excitonic coupling enhances light harvesting in the main photosynthetic antennae of diatoms*
- 11:35 František Šanda, *Finite pulse effects in 2D electronic spectroscopies*
- 11:50 Lunch
- 13:00 **Invited talk. Matthew Fisher**
- 13:20 Philip Kurian, *Excitonic transport in biomolecular aromatic networks*
- 13:35 Enrique Blair, *A fully-quantum model for the vibrational theory of olfaction*
- 13:50 David Racine, *Retinal rod cells are sensitive to the coherence of the incoming stimulating light*
- 14:05 Fernando Luis Semião, *Quantum dynamics of ion translocation in a driven potassium channel*
- 14:20 Break

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- 15:00 Yuval Kolodny, *Light harvesting in the deep ocean – enhanced energy transfer through photo-acclimation of marine cyanobacteria*
- 15:15 Jevgenij Chmeliov, *Dynamic feedback of the photosystem ii reaction center on photoprotection in plants*
- 15:30 Nir Keren, *Light harvesting dynamics in massive phycobilisome antenna structures of cyanobacteria*
- 15:45 Lev Mourokh, *Proton-pumping complexes of mitochondria membranes: Natural and artificial structures*
- 16:00 Break
- 16:30 Marijonas Tutkus, *Single-molecule fluorescence and FRET microscopy for DNA – protein interaction studies*
- 16:45 Iannis Kominis, *Quantum biometrics*
- 17:00 Erik M. Gauger, *Bio-inspired light-harvesting beyond classical limits*
- 17:15 Stefan Siwiak-Jaszek, *Quantum synchronisation in biologically inspired exciton-vibration dimers*

Poster presentations

1. Ray Lee, *Brain-to-brain entanglement measured by dyadic fMRI*
2. Thomas Player, *Spin dynamics of Posner's cluster and implications for a theory of quantum cognition*
3. Betony Adams, *An open quantum systems approach to the radical pair mechanism in a biological context*
4. Henry Maguire, *Breakdown of Franck-Condon physics due to non-additive environments*
5. Andrey Mikhaylov, *A decomposition of weak coupling limit type Lindblad equation and rates of decoherence*
6. Dominik Orłowski, *Extending driven Liouville von Neumann with electrostatic potential and alternating current*
7. Dominic Gribben, *Exact quantum dynamics in structured environments*
8. Francesco Di Maiolo, *Intermolecular energy transfer in real time*
9. Svajūnas Korsakas, *Application of the Redfield relaxation equation for a time evolution of a simple excitonic system*
10. Swetapadma Sahoo, *Atomistic modeling of inelastic tunneling through odorant molecules*
11. Elinor Zerah Harush, *Role of network structure in environment-assisted quantum transport*
12. Nidhi Pandey, *Graph theoretic unification of vibration and shape theories of olfaction*
13. Berke Ricketti, *Ultrafast sunlight emulator for quantum biology*
14. Giuseppe Celardo, *Enhancing the efficiency of light-harvesting devices by breaking of detailed balance.*
15. Parisa Hosseinnezhad, *Localization-delocalization transition in the photosynthetic system*
16. Davinder Singh, *Role of initial coherence in excitation transfer efficiency from Fenna-Matthews-Olson complex to reaction center core complex*
17. Ira Mautner, *Investigation of energy transfer mechanisms in photosynthesis using time-resolved spectroscopy*

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18. Stefan Knippenberg, *Enhanced lipid phase recognition through combined (non-) linear optical and fluorescence analyses*
19. Marketa Paloncyova, *Effect of lipid phase on the fluorescent and non-linear optical properties of membrane probes*
20. Adriana De Mendoza, *Photoprotection assisted by thermal light correlations on bacterial photosynthesis*
21. Mette Lützen Hoff Kjeldsen, *2D optical response of a coupled pair of two level systems*
22. Dominic Rouse, *Photocell optimisation: Dark state protection of excitations in a dimer strongly coupled to vibrational and optical baths*
23. Anna S. Bondarenko, *Nano-confinement of excitons in self-assembled molecular tubes*
24. Sayeh Rajabi, *A combined Redfield-Forster theory for biomimetic energy transfer on fluorographene*
25. Tenzin Kunsel, *Temperature dependence of exciton diffusion in linear molecular aggregates*
26. Leonardo Jose Uribe Castano, *Nonlinear optical properties of organized aggregate of porphyrins in lipid bilayers*
27. Animesh Datta, *Quantumness from ultrafast spectroscopy experiments*
28. Vladislav Slama, *First principles calculation of fluorographene optical and excitation transfer properties*
29. Alexander Teretenkov, *High frequency vibrational peaks in pseudomode picture*
30. Alejandro Somoza, *Quantum dynamics of vibronic systems with controlled factorization of the environment*
31. Will Brown, *Vibration-assisted quantum collective effects in light-harvesters*
32. Mantas Jakučionis, *Vibrational damping effects on electronic energy relaxation in molecular aggregates*
33. Vytautas Bubilaitis, *Excited state relaxation in vibronic model for bacterial reaction center*
34. Vytautas Balevičius Jr., *Coherent vs incoherent interactions of lowest-lying chlorophyll and carotenoid excited states in connection with efficient excitation quenching*
35. Mikas Vengris, *Solving the mystery of red tomato color by ultrafast laser spectroscopy*
36. Pavel Malý, *Vibronic effects can decrease trapping effect of low-energy states in photosynthesis*