

Dead Sea Workshop on Excitons in Natural and Manmade Materials

Ein Gedi, February 17-20 2013

Program

Sunday 17/2

Nonadiabatic Dynamics

Chair: Marco Garavelli

11:00	11:10	Sanford Ruhman		Opening Remarks
11:10	11:50	Eberhard K. U. Gross	MPI for Microstructure Physics, Halle, Germany	What's the correct classical force on the nuclei: A fresh look at potential energy surfaces and Berry phases in the time domain
11:50	12:30	Siva Umapathy	Indian Institute of Science, Bangalore, India	Frequency and time-resolved resonance Raman approaches to understanding conical intersections: examples and potential experiments
12:30	13:10	Giulio Cerullo	Politecnico di Milano, Italy	Real-time wavepacket dynamics through a conical intersection: the primary event of vision
13:10	14:40			Lunch
14:40	15:20	Wolfgang Domcke	Technische Universität München, Germany	Computational studies of the photoinduced homolytic dissociation of water in hydrogen-bonded chromophore-water complexes
15:20	16:00	Bern Kohler	Montana State University, USA	Unraveling excited state localization and decay in single- and double-stranded nucleic acids
16:00	16:40	Alan Aspuru Guzik	Harvard University, Massachusetts, USA	Towards the happy marriage of correlated electronic structure and open quantum systems theory: correlated polaron theory
16:40	17:00			Coffee

Magnetoreception and Avian Navigation

Chair: Ksenia Bravaya

17:00	17:40	Abraham Nitzan	Tel Aviv University, Israel	Excitonic effects in molecular electronics and molecular plasmonics
17:40	18:20	Kiminori Maeda	University of Oxford, UK	Magnetically sensitive light-induced reactions in cryptochromes
18:20	19:00	Thorsten Ritz	University of California, Irvine, USA	TBA
19:00	20:30			Dinner
20:30	22:30			Poster session

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Monday 18/2				
Natural photoreceptors I				
Chair: Micha Asscher				
08:30	09:10	Joachim Heberle	Frei Universität, Berlin, Germany	The good vibrations of membrane protein action
09:10	09:50	Mordechai Sheves	Weizmann Institute of Science, Rehovoth, Israel	Light-induced activation mechanism of retinal proteins
09:50	10:05	Gil Toker	Hebrew University of Jerusalem, Israel	Dramatically enhanced photo induced processes within porous silicon
10:05	10:25	Coffee		
10:25	11:05	Marco Garavelli	Università di Bologna, Via Selmi 2, 40126 Bologna, Italy	Photoinduced events in retinal systems: a computational perspective
11:05	11:45	Uri Banin	Hebrew University of Jerusalem, Israel	Dimensionality matters: dimensionality effects on optoelectronic behavior of semiconductor nanocrystals
12:00	16:30	Lunch (sandwiches) + Visit to Masada (departure from Lobby)		
Natural photoreceptors II				
Chair: Naomi Ginsberg				
16:15	16:30	Coffee		
16:30	17:10	Joseph Wachtveitl	Frankfurt University, Germany	Primary reactions of microbial rhodopsins
17:10	17:50	Noam Agmon	Hebrew University of Jerusalem, Israel	Proton wires in GFP: from x-ray structures to dynamics
17:50	18:05	Evgenia Vaganova	Hebrew University of Jerusalem, Israel	Photophysical processes in pyridine based polymer blend induced by white light/far IR irradiation
18:05	20:00	Dinner		
20:00	20:40	Anna Krylov	University of Southern California, USA	Quantum chemistry behind bioimaging: Insights from ab initio studies of fluorescent proteins and their chromophores
20:40	21:20	Dan Huppert	Tel Aviv University, Israel	Ultrafast excited state proton transfer

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Tuesday 19/2				
Natural photoreceptors III				
Chair: Dorit Shemesh				
08:30	09:10	Benny Gerber	Hebrew University, Israel	New developments in ab-initio molecular dynamics simulations of chemical reactions
09:10	09:50	Jasper van Thor	Imperial College, London, UK	Photoreactions in fluorescent proteins
09:50	10:20	Ksenia Bravaya	Univ. Southern California, Los Angeles, USA	On the interplay between the excited and electron-detached states of the GFP chromophore
10:20	10:40	Coffee		
10:40	11:20	Helmut Grubmuller	MPI Göttingen, Germany	Atomistic simulation of single molecule experiments: Molecular machines and a dynasome perspective
11:20	12:00	Wolfgang Lubitz	MPI Muelheim, Germany	Light-induced water oxidation in photosynthesis
12:00	12:40	Itamar Willner	Hebrew University, Israel	Photochemistry with bio-inspired and biomimetic organized assemblies
12:40	14:30	Lunch		
Excitonics in nanomaterials I				
Chair: Shama Speiser				
14:30	15:10	Oleg Prezhdo	Rochester University, New York, USA	Time-domain ab initio studies of excited state dynamics in semiconductor nanocrystals
15:10	15:50	Naomi Ginsberg	University of California, Berkeley, USA	Imaging heterogeneous ultrafast exciton dynamics in organic semiconducting thin films
15:50	16:10	Itai Gdor	Farkas Center, HUJI, Israel	Hyperspectral probing of exciton dynamics and multiplication in PbSe nanocrystals
16:10	16:30	Coffee		
16:30	17:10	Eran Rabani	Tel Aviv University, Israel	Multiexciton Generation in Nanocrystals and Nanorods
17:10	17:50	Patanjali Kambhampati	McGill University, Canada	Multiexcitons in semiconductor nanocrystals as a platform of ultrafast all-optical switching and logic
19:00	Banquet at Matzokei Dragot (departure from hotel lobby)			

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Wednesday 20/2

Excitonics in nanomaterials II

Chair: Eberhard K. U. Gross

09:00	09:40	Stephan Kummel	University of Bayreuth, Germany	A density-based first-principles description of exciton dynamics - hope or hopeless?
09:40	10:20	Leeor Kronik	Weizmann Institute of Science, Rehovoth, Israel	Frontier orbitals and charge-transfer excitation energies from density functional theory
10:20	10:45	Paul Arpin	University of Toronto, Canada	Ultrafast spectroscopy of phycobiliproteins from cryptophyte algae
10:45	11:00			Coffee

Quantum effects in biology

Chair: Eran Rabani

11:00	11:40	Ronnie Kosloff	Hebrew University of Jerusalem, Israel	Weak field coherent control and its role in quantum biology
11:40	12:20	Elad Harel	Northwestern University, Illinois, USA	Long-range excitonic transport in a biomimetic system inspired by the bacterial light-harvesting apparatus
12:20	13:00			Lunch (Sandwiches)
13:00	13:40	Tal Schwartz	Tel Aviv University	Chemistry under strong light-matter coupling
13:40	14:20	Shaul Mukamel	University of California, Irvine, USA	Probing energy transfer and charge separation in photosynthetic reaction centers by nonlinear spectroscopy with classical light and entangled photons