



BEN GURION UNIVERSITY

Reimund Stadler Minerva Center for
Mesoscale Macromolecular Engineering
Beer Sheva 84105, Israel



The 9th Stadler Minerva student workshop

Soft matter: where physics, chemistry, and biology meet

Beer Sheva & Ein-Gedi 28-30 March 2011

Program

- Saturday 26.03.2011** Arrival of first participants to Neve ilan Hotel
(<http://www.c-hotels.co.il/en/?cat=4>)
- Sunday 27.03.2011** Arrival remaining overseas participants to Neve ilan
- 19:00** Workshop Get-together Dinner (Bianca, Ginaton)
(<http://www.rest.co.il/map.aspx?restID=10915#1>)
Bus departure from Neve ilan 18:30

Monday 28.03.2011 BGU (Nano Auditorium)

8:30 Bus departure from Neve Ilan to BGU

10:00 coffee and registration

Session I – Chair: Rony Granek

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| 10:30 Moshe Gottlieb | Opening remarks |
| 10:40 Axel Müller
(Bayreuth) | Self-organized nanostructures from new triblock terpolymers |
| 11:15 Manfred Wilhelm
(Karlsruhe) | New developments for the mechanical characterization of materials |
| 11:50 Anne Bernheim
(Beer Sheva) | Crosstalk between non-processive myosin motors mediated by the actin filament elasticity |
| 12:25 Heike Böhm
(Stuttgart) | Mapping the Hyaluronan-rich pericellular coat of living cells |

12:45 lunch

Session II – Chair: Anne Bernheim

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| 14:00 Igal Szleifer
(Evanston) | Responsive grafted polymers: temperature, pH, ionic strength and surface geometry |
| 14:35 André Gröschel
(Bayreuth) | Multicompartment micelles of triblock terpolymers |
| 14:55 Orit Siton
(Beer Sheva) | Cortactin: an effector of cell propulsion |
| 15:15 Kristen Mills
(Stuttgart) | Experimentally measuring the necessary parameters to calculate free energy changes in growing tumor spheroids |

15:40 coffee

Session III – Chair: Raz Jelinek

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| 16:15 Annette Schmidt
(Cologne) | Hybrid soft matter: concepts for property manipulation by means of external fields |
| 16:50 Renate Messing
(Cologne) | Magneto-mechanical coupling in ferrohydrogel composites |
| 17:10 Joachim Schmeltz
(Bayreuth) | Core-crystalline wormlike micelles (CCWMs): A toolbox for complex surface-compartmentalized nanostructures |
| 17:30 Thomas Schrader
(Essen) | Fundamental biological processes and artificial receptors |

18:15 Bus to Ein-Gedi

(www.ein-gedi.co.il)

20:15 dinner

21:00 Manfred Wilhelm - after-dinner wine talk

Tuesday 29.03.2011 Ein Gedi

Session IV – Chair: Thomas Schrader

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| 8:30 Alexander Böker
(Aachen) | Directing the self-assembly of nanoparticles |
| 9:05 Ronit Biton
(Beer Sheva) | Tuning the structure of hierarchically self-assembled membranes |
| 9:25 Patrick van Rijn
(Aachen) | Self-assembled membranes from bionanoparticle-polymer hybrids |
| 9:45 Johannes Hoepfner
(Karlsruhe) | A novel approach to seawater desalination using polymeric hydrogels |
| 10:05 Thomas Meins
(Karlsruhe) | Investigation of the shear induced macroscopic alignment of diblock copolymers with combined in-situ methods |

10:25 coffee

Session V – Chair: Alexander Böker

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| 10:45 Oren Regev
(Beer Sheva) | Molecular binding to carbon nanotubes |
| 11:20 Michael Shtein
(Beer Sheva) | Enhancement of epoxy properties by surfactant-assisted dispersion of nanoparticles |
| 11:40 Jennifer Galanis
(Beer Sheva) | Vibrated granular rods as a confined liquid crystal |

Session VI – Chair: Annette Schmidt

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| 8:30 Raz Jelinek
(Beer Sheva) | Organized gold nanoparticle architecture at the air/water interface |
| 9:05 Roberto Fiammengo
(Stuttgart) | Conjugation of biologically active peptides to the passivation layer of gold nanoparticles for cellular targeting |
| 9:25 Ahiud Morag
(Beer Sheva) | Conductive nanostructures assembled from Au nanoparticles at air/water interface |
| 9:45 Celin Dobbrow
(Cologne) | Tuning the interaction potential of ferromagnetic cobalt nanoparticles |
| 10:05 Faina Karchemsky
(Beer Sheva) | Drug-transportation by carbon nanotubes |

10:25 coffee

Session VII – Chair: Rachel Yerushalmi-Rozen

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| 10:45 Christian Muller
(Barcelona) | Phase behaviour and nanostructure of polymer/fullerene bulk-heterojunction blends |
| 11:20 Céline Bounioux
(BGU Sede Boker) | Study of photoinduced charge transfer between conjugated polymers and Single Wall Carbon Nanotubes |
| 11:40 Stefan Kudera
(Stuttgart) | Nanostructured material for photovoltaic application |

12:00 lunch

13:00 excursion

19:00 dinner

20:00 poster session

Wednesday 30.03.2011 Ein Gedi

Session VIII – Chair: Meir Lahav

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| 9:00 Dimitris Vlassopoulos
(Heraklion) | Stress relaxation in complex model polymers: combs and rings |
| 9:35 Alicia Malek
(Pfinztal/Karlsruhe) | Investigation of PLLA-blockcopolymers |
| 9:55 Rony Granek
(Beer Sheva) | Protein dynamics and stability: universality vs. specificity |
| 10:30 Shlomi Reuveni
(Tel Aviv/Beer Sheva) | anomalies in vibrational dynamics of proteins: a consequence of fractal-like structure |

10:50 coffee

Session IX – Chair: Dimitris Vlassopoulos

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| 11:20 Ulrich Jonas
(Heraklion) | Structural and viscoelastic properties of molecular and particle monolayers at the air-water interface |
| 11:55 Inbal Preker
(Beer Sheva) | interfacial rheology of amphiphilic block copolymers at the water/oil interface |
| 12:15 Yoav Tsory
(Beer Sheva) | Phase transitions in polymers and liquids in electric field gradients |
| 12:50 Sela Samin
(Beer Sheva) | Attraction between like-charge surfaces in polar mixtures |

13:15 Lunch

Session X – Chair: Axel Müller

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| 14:15 Amir Berman
(Beer Sheva) | Grazing incidence diffraction from hybrid systems at the air/water interface |
| 14:50 Marcelo Carignano
(Evanston) | Interfaces involving water, ice and vapor |
| 15:10 Meir Lahav
(Rehovot) | Homochirality-The signature of life |
| 15:45 | Concluding remarks |

16:30-buses to Beer Sheva, Jerusalem & Tel Aviv

POSTER SESSION

1	Andreas Hanisch (Bayreuth)	Beehive-like aggregates from ABC Miktoarm Star Terpolymers
2	Stefan Weiss (Bayreuth)	A New Generation of Polymer / Clay Hybrid Discs
3	Yohai Dayagi (Beer Sheva)	Design and synthesis of coil-rod-coil triblock copolymers for interfacial engineering of carbon nanotubes
4	Racheli Itzhak (Beer Sheva)	Electrospinning of carbon-nanotubes-PCBM-conjugated polymer fibers for photovoltaic applications
5	Yoav Dias (Beer Sheva)	Characterization of crystallization of conjugated polymers blends of nano-additives in thin films, fibers and bulk
6	Shani Eliyahu (Beer Sheva)	Polymer mediated assembly of fullerenes into non-closed packed two-dimensional arrays
7	Jurgen Jopp (Beer Sheva)	Electrically conductive and transparent carbon-nanotube based thin films
8	Sung-Hyun Park (Evanston)	The effects of surface charge on ice melting: a molecular dynamics study
9	Kevin "Gali" Baler (Evanston)	Electrostatically triggered hydrophobic self-assembly of protein hydrogels
10	Anat Friediger (Beer Sheva)	Membrane interactions and inhibition of amyloid fibril aggregation
11	Margarita Geyzer (Beer Sheva)	Gel thin films containing polydiacetylene for biosensing applications
12	Yevgenia Tifbenkel (Beer Sheva)	Surfactant Langmuir monolayers as templates for alkyl-coated gold nanorods
13	Noga Gal (Beer Sheva)	Membrane activity investigation of indole containing DAG-lactones
14	Yelena Demirovsky (Beer Sheva)	Effects of biological compounds on silica gel- polydiacetylene monolayer biosensor
15	Ilán Pribar (Beer Sheva)	Concentration measurements of nanotubes in solution
16	Amit Srivastava (Beer Sheva)	Unfolding Behavior of Proteins in the Presence of a Pulling Force
17	Hagai Shalev (Beer Sheva)	Diblock copolymers in nonuniform electric fields
18	Yaron Ideses (Beer sheva)	Lamelipodia to Finger-like protrusion: In-vitro, In-silico and in Silicon
19	Barak Gilboa (Beer Sheva)	Cooperative bidirectional motion of myosin motors on actin tracks
20	Tamir Buchshtav (Beer Sheva)	Pattern formation and dynamic of active gels at soft fluid
21	Alexey Bushmelev (Cologne)	Non-spherical magnetic nanoparticles for the design of asymmetric structures
22	Natalia Frickel (Cologne)	Magnetic and dielectric response of CoFe ₂ O ₄ @PU composites
23	Debanjan Guin (Cologne)	Oxidation stable ferromagnetic iron nanoparticles: a promising candidate for biomedical applications
24	Manuela Belzik (Beer Sheva)	Effect of magnetic fields on the dynamics of interacting magnetic nanoparticles
25	Liron Philosof-Mazor (Beer Sheva)	Hydrophobically-coated magnetic nanoparticles for biological and chemical applications
26	Daniilo Malferrari (Bologna/Beer Sheva)	Effects of ether-functionalized ionic liquids on membrane fusion related to their aggregation properties
27	Naomi Oppenheimer (Tel Aviv)	Dynamics in a membrane with immobile inclusions

28	Mario Tagliazucchi (Evanston)	Molecular modeling of self-organized polyelectrolyte end-grafted layers
29	Greg Putzel (Evanston)	Interleaflet coupling and domain registry in phase separated lipid bilayers
30	Tania Sheynis (Beer Sheva)	Lipid-induced fibrillation and membrane protection by amyloid peptides
31	Silvia Piperno (Rehovot)	Ions or “Cryptoelectrons” in the electrification of dielectric materials
32	Yulia Timoshevsky & Idan Fitoussi (Beer Sheva)	Development of novel surface responsive sensor for cell attachment and mobility
33	Johannes Hoepfner (Beer Sheva)	Rheology of carbon nanotube dispersions in Pluronic solutions