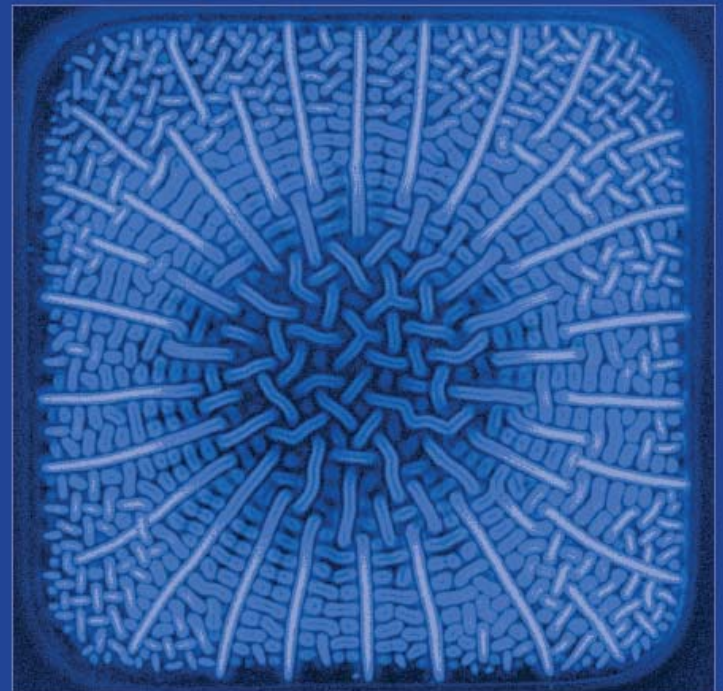


2012 APS MARCH MEETING DPOLY PROGRAM

# DPOLY

March  
2012  
Meeting  
Program



APS  
physics

2012 APS March Meeting • February 27-March 2 • Boston

## DPOLY SHORT COURSE

### Case Studies in Polymer Physics from the Industrial Research World

Saturday, February 25, 12:00 pm - 5:00 pm  
Sunday, February 26, 8:00 am - 5:00 pm  
Otis Room, Westin Boston Waterfront Hotel

#### Course Description

This workshop will present a series of case studies by industrial scientist illustrating how fundamental skills in polymer physics have played a central role in enabling new and improved products in the marketplace today. Our panel of industrial experts will show, by example, how solving fascinating and challenging problems in polymer physics has been critical for generating economic success. The goal of this workshop is to both increase awareness of the importance of fundamental polymer physics in the industrial research world as well as educate graduate students, postdocs, and research scientists about the career opportunities that are available in industry.

Panel of experts will provide a broad and diverse overview of polymer physics in current industrial research. Perspectives will vary from early career scientists to senior research fellows, small start-ups to Fortune 500 companies, and a range of technology sectors including advanced materials, consumer products, personal care, healthcare, energy, and electronics. In addition to presenting case studies of where concepts of polymer physics have had impact, each panelist will also be asked to discuss the outstanding challenges and current problems facing their technology sector.

#### Program Topics and Speakers

Michelle E. Seitz, *DSM Ahead, Materials Sciences R&D*

Understanding Network Formation and Properties via 'Real Time' Techniques

Lawrence A. Hough, *Complex Assemblies of Soft Matter Laboratory, CNRS-Rhodia-UPenn*

Tuning Polymer Chemistry and Morphology to Achieve Bulk Properties that are Relevant to Customer's Needs

Jai Pathak, *Drug Delivery & Device Design Group, MedImmune LLC*

From Molten Polymers to Therapeutic Proteins in Solution – Rheology and Underlying Polymer and Colloid Physics

Tao Xie, *General Motors Global Research & Development*

Teaching Polymer Memory Tricks

Nathan Mehl, *Senior Scientist, Milliken & Company*

Breakthrough Nucleation and Clarification of Polypropylene

Russ Walters, *Johnson and Johnson Company*

Polymer Physics in Consumer Care Products

Valeriy V. Ginzburg & Chris Christenson, *The Dow Chemical Company*

Developing New Polyolefin Products Based on Polymer Physics Principles

Vivek Prabhu, *NIST Polymers Division*

Applications of neutron reflectivity for Photoresist Fundamentals

Azar Alizadeh, *GE Global Research*

Block Copolymer Enabled Optoelectronic Devices and Applications

David J. Lohse, *ExxonMobil Research & Engineering Co. (retired)*

Developing New Polyolefin Products Based on Polymer Physics Principles

Jayesh Doshi, *eSPIN Technologies*

Problems in Polymer Physics Critical for the Commercialization of Electrospun Fibers

#### Course Organizers:

Dr. Christopher L. Soles, NIST Polymers Division ([csoles@nist.gov](mailto:csoles@nist.gov))

Prof. Karen I. Winey, U Penn, Dept. of Materials Science & Engineering ([winey@seas.upenn.edu](mailto:winey@seas.upenn.edu))

---

Front Cover Picture: Wrinkling of polymer surface under the stress. "Blue Spider" by Edwin Chan and Al Crosby, University of Massachusetts, Amherst. Picture copyright UMass MRSEC VISUAL program (supported by NSF DMR-0820506).

## Table of Contents

### Monday Sessions

#### 8:00AM

Session A40: Focus Session: Protein Association I: Phase Separation, Crystallization, Self-Assembly.....	7
Session A41: Focus Session: Structure and Dynamics of Membranes.....	8
Session A42: Focus Session: Cytoskeleton and Biomechanics - Biochemical Mechanisms....	9
Session A44: Focus Session: Hydrophobic Interactions and Hydrogen Bonding Networks in Polymeric and Soft Matter Systems.....	10
Session A45: Focus Session: Thin Film Block Copolymers - Directed Assembly.....	11
Session A46: Invited Session: Inherently Strained Polymers and Soft Materials.....	12
Session A47: Focus Session: Gelation and Glass Transition in Colloids and Soft Matter Systems I.....	13
Session A48: Charged and Ion-Containing Polymers.....	14
Session A49: Focus Session: Long-time, Entangled Dynamics in Polymers – Linear, Transient, Non-linear Rheology, Tubes.....	15
Session A50: Liquid Crystalline Order in Polymers, Soft Matter, and Complex Fluids.....	16
Session A51: Colloids I: Beyond Hard Spheres.....	17
Session A53: Disordered and Glassy Systems I.....	18

#### 11:15AM

Session B40: Focus Session: Cytoskeleton and Biomechanics - Entanglement and Crosslinking.....	19
Session B41: Lipid Bilayers and Biological Membranes.....	20
Session B42: Focus Session: BioChip Physics-Detection and Transport.....	21
Session B43: Invited Session: Physical Mechanisms of Cell Growth.....	21
Session B44: Focus Session: Translocation through Nanopores – Measurements and Theoretical Models.....	22
Session B45: Focus Session: Thin Film Block Copolymers - Swelling and Ordering.....	23
Session B46: Invited Session: Industrial Applications of Advanced Polymer-Based Nanomaterials.....	24
Session B47: Focus Session: Jamming, Glass Transition, and Gelation in Colloids and Soft Matter Systems.....	25
Session B48: Electrically and Optically Active Polymers.....	26
Session B49: Focus Session: Long-time, Entangled Dynamics in Polymers – Rods, Rings, Fibers, Particle Tracking.....	27
Session B50: Focus Session: Nano to Mesoscale Structures in Ordered Systems: Liquid Crystalline Structure and Interactions.....	28
Session B53: Disordered and Glassy Systems II.....	29

### 2:00PM-5:00PM

Session C1: Poster Session.....	30
---------------------------------	----

### 2:30PM

Session D40: Focus Session: Systems Biology and Biochemical Networks I.....	42
Session D42: Focus Session: Physics of Cancer I -- Evolution and Resistance.....	42
Session D51: Liquid Crystals: Chromonics and Nematics.....	43

## **Tuesday Sessions**

### 8:00AM

Session H40: Focus Session: Protein Association II: Aggregation and Fibril Formation....	44
Session H44: Focus Session: Nano to Mesoscale Structure in Ordered Systems: Liquid Crystal Topology and Defects.....	45
Session H45: Focus Session: Thin Film Block Copolymers - Phase Behavior.....	46
Session H46: Invited Session: Polymer Physics Prize.....	47
Session H48: Polymer Gels and Solutions.....	48
Session H49: Focus Session: Fluctuation-Induced Forces in Soft Matter and Polymeric Systems - Casimir and Interfacial Forces.....	49
Session H50: Polymer Melts.....	50
Session H51: Colloids II: Crystals and Phase Transitions.....	51
Session H52: Focus Session: Extreme Mechanics – Rods.....	52

### 11:15AM

Session J44: Focus Session: Dynamics of Polymers: Phenomena due to Confinement I.....	53
Session J45: Padden Award Symposium.....	54
Session J46: Invited Session: Electrostatic Interactions in Polymeric and Biological Systems.....	55
Session J48: Focus Session: Gelation and Glass Transition in Colloids and Soft Matter Systems II.....	56
Session J49: Focus Session: Crystallization in Single-, Multicomponent, and Hybrid Systems I.....	57
Session J50: Focus Session: Translocation through Nanopores – Novel Devices and Computational Approaches.....	58
Session J51: Liquid Crystals: Smectic, Ferroelectric, Nanocomposites and DNA.....	59
Session J52: Focus Session: Extreme Mechanics – Plates.....	60

### 2:30PM

Session L42: Focus Session: Physics of Cancer II -- Physical Aspects.....	61
Session L43: Invited Session: Precursors to the Folding and Aggregation of Biological Molecules.....	61
Session L44: Focus Session: Nano to Mesoscale Structure in Ordered Soft Matter: Liquid Crystal Phases.....	62

Session L45: Friction and Brushes.....	63
Session L46: Dillon Medal Symposium.....	64
Session L48: Polymers and DNA Coated Colloid Particles.....	65
Session L49: Focus Session: Fluctuation-Induced Forces in Soft Matter and Polymeric Systems - Charge, Shape and Nucleation.....	66
Session L50: Focus Session: Organic Electronics and Photonics – Morphology.....	67
Session L51: Self Assembly: Mostly Colloids, Lipids and Surfactants.....	68

### 5:45PM-6:45PM DPOLY Business Meeting, Room 160ABC

## **Wednesday Sessions**

### 8:00AM

Session P26: Focus Session: Friction, Fracture and Deformation Across Length Scales - Friction and Geometric Effects.....	70
Session P40: Protein Fluctuations and Conformation Changes.....	71
Session P41: Drops, Bubbles and Interfacial Fluid Mechanics.....	72
Session P43: Invited Session: High Content Biophysical Data for Dynamic Studies in Cancer.....	73
Session P44: Focus Session: Block Copolymer Micelles and Polymersomes.....	74
Session P45: Surfaces, Interfaces, and Polymeric Thin Films - Surface Instabilities.....	75
Session P46: Invited Session: DNA-Programmable Particle Assembly.....	76
Session P47: Biopolymers: Molecules, Solutions, Networks, and Gels.....	77
Session P48: Focus Session: Crystallization in Single-, Multicomponent, and Hybrid Systems II.....	78
Session P49: Focus Session: Organic Electronics and Photonics – Interfaces and Contacts.....	79
Session P50: Focus Session: Dynamics of Polymers: Phenomena due to Confinement: Glass Transition.....	80
Session P51: Colloids III: Shear and Hydrodynamics.....	81

### 11:15AM

Session Q39: Focus Session: Materials and Functional Structures for Biological Interfaces - Micro and Nanofluidics.....	82
Session Q41: Biofluids.....	83
Session Q43: Invited Session: Techniques to Study Dynamic Cellular Processes One Molecule at a Time (Including Delbruck Award Lecture).....	84
Session Q44: Focus Session: Interparticle Interactions in Polymer Nanocomposites - Transport and Dynamics.....	85
Session Q45: Elastomers and Gels.....	86
Session Q47: Focus Session: DNA-Coated Colloid Particles.....	87
Session Q48: Polymer Blends and Crystallization.....	88
Session Q49: Focus Session: Organic Electronics and Photonics –	

Photophysics and Excited State Dynamics.....	89
Session Q50: Focus Session: Dynamics of Polymers: Phenomena due to Confinement II.....	90
Session Q51: Gels, Complex Fluids and Vesicles.....	91
<b>2:30PM</b>	
Session T19: Kavli Foundation Plenary Session: Emergent Physics at the Mesoscale.....	92
Session T40: Focus Session: Cytoskeleton and Biomechanics - Forced Dynamics.....	92
Session T41: Swimming, Motility and Locomotion.....	93
Session T44: Focus Session: Interparticle Interactions in Polymer Nanocomposites - Grafted Chains.....	94
Session T45: Polymeric Glasses.....	95
Session T47: Focus Session: Heterogeneous Colloids I.....	96
Session T48: Focus Session: Advanced Optical Probes of Soft Matter – Microrheology, Microbiography.....	97
Session T49: Focus Session: Organic Electronics and Photonics: Structure - Property Correlations.....	98
Session T50: Focus Session: Phase Behavior and Structure in Copolymers.....	99

#### Thursday Sessions

##### 8:00AM

Session V40: Focus Session: Single Molecule Biological Physics – Proteins.....	100
Session V41: Focus Session: Physics of Proteins I: Dynamics and Function.....	101
Session V44: Focus Session: Interparticle Interactions in Polymer Nanocomposites - Surface Interactions.....	102
Session V45: Focus Session: Soft Matter Physics of Heterogeneous Membranes – Experiments.....	103
Session V46: Invited Session: Active Matter and Dynamical Systems.....	104
Session V47: Focus Session: Heterogeneous Colloids II.....	105
Session V48: Focus Session: Advanced Optical Probes of Soft Matter – Forces, Imaging, Excitons.....	106
Session V49: Focus Session: Organic Electronics and Photonics – Solar Cells and Light Emitting Devices.....	107
Session V50: Structure and Properties of Copolymers.....	108

##### 11:15AM

Session W39: Focus Session: Materials and Functional Structures for Biological Interfaces: Cells.....	109
Session W40: Focus Session: Single Molecule Biological Physics – Nucleic Acids and Proteins.....	110
Session W42: Focus Session: The Physics of Genome Folding I: Fractal Globules and Condensed Polymer States.....	111
Session W43: Invited Session: Physical Mechanisms of Collective	

Microbial Dynamics.....	112
Session W44: Focus Session: Interparticle Interactions in Polymer Nanocomposites - Mechanical, Electrical, and Optical Properties.....	113
Session W45: Focus Session: Soft Matter Physics of Heterogeneous Membranes - Theory and Simulation.....	114
Session W47: Focus Session: Polymers for Energy Storage and Conversion - Fundamentals of Ion Transport.....	115
Session W48: New Experimental, Theoretical, and Computational Methods in Polymer and Soft Matter Physics.....	116
Session W49: Focus Session: Organic Electronics and Photonics – Thin Film Transistors.....	117
Session W50: Focus Session: Micro and Nano Fluidics I: Devices and Applications.....	118
Session W52: Focus Session: Extreme Mechanics - Fluid-Structure Interactions and Swelling.....	119
Session W53: Focus Session: Common Features of Soft Materials: Polymers, Colloids and Granular Media I.....	120

##### 2:30PM

Session X39: Focus Session: Materials and Functional Structures for Biological Interfaces - Nanoscale Materials.....	121
Session X40: Focus Session: Single Molecule Biological Physics - Nucleic Acids.....	122
Session X41: Focus Session: Physics of Proteins II: Folding and Structure.....	123
Session X42: Focus Session: The Physics of Genome Folding II: Chromosomes and Nucleosomes.....	124
Session X43: Invited Session: Bacterial Swimming and Chemotaxis.....	124
Session X44: Focus Session: Directed Assembly of Hybrid Materials – Nanoparticles in Micelles.....	125
Session X45: Focus Session: Soft Matter Physics of Drops, Bubbles, Foams, and Emulsions - Droplet Spreading, Colliding, Wetting.....	126
Session X46: Invited Session: Deformation and Fracture of Soft Materials.....	127
Session X47: Focus Session: Polymers for Energy Storage and Conversion – Nanostructures and Phase Separated Morphologies.....	128
Session X48: Focus Session: Statistical Physics of Active Systems Away From Detailed Balance: Cytoskeleton, Flagella, and All That.....	129
Session X49: Focus Session: Organic Electronics and Photonics – Polymer Dielectrics and Charge Transport.....	130
Session X50: Focus Session: Micro and Nano Fluidics II: Structured or Active Surfaces and Electrotransport.....	131
Session X52: Focus Session: Extreme Mechanics - Fracture, Friction, and Frequencies...132	
Session X53: Focus Session: Common Features of Soft Materials: Polymers, Colloids and Granular Media II.....	133

## Friday Sessions

### 8:00AM

Session Y40: Focus Session: Cytoskeleton and Biomechanics - Role of Motors (Including DBIO Best Thesis Award Lecture) .....	134
Session Y41: Focus Session: Physics of Cancer III – Imaging.....	135
Session Y42: Physics of Bacteria and Viruses.....	135
Session Y43: Invited Session: Physical Organizing Principles for Amyloid Matter: Prediction, Structure, Function.....	136
Session Y44: Focus Session: Directed Assembly of Hybrid Materials - Particle Organization and Arrays.....	137
Session Y45: Focus Session: Soft Matter Physics of Drops, Bubbles, Foams and Emulsions - Bubbles, Films, Foams.....	138
Session Y47: Soft Matter Physics of Biological Systems.....	139
Session Y48: Focus Session: Statistical Physics of Active Systems Away From Detailed Balance: Swimmers and All That.....	140
Session Y49: Focus Session: Organic Electronics and Photonics – Small Molecules and General Advances.....	141
Session Y50: Focus Session: Micro and Nano Fluidics III: Microtransport and Thermophysical Properties.....	142

### 11:15AM

Session Z2: Invited Session: Active Responses of Biological Materials to Mechanical Stress.....	143
Session Z41: Focus Session: Non-Covalent Protein Interactions.....	144
Session Z42: Focus Session: Physics of Biomaterials: Mechanics, Dynamics, and Transport.....	145
Session Z43: Invited Session: Applications of Jamming.....	146
Session Z46: Invited Session: Self-Assembly of Proteins: From Capsids to Crystals.....	147
Session Z47: Self-Assembly and Polymer Composites.....	148
Session Z48: Focus Session: Statistical Physics of Active Systems Away from Detailed Balance; Motors, Swimmers and All That.....	149
Session Z50: Focus Session: Micro and Nano Fluidics IV: Emulsions and Complex Fluids.....	150

## Monday, February 27<sup>th</sup> 2012

Session	A44	A45	A46	A47	A48	A49	A50
Room	157C	159	160AB	160C	161	162A	162B
Chair	Papouian	Epps	Sheiko	Islam	Seery	McKenna	Shibaev
8:00 am	Franzese	<b>Karim</b>	<b>Urayama</b>	Hardcastle	Zhao	Sussman	Vaia
8:12 am	Vinh			Agarwal	Bolinteanu	Karayianis	Griffin
8:24 am	Poynor			Conrad	Barr	Guenza	Kim
8:36 am	Subramanian	Singh	<b>Mather</b>	Strandman	Goswami	<b>Simon</b>	MacKay
8:48 am	Zaccone	Mahadevapuram		Russell	Bubeck		Lee
9:00 am	Qiao	Yang		Basu	Lewis		Agrawal
9:12 am	<b>Weeks</b>	Ryu	<b>Discher</b>	Pochan	Buitrago	Qin	Lopatina
9:24 am		Kulkarni		Del Gado	Matsen	Andreev	Shibaev
9:36 am		Hayirlioglu		Arvidson	Gu	Liu	Kuriabova
9:48 am	Roundy	Ross	<b>Rubinstein</b>	Seekell	Sudre	Sun	Palfy-Muhoray
10:00 am	Li	Jung		Firestone	Hoagland	Zhu	Ye
10:12 am	Tirrell	Park		Zanchetta	Dobrynin	Wang	Kirkensgaard
10:24 am	<b>Netz</b>	Gunkel	<b>Kumacheva</b>	Sathaye	Qu	Etampawala	Zhuang
10:36 am		Gu		Sloutskin	Carrillo	Ge	Khanal
10:48 am		Suh		Martinho	Sukhishvili	Fahimi	

Session	B44	B45	B46	B47	B48	B49	B50
Room	157C	159	160AB	160C	161	162A	162B
Chair	Bhattacharya	Xu	Chatterjee	Schall	Gomez	Guenza	Lagerwall
11:15 am	<b>Aksimentiev</b>	Fan	<b>Trefonas</b>	<b>Wyart</b>	Cicoira	Andzelm	Collings
11:27 am		Albert			Telang	Schweizer	Srinivasarao
11:39 am		Gotrik			Dujovne	Wang	Walsh
11:51 am	Guan	Paradiso	<b>Alizadeh</b>	Goodrich	Chang	<b>Briels</b>	Zhou
12:03 pm	Mihovilovic	Hannon		Tabeling	Tarver		Godinho
12:15 pm	Wang	Son		Kogan	Talin		Yu
12:27 pm	Rowghanian	Seppala	<b>Kramer</b>	Caswell	Ford	Kim	Zheng
12:39 pm	Ikonen	Laure		Simmons	Nasrollahi	Grzetic	Rovner
12:51 pm	Scheicher	Mokarian-Tabari		Tito	Gomez	Zussman	Lazo
1:03 pm	Velez	Hu	<b>Soles</b>	Kramb	Gopinadhan	Bochinski	Pawsey
1:15 pm	Stein	Peters		Xu	Perez	Arinstein	Mackay
1:27 pm	Ando	Kamata		Hong	Barinov	Shiozberg	Atherton
1:39 pm	Bertrand	Davis	<b>Tournilhac</b>	Cavicchi	Chen	Parthasarathy	Zappone
1:51 pm	Ngo	Chourou		Heuge	Paudel	Khare	Kaplan
2:03 pm	Saha	Patrone		Sheinman	Kim	Saalwachter	Giomi

## POSTER SESSION 2:00-5:00 pm

**Tuesday, February 28<sup>th</sup> 2012**

<b>Session</b>	<b>H44</b>	<b>H45</b>	<b>H46</b>	<b>H48</b>	<b>H49</b>	<b>H50</b>
<i>Room</i>	<i>157C</i>	<i>159</i>	<i>160ABC</i>	<i>161</i>	<i>162A</i>	<i>162B</i>
<i>Chair</i>	<i>Selinger Samulski</i>	<i>Croll</i>	<i>Lipson</i>	<i>Watkins</i>	<i>de la Cruz</i>	<i>Hudson</i>
8:00 am			<b>Tirrell M.</b>			
8:12 am						
8:24 am						
8:36 am	<b>Meyer</b>	Yoo	<b>Tirrell D.</b>	Kothari	Noruzifar	Dasmahapatra
8:48 am		Yao		Salib	Schall	Yamamoto
9:00 am		Pinna		Lewis	Schmidt	Murnen
9:12 am	Beller	Muller	<b>Ross</b>	Lei	<b>Zandi</b>	Mester
9:24 am	Gimenez-Pinto	Williamson		Lee		Chiba
9:36 am	Mbanga	Montarnal		Kim		Farago
9:48 am	Zumer	Kim	<b>Fletcher</b>	Villet	Lin	Clark
10:00 am	Selinger	Campbell		Kohli	Hucht	Sirota
10:12 am	Almeida	Ginzburg		Cheng	Delaney	Landherr
10:24 am	Fernandez-Nieves	Ye	<b>Ryan</b>	Tran	Welch	Lyubimov
10:36 am	Lagerwall	Zhang		Lima	Fu	Beaucage
10:48 am	Zakhary	Lee		Ishikawa		Sharma

<b>Session</b>	<b>L44</b>	<b>L45</b>	<b>L46</b>	<b>L48</b>	<b>L49</b>	<b>L50</b>
<i>Room</i>	<i>157C</i>	<i>159</i>	<i>160ABC</i>	<i>161</i>	<i>162A</i>	<i>162B</i>
<i>Chair</i>	<i>Roth Samulski</i>	<i>Stoykovich</i>	<i>Bates</i>	<i>Tkachenko</i>	<i>Dogic</i>	<i>Dadmun</i>
2:30 pm			<b>Segalman</b>			
2:42 pm						
2:54 pm						
3:06 pm	<b>Francescangeli</b>	Mariani	Loo	Osti	Zwanikken	Ho
3:18 pm		Han	Bates	Maskey	Sinkovits	Guralnick
3:30 pm		Erbas	Balsara	Wu	Behler	Sobkowicz
3:42 pm	Kumar	Restagno	Ganesan	Shin	<b>Kantor</b>	Jiang
3:54 pm	Chen	Raftari	Kornfield	Prabhu		Bhatta
4:06 pm	Pindak	Obukhov	Kramer	Feng		Olds
4:18 pm	Bowick	Lee	Olsen	Milam	Rocklin	Pimcharoen
4:30 pm	Konya	Benetatos	Hexemer	Zeravcic	Maghrebi	Snyder
4:42 pm	Kalakonda	van Zoelen	Salleo	Collins	Heuberger	Kirschner
4:54 pm	Hansen	Yeh	Register	Schade	Yi	Lin
5:06 pm	Escobedo	Zhang	Green	Lara	Yang	Verduzco
5:18 pm	Agra-Kooijman	Ding	Hadzioannou	Jacobs		Park

**DPOLY Business Meeting 5:45 pm, Room: 160ABC**

<b>Session</b>	<b>J44</b>	<b>J45</b>	<b>J46</b>	<b>J48</b>	<b>J49</b>	<b>J50</b>
<i>Room</i>	<i>157C</i>	<i>159</i>	<i>160ABC</i>	<i>161</i>	<i>162A</i>	<i>162B</i>
<i>Chair</i>	<i>Fakhraai</i>	<i>Winey</i>	<i>Dobrynin</i>	<i>Rubinstein</i>	<i>Li</i>	<i>Amanuel</i>
11:15 am	Peng	Audus	<b>Levin</b>	Zhang	<b>Brinkmann</b>	Uddin
11:27 am	Xu	Hoarfrost		Lohr		Venta
11:39 am	Foster	Hore		Jadrich		Zhang
11:51 am	Jiang	Jha	<b>Mundy</b>	<b>Yodh</b>	Bokel	McMullen
12:03 pm	Kim	Kim			Cheng	Liu
12:15 pm	Riggleman	Rogers			Schick	Ling
12:27 pm	Clarke	Sing	<b>Stevens</b>	Jensen	Ungar	<b>Bhattacharya</b>
12:39 pm	Tung			Hsiao	Lee	
12:51 pm	Chang			Petekidis	Ceccia	
1:03 pm	Chrissopoulou		<b>Muthukumar</b>	Gulda	<b>Ho</b>	Liu
1:15 pm	Long			Harden		Shimizu
1:27 pm	Composto			Mergo		de Haan
1:39 pm	Karim		<b>Carrillo</b>	Cicerone	Anastasiadis	Adhikari
1:51 pm	Gao			Wang	Han	
2:03 pm	Yang			Pennachio	Sreenivas	

**Wednesday, February 29<sup>th</sup> 2012**

Session	P44	P45	P46	P47	P48	P49	P50
Room	157C	159	160AB	160C	161	162A	162B
Chair	Won	Lal	Gang	Slater	Zhu	Loo	Priestly
8:00 am	Thiagarajan	Croll	<b>Chaikin</b>	Zhang	Carvalho	<b>Koch</b>	<b>Milner</b>
8:12 am	Xiao	Vega		Cai	Miyoshi		
8:24 am	Wang	Fluerasu		Kim	Li		
8:36 am	<b>Hillmyer</b>	Bandyopadhyay	<b>Tkachenko</b>	Glassman	Cao	Wang	Zhang
8:48 am		Lesel		Chubynsky	Alamo	Hong	Vogt
9:00 am		Wang		Roh	Ochoa	Cakir	Fakhraai
9:12 am	<b>Allen</b>	Dalnoki-Veress	<b>Nykypanchuk</b>	Lott	<b>Cheng</b>	Antaya	Baeumchen
9:24 am		Murray		Slater		Kim	Torkelson
9:36 am		Cormier		Cheung		Khatib	Daley
9:48 am	Spring	McEnnis	<b>Mirkin</b>	Chan	<b>Winey</b>	Sarker	Paeng
10:00 am	Pandav	Bacanu		McKenna		Kang	Evans
10:12 am	Lin	Morris		Weiss		Irfan	Pye
10:24 am	Liaw	Morris	<b>Crocker</b>	Benjamin	Laird	Sai	<b>Roth</b>
10:36 am	Kotharanga -nnagari	Liu		Cui	Hu	Tzolov	
10:48 am		Amanuel		Gurevich	Jiang	Berube	

Session	T44	T45	T47	T48	T49	T50
Room	157C	159	160C	161	162A	162B
Chair	Tsige	Runt	Engel	Ou-Yang	DeLongchamp	Robertson
2:30 pm	Dobnikar	Gray	<b>Granick</b>	Krishnatreya	Yan	Kumar
2:42 pm	Kumar	Ediger		Boatwright	Chen	Rosales
2:54 pm	Marson	McKenna		Indei	Tumbleston	Thomas
3:06 pm	Kim	Rumberger	Yan	Pottier	<b>Rumbles</b>	Zhao
3:18 pm	Chervanyov	Guo	Moghani	Shpaysman		Pryamitsyn
3:30 pm	Kuppa	McDermott	Eck	Fung		Glaser
3:42 pm	Shantha	Davis	Chen	<b>Florin</b>	Moungthai	Kuan
3:54 pm	Shantha	Lequeux	Lee		Chen	Schmitt
4:06 pm	Banerjee	Zartman	Schultz		Pan	Beckingham
4:18 pm	Jayaraman	Toepperwein	<b>Sacanna</b>	Perry	Starbird	<b>Shi</b>
4:30 pm	Wang	Shenogina		Dimiduk	Botelho	
4:42 pm	Jiao	Di		Dixon	Eslamibidgoli	
4:54 pm	<b>Krishnamoorti</b>	Agapov	Kraft	Du	Guo	Gillard
5:06 pm		Wool	Mao	Hsu	Rathgeber	Yang
5:18 pm		Ahuja	Phillips	Hu	Yang	Bosse

Session	Q44	Q45	Q47	Q48	Q49	Q50
Room	157C	159	160C	161	162A	162B
Chair	Srinivasarao	Carrillo	Nykypanchuk	Howard	Holmes	Ellison
11:15 am	<b>Schweizer</b>	Winter	Sun	White	Facemyer	Koga
11:27 am		Fredrickson	Halverson	Li	Nayyar	Li
11:39 am		Chen	Srivastava	Lu	Sfeir	Ahrenberg
11:51 am	Park	Sariyer	<b>Starr</b>	Giller	Barras	Zhao
12:03 pm	Kalathi	Chantawansri		Balik	Radja	Johnston
12:15 pm	Wie	Xu		Dehghan	Olejnik	Malshe
12:27 pm	Ortiz	Runt	Knorowski	Rathi	Mai	Hasan
12:39 pm	Park	Zhang	Lu	Gradys	Moghe	Toga
12:51 pm	Lee	Sheiko	Leunissen	Agarwal	Heiber	Asada
1:03 pm	Pham	Balazs	Chi	Mathew	Pandit	Clough
1:15 pm	Chen	Toomey	Wu	Kim	Munoz	Li
1:27 pm	Miller	Zhou	Zhang	Flanders	Strubbe	Napolitano
1:39 pm	Pazmino	Lee	Li	Clark	<b>Musgrave</b>	McGraw
1:51 pm	Hagita	Kuksenok	Cabanas	Dong		Frieberg
2:03 pm	Montes	Christensen	Biswal	Mouhamad		Yu

**Thursday, March 1<sup>st</sup> 2012**

Session	V44	V45	V46	V47	V48	V49	V50
Room	157C	159	160AB	160C	161	162A	162B
Chair	Gersappe	Grest	Marchetti	Pine	Kilfoil	Rumbles	Olsen
8:00 am	Kaliva	Murugesan	<b>Dogic</b>	Iacovella	<b>Bechinger</b>	Djidjou	Marrou
8:12 am	Yang	Aryal		Dreyfus		Yu	Zuo
8:24 am	Alarcon	Gui		Jimenez		Alzubi	Cho
8:36 am	Beyer	Raviv	<b>Goldenfied</b>	<b>Engel</b>	Ruffner	Quadery	Burghardt
8:48 am	Semler	Sofou			Ng	Zang	Singer
9:00 am	Guo	Chen			Wei	Vidhyadhiraja	McCulloch
9:12 am	Yang	Spakowitz	<b>Goldstein</b>	Ma	Labno	<b>Holmes</b>	Osuji
9:24 am	Liu	Smith		Nguyen	Kochanczyk		Wong
9:36 am	Shofner	Heller		Habdas	Yoon		Huang
9:48 am	Nedoma	Auguste	<b>Julicher</b>	<b>Kegel</b>	Pratiwada	Gadisa	Powers
10:00 am	Martin	Wang			Wang	Mielczarek	Abdulhad
10:12 am	Diebold	Kaufeld			Sinha	Osedach	Zong
10:24 am	<b>Meth</b>		<b>Tsimring</b>	Marconi	Schuller	Cox	Spencer
10:36 am				Fukuto	Saikin	Padmaperuma	Ahn
10:48 am				Snezhko		Haegel	Kim

Session	W44	W45	W47	W48	W49	W50
Room	157C	159	160C	161	162A	162B
Chair	Alexander-Katz	Pincus	Ozcam	Budzien	Jurchescu	Kim
11:15 am	<b>Korley</b>	<b>Yamamoto</b>	Wang	Man	Okada	Cartas-Ayala
11:27 am			Richey	McCarty	Reyes-Martinez	Ung
11:39 am			Elabd	Gustafson	Hiszpanski	Aubrecht
11:51 am	Zandiatashbar	Frank	Liang	Larson	<b>Salleo</b>	Bose
12:03 pm	Senses	Paquette	Choi	Azese		Wang
12:15 pm	Moll	Sigurdsson	Miranda	Medina		Lee
12:27 pm	Yuan	DiLoreto	Colby	Jayaraman	Mei	<b>Rowat</b>
12:39 pm	Sherrott	Olmsted	Hall	Lubchenko	Wang	
12:51 pm	Mutiso	Demers	Choi	Zhang	Paulsen	
1:03 pm	Clarke	<b>Farago</b>	Young	Yan	Xie	Rotem
1:15 pm	Rodarte		Wang	Gann	Kim	Jamal
1:27 pm	Van Sickle		Lin	Teo	Adil	Collier
1:39 pm	Maity	Vink	<b>Frischknecht</b>	Goun	Wang	Vergne
1:51 pm	Jang	Oppenheimer		Wagner	Steven	Chang
2:03 pm	Srinivasan	Thomas		Agapov		Yeo

Session	X44	X45	X46	X47	X48	X49	X50
Room	157C	159	160AB	160C	161	162A	162B
Chair	Archer	Amstad	Shull	Boudouris	Hagan	Green	Balazs
2:30 pm	Zhu	<b>Driscoll</b>	<b>Olsen</b>	Park	Ladd	Li	Dayal
2:42 pm	Ratnaweera			DeLongchamp	Araujo	Wang	Mills
2:54 pm	Kim			Huq	Fakhri	Zhu	Bhattacharya
3:06 pm	<b>Hayward</b>	Park	<b>Dhinojwala</b>	Keum	Brugues	Tornheim	Svitelskiy
3:18 pm		Rykaczewski		Dadmun	Grisa	Taylor	Bullard
3:30 pm		San Miguel		Yimer	Wang	Monton	Correll
3:42 pm	Rolfe	Vannozzi	<b>Creton</b>	<b>Thurn-Albrecht</b>	Wang	Sun	Schiffbauer
3:54 pm	Srivastava	Sharpe			Gollub	Worne	Kim
4:06 pm	Das	Wang			Condat	Huang	Smith
4:18 pm	Phillips	Verneuil	<b>Craig</b>	Kusoglu	<b>Broedersz</b>	Chen	Garcia
4:30 pm	Modestino	Talini		Ganapatibhola		Shin	Anand
4:42 pm	Mutz	Sharp		Jo		Clark	Priezjev
4:54 pm		Hudson	<b>Suo</b>	Beers	Chen	White	Burgess
5:06 pm		Delon		Nakamura	Chen	Vakhshouri	Ozsun
5:18 pm		Dutta		Choi	Chelakkot	Lim	Floryan
5:30 pm				Kelleher			



**Friday, March 2<sup>nd</sup> 2012**

Session	Y44	Y45	Y47	Y48	Y49	Y50
Room	157C	159	160C	161	162A	162B
Chair	Perahia	Cohen	Santore	Needleman	Lunt	Sperling
8:00 am	<b>Panagiotopoulos</b>	Mckendry	Beckerman	Mino	Ishii	Vincent
8:12 am		Russo	Loverde	Drocco	Hsu	Datta
8:24 am		Kuo	Palmieri	Dunkel	Hashemi	Ma
8:36 am	Bozorgui	<b>Rubinstein</b>	Kindt	Tao	Ma	Balakrishnan
8:48 am	Damasceno		Santore	McCandlish	Atalla	Kumar
9:00 am	Kao		Aljadeff	Romanczuk	Zhugayevych	Melnichenko
9:12 am	Kang	Lebedeva	Wuest	Zaburdaev	Sharifzadeh	Griffiths
9:24 am	Majewski	Parker	Guo	Chou	Cour	Martens
9:36 am	Reven	Michler	Qin	Carroll	Wilke	Liu
9:48 am	Jian	Park	Sahni	<b>Lambert</b>	Wang	Lissandrello
10:00 am	Onses	Adams	Mohr		Wakabayashi	Feibelman
10:12 am	Shrestha	Fuller	Lei		Quintero	Bodiguel
10:24 am	Raman	Chevallier	Evans	Palacci	Saravanamuttu	Hoffmann
10:36 am	Choi	Rende	Wang	Christianson	Nagarjuna	Zhang
10:48 am	Declet-Perez	Kennedy		Gopinath	Li	Li

Session	Z46	Z47	Z48	Z50
Room	160AB	160C	161	162B
Chair	Whitelam	Wiegart	Grosberg	Adams
11:15 am	<b>Zlotnick</b>	Jakli	Ji	<b>Fraden</b>
11:27 am		Meng	Isaac	
11:39 am		Wiegart	Sokolov	
11:51 am	<b>Lutsko</b>	Behabtu	Saha	Arriaga
12:03 pm		Hill	Clement	Ober
12:15 pm		Crawford	Mulayim	Colin
12:27 pm	<b>Bruinsma</b>	Hsiao	Osorio-Vivanco	Kim
12:39 pm		Hollingsworth	Huepe	Li
12:51 pm		Yu	Roichman	Hai
1:03 pm	<b>Zhang</b>	Gu	Hou	Xu
1:15 pm		Zhang	Henley	Franceschini
1:27 pm		Sotta	Bu	Kumar
1:39 pm	<b>Louis</b>	Rai	Banigan	Huang
1:51 pm		Mallavajula		To
2:03 pm				Wang

**Monday, February 27, 2012**

**8:00AM - 11:00AM**

**Session A40: Focus Session: Protein Association I: Phase Separation, Crystallization, Self-Assembly**

Sponsoring Units: DBIO DPOLY

Chair: Steve Whitelam, Lawrence Berkeley National Lab

Room: 156A

8:00AM - 8:36AM	<u><a href="#">A40.00001: TBD</a></u> Invited Speaker: Robert Hayre
8:36AM - 8:48AM	<u><a href="#">A40.00002: Phase Separation in Solutions of Monoclonal Antibodies</a></u> George Benedek , Ying Wang , Aleksey Lomakin , Ramil Latypov
8:48AM - 9:00AM	<u><a href="#">A40.00003: Concentrated dispersions of equilibrium protein nanoclusters that reversibly dissociate into active monomers</a></u> Thomas M. Truskett , Keith Johnston , Jennifer Maynard , Ameya Borwankar , Maria Miller , Brian Wilson , Aileen Dinin , Tarik Khan , Kevin Kaczorowski
9:00AM - 9:12AM	<u><a href="#">A40.00004: Aggregation behavior of bovine and porcine insulin in presence of inhibitors</a></u> Kiersten Batzli , Brian Love
9:12AM - 9:24AM	<u><a href="#">A40.00005: Design rules for the self-assembly of a protein crystal</a></u> Thomas Haxton , Stephen Whitelam
9:24AM - 9:36AM	<u><a href="#">A40.00006: Protein Crystal Nucleation and Growth</a></u> Sathish Akella , Seth Fraden
9:36AM - 9:48AM	<u><a href="#">A40.00007: Role of detergents in driving complex structural arrangements in colloidal suspensions of Photosystem I (PS I) via charge stabilization and neutralization</a></u> Hanieh Niroomand , Dibyendu Mukherjee , Bamin Khomami
9:48AM - 10:00AM	<u><a href="#">A40.00008: Water dynamics during the association of hiv capsid proteins studied by all-atom simulations</a></u> Naiyin Yu , Michael Hagan
10:00AM - 10:12AM	<u><a href="#">A40.00009: Interfacial Microrheology of Lysozyme Layers During Formation at the Air-Water Interface</a></u> Daniel Allan , Daniel Reich , Robert Leheny
10:12AM - 10:24AM	<u><a href="#">A40.00010: Measurements of Diffusion within Concentrated Bovine <math>\alpha</math>-Crystallin Suspensions</a></u> Nuwan Karunaratne , Justin Berry , Larence Lurio , George Thurston , Janae Debartolo , Suresh Narayanan , Alec Sandy , John Weizeorick
10:24AM - 10:36AM	<u><a href="#">A40.00011: Master Equation Approach to Protein Assembly - Degradation of Protein Aggregates</a></u> Georg Meisl
10:36AM - 10:48AM	<u><a href="#">A40.00012: Intermediate-range order in protein suspensions</a></u> Yun Liu , Lionel Porcar , Peter Falus , Wei-Ren Chen , Emiliano Fratini , Kunlun Hong , Piero Baglioni
10:48AM - 11:00AM	<u><a href="#">A40.00013: An energy landscape approach to protein aggregation</a></u> Alexander Buell , Tuomas Knowles

Monday, February 27, 2012

8:00AM - 11:00AM

**Session A41: Focus Session: Structure and Dynamics of Membranes**

Sponsoring Units: DBIO DPOLY DMP

Chair: Mu-Ping Nieh, University of Connecticut

Room: 156B

8:00AM - 8:36AM	<a href="#">A41.00001: A Neutron View of Proteins in Lipid Bilayers</a> Invited Speaker: Stephen White
8:36AM - 8:48AM	<a href="#">A41.00002: Curvature Forces in Membrane Lipid-Protein Interactions</a> Michael F. Brown
8:48AM - 9:00AM	<a href="#">A41.00003: Thickness fluctuations in pure lipid bilayers</a> Michihiro Nagao , Andrea Woodka , Paul Butler , Lionel Porcar , Bela Farago
9:00AM - 9:12AM	<a href="#">A41.00004: A Simple Analysis of Small-Angle Neutron Scattering Data to Estimate Thickness Fluctuations of the Membrane</a> Takumi Hawa , Victor Lee
9:12AM - 9:48AM	<a href="#">A41.00005: High-resolution Structures of Protein-Membrane Complexes by Neutron Reflection and MD Simulation: Membrane Association of the PTEN Tumor Suppressor</a> Invited Speaker: Matthias L"osche
9:48AM - 10:00AM	<a href="#">A41.00006: Application of Small-Angle Neutron and X-ray Scattering in Determining Lipid Bilayer Structure</a> Jianjun Pan , Frederick A. Heberle , Norbert Kucerka , Stephanie Tristram-Nagle , Michelle Szymanski , Mary Koepfinger , John Katsaras
10:00AM - 10:12AM	<a href="#">A41.00007: Growth Mechanism of Lipid-Based Nanodiscs -- a Model Membrane for Studying Kinetics of Particle Coalescence</a> Mu-Ping Nieh , Anthony Dizon , Ming Li , Andrew Hu , Tai-Hsi Fan
10:12AM - 10:24AM	<a href="#">A41.00008: Swellable Model POPC/POPG/DHPC Membrane with a Lamellar Long-Range Order</a> Ming Li , Mu-Ping Nieh
10:24AM - 10:36AM	<a href="#">A41.00009: Mobility of water and selected atoms in bilayer DMPC membranes</a> F.Y. Hansen , H. Taub , M. Bai , A. Miskowiec
10:36AM - 10:48AM	<a href="#">A41.00010: Structure of single-supported DMPC lipid bilayer membranes as a function of hydration level studied by neutron reflectivity and Atomic Force Microscopy</a> A. Miskowiec , P. Schnase , M. Bai , H. Taub , F.Y. Hansen , M. Dubey , S. Singh , J. Majewski
10:48AM - 11:00AM	<a href="#">A41.00011: Cholesterol Flip-Flop Dynamics in a Phospholipid Bilayer: A 10 Microsecond All-Atom Molecular Dynamics Simulation</a> Amit Choubey , Ken-ichi Nomura , Rajiv Kalia , Aiichiro Nakano , Priya Vashishta

Monday, February 27, 2012

8:00AM - 11:00AM

**Session A42: Focus Session: Cytoskeleton and Biomechanics - Biochemical Mechanisms**

Sponsoring Units: DBIO DPOLY

Chair: Megan Valentine, University of California, Santa Barbara

Room: 156C

8:00AM - 8:12AM	<a href="#">A42.00001: Stochastic simulations of the growth dynamics and organization of lamellipodia-like actin networks</a> Longhua Hu , Garegin Papoian
8:12AM - 8:24AM	<a href="#">A42.00002: How ion binding affects actin filament stability and flexural rigidity</a> Hyeran Kang , Michael Bradley , Brannon McCullough , Ana"elle Pierre , Elena Grintsevich , Enrique De La Cruz
8:24AM - 8:36AM	<a href="#">A42.00003: Mechanotransduction through the plasma membrane &amp; cytoskeleton</a> Kristina Haase , Andrew Pelling
8:36AM - 9:12AM	<a href="#">A42.00004: Leading at the Front: How EB Proteins Regulate Microtubule Dynamics</a> Invited Speaker: Taviare Hawkins
9:12AM - 9:24AM	<a href="#">A42.00005: Redundancy and cooperativity in the mechanics of compositely crosslinked cytoskeletal networks</a> J.M. Schwarz , D.Q. Quint , Moumita Das
9:24AM - 9:36AM	<a href="#">A42.00006: The origins of strain stiffening in fibrin networks</a> Louise Jawerth , Stefan Muenster , David Weitz
9:36AM - 9:48AM	<a href="#">A42.00007: Semiflexible filament networks viewed as fluctuating beam frames</a> Tianxiang Su , Prashant Purohit
9:48AM - 10:00AM	<a href="#">A42.00008: Spindle Assembly and Architecture: From Laser Ablation to Microtubule Nucleation</a> Daniel Needleman , Jan Bragues , Valeria Nuzzo , Eric Mazur
10:00AM - 10:12AM	<a href="#">A42.00009: Coupling stochastic kinetics and mechanics uncovers new dynamics induced by focal adhesions in filopodia</a> Maria Minakova , Garegin Papoian
10:12AM - 10:24AM	<a href="#">A42.00010: Growth Cone Biomechanics in Peripheral and Central Nervous System Neurons</a> Jeffrey Urbach , Daniel Koch , Will Rosoff , Herbert Geller
10:24AM - 10:36AM	<a href="#">A42.00011: An Atomic Force Microscopy based investigation of specific biomechanical properties for various types of neuronal cells</a> Elise Spedden , James White , David Kaplan , Cristian Staii
10:36AM - 10:48AM	<a href="#">A42.00012: Nuclear Physics in a biological context</a> Dennis Discher

Monday, February 27, 2012

8:00AM - 11:00AM

**Session A44: Focus Session: Hydrophobic Interactions and Hydrogen Bonding Networks in Polymeric and Soft Matter Systems**

Sponsoring Units: DPOLY DBIO

Chair: Garegin Papoian, University of Maryland

Room: 157C

8:00AM - 8:12AM	<u><a href="#">A44.00001: More than one dynamic crossover in protein hydration water</a></u> Giancarlo Franzese , Marco G. Mazza , Kevin Stokely , Sara Pagnotta , Fabio Bruni , H. Eugene Stanley
8:12AM - 8:24AM	<u><a href="#">A44.00002: The effect of salt solutes on the relaxation dynamics of water from 65 to 720 GHz</a></u> Nguyen Vinh , Mark Sherwin , Jim Allen , Kevin Plaxco
8:24AM - 8:36AM	<u><a href="#">A44.00003: Investigating How Contact Angle Effects the Interaction between Water and a Hydrophobic Surface</a></u> Adele Poynor , Caitlyn Neidig
8:36AM - 8:48AM	<u><a href="#">A44.00004: Mesoscale inhomogeneities in an aqueous ternary system</a></u> Deepa Subramanian , Stephen Hayward , Elia Altabet , Peter Collings , Mikhail Anisimov
8:48AM - 9:00AM	<u><a href="#">A44.00005: Statistical Mechanics of Thermosensitive Nanoparticle Binding: Quantifying Hydrophobic Interactions in Bulk Solution</a></u> Alessio Zaccone , Jerome Crassous , Benjamin Beri , Matthias Ballauff
9:00AM - 9:12AM	<u><a href="#">A44.00006: Effect of Valence of Counterions on the Structure of Charged Membranes, a Computer Simulation Study</a></u> Baofu Qiao , Monica Olvera de la Cruz
9:12AM - 9:48AM	<u><a href="#">A44.00007: Deconstructing Classical Water Models at Interfaces and in Bulk: Hydrophobic Interactions and Hydrogen Bonding</a></u> Invited Speaker: John D. Weeks
9:48AM - 10:00AM	<u><a href="#">A44.00008: A SAFT-based classical density functional for water</a></u> David Roundy , Jessica Hughes , Eric Krebs
10:00AM - 10:12AM	<u><a href="#">A44.00009: Morphology and chirality control self-assembly of sickle hemoglobin inside red blood cells</a></u> Xuejin Li , Huan Lei , Bruce Caswell , George Karniadakis
10:12AM - 10:24AM	<u><a href="#">A44.00010: Secondary structure formation in peptide amphiphile micelles</a></u> Matthew Tirrell
10:24AM - 11:00AM	<u><a href="#">A44.00011: Friction and Hydration Repulsion Between Hydrogen-Bonding Surfaces</a></u> Invited Speaker: Roland Netz

Monday, February 27, 2012

8:00AM - 11:00AM

**Session A45: Focus Session: Thin Film Block Copolymers - Directed Assembly**

Sponsoring Units: DPOLY

Chair: Thomas Epps, University of Delaware

Room: 159

8:00AM - 8:36AM	<u><a href="#">A45.00001: Directed Ordering of Block Copolymer Thin Films with Flexible Interfaces for Functional Materials</a></u> Invited Speaker: Alamgir Karim
8:36AM - 8:48AM	<u><a href="#">A45.00002: Facile Route to Vertically Aligned High-Aspect Ratio Block Copolymer Films via Dynamic Zone Annealing</a></u> Gurpreet Singh , Manish Kulkarni , Kevin Yager , Detlef Smilgies , David Bucknall , Alamgir Karim
8:48AM - 9:00AM	<u><a href="#">A45.00003: Controlling Domain Orientation in Thin Films of Lamellar AB and ABA Block Copolymers</a></u> Nikhila Mahadevapuram , Thai Vu , Gila Stein
9:00AM - 9:12AM	<u><a href="#">A45.00004: Diblock and Triblock Copolymer Thin Films on a Substrate with Controlled Selectivity</a></u> Yong-Biao Yang , Jaep Kim , Junhan Cho
9:12AM - 9:24AM	<u><a href="#">A45.00005: Microdomain Orientation of PS-b-PMMA Thin Films on the PS grafted Substrates</a></u> Du Yeol Ryu , Rui Guo , Eunhye Kim
9:24AM - 9:36AM	<u><a href="#">A45.00006: Orientation control of cold zone annealed Block copolymer films on tunable gradient surface energy substrates using combinatorial methods</a></u> Manish Kulkarni , Gurpreet Singh , Alamgir Karim
9:36AM - 9:48AM	<u><a href="#">A45.00007: Block Copolymer Ordering on Soft, Patternable and Flexible Substrates</a></u> Arzu Hayirlioglu , Gurpreet Singh , Alamgir Karim
9:48AM - 10:00AM	<u><a href="#">A45.00008: Controlling the alignment and the morphology of bilayer BCP films using templated self-assembly</a></u> Amir Tavakkoli K. G. , Kevin W. Gotrik , Adam F. Hannon , Alfredo Alexander-Katz , Caroline A. Ross , Karl K. Berggren
10:00AM - 10:12AM	<u><a href="#">A45.00009: Controlling the Block Copolymer Patterns via Combining Graphoepitaxy and Surface Guidance</a></u> Hyunjung Jung , Sumi Lee , Eun Ae Kwak , Sanghoon Woo , Frank Leifarth , Craig Hawker , June Huh , Du Yeol Ryu , Joona Bang
10:12AM - 10:24AM	<u><a href="#">A45.00010: Macroscopic Ordering of Block Copolymers into Sequenced Patterns on Topographically Corrugated Surface</a></u> Sungjune Park , Larisa Tsarkova , Stephanie Hiltl , Stefan Roitsch , Joachim Mayer , Alexander Boker
10:24AM - 10:36AM	<u><a href="#">A45.00011: Block copolymer thin films with long-range lateral order</a></u> Ilja Gunkel , Ting Xu , Alexander Hexemer , Thomas Russell
10:36AM - 10:48AM	<u><a href="#">A45.00012: Combining block copolymer lithography with nano-imprinting lithography: Mass-producing sub-20nm unidirectional line patterns</a></u> Xiaodan Gu , Sung Woo Hong , Thomas P. Russell
10:48AM - 11:00AM	<u><a href="#">A45.00013: Offset block copolymer printing using brushless substrates and elastomeric stamps</a></u> Hyo Seon Suh , Hyunsik Yoon , Do Kyeong Kwon , Kookheon Char , M. Serdar Onses , Jeong In Lee , Paul Nealey

Monday, February 27, 2012

8:00AM - 11:00AM

**Session A46: Invited Session: Inherently Strained Polymers and Soft Materials**

Sponsoring Units: DPOLY

Chair: Sergei Sheiko, University of North Carolina

Room: 160AB

8:00AM - 8:36AM [A46.00001: Switching Shape of Nematic Elastomers](#)  
Invited Speaker: Kenji Urayama

8:36AM - 9:12AM [A46.00002: Surface shape memory in polymers](#)  
Invited Speaker: Patrick Mather

9:12AM - 9:48AM [A46.00003: Cell Forces and Cytoskeletal Order Parameters](#)  
Invited Speaker: Dennis Discher

9:48AM - 10:24AM [A46.00004: Tension in Highly Branched Polymers](#)  
Invited Speaker: Michael Rubinstein

10:24AM - 11:00AM [A46.00005: New strategies in adaptive polymer gels](#)  
Invited Speaker: Eugenia Kumacheva

12

Monday, February 27, 2012

8:00AM - 11:00AM

**Session A47: Focus Session: Gelation and Glass Transition in Colloids and Soft Matter Systems I**

Sponsoring Units: DPOLY

Chair: Mohammad Islam, Carnegie Mellon University

Room: 160C

8:00AM - 8:12AM [A47.00001: Gelation kinetics of gelatin using particle tracking microrheology](#)  
Joseph Hardcastle , Rama Bansil

8:12AM - 8:24AM [A47.00002: Temperature Dependent Dynamics and Structure of Soft Colloids](#)  
Praveen Agarwal , Samanvaya Srivastava , Lynden Archer

8:24AM - 8:36AM [A47.00003: Confinement-induced solidification of attractive colloidal suspensions](#)  
Jacinta Conrad , Melissa Spannuth

8:36AM - 8:48AM [A47.00004: Gelation of self-assembled bile acid-PEG conjugates](#)  
Satu Strandman , Frantz Le Devedec , X.X. Zhu

8:48AM - 9:00AM [A47.00005: The Role of Charge Interactions in Colloidal Gelation](#)  
Emily Russell , Joris Sprakel , Thomas Kodger , David Weitz

9:00AM - 9:12AM [A47.00006: Anomalous Phase Transitions in Soft Colloid-Polymer Binary Mixtures](#)  
Jaydeep Basu , Ajoy Kandar , Suresh Narayanan , Alec Sandy

9:12AM - 9:24AM [A47.00007: Injectable Solid Peptide Hydrogel as Cell Carrier: Effects of Shear Flow on Hydrogel and Cell Payload](#)  
Darrin Pochan

9:24AM - 9:36AM [A47.00008: Shear-driven gelation of dilute colloidal suspensions](#)  
Emanuela Del Gado , Alessio Zaccone , Daniele Gentili , Hua Wu , Massimo Morbidelli

9:36AM - 9:48AM [A47.00009: Aggregation and network formation in aqueous methylcellulose near the sol-gel transition](#)  
Sara Arvidson , John McAllister , Joseph Lott , Frank Bates , Timothy Lodge

9:48AM - 10:00AM [A47.00010: Effect of particle stiffness on glassy dynamics of dense colloidal liquids](#)  
Raymond Seekell , Prasad Sarangapani , Y. Elaine Zhu

10:00AM - 10:12AM [A47.00011: Thermo-adjustable mechanical properties of polymer, lipid-based complex fluids](#)  
Millicent Firestone , Sungwon Lee

10:12AM - 10:24AM [A47.00012: Mechanics of networks of aliphatic fibers in aqueous surfactant media](#)  
Giuliano Zanchetta , Marco Caggioni , Vincenzo Guida , Veronique Trappe

10:24AM - 10:36AM [A47.00013: Elimination of branching in self-assembled beta hairpin peptide fibrils](#)  
Sameer Sathaye , Darrin Pochan

10:36AM - 10:48AM [A47.00014: Bond orientational order in randomly-packed colloidal spheres](#)  
Eli Sloutskin , Alexander Butenko

10:48AM - 11:00AM [A47.00015: Anharmonicity in Amino Acids](#)  
Herculano Martinho , Thamires Lima , Mariana Ishikawa

13

Monday, February 27, 2012

8:00AM - 11:00AM

### Session A48: Charged and Ion-Containing Polymers

Sponsoring Units: DPOLY

Chair: Thomas Seery, University of Connecticut

Room: 161

8:00AM - 8:12AM	<u>A48.00001: Influence of Plasticizer on Ion Aggregation in Single-ion Polymer Conductors</u> Hanqing Zhao , Dan King , Paul Painter , Ralph Colby , James Runt
8:12AM - 8:24AM	<u>A48.00002: Atomistic molecular dynamics simulations of model ionomers</u> Dan Bolintineanu , Mark Stevens , Amalie Firschknecht
8:24AM - 8:36AM	<u>A48.00003: Weak polyelectrolytes grafted to nanoparticles and flat surfaces</u> Stephen Barr , Athanassios Panagiotopoulos
8:36AM - 8:48AM	<u>A48.00004: Large scale molecular dynamics study of polymer-surfactant complex</u> Monojoy Goswami , Bobby Sumpter
8:48AM - 9:00AM	<u>A48.00005: Near Edge X-ray Absorption Fine Structure Studies of Cu Ion-Containing PAMAMOS Dendrimer Networks</u> Robert Bubeck , Petar Dvornic , Daniel Fischer
9:00AM - 9:12AM	<u>A48.00006: Mean-Field Modeling of the Encapsulation of Weakly Acidic Particles in Polyelectrolyte Dendrimers</u> Thomas Lewis , Venkat Ganesan
9:12AM - 9:24AM	<u>A48.00007: Structure-Property Relationships in Precise Acid-Containing Polymers</u> Francisco Buitrago , Kathleen Opper , Kenneth Wagener , Karen Winey
9:24AM - 9:36AM	<u>A48.00008: Normal force and interpenetration between polyelectrolyte brushes</u> Mark Matsen
9:36AM - 9:48AM	<u>A48.00009: Block copolymer ion gels for gas separation</u> Yuanyan Gu , Timothy Lodge
9:48AM - 10:00AM	<u>A48.00010: Transport and phase behavior in anion-conducting diblock copolymers</u> Guillaume Sudre , Sebnem Inceoglu , Nitash Balsara
10:00AM - 10:12AM	<u>A48.00011: Polyelectrolyte Uptake by PEMs at High Salt</u> David Hoagland , Zhaohui Su , Bo Peng , Xingjie Zan
10:12AM - 10:24AM	<u>A48.00012: Polyelectrolytes in Salt Solutions: Molecular Dynamics Simulations</u> Andrey Dobrynin , Jan-Michael Carrillo
10:24AM - 10:36AM	<u>A48.00013: Electrostatic persistence length of flexible polyelectrolytes: resolving the controversy between theory and experiments</u> Wei Qu , Erik Luijten
10:36AM - 10:48AM	<u>A48.00014: Layer-by-Layer Assembly of Charged Nanoparticles on Porous Substrates: Molecular Dynamics Simulations</u> Jan-Michael Carrillo , Andrey Dobrynin
10:48AM - 11:00AM	<u>A48.00015: Diffusion of Polyelectrolyte Chains within Multilayer Films</u> Svetlana Sukhishvili , Li Xu , Aliaksandr Zhuk , John Ankner

14

Monday, February 27, 2012

8:00AM - 11:00AM

### Session A49: Focus Session: Long-time, Entangled Dynamics in Polymers - Linear, Transient, Non-linear Rheology, Tubes

Sponsoring Units: DPOLY

Chair: Gregory McKenna, Texas Tech University

Room: 162A

8:00AM - 8:12AM	<u>A49.00001: Microscopic theory of the tube confinement potential and relaxation of entangled needle liquids under stress</u> Daniel Sussman , Ken Schweizer
8:12AM - 8:24AM	<u>A49.00002: Rheology of linear monodisperse polyethylene melts from atomistic Molecular Dynamics simulations</u> Nikos Karayiannis , Jorge Ramirez , Alexei Likhtman
8:24AM - 8:36AM	<u>A49.00003: Intermolecular constraints in the dynamics of semiflexible entangled polymer melts</u> Marina Guenza
8:36AM - 9:12AM	<u>A49.00004: Long-Time Dynamics in Polymers: Experimental Results</u> Invited Speaker: Sindee Simon
9:12AM - 9:24AM	<u>A49.00005: Tube Dynamics of Mildly Entangled Polymers: Semiflexibility Effects</u> Jian Qin , Scott Milner , Pavlos Stephanou , Vlasis Mavrantzas
9:24AM - 9:36AM	<u>A49.00006: A critical analysis of typical assumptions in the theory of entangled polymer dynamics in elongational flows</u> Marat Andreev , Renat Khaliullin , Jay Schieber
9:36AM - 9:48AM	<u>A49.00007: Exploring the role of long-chain branching in large deformation of entangled melts</u> Gengxin Liu , Kwstas Nietsikas , Apostolos Avgeropoulos , Shi-Qing Wang
9:48AM - 10:00AM	<u>A49.00008: Similarity and difference between simple shear and uniaxial extension of entangled polymers</u> Hao Sun , Shi-Qing Wang
10:00AM - 10:12AM	<u>A49.00009: Large-deformation and long-time behavior of entangled melts in complex geometries</u> Xiangyang Zhu , Shi-Qing Wang
10:12AM - 10:24AM	<u>A49.00010: Barrier to chain retraction: where we are six years after the first report of shear inhomogeneity in entangled polymers?</u> Shi-Qing Wang , Pouyan Boukany , Yangyang Wang , Shiwang Cheng
10:24AM - 10:36AM	<u>A49.00011: Neutron Reflectivity Study of Interdiffusion of Ionomers into Van der Waals Polymer Thin Films</u> Thusitha Etampawala , Dilru Ratnaweera , Sidath Wijesinghe , Dvora Perahia , Jaroslaw Majewski
10:36AM - 10:48AM	<u>A49.00012: Development of Interfacial Strength and Entanglements During Welding of Polymers</u> Ting Ge , Mark O. Robbins , Flint Pierce , Gary S. Grest , Dvora Perahia
10:48AM - 11:00AM	<u>A49.00013: Using the parallel plates geometry for nonlinear rheological measurements</u> Zahra Fahimi , Chase P. Broedersz , Hans M. Wy

15

Monday, February 27, 2012

8:00AM - 11:00AM

### Session A50: Liquid Crystalline Order in Polymers, Soft Matter, and Complex Fluids

Sponsoring Units: DPOLY

Chair: Peter Shibayev, Fordham University

Room: 162B

8:00AM - 8:12AM	<u>A50.00001: Shape Memory as a Process: Optimizing Polymer Design for Shape Recovery</u> Richard Vaia , Hilmar Koerner , Kyungmin Lee , Robert Strong , Matthew Smith , Huabin Wang , Tim White , Loon-Seng Tan
8:12AM - 8:24AM	<u>A50.00002: Shape and Memory in Liquid Crystalline Elastomers</u> Anselm Griffin , Wanting Ren , Philip McMullan , Whitney Kline , Mohan Srinivasarao
8:24AM - 8:36AM	<u>A50.00003: Phase Behavior of Disk-Coil Macromolecules</u> YongJoo Kim , Edward Ha , Alfredo Alexander-Katz
8:36AM - 8:48AM	<u>A50.00004: Liquid Crystal Phases of Semiflexible Polymers</u> Ian MacKay , Don Sullivan
8:48AM - 9:00AM	<u>A50.00005: Photomechanical mechanism and structure-property considerations in the generation of photomechanical work in glassy, azobenzene liquid crystal polymer networks</u> Kyung Min Lee , Nelson Tabiryan , Timothy Bunning , Timothy White
9:00AM - 9:12AM	<u>A50.00006: Surface wrinkling in liquid crystal elastomer bilayers</u> Aditya Agrawal , Paul Luchette , Walter Chapman , Peter Muhoray , Rafael Verduzco
9:12AM - 9:24AM	<u>A50.00007: Field-induced orientational order of liquid crystals in random environments</u> Lena Lopatina , Jonathan Selinger
9:24AM - 9:36AM	<u>A50.00008: Highly viscous liquid crystalline mixtures: the alternative to liquid crystalline elastomers</u> Petr Shibaev , Cristina Schlesier , Leah Newman , Scott McDonald
9:36AM - 9:48AM	<u>A50.00009: Linear aggregation and liquid crystalline ordering: from semi-flexible polymers to rigid rods</u> Tatiana Kuriabova , Zach Kost-Smith , M.D. Betteerton , Matthew A. Glaser
9:48AM - 10:00AM	<u>A50.00010: Liquid Crystal Elastomer Motors</u> Peter Palfy-Muhoray , Xiaoyu Zheng
10:00AM - 10:12AM	<u>A50.00011: Orientational fluctuations of amorphous nematogenic solids</u> Fangfu Ye , Bing Lu , Paul Goldbart
10:12AM - 10:24AM	<u>A50.00012: Self-assembled quadracontinuous chiral network in 3-miktoarm star terpolymer blend</u> Jacob Kirkensgaard , Myfanwy Evans , Stephen Hyde
10:24AM - 10:36AM	<u>A50.00013: Non-Monotonic Concentration Effects in the Phase Behavior and Nematic Orders: Mixtures of Side-Chain Liquid Crystalline Polymers and Low-Molecular-Weight Liquid Crystals</u> Bilin Zhuang , Zhen-Gang Wang
10:36AM - 10:48AM	<u>A50.00014: Effect of blending on nematic order in semiflexible polymers</u> Kiran Khanal , Jutta Luettmer-Strathmann

16

Monday, February 27, 2012

8:00AM - 11:00AM

### Session A51: Colloids I: Beyond Hard Spheres

Sponsoring Units: DCMP DFD

Chair: Anthony Dinsmore, University of Massachusetts, Amherst

Room: Boston Convention Center 154

8:00AM - 8:12AM	<u>A51.00001: Photonic Droplets Containing Transparent Aqueous Colloidal Suspensions with Optimal Scattering Properties</u> Jin-Gyu Park , Sofia Magkiriadou , Young-Seok Kim , Vinothan Manoharan
8:12AM - 8:24AM	<u>A51.00002: Curvature-Induced Capillary Interaction between Spherical Particles at a Liquid Interface</u> Nesrin Senbil , Chuan Zeng , Benny Davidovitch , Anthony D. Dinsmore
8:24AM - 8:36AM	<u>A51.00003: Using Micron-Sized Ellipsoids as a New Tool for Microrheology</u> David C. Kilgore , Kenneth W. Desmond , Eric R. Weeks
8:36AM - 8:48AM	<u>A51.00004: Non-capillary binding of colloidal particles to liquid interfaces</u> David Kaz , Ryan McGorty , Vinothan Manoharan
8:48AM - 9:00AM	<u>A51.00005: Memory effects in soap film arrangements</u> Nicolas Vandewalle , Stephane Dorbolo , Geoffroy Lumay , Julien Schockmel , Martial Noirhomme
9:00AM - 9:12AM	<u>A51.00006: Droplet-based microfluidics and the dynamics of emulsions</u> Jean-Christophe Baret , Quentin Brosseau , Benoit Semin , Xiaopeng Qu
9:12AM - 9:24AM	<u>A51.00007: Pseudo-Steady Liquid Transport in Aqueous Foams during Filling of a Container</u> Michael Conroy , Ramagopal Ananth
9:24AM - 9:36AM	<u>A51.00008: Coarsening of Two Dimensional Foams on a Curved Surface</u> Adam Roth , Chris Jones , Doug Durian
9:36AM - 9:48AM	<u>A51.00009: Analysis of emulsion stability in acrylic dispersions</u> Suresh Ahuja
9:48AM - 10:00AM	<u>A51.00010: Clay-oil droplet suspensions in electric fields</u> Zbigniew Rozynek , Jon Otto Fossum , Knut Kjerstad , Alexander Mikkelsen , Rene Castberg
10:00AM - 10:12AM	<u>A51.00011: Dynamics of charged particles in nonpolar solvent in response to an electric field</u> Tina Lin , David Weitz
10:12AM - 10:24AM	<u>A51.00012: Controlling Aggregation in Non-Polar Asphaltene Suspensions Through Electrostatics</u> Sara Hashmi , Abbas Firoozabadi
10:24AM - 10:36AM	<u>A51.00013: The Electric Double Layer Structure Around Charged Spherical Interfaces</u> Zhenwei Yao , Mark Bowick , Xu Ma
10:36AM - 10:48AM	<u>A51.00014: Colloidal analogues of charged and uncharged polymer chains with tunable stiffness</u> Hanumantha Rao Vutukuri , Bo Peng , Peter van Oostrum , Arnout Imhof , Alfons van Blaaderen
10:48AM - 11:00AM	<u>A51.00015: First experimental determination of permanent and induced electric dipolar moments of colloidal cellulose nanocrystals dispersed in apolar solvents</u> Bruno Frka-Petesic , Bruno Jean , Laurent Heux

17

Monday, February 27, 2012

8:00AM - 11:00AM

**Session A53: Disordered and Glassy Systems I**

Sponsoring Units: GSNP

Chair: Horacio Castillo, Ohio University

Room: 153B

8:00AM - 8:12AM	<a href="#">A53.00001: The dependence of fragility of glass forming liquids on interparticle interactions and density</a> Srikanth Sastry , Shiladitya Sengupta , Frederic Affouard , Filipe Vasconcelos
8:12AM - 8:24AM	<a href="#">A53.00002: Frequency and Wavevector Dependence of the Atomic Level Stress-Stress Correlation Function in a Model Supercooled Liquid</a> Valentin A. Levashov , James R. Morris , Takeshi Egami
8:24AM - 8:36AM	<a href="#">A53.00003: Measuring Dynamical Facilitation in Supercooled Liquids and Related Materials</a> Yael Elmatad , Aaron Keys
8:36AM - 8:48AM	<a href="#">A53.00004: Excitations are localized and relaxation is hierarchical in glass-forming liquids</a> Aaron Keys , Lester Hedges , Juan Garrahan , Sharon Glotzer , David Chandler
8:48AM - 9:00AM	<a href="#">A53.00005: Anomalous properties of liquids for a family of models with short range tetrahedral interactions</a> Sergey Buldyrev , Giancarlo Franzese
9:00AM - 9:12AM	<a href="#">A53.00006: Stretched-exponential relaxation and hidden power laws in a solidifying 2D liquid</a> Alexander Patashinski , Rafal Orlik , Antoni Mitus , Bartosz Grzybowski , Mark Ratner
9:12AM - 9:24AM	<a href="#">A53.00007: Sheared athermal soft-particle suspensions near jamming: dependence of effective diffusion on packing density and system size</a> Kamran Karimi , Craig Maloney
9:24AM - 9:36AM	<a href="#">A53.00008: Decoupling of Rotational and Translational Diffusion in Supercooled Colloidal Fluids</a> Kazem V. Edmond , Mark T. Elsesser , Gary L. Hunter , HyunJoo Park , David J. Pine , Eric R. Weeks
9:36AM - 9:48AM	<a href="#">A53.00009: Thermodynamics versus network topology of network glasses</a> Le Yan , Matthieu Wyart
9:48AM - 10:00AM	<a href="#">A53.00010: Elastic properties of compressed emulsions</a> Ivane Jorjadze
10:00AM - 10:12AM	<a href="#">A53.00011: Glassy Dynamics of Charge Density Waves in Chromium</a> Hyekyung Kim , Jonathan Logan , Oleg Shpyrko , Eric Isaacs
10:12AM - 10:24AM	<a href="#">A53.00012: Local collapse of the atomic cage in a liquid flow</a> Takuya Iwashita , Takeshi Egami
10:24AM - 10:36AM	<a href="#">A53.00013: Local Perturbation of Quasi Two-Dimensional Colloidal Glasses</a> Kevin Aptowicz , Tim Still , Ke Chen , Peter Yunker , Arjun Yodh
10:36AM - 10:48AM	<a href="#">A53.00014: X-ray investigation of colloidal glasses under shear</a> Dmitry Denisov , Triet Dang , Bernd Struth , Peter Schall
10:48AM - 11:00AM	<a href="#">A53.00015: Boundaries Matter for Confined Colloidal Glasses</a> Gary L. Hunter , Kazem V. Edmond , Eric R. Weeks

Monday, February 27, 2012

11:15AM - 2:15PM

**Session B40: Focus Session: Cytoskeleton and Biomechanics - Entanglement and Crosslinking**

Sponsoring Units: DBIO DPOLY

Chair: R.K.P. Zia, Virginia Polytechnic Institute and State University

Room: 156A

11:15AM - 11:51AM	<a href="#">B40.00001: Seeing is believing: New insight into structure-mechanics relationships in entangled and crosslinked microtubule networks</a> Invited Speaker: Megan Valentine
11:51AM - 12:03PM	<a href="#">B40.00002: Actin filament curvature biases branching direction</a> Evan Wang , Viviana Risca , Ovijit Chaudhuri , Jia-Jun Chia , Phillip Geissler , Daniel Fletcher
12:03PM - 12:15PM	<a href="#">B40.00003: Condensation of F-Actin by Dimensional Reduction</a> Robijn Bruinsma , Cyron Christian , Kei Mueller , Andreas Bausch , Wolfgang Wa
12:15PM - 12:27PM	<a href="#">B40.00004: Stress Enhanced Gelation in <math>\alpha</math>-Actinin-4 Cross-linked Actin Networks</a> Norman Yao , Chase Brodersz , Martin Depken , Daniel Becker , Martin Pollak , Frederick MacKintosh , David Weitz
12:27PM - 12:39PM	<a href="#">B40.00005: Simulations and theory of model microtubule self-assembly</a> Mark Stevens , Shengfeng Cheng , Ankush Aggarwal
12:39PM - 12:51PM	<a href="#">B40.00006: Dynamical Length-Regulation of Microtubules</a> Anna Melbinger , Louis Reese , Erwin Frey
12:51PM - 1:03PM	<a href="#">B40.00007: On the origins and extent of mechanical variation among cells</a> John Maloney , Eric Lehnhardt , Krystyn Van Vliet
1:03PM - 1:15PM	<a href="#">B40.00008: Non-Equilibrium Cell Mechanics Studied with a Dual Optical Trap</a> Florian Schlosser , Florian Rehfeldt , Christoph F. Schmidt
1:15PM - 1:27PM	<a href="#">B40.00009: M &amp; M's: Mechanosensitivity and Mechanotransduction in Myoblasts</a> Zeinab Al-Rekabi , Andrew Pelling
1:27PM - 1:39PM	<a href="#">B40.00010: Polymer Coated Surface Acoustic Wave Biosensor for Living Cells</a> Lian Dai , JianPing Zhang , Abiche DeWilde , Gang Wang , Kenneth Marx , Susan Braunhut , Joel Therrien
1:39PM - 1:51PM	<a href="#">B40.00011: Modeling spinal cord biomechanics</a> Carlos Luna , Sameer Shah , Avis Cohen , Helim Aranda-Espinoza
1:51PM - 2:03PM	<a href="#">B40.00012: Matrix elasticity perturbation and Lamin-A/C expression in stem cells modulate their mechanics and lineage specification</a> Irena Ivanovska , Dennis Discher
2:03PM - 2:15PM	<a href="#">B40.00013: Simulation of Second Harmonic Generation from Heterogeneous Microtubule Structures</a> Noah Langowitz , Che-Hang Yu , Daniel Needleman

Monday, February 27, 2012

11:15AM - 2:15PM

### Session B41: Lipid Bilayers and Biological Membranes

Sponsoring Units: DBIO

Chair: Jianjun Pan, Oak Ridge National Laboratory

Room: 156B

11:15AM - 11:27AM	<u>B41.00001: Computer Simulation of Cytoskeleton-Induced Blebbing of Lipid Membranes</u> Mohamed Laradji , Eirc J. Spangler , Cameron W. Harvey , Joel D. Revallee , P.B. Sunil Kumar
11:27AM - 11:39AM	<u>B41.00002: Coarse-grained simulation of lipid vesicles with "n-atic" orientational order</u> Jun Geng , Jonathan Selinger , Robin Selinger
11:39AM - 11:51AM	<u>B41.00003: Morphologies of Elastic Membranes with Fluctuating Connectivity</u> Chloe Funkhouser , Rastko Sknepnek , Monica Olvera de la Cruz
11:51AM - 12:03PM	<u>B41.00004: Cooperative Motion in Lipid Bilayer Membranes</u> Benedikt Hartmann , Francis Starr
12:03PM - 12:15PM	<u>B41.00005: How the antimicrobial peptides destroy bacteria cell membrane: Translocations vs. membrane buckling</u> Leonardo Golubovic , Lianghui Gao , Licui Chen , Weihai Fang
12:15PM - 12:27PM	<u>B41.00006: Interaction of PLGA and trimethyl chitosan modified PLGA nanoparticles with mixed anionic/zwitterionic phospholipid bilayers studied using molecular dynamics simulations</u> Brian Novak , Carlos Astete , Cristina Sabliov , Dorel Moldovan
12:27PM - 12:39PM	<u>B41.00007: Atomic Force Microscopy Study of Changes to the Mechanical Properties of Pseudomonas aeruginosa Cells Induced By Antimicrobial Peptides</u> Shun Lu , John Dutcher
12:39PM - 12:51PM	<u>B41.00008: Interactions between HIV-1 Neutralizing Antibodies and Model Lipid Membranes imaged with AFM</u> Stefan Zauscher , Gregory Hardy , Munir Alam , Joseph Shapter
12:51PM - 1:03PM	<u>B41.00009: Modeling curvature-dependent subcellular localization of a small sporulation protein in Bacillus subtilis</u> Vaibhav Wasnik , Ned Wingreen , Ranjan Mukhopadhyay
1:03PM - 1:15PM	<u>B41.00010: Relationship between peptide amino acid sequence and membrane curvature generation</u> Nathan Schmidt , David Kuo , Ghee Hwee Lai , Abhijit Mishra , Gerard Wong
1:15PM - 1:27PM	<u>B41.00011: Family of pH-Low-Insertion-Peptides (pHLIPs)</u> Dharmika Weerakkody , Anna Moshnikova , Valentina Moshnikova , Mak Thakur , Bethany Rossi , Donald Engelman , Oleg Andreev , Yana Reshetnyak
1:27PM - 1:39PM	<u>B41.00012: Membrane-associated peptide folding: pH triggered insertion and helical structure formation</u> Alexander Karabadzak , Dharmika Weerakkody , Mak Thakur , Donald Engelman , Vladislav Markin , Oleg Andreev , Yana Reshetnyak
1:39PM - 1:51PM	<u>B41.00013: Modulation of the transmembrane helix insertion pathway by polar cargo</u> Dayanjali Wijesinghe , Alexander Karabadzak , Vladislav Markin , Donald Engelman , Oleg Andreev , Yana Reshetnyak
1:51PM - 2:03PM	<u>B41.00014: Exploration of phase separation in heterogeneous lipid monolayers</u>

Curt DeCaro , Sambhunath Bera , Zhang Jiang , Mrinmay Mukhopadhyay , Carol Thompson

2:03PM - 2:15PM

B41.00015: Domain formation in multicomponent lipid bilayers coupled to elastic substrate  
MD Zulfikar Ali , Ranjan Mukhopadhyay

Monday, February 27, 2012

11:15AM - 2:15PM

### Session B42: Focus Session: BioChip Physics-Detection and Transport

Sponsoring Units: DBIO DFD

Chair: David Nolte, Purdue University and Peter Kiesel, Palo Alto Research Center

Room: 156C

### Session B43: Invited Session: Physical Mechanisms of Cell Growth

Sponsoring Units: DBIO

Chair: K.C. Huang, Stanford University

Room: 157AB



Monday, February 27, 2012

11:15AM - 2:15PM

**Session B44: Focus Session: Translocation through Nanopores - Measurements and Theoretical Models**

Sponsoring Units: DPOLY DBIO

Chair: Aniket Bhattacharya, University of Central Florida

Room: 157C

11:15AM - 11:51AM	<u>B44.00001: Sequence-dependent ion current modulations in biological and synthetic nanopores</u> Invited Speaker: Aleksei Aksimentiev
11:51AM - 12:03PM	<u>B44.00002: Unexpected stop-and-go when DNA is pulled through a network</u> Juan Guan , Bo Wang , Sung Chul Bae , Steve Granick
12:03PM - 12:15PM	<u>B44.00003: Non-Equilibrium DNA Dynamics Probed by Delayed Capture and Recapture by a Solid-State Nanopore</u> Mima Mihovilovic , Erin Teich , Nicholas Hagerty , Derek Stein
12:15PM - 12:27PM	<u>B44.00004: Forced Translocation of Polymer through Nanopore: Deterministic Model and Simulations</u> Yanqian Wang , Sergey Panyukov , Qi Liao , Michael Rubinstein
12:27PM - 12:39PM	<u>B44.00005: Force-Driven Translocation of a Polymer through a Nanopore</u> Payam Rowghanian , Alexander Grosberg
12:39PM - 12:51PM	<u>B44.00006: Non-equilibrium tension propagation as a unifying description of driven polymer translocation</u> Timo Ikonen , Tapio Ala-Nissila , Aniket Bhattacharya , Wokyung Sung
12:51PM - 1:03PM	<u>B44.00007: Graphene Nano-Electrodes for DNA Sequencing: an Ab initio Perspective</u> R.H. Scheicher , J. Prasangkit , A. Grigoriev , Y. He , M. Liu , R. Ahuja
1:03PM - 1:15PM	<u>B44.00008: Preprotein translocation across the endoplasmic reticulum membrane in milieus crowded by proteins</u> Jose Antonio Velez , Orlando Guzm'an , Fernando Navarro
1:15PM - 1:27PM	<u>B44.00009: Nanopore Mass Spectrometry</u> Derek Stein , Joseph Bush , Mirna Mihovilovic , William Maulbetsch , Wooyoung Moon , Carthene Bazemore-Walker , Peter Weber
1:27PM - 1:39PM	<u>B44.00010: Direct observation of DNA translocation influenced by electrically gated nanopores</u> Genki Ando , Hiroki Moriya , Kenta Tsukahira , Satoshi Yano , Toshiyuki Mitsui
1:39PM - 1:51PM	<u>B44.00011: Thermophoretic stretch of a polymer confined to a nanofluidic channel</u> Martin Bertrand , Bela Joos
1:51PM - 2:03PM	<u>B44.00012: Small Interfering RNA Transfection Across a Phospholipid Membrane</u> Van Ngo , Amit Choubey , Rajiv Kalia , Aiichiro Nakano , Priya Vashishta
2:03PM - 2:15PM	<u>B44.00013: DNA base-specific modulation of <math>S_{\mu}A</math> transverse edge currents through a metallic graphene nanoribbon with a nanopore</u> Kamal K. Saha , Marija Drndi'c , Branislav K. Nikoli'c

Monday, February 27, 2012

11:15AM - 2:15PM

**Session B45: Focus Session: Thin Film Block Copolymers - Swelling and Ordering**

Sponsoring Units: DPOLY

Chair: Ting Xu, University of California, Berkeley

Room: 159

11:15AM - 11:27AM	<u>B45.00001: Defect structure and selective swelling of a lamellar diblock copolymer film</u> Yin Fan , Alfredo Alexander-Katz , Edwin Thomas
11:27AM - 11:39AM	<u>B45.00002: Effect of Solvent Removal Rate on the Morphology of Solvent Vapor Annealed ABA Triblock Copolymer Thin Films</u> Julie N. L. Albert , Wen-Shiue Young , Ronald L. Lewis, III , Timothy D. Bogart , Jasmine R. Smith , Thomas H. Epps, III
11:39AM - 11:51AM	<u>B45.00003: Obtaining Perpendicular Block Copolymer Morphologies with Solvent Annealing</u> Kevin Gotrik , Jeong Gon Son , Adam Hannon , Caroline Ross
11:51AM - 12:03PM	<u>B45.00004: Mesoscale Dynamics of Solvent Evaporation in Block Copolymer Thin Films</u> Sean Paradiso , Su-ni Hur , Kris Delaney , Hector Ceniceros , Carlos Garcia-Cervera , Glenn Fredrickson
12:03PM - 12:15PM	<u>B45.00005: Optimizing the Combination of Solvent Annealing and Directed Self-Assembly in Thin Film Block Copolymer Systems Using Self-Consistent Field Theory</u> Adam Hannon , Kevin Gotrik , Alfredo Alexander-Katz , Caroline Ross
12:15PM - 12:27PM	<u>B45.00006: Sub-10 nm block copolymer patterns with mixed morphology and period using electron irradiation and solvent annealing</u> Jeong Gon Son , Jae-Byum Chang , Karl K. Berggren , Caroline A. Ross
12:27PM - 12:39PM	<u>B45.00007: Raster solvent vapor annealing of block copolymer thin films</u> Jonathan Seppala , Ronald Lewis , Thomas Epps
12:39PM - 12:51PM	<u>B45.00008: Confined drying of copolymer solutions</u> Daubersies Laure , Leng Jacques , Salmon Jean-Baptiste
12:51PM - 1:03PM	<u>B45.00009: Rapid Self-Assembly and Perpendicular Alignment in lamellar PS-b-PEO System for Fabrication of Sub 20 nm Nanolithography Templates</u> Parvaneh Mokarian-Tabari , Timothy W. Collins , Ramsankar Senthamarakanan , Justin D. Holmes , Michael A. Morris
1:03PM - 1:15PM	<u>B45.00010: Controlled Deposition of Ordered Block Copolymer Thin Films by Electro spray</u> Hanqiong Hu , Sofia Rangou , Apostolos Avergopoulos , Chinedum Osuji
1:15PM - 1:27PM	<u>B45.00011: Two distinct timescales in the ordering of symmetric diblock copolymer films</u> Robert D. Peters , Kari Dalnoki-Veress
1:27PM - 1:39PM	<u>B45.00012: The hydration and ordering of lamellar block copolymer films prior to the formation of polymer vesicles</u> Yohei Kamata , Andrew Parnell , Andrew Dennison , Robert Barker , Philipp Gutfreund , Maximilian Skoda , Shaomin Mai , Richard Jones
1:39PM - 1:51PM	<u>B45.00013: Effect of thickness on microdomain orientation in shear-aligned, cylinder-forming PS-PHMA thin films</u> Raleigh Davis , Paul Chaikin , Richard Register
1:51PM - 2:03PM	<u>B45.00014: GISAXS simulation and analysis on GPU clusters</u> Slim Chourou , Abhinav Sarje , Xiaoye Li , Elaine Chan , Alexander Hexemer
2:03PM - 2:15PM	<u>B45.00015: Modeling Line Edge Roughness in Lamellar Block Copolymer Systems</u> Paul Patrone , Gregg Gallatin

Monday, February 27, 2012

11:15AM - 2:15PM

**Session B46: Invited Session: Industrial Applications of Advanced Polymer-Based Nanomaterials**

Sponsoring Units: DPOLY

Chair: Tirtha Chatterjee, Dow Chemical Company

Room: 160AB

11:15AM - 11:51AM	<u>B46.00001: Polymer and Material Design for Lithography From 50 nm Node to the sub-16 nm Node</u> Invited Speaker: Peter Trefonas
11:51AM - 12:27PM	<u>B46.00002: Development of nanostructured surfaces for ice protection applications</u> Invited Speaker: Azar Alizadeh
12:27PM - 1:03PM	<u>B46.00003: Tough Block Copolymer Organogels and Elastomers as Short Fiber Composites</u> Invited Speaker: Edward J. Kramer
1:03PM - 1:39PM	<u>B46.00004: Interfacial, Thin Film, and Structural Measurements to Facilitate Polymer Nanomanufacturing</u> Invited Speaker: Christopher Soles
1:39PM - 2:15PM	<u>B46.00005: Self-Healing Polymer Networks</u> Invited Speaker: Francois Toumilhac

24

Monday, February 27, 2012

11:15AM - 2:15PM

**Session B47: Focus Session: Jamming, Glass Transition, and Gelation in Colloids and Soft Matter Systems**

Sponsoring Units: DPOLY

Chair: Peter Schall, University of Amsterdam

Room: 160C

11:15AM - 11:51AM	<u>B47.00001: Geometrical analysis of suspension flows near jamming</u> Invited Speaker: Matthieu Wyart
11:51AM - 12:03PM	<u>B47.00002: Finite Size Effects at the Jamming Transition</u> Carl Goodrich , Sidney Nagel , Andrea Liu
12:03PM - 12:15PM	<u>B47.00003: Non local rheology and near wall fluctuations in microgel jammed suspensions</u> Patrick Tabeling , Choongyeop Lee , Fabrice Monti , Michel Cloitre
12:15PM - 12:27PM	<u>B47.00004: Stability of jammed systems to generalized boundary deformations</u> Oleg Kogan , Sam Schoenholz , Andrea Liu , Sidney Nagel
12:27PM - 12:39PM	<u>B47.00005: Vestige of <math>ST = 0</math> jamming transition at finite temperature in 3D</u> Thomas Caswell , Margaret Gardel , Sidney Nagel , Zexin Zhang , Arjun Yodh
12:39PM - 12:51PM	<u>B47.00006: Localization model for relaxation in glass-forming materials</u> David S. Simmons , Marcus T. Cicerone , Jack F. Douglas
12:51PM - 1:03PM	<u>B47.00007: Lattice Model of Dynamic Heterogeneity in Glassy Systems</u> Nicholas B. Tito , Jane E.G. Lipson , Scott T. Milner
1:03PM - 1:15PM	<u>B47.00008: Building a Colloidal Proxy for Binary Metallic Glasses</u> Ryan Kramb , Katherine Jensen , Logan Ward , Richard Vaia , Daniel Miracle
1:15PM - 1:27PM	<u>B47.00009: Contact processes in crowded environments</u> Shiliyang Xu , B. Chakrabarti , J.M. Schwarz
1:27PM - 1:39PM	<u>B47.00010: Experiments on Rearrangements and Forces in 2D Emulsion Hopper Flow</u> Xia Hong , Kenneth Desmond , Dandan Chen , Eric Weeks
1:39PM - 1:51PM	<u>B47.00011: The Role of Solvent-Solute Interactions on The Behavior of Low Molecular Mass Organo-Gelators</u> Kevin Cavicchi , Li Feng
1:51PM - 2:03PM	<u>B47.00012: Effects of penalty function type on the history-penalized metabasin escape algorithm for supercooled liquids</u> Ravi Heuge , Xi Lin
2:03PM - 2:15PM	<u>B47.00013: Nonlinear effective medium theory of disordered spring networks</u> M. Sheinman , C.P. Broedersz , F.C. MacKintosh

25

Monday, February 27, 2012

11:15AM - 2:15PM

### Session B48: Electrically and Optically Active Polymers

Sponsoring Units: DPOLY  
Chair: Enrique Gomez, Pennsylvania State University  
Room: 161

11:15AM - 11:27AM	<b>B48.00001: Micellar Electrolytes in Organic Electrochemical Transistors</b> Fabio Cicoira , Tarabella Giuseppe , Gaurav Nanda , Salvatore Iannotta , Clara Santato
11:27AM - 11:39AM	<b>B48.00002: Quadratic Electro-Optic Effect in the Nonconjugated Conductive Co-polymer Iodine-doped Styrene-Butadiene-Rubber Measured at 633 nm and 1550 nm</b> Garudutt Telang , Mrinal Thakur
11:39AM - 11:51AM	<b>B48.00003: Photoluminescence of P3HT nanoparticles</b> Irene Dujovne , Joelle Labastide , Mina Baghgar , Aidan McKenna , Austin M. Barnes , D. Venkataraman , Michael D. Barnes
11:51AM - 12:03PM	<b>B48.00004: Crystallizing Conjugated Polymer Chains of P3HT Stretched for Dramatic Enhancements in Optoelectronic Efficiencies</b> Chih-Hung Chang , Arnold C.-M. Yang
12:03PM - 12:15PM	<b>B48.00005: Manipulating meso-structure and electrical conductivity in polymer-acid doped polyaniline by exploiting redox chemistry</b> Jacob Tarver , Joline Fan , Yueh-Lin Loo
12:15PM - 12:27PM	<b>B48.00006: An Integrated Electrochromic Nanoplasmonic Optical Switch</b> Alec Talin , Erich Walter , Amit Agrawal , Ting Xu , Henri Lezec
12:27PM - 12:39PM	<b>B48.00007: Resistive Switching in Ag Nanowire/Polymer Composite Materials</b> Jamie Ford , Rose Mutiso , Karen Winey
12:39PM - 12:51PM	<b>B48.00008: Far-infrared through visible optical characterization of polymer-based electrochromic devices on single-walled carbon nanotube electrodes</b> Zahra Nasrollahi , Svetlana V. Vasilyeva , Evan P. Donoghue , Andrew G. Rinzler , D.B. Tanner
12:51PM - 1:03PM	<b>B48.00009: Consequence of the miscibility and mesostructure of the photoactive layer on organic solar cell performance</b> Enrique Gomez , Derek Kozub , Kiarash Vakhshouri
1:03PM - 1:15PM	<b>B48.00010: Magnetic field alignment of supramolecular perylene/block copolymer complexes for electro-optic thin films</b> Manesh Gopinadhan , Pawel Majewski , Ryan Shade , Emma Dell , Nalini Gupta , Luis Campos , Chinedum Osuji
1:15PM - 1:27PM	<b>B48.00011: Structure/property relationships in high hole mobility regioregular PT based copolymers</b> Louis Perez , Lei Ying , Guillermo Bazan , Edward Kramer
1:27PM - 1:39PM	<b>B48.00012: Electric Field Effect on Adhesion of Poly(ethylene oxide) Physical Hydrogels</b> Victor Barinov , Bilal Marie
1:39PM - 1:51PM	<b>B48.00013: Optical behavior of the conjugated polymer MEH-PPV thin films stretched in bi-layer dewetting by an unstable layer</b> Po-Tsun Chen , Arnold C.-M. Yang
1:51PM - 2:03PM	<b>B48.00014: High pressure optical studies of donor-acceptor polymer heterojunctions</b> Keshab Paudel , Meera Chandrasekhar , Suchi Guha
2:03PM - 2:15PM	<b>B48.00015: Electrical transport properties of FeCl<sub>3</sub> {3}S doped poly(phenylenevinylene-co-3,4-ethylenedioxythiophene)</b> Kyung Ho Kim , Ajeong Choi , Jun-Mo Park , Sung Ju Hong , Joon Beom Shim , Tae-Lim Choi , Yung Woo Park

Monday, February 27, 2012

11:15AM - 2:15PM

### Session B49: Focus Session: Long-time, Entangled Dynamics in Polymers - Rods, Rings, Fibers, Particle Tracking

Sponsoring Units: DPOLY  
Chair: Marina Guenza, University of Oregon  
Room: 162A

11:15AM - 11:27AM	<b>B49.00001: An improved dissipative particle dynamics model for simulation of entangled polymers</b> Jan Andzelm , Yelena Sliozberg , Timothy Sirk , John Brennan , Martin Lisal
11:27AM - 11:39AM	<b>B49.00002: Theory of the nonlinear rheology of topologically entangled rod fluids</b> Ken Schweizer , Daniel Sussman
11:39AM - 11:51AM	<b>B49.00003: Theoretical and computational studies of entangled rod-coil block copolymer diffusion</b> Muzhou Wang , Alfredo Alexander-Katz , B.D. Olsen
11:51AM - 12:27PM	<b>B49.00004: Memory and transient forces in coarse grain simulations of complex polymers</b> Invited Speaker: Wim Briels
12:27PM - 12:39PM	<b>B49.00005: Self-Consistent Field Theory of Gaussian Ring Polymers</b> Jaepup Kim , Yong-Biao Yang , Won Bo Lee
12:39PM - 12:51PM	<b>B49.00006: Self-consistent field theory for polymer dynamics</b> Doug Grzetic , Robert Wickham , An-Chang Shi
12:51PM - 1:03PM	<b>B49.00007: Structure Formation in Semi-Dilute Polymer Solution during Electrospinning</b> Eyal Zussman , Yakov Paley , Arkadii Arinstein , Kim Shuster
1:03PM - 1:15PM	<b>B49.00008: Edge electrospinning from a fluid-filled bowl for high throughput production of quality nanofibers</b> J.R. Bochinski , N.M. Thoppey , R.E. Gorga , L.I. Clarke
1:15PM - 1:27PM	<b>B49.00009: Size-dependent behavior of as-spun nanofiber vs. polymer molecular weight</b> Arkadii Arinstein
1:27PM - 1:39PM	<b>B49.00010: Mechanical properties and morphology of polymer gels</b> Yelena Sliozberg , Timothy Sirk , John Brennan , Jan Andzelm , Randy Mrozek , Joseph Lenhart
1:39PM - 1:51PM	<b>B49.00011: Rapid, accurate single particle tracking based on radial symmetry center determination</b> Raghuvveer Parthasarathy
1:51PM - 2:03PM	<b>B49.00012: Molecular Simulations of Passive Particle Rheology</b> Rajesh Khare , Mir Karim , Tsutomu Indei , Jay Schieber
2:03PM - 2:15PM	<b>B49.00013: NMR-based Molecular Rheology of Entangled Polymers in Bulk and in Nanoscopic Confinement</b> Kay Saalwachter , Marie-Luise Trutschel , Fabian Vaca Chavez

Monday, February 27, 2012

11:15AM - 2:15PM

**Session B50: Focus Session: Nano to Mesoscale Structures in Ordered Systems: Liquid Crystalline Structure and Interactions**

Sponsoring Units: DPOLY  
Chair: Jan Lagerwall, Seoul National University  
Room: 162B

11:15AM - 11:27AM	<u>B50.00001: Molecular Assembly and Liquid Crystal Properties of a Near-IR Absorbing Dye</u> Peter Collings, Elizabeth Mills
11:27AM - 11:39AM	<u>B50.00002: Studies on Sunset Yellow Chromonic liquid crystals by Polarized Raman and X-ray Scattering</u> Mohan Srinivasarao, Xuxia Yao, Jung Ok Park, Leela Joshi, Shin-Woong Kang, Dena Mae Agra-Kooijman, Satyendra Kumar
11:39AM - 11:51AM	<u>B50.00003: Photoisometric liquid crystals integrated with plasmonic nano-structures</u> Gary Walsh, Sylvanus Lee, Brian Kimball, Luca Dal Negro
11:51AM - 12:03PM	<u>B50.00004: Elasticity of Isotropic chromonic liquid crystal Sunset Yellow probed by magnetic Frederiks transition</u> Shuang Zhou, Yu. A. Nastishin, M.M. Omelchenko, L. Tortora, V.G. Nazarenko, O.P. Boiko, T. Ostapenko, S.N. Sprunt, J.T. Gleeson, O.D. Lavrentovich
12:03PM - 12:15PM	<u>B50.00005: Electric Field Induced Stable Micro Rotor in Nematic Liquid Crystal Drops Constrained on Thin Cellulosic Fibers</u> Maria Helena Godinho, Yong Geng, Pedro Almeida, João Figueirinhas, Eugene Terentjev
12:15PM - 12:27PM	<u>B50.00006: Synthesis and investigations of mesogen encapsulated gold nanoparticles</u> Chih-Hao Yu, Chris J. Welch, Bai J. Tang, Chris J. Schubert, Georg H. Mehl
12:27PM - 12:39PM	<u>B50.00007: Nonlinear Diffusion on a Sphere</u> Xiaoyu Zheng, Peter Palffy-Muhoray
12:39PM - 12:51PM	<u>B50.00008: Elastic Torque on a Ferromagnetic Disk within a Nematic Liquid Crystal</u> Joel B. Rovner, Dan S. Borgnia, Clayton P. Lapointe, Daniel H. Reich, Robert L. Leheny
12:51PM - 1:03PM	<u>B50.00009: Anomalous diffusion of colloidal particles in a nematic liquid crystal</u> Israel Lazo, Oleg D. Lavrentovich, Taras Turiv, Alexander Brodin, Vassili Nazarenko
1:03PM - 1:15PM	<u>B50.00010: Colloids at a Chiral Liquid Crystal-Isotropic Liquid Interface</u> Anne Pawsey, Juho Lintuvuori, Tiffany Wood, Job Thijsen, Davide Marenduzzo, Paul Clegg
1:15PM - 1:27PM	<u>B50.00011: Deformable Colloids in the Presence of a Liquid Crystal</u> Frances Mackay, Colin Denniston
1:27PM - 1:39PM	<u>B50.00012: Multistable alignment of nematic liquid crystals on patterned surfaces</u> Timothy Atherton
1:39PM - 1:51PM	<u>B50.00013: Direct Nanomechanical Measurement of an Anchoring Transition in a Nematic Liquid Crystal Subject to Hybrid Anchoring Conditions</u> Bruno Zappone, Marina Ruths
1:51PM - 2:03PM	<u>B50.00014: Unified theory of chiral smectic A monolayers and <math>\pi</math>-wall defects</u> C. Nadir Kaplan, Mark J. Zakhary, Thomas Gibaud, Edward Barry, Robert B. Meyer, Zvonimir Dogic
2:03PM - 2:15PM	<u>B50.00015: Molecular Tilt on Monolayer-Protected Nanoparticles</u> Luca Giomi, Mark Bowick, Xu Ma, Apala Majumdar

28

Monday, February 27, 2012

11:15AM - 2:15PM

**Session B53: Disordered and Glassy Systems II**

Sponsoring Units: GSNP  
Chair: Craig Maloney, Carnegie Mellon University  
Room: 153B

11:15AM - 11:27AM	<u>B53.00001: Nanoscale dynamics of binary metallic glass Cu<sub>50</sub>xHf<sub>50-1-x</sub> films</u> Jacob Burgess, Chris Holt, David Fortin, Greg Popowich, Erik Lubber, David Mitlin, Mark Freeman
11:27AM - 11:39AM	<u>B53.00002: Isothermal Pressurizations and Glass Transition Dynamics in the Intermediate Glass-Forming Liquid Glycerol</u> William Oliver, Titus Morris, Tim Ransom
11:39AM - 11:51AM	<u>B53.00003: Fast Scanning Calorimetry study of non-equilibrium relaxation in 2-Ethyl-1-Hexanol</u> Vlad Sadtchenko, Deepanjan Bhattacharya, Candace Pane
11:51AM - 12:03PM	<u>B53.00004: Fluctuating Relaxation Times in Glass-forming Liquids</u> Gcina A. Mavimbela, Horacio E. Castillo, Azita Parsaeian
12:03PM - 12:15PM	<u>B53.00005: Mapping dynamical heterogeneity in structural glasses to correlated fluctuations of the time variables</u> Karina E Avila, Horacio E Castillo, Azita Parsaeian
12:15PM - 12:27PM	<u>B53.00006: High Pressure Brillouin Scattering in the Fragile Glass Former Cumene</u> Tim Ransom, William Oliver
12:27PM - 12:39PM	<u>B53.00007: Molecular modeling of ultra-stable vapor deposited glasses</u> Sadanand Singh, Devin Averett, Chi-cheng Chiu, Juan J. de Pablo
12:39PM - 12:51PM	<u>B53.00008: Dynamic heterogeneity above and below the mode-coupling temperature</u> Elijah Flenner, Grzegorz Szamel
12:51PM - 1:03PM	<u>B53.00009: Fast Scanning Calorimetry studies of glassy and supercooled water</u> Deepanjan Bhattacharya, Candace Payne, Vlad Sadtchenko
1:03PM - 1:15PM	<u>B53.00010: Volume and structural analysis of super-cooled water under high pressure</u> Solomon F. Duke, Mesfin Tsigie
1:15PM - 1:27PM	<u>B53.00011: A field theory approach to the dynamics of classical particles</u> David McCowan, Gene Mazenko
1:27PM - 1:39PM	<u>B53.00012: N-Q-R measurements of low energy Chiral structures in powdered glassy As<sub>2</sub>Se<sub>3</sub></u> Chris Nelson
1:39PM - 1:51PM	<u>B53.00013: Slow relaxations in glasses: full aging and beyond</u> Yoseph Imry, Ariel Amir, Yuval Oreg, Stefano Borini
1:51PM - 2:03PM	<u>B53.00014: Voids and molecular hydrogen in hydrogenated amorphous silicon</u> Rajendra Timilsina, Parthapratim Biswas
2:03PM - 2:15PM	<u>B53.00015: Structural and microscopic relaxations in glycerol: an IXS study</u> Alessandro Cunsolo

29

Monday, February 27, 2012

2:00PM – 5:00PM

POSTER SESSION: *Exhibit Hall C*

C1.00001: POLYMERS AND SOFT MATTER PHYSICS

C1.00002: Partition function zeros and phase transitions of a square-well polymer

Pyie-Phyo Aung , Mark Taylor

C1.00003: Modeling Amphiphilic Solutes in a Jagla Solvent

Zhiqiang Su , Sergey V. Buldyrev , Pablo G. Debenedetti , Peter J. Rossky , H.Eugene Stanley

C1.00004: Localized entrapment of green fluorescent protein within nanostructured polymer films

John Ankner , Veronika Kozlovskaya , Hugh O'Neill , Qiu Zhang , Eugenia Kharlampieva

C1.00005: Time-resolved WAXD/SAXS Characterization on the Crystallization of Silica Filled HDPE Nanocomposite

Xiaowei Li , Christian Burger , Yimin Mao , Benjamin Hsiao

C1.00006: The CHX Beamline at NSLS-II: a Tool to probe Structure and Dynamics in Soft-Condensed Matter

Andrei Flueraşu , Lutz Wiegart

C1.00007: Ionic conductivity of imidazole-functionalized liquid crystal mesogens

Supacharee Roddecha , Mitchell Anthamatten

C1.00008: New Soft Matter Soft X-ray Scattering Facility and the Advanced Light Source with Real Time Analysis

Eliot Gann , Anthony Young , Brian Collins , Hongping Yan , Howard Padmore , Harald Ade , Alex Hexemer , Cheng Wang

C1.00009: Phase behavior of silica-polypeptide colloidal particles immersed in liquid crystal forming mesogens

Melissa Collins , Erick Soto-Cantu , Paul Russo

C1.00010: Morphology and charge carrier transport in eumelanin thin films

Clara Santato , Julia Wuensche , Federico Rosei

C1.00011: A Novel 3D-Lattice Model of Fibrillar Polymeric Material

C. Brad Bennett , James Kruczek , D.A. Rabson , W. Garrett Matthews , Sagar A. Pandit

C1.00012: Controlling adhesion and friction using nanostructured polymer layers: role of polymer conformation and ionization

Suzanne Giasson , Ibrahim Ba , Olga Borozenko

C1.00013: Polymerization at Vapor/Liquid Interfaces

Malancha Gupta

C1.00014: Molecular Interpretation of Gas Sorption into Polymer Glasses: Mono Sorption Model

Isaac Sanchez , Yingying Jiang , Don Paul

C1.00015: PolyGraph: a Polymer Visualization system

Ashok Cutkosky\* , Najeeb Tarazi\* , Erez Lieberman Aiden

C1.00016: Confinement of Block Copolymer Nanocomposites within Nanoporous Templates

Seyedali Monemian , LaShanda Korley

C1.00017: Surface Modification for Controlling the Orientation of Block Copolymers in thin film and in Cylindrical Nanopores

Xin-Guan Lin , Feng-Cheng Lin , Shih-Huang Tung

C1.00018: Fast Fabrication of Hierarchically-Structured Nanocomposites in Thin Films

Joseph Kao , Peter Bai , Seong-Jun Jeong , Vivian Peng-Wei Chuang , Ting Xu

C1.00019: Fabrication of Three-Dimensional Bilayered Nanostructures via Block Copolymers

Sanghoon Woo , Sumi Lee , Eun Ae Kwak , Hyunjung Jung , Frank Leibfarth , Craig Hawker , June Huh , Du Yeol Ryu , Joona Bang

C1.00020: Fabrication of square arrays of inverted pyramids using ABC triblock terpolymer

Hong Kyoon Choi , Caroline Ross , Hang Yu , Carl Thompson

C1.00021: Hierarchical buckling of block copolymer thin films on PDMS substrates

DoKyeong Kwon , Hyo seon Suh , Kookheon Char

C1.00022: Surface Properties of Bottlebrush Copolymer Thin Films

Xianyu Li , Stacy Prukop , Rafael Verduzco

C1.00023: Self-assembled nanostructures in a cross-linkable block copolymer

Chunlin He , Ian Campbell , Mark Stoykov

C1.00024: Tuning the Morphology of Solvent Annealed Thin Films of Polystyrene-b-Polyethylene Oxide with Controlled Saturations of Water and Toluene Vapors

Brian C. Stahl , Edward J. Kramer , Craig J. Hawker

C1.00025: Laterally confined diblock copolymers

Roberta Dessi , Marco Pinna , Andrei Zvelindovsky

C1.00026: Self-Assemble Behavior of Polystyrene-tethered Hydrophilic POSS Nanoparticle in Thin Film

I-Fan Hsieh , Xinfei Yu , Kan Yue , Stephen Cheng

C1.00027: Morphology of ABC linear triblock polymer melts: self-consistent-field theoretic simulation approach

Mouge Mohagheghi , Bamin Khomami

C1.00028: Hierarchical silver concentric ring patterns of block copolymer microdomains for high efficient SERS

Dusik Bac , Jin Kon Kim

C1.00029: Effect of tacticity on the interfacial structural properties of adsorbed polystyrene thin films

Yergou Tatek , Mesfin Tsige

C1.00030: Memory Effects of Multistage Crosslinking and Scission on Stress in Polymer Networks

Joanne Budzien

C1.00031: Mapping of grain boundary energies of block copolymer/homopolymer blends using triple junction analysis

Hyung Ju Ryu , Michael R. Bockstaller

C1.00032: Reduction of Dielectric Hysteresis in Multilayered Film via Nanoconfinement

Lei Zhu , Mathew Mackey , Donald Schuele , Lionel Flandin , Mason Wolak , James Shirik , Anne Hiltner , Eric Baer

C1.00033: Fullerene-based shape amphiphiles towards hierarchical supramolecular assemblies

Chih-Hao Hsu , Chien-Lung Wang , Hao-Jan Sun , Yingfeng Tu , Stephen Cheng

C1.00034: Chain Packing and Trajectory of Isotactic Polypropylene  $\alpha$  Crystals studied by Solid-State NMR

Zhen Li , Yan Cao , Toshikazu Miyoshi , Stephen Cheng

C1.00035: Tube Visualization and Properties from Isoconfigurational Averaging

Jian Qin , Windsor Bisbee , Scott Milner

C1.00036: Unfolding of Collapsed Polymers in Shear Flow Enhanced by Colloidal Suspensions: Effect of Colloid Banding Structures in Confining Channels

Hsieh Chen , Alfredo Alexander-Katz

C1.00037: Slippage of polymers: Influence of the chemical structure

Mischa Klos , Oliver Bäumchen , Matthias Lessel , Karin Jacobs

C1.00038: Glass transition in ultra thin polymeric films measured by differential AC-Chip calorimetry

Christoph Schick , Heiko Huth , Dongshan Zhou , Mathias Ahrenberg

C1.00039: Viscoelastic behavior of polymer in confined system

Guiduk Yu , Bong Seock Kim , Jungwook Kim , Kyusoon Shin

C1.00040: Confinement effects on thermal frontal polymerization

Preeta Datta , Kirill Efimenko , Jan Genzer

C1.00041: Temperature Dependence of Polymer Diffusion in MWCNT/PS Nanocomposites

Wei-Shao Tung , Nigel Clarke , Russell J. Composto , Karen I. Winey

[C1.00042: Effect of confinement on reaction rates within polymer nanotemplates](#)

Cecile Malardier-Jugroot , Xia Li

[C1.00043: Influence of Thermal History in Crystallization of Physically Confined 2-Decanol](#)

Samuel Amanuel , Alexandra Safiq , Hillary Bauer , Jargalsaikhan Dulmaa , Amer Khraisat

[C1.00044: Polymer Diffusion in Nanocomposites having attractive particle- polymer interactions](#)

Chia-Chun Lin , Sangah Gam , Jeffrey S. Meth , Nigel Clarke , Karen I. Winey , Russell J. Composto

[C1.00045: Anomalous yet Brownian](#)

Sung Chul Bae , Bo Wang , Juan Guan , Steve Granick

[C1.00046: Glass Transition Temperature Gradient evidenced by NMR and Calorimetry](#)

Francois Lequeux , Helene Montes , Aurelie Papon , Laurent Guy , Kay Saalwachter

[C1.00047: End Group Effects on the Hydrogel Formation of PEO-PPO-PEO Triblock](#)

[Copolymers](#)

Aaron Cohen , Chang Y. Ryu , Gyoo Y. Jung , Hee Sung Hwang

[C1.00048: Self-assembly of polystyrene-\*b\*-poly\(4-vinylpyridine\) and polystyrene-\*b\*-](#)

[poly\(ethylene oxide\) in small molecules melt](#)

Cheng-Hao Yu , Yu-Hao Chuang , Shih-Huang Tung

[C1.00049: Nanoparticle-Loaded Multifunctional Block Copolymer Micelles](#)

Jinhye Bae , Jimmy Lawrence , Caroline Miesch , Alexander Ribbe , Weikun Li , Todd Emrick , Jintao Zhu , Ryan Hayward

[C1.00050: Phase Behavior of Star-shaped polystyrene-\*t\*extit\[\*b\*lock\]-\*p\*oly\(methyl methacrylate\)](#)

[Copolymers](#)

Sangshin Jang , Hongchul Moon , Youngmin Lee , Jin Kon Kim

[C1.00051: Kinetics of micellization for diblock copolymers in selective solvents studied using self-consistent field theory](#)

Raghuram Thiagarajan , David Morse

[C1.00052: Blending of Diblocks and Triblocks with identical hydrophilic block for multicompartment and multigeometry nanostructures](#)

Zheng Zeng , Jiahua Zhu , Yingchao Chen , Shiyi Zhang , Darrin Pochan , Karen Wooley

[C1.00053: Kinetic control of block copolymer self-assembly into multicompartment and novel geometry nanoparticles](#)

Yingchao Chen , Xiaojun Wang , Ke Zhang , Karen Wooley , Jimmy Mays , Virgil Percec , Darrin Pochan

[C1.00054: Dynamic Processes in Diblock Copolymer Micelles with a Semi-Crystalline Core](#)

Avantika Singh , Megan Robertson

[C1.00055: Long Circulating Micelles based on Helix Bundle-Forming Peptide-Polymer](#)

[Conjugates](#)

Jessica Shu , He Dong , Nikhil Dube , Jai Woong Seo , Yu Fei Ma , Katherine Ferrara , Ting Xu

[C1.00056: Physics of Polymersomes: lateral segregation experiments and raft simulations](#)

Dennis Discher

[C1.00057: Controlling the Morphology of TiO<sub>2</sub> Nanorods/Polythiophene Composites for Bulk Heterojunction Solar Cells Using H-Bonding](#)

Ying Lin , Qingshuo Wei , James J. Watkins

[C1.00058: Magnetic Nanoparticle/Block Copolymer Hybrid Materials for the Fabrication of Electromagnetic Devices](#)

Xinyu Wang , David Mesguich , James Watkins

[C1.00059: Novel Approach to Quantify Dispersion of Spherical Nanoparticles in Polymer Nanocomposites](#)

Deniz Rende , Nihat Baysal , Rahmi Ozisik

[C1.00060: Mesoscopic Iron-Oxide Nanorod Polymer Nanocomposite Films](#)

Robert Ferrier , Kohji Ohno , Russell Composto

[C1.00061: Additive Driven Self Assembly in Poly\(ethylene glycol \) monomethyl ether monomethacrylate-block-Poly\(ethyl methacrylate\) Copolymers](#)

Cheng Li , Wenxu Zhang , Edward Coughlin , James Watkins

[C1.00062: Correlating nanoscale structural changes to macromolecular gel formation in Laponite containing Pluronic F127 photogel systems](#)

K. Anne Juggernaut , Brian Love

[C1.00063: Gold-Decorated Supraspheres of Block Copolymer Micelles](#)

M.P. Kim , D.J. Kang , A.G. Kannon , D.-W. Jung , G.R. Yi , B.J. Kim

[C1.00064: Self-Assembly of CdSe Nanorods by Controlled Solvent Evaporation and Applied Electric Field](#)

Sirinya Chantarak , Todd Emrick , Thomas P. Russell

[C1.00065: Emulsions of Polymer Blends Stabilized by Janus Particles](#)

Kyle Bryson , Ryan Hayward , Thomas Russell

[C1.00066: Crystallization of Polymers at liquid/liquid interface templated by single-walled carbon nanotubes](#)

Wenda Wang , Christopher Li

[C1.00067: Effect of Nanoparticle Size on Nanoparticle Spatial Distribution in a Diblock Copolymer Supramolecular Thin Film](#)

Peter Bai , Joseph Kao , Matthew Lucas , Paul Alivisatos , Ting Xu

[C1.00068: Direct Nanorod Assembly Using Block Copolymer-Based Supramolecules](#)

Kari Thorkelsson , Alexander Mastroianni , Peter Ercius , Ting Xu

[C1.00069: Magnetically aligned polymers and nanocomposites for energy harvesting and energy storage applications](#)

Pawel Majewski , Manesh Gopinadhan , Candice Pelligra , Shanju Zhang , Lisa Pfeifferle , Luis Campos , Chinedum Osuji

[C1.00070: Absorption of nanoparticles onto curved surfaces](#)

Chih-Yu Jao , Jihaeng Yi , Ishac L. N. Kandas , Bo Liu , Yong Xu , Hans D. Robinson

[C1.00071: Thermodynamics of ligand-coated nanoparticle complexation with lipid bilayers](#)

Reid Van Lehn , Randy Carney , Kislou Voitchovsky , Francesco Stellacci , Maria Ricci , Alfredo Alexander-Katz

[C1.00072: Morphological robustness in polythiophene/fullerene mixtures](#)

Sameer Vajjala Kesava , Derek Kozub , Cheng Wang , Alexander Hexemer , Enrique Gomez

[C1.00073: Thin-film fabrication and electric field induced poling of an azo dye-doped cyclic olefin copolymer](#)

Jonathan Choi , Bastian Braeuer , Padma Gopalan , David McGee

[C1.00074: Temperature Dependent Study of Regioregular and Regiorandom Poly \(3-hexyl thiophene\)s](#)

Xiaobo Shen , Thomas Russell

[C1.00075: Additive-Driven Assembly of Block Copolymer-Nanoparticle Hybrid Materials for Solution Processable Floating Gate Memory](#)

Qingshuo Wei , Ying Lin , Eric Anderson , Alejandro Briseno , Samuel Gido , James Watkins

[C1.00076: Classification of Semiconducting Polymeric Mesophases to Optimize Device Post-Processing](#)

Chad Snyder , Ryan Nieuwendaal , David VanderHart , Lee Richter , R. Joseph Kline , Dean DeLongchamp , Martin Heeney , Iain McCulloch

[C1.00077: Conformation Effects on the Photoluminescence Behavior of Anchored MEH-PPV Pancakes and Brushes](#)

Kuo Sheng Shih , Po-Tsun Chen , Arnold C.-M. Yang

[C1.00078: Properties of Alq<sub>3</sub> waveguides containing embedded metal layers](#)

Niranjala Wickremasinghe , Xiaosheng Wang , Jonathan Thompson , Heidrun Schmitzer , Hans Peter Wagner

[C1.00079: Mechanical deformations of the metal cathodes of polymer light emitting devices during stability tests](#)

Zac Barcikowski , Jacob Cox , Marian Tzolov

[C1.00080: N-type Organic Field Effect Transistor Using Densely Aligned Carbon Nanotube Array Electrodes](#)

Edwards G. Jimenez , Biddut K. Sarker , Saiful I. Khondaker

**C1.00081: Thermal Analysis of defects in Organic Light Emitting Diodes using Thermoreflectance imaging technique**  
Achyut Shrestha , Andrew Davis , Kenneth Carter , Janice Hudgings

**C1.00082: Correlation of interfacial width with device characteristics in all-polymer thin film transistors based on P(NDI2OD-T2)**  
Hongping Yan , Torben Schuettfort , Christopher McNeill , Harald Ade

**C1.00083: Effect of bridging atom identity on the morphology of solution-processed small molecule bulk heterojunction photovoltaics**  
Gregory Su , Nancy Eisenmenger , Gregory Welch , Guillermo Bazan , Edward Kramer , Michael Chabinye

**C1.00084: High Optical Quality Organic Thin Films for Nonlinear Photonics Fabricated by Molecular Beam Deposition**  
Marten Beels

**C1.00085: Nanoscopic Assembly of Organic Semiconductors for Organoelectronic Devices**  
Benjamin J. Rancatore , Clayton E. Mauldin , Jean M.J. Fréchet , Ting Xu

**C1.00086: Connecting the Nanodots: Programmable Nanofabrication of Fused Metal Shapes on DNA Templates**  
Mauricio Pilo-Pais , Sarah Goldberg , Enrique Samano , Henok Mebrahtu , Thomas LaBean , Gleb Finkelstein

**C1.00087:  $\pi$ -Conjugated Copolymers of Thiophene: Effect of Chain Architecture on the Physical and Optoelectronic Properties for Photovoltaic Applications**  
Jojo Amonoo , Emmanouil Glynos , Chelsea Chen , Anton Li , Jonas Locke , Anne McNeil , Peter Green

**C1.00088: Organic-Inorganic Nanocomposites by Placing Conjugated Polymers in Intimate Contact with Quantum Rods**  
Zhiqun Lin , Xinchang Pang , Lei Zhao

**C1.00089: Molecular sieve/sulfonated poly(ether ketone ether sulfone) composite membrane as proton exchange membrane**  
Sairung Changkhamchom , Anuvat Sirivat

**C1.00090: Studies on Morphology of Three-component Polymer Solar Cells**  
Yu Gu , Thomas Russell

**C1.00091: Diketopyrrolopyrrole (DPP)-based low band gap polymers for efficient solar cells**  
Feng Liu , Yu Gu , Cheng Wang , Wei Zhao , Dian Chen , Alejandro Briseno , Thomas Russell

**C1.00092: From carbon dioxide to organic compounds: Novel cathode materials for microbial electrosynthesis**  
Mengmeng Cui , Tian Zhang , Huarong Nie , Haiyun Lu , Derek Lovley , Thomas Russell

**C1.00093: Dynamics of Poly(ethyleneoxide) in the Presence of LiTFSI: Neutron Spin Echo and Dielectric Spectroscopy Study**  
Changwoo Do , Xiao-Guang Sun , Michael Ohl , Jürgen Allgaier , Marion Götz , Peter Lunkenheimer , Alois Loidl , Dieter Richter

**C1.00094: Effect of Solvating Plasticizers on Ion Conduction of Polysiloxane Single-ion Conductors with Lithium Tetraperthyl Borate and Cyclic Carbonate Side Chains**  
U. Hyeok Choi , Siwei Liang , Michael O'Reilly , Karen Winey , James Runt , Ralph Colby

**C1.00095: Fine-tuning Structures from Molecules to Nanophases: Insight into the Origin of Superior Organic Photovoltaic Efficiency**  
Wei Chen , Seth Darling

**C1.00096: Tuning Ion Conducting Pathways Using Holographic Polymerization**  
Derrick Smith , Christopher Li , Bin Dong , Timothy Bunning

**C1.00097: Tuning interfacial interactions between conjugated polymers and inorganic nanocrystals for control over bulk thermoelectric properties**  
Boris Russ , Nelson Coates , Shannon Yee , Jeffrey Urban , Rachel A. Segalman

**C1.00098: Donor-acceptor block copolymer self-assembly in polymer-based photovoltaics**  
Michael A. Brady , Sung-Yu Ku , Justin E. Cochran , Neil D. Treat , Craig J. Hawker , Michael L. Chabinye , Edward J. Kramer

**C1.00099: Synthesis and Characterization of a Systematic Series of All-Conjugated Diblock**

**Copolymers**  
Kendall Smith , Rafael Verduzco

**C1.00100: Incorporation of Functionalized Metal Oxides into Poly(Ethylene Oxide) Based Solid Polymer Electrolytes for Lithium-Ion Batteries**  
Eric Anderson , YuYing Tang , Craig Versek , Mark Tuominen , Samuel Gido , James Watkins

**C1.00101: Morphology Study of Bulk Heterojunction Solar Cells Based on PCDTBT**  
Hsin-Wei Wang , Thomas Russell , Todd Emrick

**C1.00102: Comb-branched Polymer Electrolytes: Architectural Changes That Promote Increased  $\text{Li}^+$  Transport**  
Robert DeMille , Sowmya Murthy , Dmitry Bedrov , Grant Smith

**C1.00103: Fluid Properties in Electromagnetic Fields**  
Sean Cantu , samina masood

**C1.00104: Electro-coflow as a route to drop generation**  
Alberto Fernandez-Nieves , Venkata R. Gundabala , Josefa Guerrero

**C1.00105: Water nano-hydrodynamics: The interplay between interfacial viscosity, slip and chemistry**  
Hsiang-Chih Chiu , Deborah Ortiz-Young , Elisa Riedo

**C1.00106: Investigating the hydrodynamics of asymmetrically driven polymer brushes in micro-channels**  
Ibrahim Souki , Mohamed Laradji , P.B. Sunil Kumar

**C1.00107: Solid Polymer Electrolytes by Self Assembly of Multi-Ionic Janus POSS Li-Salts in Polyethylene Oxide**  
Stephanie Wunder , Parameswara Rao Chinnam

**C1.00108: Molecular-based polyhedral crystalline colloids**  
Melinda Sindoro , Nobuhiro Yanai , Steve Granick

**C1.00109: Molecular dynamic simulations of hydrophilically decorated poly-dots**  
Sidath Wijesinghe , Dvora Perahia , Gary S. Grest

**C1.00110: Rheology of cube shaped particles in a suspension**  
Rajesh Mallavajula , Donald Koch , Lynden Archer

**C1.00111: Optical Force Probe Microscopy of the Pericellular Matrix**  
Louis T. McLane , Patrick Chang , Anna Granqvist , Heike Boehm , Anthony Kramer , Jennifer E. Curtis

**C1.00112: Mapping optical trapping energy of nanoparticles via confocal microscopy**  
Min Yao Lim

**C1.00113: Structural analysis of three-dimensional photonic crystals in nature**  
Beom-Jin Yoon , Jung Ok Park , Mohan Srinivasarao

**C1.00114: Structure and Dynamics of Polymer-Coated Nanoparticles in Ionic Liquids Studied by In-Situ Electron Microscopy**  
Paul Kim , Thomas Russell , David Hoagland

**C1.00115: Polymer Conformation near the Critical Demixing Point of a Binary Solution**  
Lilin He , Gang Cheng , Yuri Melnichenko

**C1.00116: Fluorescent Polystyrene Sulfonate for Polyelectrolyte Studies**  
Wayne Huberty , Xiaowei Tong , Sreelatha Balamurugan , Donghui Zhang , Paul Russo

**C1.00117: Electromagnetic Propagation of Waves in Helical Stochastic**  
Reyes Adrian , David Mendez

**C1.00118: Flow Instability of Soft Gels from Pluronic F108 Aqueous Solution Under Steady Shear**  
Hanjin Park , Gyoo Yeol Jung , Chang Yeol Ryu

**C1.00119: Fourth-order Fluctuations near the Colloidal Glass Transition**  
Chris Wagenbach , Nathan Israeloff

**C1.00120: Migration of Surfactant Vesicles during spontaneous emulsification**  
Dominik Michler , Noushine Shahidzadeh , Rudolf Sprik , Peter Schall , Daniel Bonn

**C1.00121: Controlling Droplet Impact with Polymer Additives**

Michael Smith , Volfrango Bertola

[C1.00122: Glints of light reveal properties of coiled electrospinning jets in flight](#)

Darrell H. Reneker , Kaiyi Liu

[C1.00123: Digital Reconstruction of 3D Polydisperse Dry Foam](#)

A. Chicco , K. Feitosa , A.E. Roth , P.T. Korda , D.J. Durian

[Preview Abstract](#)

[C1.00124: Asymptotic Behavior in Liquid Drop Coalescence](#)

Joseph Paulsen , Justin Burton , Sidney Nagel , Santosh Appathurai , Michael Harris , Osman Basaran

[C1.00125: Carbon nanotube-induced chirality and macroscopic helical twist in achiral liquid crystals](#)

Rajratan Basu , Krysta Boccuzzi , Sameh Ferjani , Robert Lemieux , Rolfe Petschek , Charles Rosenblatt

[C1.00126: Pretransitional Clusters in Multicolor Liquid Crystalline Honeycombs](#)

Goran Ungar , Xiangbing Zeng , Feng Liu , Robert Kieffer , Constance N<sup>o</sup>urnberger , Carsten Tschierke , Gillian Gehring

[C1.00127: Compaction of DNA with Lipid Modified Silica Nanoparticles](#)

Sushma Savarala , Stephanie L. Wunder , Mare Ilies

[C1.00128: Tunable and regenerative DNA zipper based spring](#)

Preston Landon , Alexander Mo , Srinivasan Ramachandran , Ratnesh Lal

[C1.00129: Single particle tracking for a particle in a thermo-osmotic trap](#)

Mark Nolan Confesor , Pik-Yin Lai , C.K. Chan

[C1.00130: Controlled Transport of Functionalized Nanochannel through Lipid Membrane](#)

Meenakshi Dutt , Olga Kuksenok , Anna C. Balazs

[C1.00131: Molecular Dynamics Simulations of Phosphatidylinositol Bisphosphate \(PIP2\)](#)

David Slochower , Paul Janmey

[C1.00132: Divalent cation-induced cluster formation by polyphosphoinositides in model membranes](#)

Yu-Hsiu Wang , Paul Janmey

[C1.00133: Driven Brownian transport through arrays of symmetric obstacles](#)

Steffen Martens , Pulak K. Ghosh , Peter H<sup>o</sup>anggi , Fabio Marchesoni , Franco Nori , Lutz Schimansky-Geier , Gerhard Schmid

[C1.00134: Hydrophobic Drug Encapsulation Mechanisms of an Injectable Self-Assembling Peptide Hydrogel](#)

Jessie E.P. Sun , Joel P. Schneider , Darrin J. Pochan

[C1.00135: PNIPAM: an amphiphilic polymer probing the mean energetic state of water](#)

Irmgard Bischofberger , Paolo de los Rios , Ilian Jelezarov , Veronique Trappe

[C1.00136: Single molecule discrimination as the sequential hypothesis testing, maximum information gain measurement](#)

Alexei Goun

[C1.00137: Force extension response of single self-associating polymer chains](#)

Charles Sing , Alfredo Alexander-Katz

[C1.00138: Modeling the Strength of  \$\beta\$ -sheet Structures in Silk Crystals and Protein](#)

Molecules

David Grubb

[C1.00139: Searching DNA by Brownian Motion of Transcription Factors](#)

Robijn Bruinsma , Alexander Grosberg

[C1.00140: Anomalous Freezing Behavior of Nanoscale Liposomes](#)

Eric Spangler , Mohamed Laradji , Sunil Kumar

[C1.00141: Desalination membranes from functional block copolymer via non-solvent induced phase inversion](#)

Hyemin Sung , Justin Poelma , Frank Leibfarth , Craig Hawker , Joona Bang

[C1.00142: Morphological study on a phospholipid mixture and their Dependence of](#)

[Temperature, Concentration and Chemical Composition](#)

Ying Liu , Yongkun Yang , Mu-Ping Nieh

[C1.00143: The Effect of Short-Chain Lipid on the Morphology of Bicellar Mixtures](#)

Ming Li , Hannah Morales , John Katsaras , Peter Macdonald , Mu-Ping Nieh

[C1.00144: Rheology of Vimentin Intermediate Filament Networks](#)

Huayin Wu

[C1.00145: Force Dependent Changes in Non-Erythroid Spectrin and Ankyrins](#)

Eleni Degaga , Martin Forstner

[C1.00146: Dynamics and Structure of Disordered Peptides from Two-Dimensional Infrared Spectroscopy](#)

Mike Reppert , Joshua Lessing , Chunte Peng , Kevin Jones , Carlos Baiz , Andrei Tokmakoff

[C1.00147: Vibrational Coherence Spectroscopy Investigation of Cytochrome c equilibrium Unfolding](#)

Yuhan Sun , Karunakaran Venugopal , Paul M. Champion

[C1.00148: Protein Dynamics Studied via a Disclination Network Based Approach](#)

Rahmi Ozisik , Osman Burak Okan , Aravind Rammohan

[C1.00149: Acoustic Force Microscopy in Aqueous Environments to Determine Protein Folding Dynamics](#)

Stefan Zauscher , Zehra Parlak , Jianming Zhang , Terry Oas

[C1.00150: Analysis of Soybean Microtubule Persistence Length: New Evidence on the Correlation between Structural Composition and Mechanical Properties](#)

Mitra Shojania Feizabadi , Carly Winton , Jimmy Barrientos

[C1.00151: Conformational response of a clay binding protein \(EGF\) by a coarse-grained Monte Carlo simulation](#)

Barry Farmer , Lawrence Drummy , Rajesh Naik , Madhavi Kadakia , Ras Pandey

[C1.00152: Amphiphilic Peptide-Polymer Conjugates with Side-Conjugation](#)

Nikhil Dube , Andrew Presley , Jessica Shu , Ting Xu

[C1.00153: Biocompatibility of Titanium](#)

Fereydoon Namavar , Renat Sabirianov , Denes Marton , Alexander Rubinstein , Kevin Garvin

[C1.00154: Partially-Functionalized Isotactic Polystyrene with Blocky Comonomer Segments](#)

Ariel Siegel , Wayne Powers , Chang Y. Ryu

[C1.00155: Rigid amorphous fraction of Nylon 11 determined from TMDSC](#)

Bin Mao , Peggy Cebe

[C1.00156: Structure of Oriented PLA/Graphene Nanocomposite Fibers](#)

Qian Ma , Marek Pyda , Bin Mao , Erika Simona Cozza , Orietta Monticelli , Peggy Cebe

[C1.00157: The Role of Surface Charge of Nucleation Agents on the Crystallization Behavior of Poly\(vinylidene fluoride\)](#)

Ying Wu , Shaw Ling Hsu

[C1.00158: Characterization of aging behavior associated with multi-layered polymer laminates](#)

Ying Jin , Ying Wu , Shaw Ling Hsu

[C1.00159: Optically Fixable and Optically Elastic Photomechanical Responses in Azobenzene Liquid Crystal Polymer Networks](#)

Timothy White , Kyung Min Lee , Richard Vaia , Timothy Bunning

[C1.00160: Effect of an external field on nematic order in semiflexible polymers](#)

Jutta Luettmer-Strathmann , Kiran Khanal

[C1.00161: The evaluation of the dynamic data near T<sub>g</sub> from a new aspect](#)

Ben Xu , Gregory B. McKenna

[C1.00162: Formation of Stable Polymer Glasses via Matrix Assisted Pulsed Laser Evaporation](#)

Kimberly Shepard , Yunlong Guo , Rodney Priestley

[C1.00163: The evaluation of the dynamic data near T<sub>g</sub> {g}: A different perspective](#)

Ben Xu , Gregory B. McKenna

[C1.00164: A configurational entropy theory for the non-Arrhenius relaxation in disordered](#)



## systems

Yizhen Wang , X. Frank Zhang , Jinxiu Zhang

[C1.00165: Purification and Fractionation of PEO-PPO-PEO Triblock Copolymers](#)

Chang Yeol Ryu , Hanjin Park , Gyoo Yeol Jung

[C1.00166: Size Interplay between Polymer and Nanopores for the Band Broadening of SEC](#)

Ian Weiss , Chang Yeol Ryu , Taihyun Chang

[C1.00167: SANS Mapping of Orientation and Relaxation of Polymer Chains upon Uniaxial Extension](#)

Howard Wang , Liwei Huang , Yangyang Wang , Hao Sun , Shi-Qing Wang , Dazhi Liu , Carrie Gao , Ke An

[C1.00168: X-ray scattering investigation of structural relaxation in an ordered block copolymer melt subjected to uniaxial extensional flow](#)

Wesley Burghardt , Erica McCready

[C1.00169: Comparative study of polymer chain dynamics in aqueous solutions by FPR and DLS](#)

Kiril Strelitzky , Ryan McDonough , Rafael Cueto , Paul Russo

[C1.00170: Silicone Elastomer Networks with Tunable Modulus for Cell Mobility Studies](#)

Julie N.L. Albert , Kirill Efimenko , Jan Genzer

[C1.00171: New Insights into Chain Order Dynamics and Structural Development in Sulfur-Vulcanized Natural Rubber Latex using Multiple Quantum NMR and Synchrotron X-Ray Diffraction](#)

Justin Che , Shigeyuki Toki , Juan Valentin , Justo Brasero , Lixia Rong , Benjamin S. Hsiao

[C1.00172: Chemotaxis of active, self-oscillating polymer gels in solution](#)

Pratyush Dayal , Amitabh Bhattacharya , Olga Kuksenok , Anna C. Balazs

[C1.00173: Effect of Thickness on the Thermal Properties of Hydrogen Bonded Layer by Layer Assemblies](#)

Choonghyun Sung , Ajay Vidyasagar , Katelin Hearn , Jodie Lutkenhaus

[C1.00174: Layer-by-Layer Assembly of Polyelectrolyte Chains and Nanoparticles on Porous Substrates: Molecular Dynamics Simulations](#)

Jan-Michael Carrillo , Andrey Dobrynin

[C1.00175: Interaction between Brush Layers of Bottle-Brush Polyelectrolytes: Molecular Dynamics Simulations](#)

Daniel Russano , Jan-Michael Carrillo , Andrey Dobrynin

[C1.00176: Synthesis and Physical Behavior of Model Polymer Electrolyte Membranes for Alkaline Fuel Cells](#)

Rick Beyer , Samuel Price , Aaron Jackson , Christopher Gold , Yuesheng Ye , Yossef Elabd

[C1.00177: In-depth Analysis of Proton Mobilities in Sulfonated Block Copolymers](#)

Moon Jeong Park , Sun Ju Lee , Sung Yeon Kim

[C1.00178: Functionalizing Silica Nanoparticles Designed for Improved Ion Transport](#)

Michael O'Reilly , Jamie Ford , Karen Winey

[C1.00179: Effect of water uptake on morphology of polymerized ionic liquid block copolymers and random copolymers](#)

Tsen-Shan Wang , Yuesheng Ye , Yossef Elabd , Karen Winey

[C1.00180: Block Copolymer Exhibiting Simultaneous Electronic and Ionic Conduction](#)

Shrayesh Patel , Anna Javier , Nitash Balsara

[C1.00181: Discontinuous Changes in Ionic Conductivity of a Block Copolymer Electrolyte through the Order-Disorder Transition](#)

Alexander Teran , Rodger Yuan , Scott Mullin , Nitash Balsara

[C1.00182: Conformation of polystyrene sulfonate \(PSS\) and its origin of counterion distribution](#)

Shuangjiang Luo , Qingbo Yang , Jiang Zhao

[C1.00183: Tuning Thermal Transitions in Dry and Hydrated Polyelectrolyte Layer by Layer Assemblies with Ionic Strength and pH](#)

Ajay Vidyasagar , Jodie Lutkenhaus

[C1.00184: Anomalous  \$\chi\$  for Polydisperse Polystyrene-\*b\*-Poly\(octyl acrylate\)](#)

Jumi Lee , Hyungju Ahn , Du Yeol Ryu , Kwanwoo Shin , Junhan Cho

[C1.00185: Thermal Rupture Of Linear Polymer Chains Under Tensile Stress](#)

Abhijit Ghosh , Won Bo Lee

[C1.00186: Phase Behavior of Hydrogenated Derivatives of Linear ABC Block-Random Copolymers of Styrene and Isoprene](#)

Bryan Beckingham , Richard Register

[C1.00187: Fast field theoretic simulation of block copolymers with the mode Monte Carlo method](#)

YongJoo Kim , Adam Hannon , Caroline Ross , Alfredo Alexander-Katz

[C1.00188: Fluctuations/Correlations in Symmetric Diblock Copolymers: Simulations and Theories](#)

Jing Zong , Delian Yang , Qiang (David) Wang

[C1.00189: Transformation kinetics of BCC sphere morphology of diblock copolymer under electric field](#)

Andrei Zvelindovsky , Dung Q. Ly , Marco Pinna , Takashi Honda , Toshihiro Kawakatsu

[C1.00190: Genistein Modified Polymer Blends for Hemodialysis Membranes](#)

Teng Chang , Thein Kyu , Linda DeFine , Thomas Alexander

[C1.00191: Solubilization of Genistein in Poly\(Ethylene Glycol\) via Eutectic Crystal Melting](#)

Sasiwimon Buddhiranon , Thein Kyu

[C1.00192: Topographically Uniform but Chemically Heterogeneous Nanostructures by Nanoimprinting Demixed Polymer blends](#)

Zhen Wang , Dae-Up Ahn , Yifu Ding

[C1.00193: Properties of PET/PLA Electrospun Blends](#)

Kevin Li , Peggy Cebe

[C1.00194: Reactive Poly\(Amic Acid\)/ Poly\(Glycidyl Methacrylate-\*r\*-Poly\(ethylene Glycol\) Methyl Ether Methacrylate\) Blends as Gas Permeation Membranes](#)

Michael Beaulieu , James Watkins

[C1.00195: Evaluation of Flame Retardancy, Mechanical Properties, and Biocompatibility of HIPS/PBRs Blends](#)

Liudi Zhang , Seongchan Pack , Coralie Beaulieu , Miriam Rafailovich

[C1.00196: PVDF/PVIm polymer blend films for fuel cell membranes](#)

Wenwen Huang , Meng Zhao , Fan Yang , Lorne Farovitch , Parisa Haghighi , Leonard Macisco , Tyler Swob , Thomas Smith , Peggy Cebe

[C1.00197: Polydispersity Effects on Scaling Behavior of Polymers Grafted on Surfaces of Varying Curvature](#)

Paul Dodd , Arthi Jayaraman

[C1.00198: Size Controlled Polymer Coated Nanoparticles as Efficient Compatibilizers for Polymer Blends](#)

T. Kwon , T. Kim , F. Ali , D.J. Kang , B.J. Kim , J. Bang , W.B. Lee

[C1.00199: Remote fluorescence-based sensing of elastic thin-film elastic moduli](#)

Ah Young Jee , Minyung Lee

[C1.00200: Macroscopic Ordering of CNTs in a Liquid Crystalline Polymer Nano-Composite by Shearing](#)

P. Kalakonda , S. Sarkar , G.S. Iannacchione , E. Gombos , G.S. Hoonjan , G. Georgiev , P. Cebe

[C1.00201: Self-assembly Nano-filled Polymer Blends in a Photovoltaic Thin-film Device](#)

Di Xu , Joseph Ortiz , Dilip Gersappe

[C1.00202: Electrical Conductivity Response toward Ketone Vapors of Poly\(Para-Phenylene Vinylene\)/Zeolite Y Composites](#)

Jirarat Kamonsawas , Anuvat Sirivat

[C1.00203: Electrical Response of PEDOT-PSS/FAU Zeolite Composites toward SO<sub>2</sub>: Controlling the Adsorption Properties of FAU Zeolite](#)

Pojjawan Chanthaanont , Anuvat Sirivat  
**C1.00204: Polydiphenylamine-Zeolite Y composites as a sensing material toward halogenated hydrocarbons**  
 Tharaporn Permpool , Anuvat Sirivat , Darunee Atsawasathein , Ladawan Wannathong  
**C1.00205: Transformative Skin: From Anti-biofouling to Reliable Power Cable**  
 Xuanhe Zhao  
**C1.00206: Molecular Dynamics Simulation of Diffusivity and Mobility of Ionic Charge Carriers in Model Battery Polymers**  
 Sara Waters , Jon Brown , Amalie Frischknecht , John McCoy  
**C1.00207: Hypersonic properties of polymer films and multi-layers**  
 James Sharp , Paul Walker , Eric Young , Vitali Goussev , Andrey Akimov , Anthony Kent  
**C1.00208: Local stress in thin polystyrene films**  
 Bekele Gurmesssa , Andrew Croll  
**C1.00209: Cracking in thin films of colloidal particles on elastomeric substrates**  
 Michael Smith , James Sharp  
**C1.00210: Reaction Kinetics at the Interface between Immiscible Polymers: Competition between Diffusivity and Reactivity**  
 Guangcui Yuan , Mingji Wang , Charles C. Han  
**C1.00211: Thermal Behaviors of PS Thin Films on Grafted PS Layer with Varied Grafting Density**  
 Hoyeon Lee , Sungmin Park , Yonghoon Lee , Eunyoung Choi , Du Yeol Ryu , David M. Trombly , Venkat Ganesan  
**C1.00212: Instability of Surface-initiated ATRP Polyelectrolyte Brushes in Aqueous Environments**  
 Casey Galvin , Erich Bain , Evren Ozcam , Adam Henke , Jiri Srogl , Jan Genzer  
**C1.00213: Lateral phase separation of mixed polymer brushes on planar and spherical surfaces**  
 Reid Van Lehn , Alfredo Alexander-Katz  
**C1.00214: Photonic multilayer sensors from photo-crosslinkable polymer films**  
 Maria Chiappelli , Ryan C. Hayward  
**C1.00215: Template polymerization using a controlled reaction scheme**  
 Jan Genzer , Preeta Datta  
**C1.00216: Wrinkling of Inhomogeneously Strained Thin Polymer Films**  
 Yu-Cheng Chen , Alfred J. Crosby  
**C1.00217: Comparison of surface mobility on low and high molecular weight glasses**  
 Mark Ediger , Keewook Paeng , Lei Zhu , Lian Yu  
**C1.00218: Molecular Bottlebrushes as Tensile Machines for Probing Specific Bonds under Tension**  
 Yuanhao Li , Alper Nese , Natalia Lebedeva , Tyler Davis , Krzysztof Matyjaszewski , Sergei Sheiko  
**C1.00219: Simultaneous Vapor Deposition and Phase Separation of Polymer Films**  
 Ran Tao , Mitchell Anthamatten  
**C1.00220: Controlled viscous and viscoelastic instabilities of polystyrene film on topographically patterned poly(methyl methacrylate)**  
 Zheng Zhang , Dae Up Ahn , Yifu Ding  
**C1.00221: Novel Synthesis of Surface-Grafted Radical Initiator With Improved Stability and Yield**  
 Erich Bain , Keith Dawes , Xinfang Hu , Christopher Gorman , Jiri Srogl , Jan Genzer  
**C1.00222: Impact of adhesion on thermal boundary conductance at organic-metal interface**  
 Y. Jin , C. Shao , J. Kieffer , K.P. Pipe , M. Shtein  
**C1.00223: Ion Correlations at an Electrified Liquid/Liquid Interface**  
 Nouamane Laanait , Miroslav Mihaylov , Binyang Hou , Hao Yu , Petr Vanysek , Binhua Lin , Mati Meron , Ilan Benjamin , Mark Schlossman  
**C1.00224: Fluctuations of one-dimensional interface in the directed polymer formulation: role of a finite interface width**

Elisabeth Agoritsas , Vivien Lecomte , Thierry Giamarchi  
**C1.00225: Wang-Landau simulations of polymer adsorption on diluted surfaces**  
 Paulo Martins , Thomas Vogel , David Landau  
**C1.00226: The Behavior of Water at the Interface with Polystyrene**  
 Selemo Bekele , Mesfin Tsige  
**C1.00227: MD study of polymer melts confined in thin films and nanopores**  
 Hendrik Meyer  
**C1.00228: Adsorption of Derivatized Dextran Polyelectrolytes onto Nanocrystalline Cellulose**  
 Alan Esker , Joshua Kittle , Xiaosong Du , Feng Jiang , Maren Roman , Holger Wondraczek , Andreas Koschella , Thomas Heinze  
**C1.00229: Engineering the band structure of hypersonic phononic hybrid Bragg stacks**  
 Dirk Schneider , Faroha Liaqat , El Houssaine El Boudouti , Bahram Djafari-Rouhani , Wolfgang Tremel , Hans-Jürgen Butt , George Fytas  
**C1.00230: Engineering Novel Thermoreversible Hydrogels with Applications in Regenerative Medicine and Delivery Systems**  
 Divya Bhatnagar , Nikhil Mehandru , Japbani Nanda , Yicheng Sun , Miriam Rafailovich  
**C1.00231: Synchrotron SAXS and WAXD Studies of Cellulose Nascent Crystals: Experiment and Structure Analysis**  
 Ying Su , Christian Burger , Benjamin S. Hsiao , Benjamin Chu  
**C1.00232: Friction between Brush Layers of Charged and Neutral Bottle-Brush Macromolecules. Molecular Dynamics Simulations**  
 Daniel Russano , Jan-Michael Carrillo , Andrey Dobrynin  
**C1.00233: Dynamics of Nanoparticle Adhesion**  
 Andrey Dobrynin , Jan-Michael Carrillo , Elie Raphael  
**C1.00234: Measuring Adhesion of Freestanding Polymer Nano-fibers**  
 Xin Wang , Johnny Najem , Shing-Chung Wong , Kai-tak Wan  
**C1.00235: Differential AC chip calorimeter for in situ investigation of vapor deposited thin films**  
 Mathias Ahrenberg , Christoph Schick , Heiko Huth , Evgeni Schoifet , Mark Ediger , Katie Whitaker  
**C1.00236: Symmetric-asymmetric transition of polymer mushroom**  
 Delian Yang , Qiang (David) Wang  
**C1.00237: Structural and phase transitions of one and two polymer mushrooms**  
 Delian Yang , Qiang (David) Wang  
**C1.00238: Quantification of Complex Topologies in Macromolecular and Nanoscale Structures using Small-Angle Scattering**  
 Siddharth Pradhan , Ramanth Ramachandran , Durgesh Rai , Gregory Beaucage

Monday, February 27, 2012

2:30PM – 5:30PM

**Session D40: Focus Session: Systems Biology and Biochemical Networks I**

Sponsoring Units: DBIO GSNP

Chair: Jin Wang, SUNY Stony Brook

Room: 156A

2:30PM - 3:06PM	<u>D40.00001: Optimal Information Processing in Biochemical Networks</u> Invited Speaker: Chris Wiggins
3:06PM - 3:18PM	<u>D40.00002: Adaptation at the output of the chemotaxis signaling pathway</u> Junhua Yuan , Richard Branch , Basarab Hosu , Howard Berg
3:18PM - 3:30PM	<u>D40.00003: The energy cost of accurate adaptation in networks with incoherent type-1 feed-forward loop</u> Ganhui Lan , Yuhai Tu
3:30PM - 3:42PM	<u>D40.00004: Noise places constraints on eukaryotic gradient sensing and chemotaxis</u> Bo Hu , Danny Fuller , William Loomis , Wen Chen , Wouter-Jan Rappel , Herbert Levine
3:42PM - 4:18PM	<u>D40.00005: Process-driven inference of biological network structure: feasibility, minimality, and multiplicity</u> Invited Speaker: Chen Zeng
4:18PM - 4:30PM	<u>D40.00006: Communication channels between membrane bound proteins</u> James Sethna , Benjamin Machta , Sarah Veatch
4:30PM - 4:42PM	<u>D40.00007: Maximum entropy principle for predicting response to multiple-drug exposure in bacteria and human cancer cells</u> Kevin Wood , Satoshi Nishida , Eduardo Sontag , Philippe Cluzel
4:42PM - 4:54PM	<u>D40.00008: Robust regulation of oscillatory Min-protein patterns</u> Jacob Halatek , Erwin Frey
4:54PM - 5:06PM	<u>D40.00009: Mathematical Analysis of Biomolecular Network Reveals Connections Between Diseases</u> Guanyu Wang
5:06PM - 5:18PM	<u>D40.00010: Modeling the mammalian circadian clock</u> Craig Jolley , Hiroki Ueda

Monday, February 27, 2012

2:30PM – 5:30PM

**Session D42: Focus Session: Physics of Cancer I -- Evolution and Resistance**

Sponsoring Units: DBIO

Chair: Robert Austin, DBIO

Room: 156C

Monday, February 27, 2012

2:30PM – 5:30PM

**Session D51: Liquid Crystals: Chromonics and Nematics**

Sponsoring Units: DCMP DFD

Chair: Peter Collings, Swarthmore University

Room: Boston Convention Center 154

2:30PM - 2:42PM	<u>D51.00001: Lyotropic chromonic liquid crystals in the biphasic region</u> Xuxia Yao , Alejandro Rey , Jung Park , Mohan Srinivasarao
2:42PM - 2:54PM	<u>D51.00002: Order Parameter measurements of Chromonic Liquid Crystal Benzopurpurin 4B using polarized Raman scattering</u> Karthik Nayani , Jung Ok Park , Mohan Srinivasarao
2:54PM - 3:06PM	<u>D51.00003: Textural transformations in lyotropic chromonic liquid crystals under confinement</u> Alireza Shams , Xuxia Yao , Alejandro D. Rey , Jung Ok Park , Mohan Srinivasarao
3:06PM - 3:18PM	<u>D51.00004: Molecular Aggregation in Disodium Cromoglycate</u> Gautam Singh , D. Agra-Kooijman , P.J. Collings , Satyendra Kumar
3:18PM - 3:30PM	<u>D51.00005: Flexopolydispersity of Nematic Liquid Crystals</u> Yue Shi , Dong Chen , Rizwan Mahmood , Noel Clark
3:30PM - 3:42PM	<u>D51.00006: Nematic order in toroidal and higher-genus droplets</u> Ekapop Pairam , Jaya Lakshmi , Alberto Fernandez-Nieves
3:42PM - 3:54PM	<u>D51.00007: Seeing and Sculpting Nematic Liquid Crystal Textures with the Thom construction</u> Bryan Chen , Gareth Alexander
3:54PM - 4:06PM	<u>D51.00008: Patterned Liquid Crystal Droplets</u> Jakub Kolacz , Andrew Konya , Julio Avila , Feng Wang , Qi-Huo Wei
4:06PM - 4:18PM	<u>D51.00009: The mechanism of controlling liquid crystal surface pretilt angle on plasma beam sputtered films</u> Ru-Pin Pan , Meng-Chiou Huang , Wei-Ta Wu , Cheng-Wei Lai , Hsin-Ying Wu
4:18PM - 4:30PM	<u>D51.00010: Transient Splitting of Conoscopic Isogyres of a Uniaxial Nematic</u> Young-Ki Kim , Bohdan Senuk , Luana Tortora , Samuel Sprunt , Matthias Lehmann , Oleg D. Lavrentovich
4:30PM - 4:42PM	<u>D51.00011: A comparison between "cybotactic" groups in bent-core and rod-like nematic liquid crystals</u> Saonti Chakraborty , Nicholas Diorio , Will Carr , James Gleeson , Antal Jakli , Samuel Sprunt
4:42PM - 4:54PM	<u>D51.00012: Optimizing liquid crystalline properties for bio-sensing at aqueous interfaces</u> Wilder Iglesias , Nicholas L. Abbott , Elizabeth K. Mann , Antal J'akli
4:54PM - 5:06PM	<u>D51.00013: Competing Ordering Processes at Liquid Crystal Surfaces Laden with Semifluorinated Alkane Molecules</u> Xunda Feng , Ahmed Mourran , Martin Moeller , Christian Bahr
5:06PM - 5:18PM	<u>D51.00014: Revealing the inner arrangement of cholesteric liquid crystals confined in polymeric electrospun fibers</u> Giusy Scalia , Eva Enz , Vera La Ferrara , Oronzio Cal'vo , Jan Lagerwall
5:18PM - 5:30PM	<u>D51.00015: Macroscopic torsional strain and induced molecular conformational deracemization</u> Rajratan Basu , Joel Pendery , Rolfe Petschek , Robert Lemieux , Charles Rosenblatt

Tuesday, February 28, 2012

8:00AM - 11:00AM

**Session H40: Focus Session: Protein Association II: Aggregation and Fibril Formation**

Sponsoring Units: DBIO DPOLY

Chair: Eric Watkins, Institut Laue Langevin

Room: 156A

8:00AM - 8:36AM	<a href="#">H40.00001: The Physics of Amyloid Aggregation and Templating in Prions</a> Invited Speaker: Daniel Cox
8:36AM - 8:48AM	<a href="#">H40.00002: Early-Aggregation Studies of Polyglutamine in Solution</a> Aaron Fluitt , Juan de Pablo
8:48AM - 9:00AM	<a href="#">H40.00003: Search for Length Dependent Stable Structures of Polyglutamine Proteins with Replica Exchange Molecular Dynamic</a> Alexander Kluber , Robert Hayre , Daniel Cox
9:00AM - 9:12AM	<a href="#">H40.00004: Lysozyme Aggregation and Fibrillation Monitored by Dynamic Light Scattering</a> Louis Nemzer , Bret Flanders , Jeremy Schmit , Christopher Sorensen
9:12AM - 9:24AM	<a href="#">H40.00005: Primary nucleation and linear aggregation: novel methods take us further</a> Gonzalo Garcia
9:24AM - 9:36AM	<a href="#">H40.00006: The Mechanisms of Aberrant Protein Aggregation</a> Samuel Cohen , Michele Vendruscolo , Chris Dobson , Tuomas Knowles
9:36AM - 9:48AM	<a href="#">H40.00007: Amyloid growth: combining experiment and kinetic theory</a> Tuomas Knowles , Samuel Cohen , Michele Vendruscolo , Christopher Dobson
9:48AM - 10:00AM	<a href="#">H40.00008: Scaling exponents report on changes in the mechanism of filamentous growth</a> Luke Rajah , Samuel Cohen , Sara Linse , Erik Hellstrand , Chris Dobson , Tuomas Knowles
10:00AM - 10:12AM	<a href="#">H40.00009: Control the kinetics and pathway of insulin fibril formation</a> Zhongli Zheng , Benxin Jing , Y. Elaine Zhu
10:12AM - 10:24AM	<a href="#">H40.00010: Time-Dependent and Low Temperature Studies of Amyloidogenic and Non-amyloidogenic Proteins by Dielectric Relaxation Spectroscopy</a> Donald Barry , Shaun Marshall , Shelby Hunt , Florin Despa , Izabela Stroe
10:24AM - 10:36AM	<a href="#">H40.00011: Applying microfluidic techniques in quantitative studies of protein aggregation</a> Therese Herling
10:36AM - 10:48AM	<a href="#">H40.00012: Anomalous Formation of Multilayer Protein Aggregates on the Surface of Nanotubular <math>\text{TiO}_2</math></a> Jacob Forstater , Alfred Kleinhammes , Yue Wu
10:48AM - 11:00AM	<a href="#">H40.00013: Effect of Lipid Bilayer on Human Islet Amyloid Polypeptide Self Assembly</a> Chi-cheng Chiu , Sadanand Singh , Juan J. de Pablo

44

Tuesday, February 28, 2012

8:00AM - 11:00AM

**Session H44: Focus Session: Nano to Mesoscale Structure in Ordered Systems: Liquid Crystal Topology and Defects**

Sponsoring Units: DPOLY

Chair: Robin Selinger, Kent State University and Edward Samulski, University of North Carolina

Room: 157C

8:00AM - 8:36AM	<a href="#">H44.00001: Polymer Physics Prize Break</a>
8:36AM - 9:12AM	<a href="#">H44.00002: Chiral Self-Assembly</a> Invited Speaker: Robert Meyer
9:12AM - 9:24AM	<a href="#">H44.00003: Pillar-Assisted Epitaxial Assembly of Focal Conic Domain Arrays in Smectic-A Liquid Crystals</a> Daniel Beller , Apiradee Honglawan , Marcello Cavallaro , Randall Kamien , Kathleen Stebe , Shu Yang
9:24AM - 9:36AM	<a href="#">H44.00004: Shape and chirality transitions in twisted nematic elastomer ribbons: Finite element simulation studies</a> Vianney Gimenez-Pinto , Fangfu Ye , Badel Mbanga , Jonathan Selinger , Robin Selinger
Tuesday, February 28, 2012 9:36AM - 9:48AM	<a href="#">H44.00005: Frustrated orientational order on extrinsic geometries</a> Badel L. Mbanga , Gregory M. Grason , Christian D. Santangelo
9:48AM - 10:00AM	<a href="#">H44.00006: Topology of knots and links in chiral nematic colloids</a> Slobodan Zumer , Simon Copar , Igor Musevic , Miha Ravnik , Uros Tkalec
10:00AM - 10:12AM	<a href="#">H44.00007: Modeling texture transitions in cholesteric liquid crystal droplets</a> Robin Selinger , Vianney Gimenez-Pinto , Shin-Ying Lu , Jonathan Selinger , Andrew Konya
10:12AM - 10:24AM	<a href="#">H44.00008: Necklaces of Liquid Crystal Beads: Nematic Drops Constrained on Thin Cellulosic Fibers</a> Pedro Almeida , Yong Geng , Eugene Terentjev , Maria Helena Godinho
10:24AM - 10:36AM	<a href="#">H44.00009: Controlling the location of defects in nematic shells</a> Alberto Fernandez-Nieves , Teresa Lopez-Leon , Maurizio Nobili , Christophe Blanc
10:36AM - 10:48AM	<a href="#">H44.00010: Structures in liquid crystalline shells at a nematic-smectic transition</a> Jan Lagerwall , Hsin-Ling Liang , Per Rudquist
10:48AM - 11:00AM	<a href="#">H44.00011: Visualizing, manipulating, and imprinting <math>\pi</math>-wall defects in self-assembled colloidal membranes</a> Mark Zakhary , Thomas Gibaud , C. Nadir Kaplan , Edward Barry , Rudolf Oldenbourg , Robert B. Meyer , Zvonimir Dogic

45

Tuesday, February 28, 2012

8:00AM - 11:00AM

**Session H45: Focus Session: Thin Film Block Copolymers - Phase Behavior**

Sponsoring Units: DPOLY

Chair: Andrew Croll, North Dakota State University

Room: 159

8:00AM - 8:36AM	<u>H45.00001: Polymer Physics Prize Break</u>
8:36AM - 8:48AM	<u>H45.00002: Controlling the Orientation of Block Copolymer Thin Films with Selective and Neutral Nanoparticles</u> Misang Yoo , Seyong Kim , Bumjoon J. Kim , Joona Bang
8:48AM - 9:00AM	<u>H45.00003: Assembly and Photo-Induced Disorder in Block Copolymer-Additive Systems</u> Li Yao , James Watkins
9:00AM - 9:12AM	<u>H45.00004: Diblock copolymer morphologies in ultra thin films under shear</u> Marco Pinna , Andrei Zvelindovsky , Xiaohu Guo , Christine Stokes
9:12AM - 9:24AM	<u>H45.00005: Structure and dynamics of random block copolymers in the bulk and thin films</u> Marcus M(\u)ller , Birger Steinm(\u)ller , Keith H. Hambrecht , Grant D. Smith , Dmitry Bedrov
9:24AM - 9:36AM	<u>H45.00006: Macrophase Separation of Block Copolymer Blends in Thin Films</u> Lance Williamson , Paul Nealey
9:36AM - 9:48AM	<u>H45.00007: Phase segregation at the sub-5-nm scale using high <math>\chi</math> S Poly(ethylene oxide-b-dimethylsiloxane) copolymers</u> Damien Montarnal , Glenn Fredrickson , Edward Kramer , Craig Hawker
9:48AM - 10:00AM	<u>H45.00008: Decoupling Bulk Thermodynamics and Wetting Characteristics of Block Copolymer Thin Films</u> Sangwon Kim , Paul Nealey , Frank Bates
10:00AM - 10:12AM	<u>H45.00009: Continuity and connectivity of lamellar-forming block copolymers in thin films</u> Ian Campbell , Mark Stoykovich
10:12AM - 10:24AM	<u>H45.00010: Theoretical and Experimental Investigations of Contact Hole Shrink using PS-PMMA Block Copolymers</u> Valeriy Ginzburg , Phillip Hustad , Jeffrey Weinhold , Rahul Sharma , Vivian Chuang , Peter Trefonas
10:24AM - 10:36AM	<u>H45.00011: Tailoring block copolymer morphology via control of topographical surface: A self consistent field theoretic study</u> Xianggui Ye , Brian J. Edwards , Bamin Khomami
10:36AM - 10:48AM	<u>H45.00012: Silicon patterning using self-assembled PS-b-PAA diblock copolymer masks for anti-reflective black silicon fabrication via plasma etching</u> Xin Zhang , Christopher J. Metting , Sean Fackler , Robert M. Briber , Andrei B. Sushkov , H. Dennis Drew
10:48AM - 11:00AM	<u>H45.00013: Assembly of block copolymer films between chemically patterned and chemically homogeneous surface</u> Jeong In Lee , Huiman Kang , Hyo Seon Suh , Christopher Thode , Lei Wan , Abelrado Hernandez , Yasuhiko Tada , Hiroshi Yoshida , Juan de Pablo , Paul Nealey

Tuesday, February 28, 2012

8:00AM - 11:00AM

**Session H46: Invited Session: Polymer Physics Prize**

Sponsoring Units: DPOLY

Chair: Jane Lipson, Dartmouth College

Room: 160ABC

8:00AM - 8:36AM	<u>H46.00001: Polymer Physics Prize Lecture: Polyelectrolyte complexes: New routes to useful soft materials</u> Invited Speaker: Matthew Tirrell
8:36AM - 9:12AM	<u>H46.00002: Physical and Biological Properties of Engineered Protein Hydrogels</u> Invited Speaker: David Tirrell
9:12AM - 9:48AM	<u>H46.00003: Enhancing Biopolymer Dynamics through Destruction</u> Invited Speaker: Jennifer Ross
9:48AM - 10:24AM	<u>H46.00004: Cellular Reconstitution: Building Biomolecular Systems from the Bottom Up</u> Invited Speaker: Daniel Fletcher
10:24AM - 11:00AM	<u>H46.00005: Making Polymers Swim</u> Invited Speaker: Anthony Ryan

Tuesday, February 28, 2012

8:00AM - 11:00AM

#### Session H48: Polymer Gels and Solutions

Sponsoring Units: DPOLY

Chair: James Watkins, University of Massachusetts

Room: 161

8:00AM - 8:36AM	<a href="#">H48.00001: Polymer Physics Prize Break</a>
8:36AM - 8:48AM	<a href="#">H48.00002: Phase Segregation and Dynamics in Strongly Interacting Small Molecule Additive - Block Copolymer Surfactant Complexes</a> Rohit Kothari , Ahmed Khalil , H. Henning Winter , James J. Watkins
8:48AM - 9:00AM	<a href="#">H48.00003: Using Mesoscopic Models to Design Strong and Tough Biomimetic Polymer</a> Isaac G. Salib , German V. Kolmakov , Benjamin J. Bucior , Orit Peleg , Martin Kroger , Thierry Savin , Viola Vogel , Krzysztof Matyjaszewski , Anna C. Balazs
9:00AM - 9:12AM	<a href="#">H48.00004: Synthesis and Characterization of Poly(hydroxyethyl methacrylate) Hydrogels Bearing Reversibly Associating Side Groups</a> Christopher Lewis , Jiahui Li , Mitchell Anthamatten
9:12AM - 9:24AM	<a href="#">H48.00005: Thermoreversible Supramolecular Ion Gels via Hydrogen Bonding</a> Yu Lei , Timothy Lodge
9:24AM - 9:36AM	<a href="#">H48.00006: Hydrogen Bonding Based Layer-by-Layer Assembly of Poly(vinyl alcohol) with Weak Polyacids</a> Hyomin Lee , Remy Mensire , Robert Cohen , Michael Rubner
9:36AM - 9:48AM	<a href="#">H48.00007: Gelation in a model 1-component system with adhesive hard-sphere interactions</a> Jung Min Kim , Aaron Eberle , Jun Fang , Norman Wagner
9:48AM - 10:00AM	<a href="#">H48.00008: Concentration Fluctuations in Polymer Solutions under Extensional Flow</a> Michael Villet , Michael Cromer , Glenn Fredrickson , Gary Leal , Roman Stepanyan , Markus Bulters
10:00AM - 10:12AM	<a href="#">H48.00009: Crossover length scale for viscosity experienced by Gold nanoparticles in semi dilute polymer solution</a> Indermeet Kohli , Rami Omari , Ashis Mukhopadhyay
10:12AM - 10:24AM	<a href="#">H48.00010: Kinetics of Narrowly dispersed Latex Formation in a Surfactant-free Emulsion Polymerization of Styrene in Acetone-Water Mixture</a> He Cheng , Zhiyong Li , Charles Han
	Preview Abstract
10:24AM - 10:36AM	<a href="#">H48.00011: Cluster Growth in Aqueous Sugars Observed by Dynamic Light Scattering</a> Tri Tran , David Sidebottom
10:36AM - 10:48AM	<a href="#">H48.00012: Boson peak in L-cysteine: a Raman scattering study</a> Thamires Lima , Herculano Martinho
10:48AM - 11:00AM	<a href="#">H48.00013: Low temperature dynamic transitions of L-cysteine and L-proline amino acids: a specific heat study</a> Mariana Ishikawa , Thamires Lima , Herculano Martinho

48

Tuesday, February 28, 2012

8:00AM - 11:00AM

#### Session H49: Focus Session: Fluctuation-Induced Forces in Soft Matter & Polymeric Systems - Casimir and Interfacial Forces

Sponsoring Units: DPOLY

Chair: Monica Olvera de la Cruz, Northwestern University

Room: 162A

8:00AM - 8:36AM	<a href="#">H49.00001: Polymer Physics Prize Break</a>
8:36AM - 8:48AM	<a href="#">H49.00002: Casimir Interaction at Soft Interfaces</a> Ehsan Noruzifar , Jef Wagner , Hsiang-Ku Lin , Umar Mohideen , Roya Zandi
8:48AM - 9:00AM	<a href="#">H49.00003: Critical Casimir Interactions: New fluctuation forces in colloidal science</a> Peter Schall
9:00AM - 9:12AM	<a href="#">H49.00004: Thermodynamic Casimir effect in the large-<math>\beta\epsilon</math> limit: Exact results for slabs with free surfaces</a> F.M. Schmidt , M. Hasenbusch , A. Hucht , S. Rutkevich , D. Grunberg , H.W. Diehl
9:12AM - 9:48AM	<a href="#">H49.00005: Fluctuation-induced forces in a fluid membrane under tension</a> Invited Speaker: Roya Zandi
9:48AM - 10:00AM	<a href="#">H49.00006: The Casimir forces between inclusions in a fluid membrane</a> Hsiang-Ku Lin , Roya Zandi , Umar Mohideen , Leonid Pryadko
10:00AM - 10:12AM	<a href="#">H49.00007: Aspect-ratio dependence of thermodynamic Casimir forces</a> Alfred Hucht , Daniel Grueneberg , Felix M. Schmidt
10:12AM - 10:24AM	<a href="#">H49.00008: Field-Theoretic Simulations of Bicontinuous Microemulsions in Polymer Blends</a> Kris Delaney , Glenn Fredrickson
10:24AM - 10:36AM	<a href="#">H49.00009: Looking Down at Adsorption Dynamics: Filament Height Measurements with TIRFM</a> David Welch , Zvonimir Dogic
10:36AM - 10:48AM	<a href="#">H49.00010: Partial osmotic compressibility of binary mixtures of colloidal nanoparticles and PEG</a> Jinxin Fu , Melissa Goleb , H. Daniel Ou-Yang

49

Tuesday, February 28, 2012

8:00AM - 11:00AM

### Session H50: Polymer Melts

Sponsoring Units: DPOLY  
Chair: Steven Hudson, NIST  
Room: 162B

8:00AM - 8:36AM	<a href="#">H50.00001: Polymer Physics Prize Break</a>
8:36AM - 8:48AM	<a href="#">H50.00002: Coil-Globule Transition of Polymer -- Tricriticality of Theta</a> Ashok Dasmahapatra
8:48AM - 9:00AM	<a href="#">H50.00003: Microscopic Theory of Nanoparticle Diffusivity in Entangled and Unentangled Polymer Melts</a> Umi Yamamoto , Kenneth Schweizer
9:00AM - 9:12AM	<a href="#">H50.00004: Effect of Secondary Structure on the Persistence Length of a Poly N-substituted Glycine</a> Hannah K. Murnen , Adrienne M. Rosales , Steven R. Kline , Ronald N. Zuckermann , Rachel A. Segalman
9:12AM - 9:24AM	<a href="#">H50.00005: Gibbs Ensemble Calculations of Phase Coexistence in Supramolecular Assembly of Block Copolymers</a> Zoltan Mester , Nathaniel Lynd , Glenn Fredrickson
9:24AM - 9:36AM	<a href="#">H50.00006: Pressure-induced structural transition in an one-component polymer poly(4-methyl-1-pentene) in its melted state</a> Ayano Chiba , Nobumasa Funamori , Kazuya Nakayama , Yasuo Ohishi , Stephen M. Bennington , Sanjay Rastogi , Anuj Shukla , Kazuhiko Tsuji , Mikihito Takenaka
9:36AM - 9:48AM	<a href="#">H50.00007: Anomalous diffusion of a polymer chain in an unentangled melt</a> Jean Farago , Hendrik Meyer , Alexander Semenov
9:48AM - 10:00AM	<a href="#">H50.00008: Representation of Polymer melts as soft liquids with effective pair interactions</a> Anthony Clark , Marina Guenza
10:00AM - 10:12AM	<a href="#">H50.00009: Entropy of Mixing: Rigid vs. Flexible Molecules: Effect of Varying Solvent on Dissolution Temperature</a> Eric B. Sirota , Hasnain Rangwalla , Pawel Peczak
10:12AM - 10:24AM	<a href="#">H50.00010: Polymeric Fluid Flow Over Superhydrophobic Surfaces</a> Lucas Landherr , Steven Hudson , Kalman Migler
	Preview Abstract
10:24AM - 10:36AM	<a href="#">H50.00011: Reconstructing Polymer Melt Dynamics Sped up due to Large-Scale Coarse-Graining</a> Ivan Lyubimov , Marina Guenza
10:36AM - 10:48AM	<a href="#">H50.00012: Steric Constraints in Fractal-Regime Star Polymers</a> Gregory Beaucage , Durgesh Rai , Ramanath Ramachandran , Kedar Ratkanthwar , Nikos Hadjichristidis , Hong Kunlun , David Uhrig
10:48AM - 11:00AM	<a href="#">H50.00013: Capillary break-up, gelation and extensional rheology of hydrophobically modified cellulose ethers</a> Vivek Sharma , Simon Haward , Olivia Pessinet , Asa Soderlund , Phil Threlfall-Holmes , Gareth McKinley

50

Tuesday, February 28, 2012

8:00AM - 11:00AM

### Session H51: Colloids II: Crystals and Phase Transitions

Sponsoring Units: DCMP DFD  
Chair: Alberto Fernandez-Nieves, Georgia Institute of Technology  
Room: Boston Convention Center 154

8:00AM - 8:12AM	<a href="#">H51.00001: Effects of vacancies and interstitials on the phonon modes in a 2D colloidal crystal</a> Lichao Yu , Sungcheol Kim , Di Yin , Alexandros Pertsinidis , Xinsheng Ling
8:12AM - 8:24AM	<a href="#">H51.00002: Normal modes of various colloidal crystals</a> Feng Wang , Yi Peng , Ziren Wang , Yilong Han
8:24AM - 8:36AM	<a href="#">H51.00003: Microscopic observation of dynamics and structure in microgel suspensions</a> Melaku Muluneh , Joris Sprakel , Hans Wyss , Johan Mattsson , David Weitz
8:36AM - 8:48AM	<a href="#">H51.00004: Homogeneous Melting of 3D Superheated Colloidal Crystals</a> Ziren Wang , Feng Wang , Yi Peng , Yilong Han
8:48AM - 9:00AM	<a href="#">H51.00005: Polyhedral assembled colloids (PACs); a new family of colloids with facets</a> Nobuhiro Yanai , Jing Yan , Qian Chen , Steve Granick
9:00AM - 9:12AM	<a href="#">H51.00006: Measuring every particle's size in a confocal microscopy experiment</a> Eric Weeks , Rei Kurita
9:12AM - 9:24AM	<a href="#">H51.00007: Vibrational Phonon Modes of Two-Dimensional Soft-Particle Colloidal Crystals with Hard-Particle Dopants</a> Matthew Gratale , Peter Yunker , Ke Chen , Kevin Aptowicz , Arjun Yodh
9:24AM - 9:36AM	<a href="#">H51.00008: Direct observation of the nucleation in colloidal solid-solid transitions</a> Yi Peng , Feng Wang , Ziren Wang , Yilong Han
9:36AM - 9:48AM	<a href="#">H51.00009: Colloidal gas-liquid transition: tuning nucleation and growth by Critical Casimir forces</a> Duc Nguyen , Peter Schall
9:48AM - 10:00AM	<a href="#">H51.00010: Temperature control of colloidal phases by Critical Casimir forces -- a simulation study</a> Minh Triet Dang , Van Duc Nguyen , Ana Vila Verde , Peter Bolhuis , Peter Schall
10:00AM - 10:12AM	<a href="#">H51.00011: Colloidal aggregation in microgravity by critical Casimir forces</a> Sandra Veen , Peter Schall , Oleg Antoniak , Marco Potenza , Matteo Alaïmo , Stefano Mazzoni , Gerard Wegdam
10:12AM - 10:24AM	<a href="#">H51.00012: Light transport through soft colloidal glasses</a> Sofia Magkiriadou , Jin-Gyu Park , Young-Seok Kim , Gi-Ra Yi , Vinodhan N. Manoharan
10:24AM - 10:36AM	<a href="#">H51.00013: 3D Dynamic Light Scattering of Microgel Suspensions</a> John Hyatt , Alberto Fernandez-Nieves
10:36AM - 10:48AM	<a href="#">H51.00014: Using colloidal packings as templates for structuring drugs</a> James Wilking , Andre'e Studart , Sebastian Koltzenburg , Rodrigo Guerra , Esther Amstad , Jens Rieger , David Weitz
10:48AM - 11:00AM	<a href="#">H51.00015: Spin coating of superparamagnetic colloids with applied magnetic fields</a> Wenceslao Gonzalez-Velasquez , Moorthi Pichumani

51

Tuesday, February 28, 2012

8:00AM - 11:00AM

**Session H52: Focus Session: Extreme Mechanics - Rods**

Sponsoring Units: GSNP DFD

Chair: Douglas Holmes, Virginia Polytechnic Institute and State University

Room: 153C

8:00AM - 8:36AM	<u>H52.00001: Dynamic curling of a naturally curved Elastica</u> Invited Speaker: Basile Audoly
8:36AM - 8:48AM	<u>H52.00002: The Mechanics of Curly Hair</u> James Miller , Arnaud Lazarus , Breanna Berry , Basile Audoly , Pedro Reis
8:48AM - 9:00AM	<u>H52.00003: The Shape of a Ponytail and the Statistical Physics of Hair Fiber Bundles</u> Raymond E. Goldstein , Patrick B. Warren , Robin C. Ball
9:00AM - 9:12AM	<u>H52.00004: Following the equilibria of slender elastic rods</u> Arnaud Lazarus , James Miller , Pedro Reis
9:12AM - 9:24AM	<u>H52.00005: The elasticity of magnetic chains: From self-buckling to self-assembly</u> Dominic Vella , Emmanuel du Pontavice , Cameron Hall , Alain Goriely
9:24AM - 9:36AM	<u>H52.00006: Spontaneous and Deterministic Three-dimensional Curling of Pre-strained Elastomeric Strips: From Hemi-helix to Helix</u> Jiangshui Huang , Jia Liu , Benedikt Kroll , Katia Bertoldi , Zhigang Suo , David Clarke
9:36AM - 9:48AM	<u>H52.00007: Snakes Out of the Plane</u> Andrew McCormick , Bruce A. Young , L. Mahadevan
9:48AM - 10:00AM	<u>H52.00008: Analysis of the fluid mechanical sewing machine</u> Pierre-Thomas Brun , Basile Audoly , Neil Ribe
10:00AM - 10:12AM	<u>H52.00009: Microfabrication of a spider-silk analogue through the liquid rope coiling instability</u> Frederick P. Gosselin , Daniel Theriault , Martin Levesque
10:12AM - 10:24AM	<u>H52.00010: Buckling Instability and Stress Propagation in Rods with Elastic Support</u> Zi Chen , Wanliang Shan , Ankita Gumaste , Winston Soboyejo , Clifford Brangwynne
10:24AM - 10:36AM	<u>H52.00011: Undulatory buckling of a rod constrained by an elastic matrix</u> Jia Liu , Tianxiang Su , Oscar Lopez-Pamies , Pedro Reis , Katia Bertoldi
10:36AM - 10:48AM	<u>H52.00012: Slack, stress, and noisy structures in inertial strings</u> James Hanna , Christian Santangelo
10:48AM - 11:00AM	<u>H52.00013: Sinusoidal to helical buckling of an elastic rod under a cylindrical constraint</u> Tianxiang Su , James Miller , Arnaud Lazarus , Nathan Wicks , Jahir Pabon , Katia Bertoldi , Pedro Reis

52

Tuesday, February 28, 2012

11:15AM - 2:15PM

**Session J44: Focus Session: Dynamics of Polymers: Phenomena Due to Confinement I**

Sponsoring Units: DPOLY

Chair: Zahra Fakhrabi, University of Pennsylvania

Room: 157C

11:15AM - 11:27AM	J44.00001: A closer look at the two-layer model Dongdong Peng
11:27AM - 11:39AM	J44.00002: Inter- and intra-chain Proximity in PS and PMMA free-standing thin films Studied by Fluorescence NRET Jie Xu , Gi Xue
11:39AM - 11:51AM	J44.00003: Surface Dynamics of Partially Tethered Polymer Films Mark Foster , Jin Kuk Lee , Bulent Akgun , Zhang Jiang , Suresh Narayanan , Sushil Satija
11:51AM - 12:03PM	J44.00004: Structural characterization of irreversibly adsorbed polymer layers at the polymer/solid interface - In-situ grazing incidence angle x-ray scattering studies Naisheng Jiang , Fen Chen , Xiameng Chen , Zexi Han , Chen Liang , Peter Gin , Mitsunori Asada , Maya Endoh , Tad Koga
12:03PM - 12:15PM	J44.00005: Relaxation of Polyisoprene in Nanoscale Confinement Sung A. Kim , Praveen Agarwal , Lynden Archer
12:15PM - 12:27PM	J44.00006: Molecular simulations of confined polymer glasses Robert Riggleman , Amit Shavit
12:27PM - 12:39PM	J44.00007: Structure and Dynamics of Polymer / Single Wall Carbon Nanotube Nanocomposites Nigel Clarke , Argyrios Karatrantos , Karen Winey , Russell Composto
12:39PM - 12:51PM	J44.00008: Polymer Conformations in SWCNT/Polystyrene Nanocomposites using SANS Wei-Shao Tung , Nigel Clarke , Russell J. Composto , Karen I. Winey
12:51PM - 1:03PM	J44.00009: Structures and Dynamics of Polymers Adsorbed on Supported Cationic Lipid Membrane Chen-Ming Chang , Yuk-Gyn Lau , Jih-Chiang Tsai , Wen-Tau Juan
1:03PM - 1:15PM	J44.00010: Structure and Dynamics in Hyperbranched Nanohybrids K. Christopoulou , S. Fotiadou , S.H. Anastasiadis , B. Frick
1:15PM - 1:27PM	J44.00011: Large Amplitude Shear Deformations of Nano-Filled Elastomers: Evidence of Glassy Dynamics in the Vicinity of the Fillers Didier Long , Paul Sotta , Samy Merabia , Aurelie Papon , Francois Lequeux , Helene Montes , Laurent Guy
1:27PM - 1:39PM	J44.00012: Polymer Diffusion Slows Down in Nanocomposites Containing Hard Nanospheres Russell Composto , Sangah Gam , Karen Winey , nigel clarke , Jeffrey Meth
1:39PM - 1:51PM	J44.00013: Time and Temperature Dependent Surface Stiffness of Poly(alpha-methylstyrene)(PAMS) through Particle Embedment Taskin Karim , Gregory McKenna
1:51PM - 2:03PM	J44.00014: The Calorimetric Glass Transition of Polystyrene Ultrathin Films Siyang Gao , Yung P. Koh , Sindee Simon
2:03PM - 2:15PM	J44.00015: Dynamics of anchored polymer chains in a tunable micelle confinement system Hengxi Yang , Chelsea Chen , Ga Ram Jun , Peter Green

53



Tuesday, February 28, 2012

11:15AM - 2:15PM

**Session J45: Padden Award Symposium**

Sponsoring Units: DPOLY

Chair: Karen Winey, University of Pennsylvania

Room: 159

11:15AM - 11:27AM	<u>J45.00001: Field-Theoretic Studies of Nanostructured Triblock Polyelectrolyte Gels</u> Debra Audus , Glenn Fredrickson
11:27AM - 11:39AM	<u>J45.00002: Effect of Confinement on Proton Transport in Nanostructured Block Copolymer/Ionic Liquid Membranes</u> Megan L. Hoarfrost , Madhu S. Tyagi , Rachel A. Segalman , Jeffrey A. Reimer
11:39AM - 11:51AM	<u>J45.00003: Controlling Au Nanorod Dispersion in Thin Film Polymer Blends</u> Michael J.A. Hore , Russell J. Composto
11:51AM - 12:03PM	<u>J45.00004: Influence of Charge and Network Inhomogeneities on the Swollen-Collapsed Transition in Polyelectrolyte Nanogels</u> Prateek Jha , Jos Zwanikken , Francois Detcheverry , Juan de Pablo , Monica Olvera de la Cruz
12:03PM - 12:15PM	<u>J45.00005: Enhanced electron mobility of n-channel polymer thin film transistors by use of low-k polymer dielectric buffer layer</u> Felix Sunjoo Kim , Samson Jenekhe
12:15PM - 12:27PM	<u>J45.00006: Imaging three dimensional bicontinuous networks in bulk heterojunction solar cells</u> James T. Rogers , Louis A. Perez , Alan J. Heeger , Hiroshi Jinnai , Guillermo C. Bazan , Edward J. Kramer
12:27PM - 12:39PM	<u>J45.00007: Single molecule dynamics of self-associating polymers</u> Charles Sing , Alfredo Alexander-Katz

Tuesday, February 28, 2012

11:15AM - 2:15PM

**Session J46: Invited Session: Electrostatic Interactions in Polymeric and Biological Systems**

Sponsoring Units: DPOLY

Chair: Andrey Dobrynin, University of Connecticut

Room: 160ABC

11:15AM - 11:51AM	<u>J46.00001: Ion Specific Effects at Interfaces</u> Invited Speaker: Yan Levin
11:51AM - 12:27PM	<u>J46.00002: Solvation of ions in bulk and at interfaces: What can density functional theory teach us?</u> Invited Speaker: Christopher Mundy
12:27PM - 1:03PM	<u>J46.00003: Simulation of single molecule stretching experiments on denatured ssDNA</u> Invited Speaker: Mark Stevens
1:03PM - 1:39PM	<u>J46.00004: Charge-regularization effects on polyelectrolytes</u> Invited Speaker: Murugappan Muthukumar
1:39PM - 2:15PM	<u>J46.00005: Effect of electrostatic interactions on lubrication in polymeric and biological systems</u> Invited Speaker: Jan-Michael Carrillo

Tuesday, February 28, 2012

11:15AM - 2:15PM

**Session J48: Focus Session: Gelation and Glass Transition in Colloids and Soft Matter Systems II**

Sponsoring Units: DPOLY  
Chair: Michael Rubinstein, University of North Carolina  
Room: 161

11:15AM - 11:27AM	<u>J48.00001: Kinetic arrest and activated relaxation in dense suspensions of attractive nonspherical colloids</u> Rui Zhang , Kenneth Schweizer
11:27AM - 11:39AM	<u>J48.00002: Rearrangements, Vibrations and Microscopic Glassy Dynamics and Structure in Quasi-2D Dense Colloidal Gels</u> Matthew Lohr , Arjun Yodh
11:39AM - 11:51AM	<u>J48.00003: Dynamical Phases and Rheology of Rod-Sphere Nanoparticle Mixtures</u> Ryan Jadrach , Kenneth Schweizer
11:51AM - 12:27PM	<u>J48.00004: Phonons and Rearrangements in Disordered Colloidal Glasses</u> Invited Speaker: Arjun Yodh
12:27PM - 12:39PM	<u>J48.00005: Characterization of local shear zones that govern the deformation of colloidal glasses</u> Katharine Jensen , Nobutomo Nakamura , David Weitz , Frans Spaepen
12:39PM - 12:51PM	<u>J48.00006: Elasticity and microstructure of colloidal gels undergoing strain-induced yielding</u> Lilian Hsiao , Richmond Newman , Sharon Glotzer , Michael Solomon
12:51PM - 1:03PM	<u>J48.00007: Complex oscillatory yielding in model hard sphere glasses</u> George Petekidis , Nick Koumakis
1:03PM - 1:15PM	<u>J48.00008: Interactions of Dislocations with Twin Boundaries in Hard-Sphere Colloidal Crystals</u> Maria Persson Gulda , Eric Maire , David Weitz , Frans Spaepen
1:15PM - 1:27PM	<u>J48.00009: Gel formation and aging in weakly attractive nanocolloid suspensions</u> James Harden , Hongyu Guo , Subramanian Ramakrishnan , Robert Leheny
1:27PM - 1:39PM	<u>J48.00010: Phase-Change Dynamics in Attractive, Polydisperse Colloidal Suspensions</u> John Mergo , Itai Cohen , Anthony Dinsmore
1:39PM - 1:51PM	<u>J48.00011: The role of picosecond dynamics in relaxation of molecular glasses</u> Marcus Cicerone , Qin Zhong , Feng Ding , Jack Douglas , Madhusudan Tyagi , David Simmons
1:51PM - 2:03PM	<u>J48.00012: AC Impedance Study of the Structural Transformation of Graphite Suspensions</u> Jianjian Wang , Gang Chen
2:03PM - 2:15PM	<u>J48.00013: Large colloidal crystals grown by centrifugation onto a template</u> Daniel Pennachio , Katharine Jensen , David Weitz , Frans Spaepen

56

Tuesday, February 28, 2012

11:15AM - 2:15PM

**Session J49: Focus Session: Crystallization in Single-, Multicomponent, and Hybrid Systems I**

Sponsoring Units: DPOLY  
Chair: Christopher Li, Drexel University  
Room: 162A

11:15AM - 11:51AM	<u>J49.00001: Orientation of conjugated polymers: epitaxy versus mechanical rubbing</u> Invited Speaker: Martin Brinkmann
11:51AM - 12:03PM	<u>J49.00002: Solution Assembly of Hybrid Poly (3-hexyl thiophene) and Cadmium Selenide Nanowires</u> Felicia Bokel , Emily Pentzer , Todd Emrick , Ryan Hayward
12:03PM - 12:15PM	<u>J49.00003: Correlating crystallization and ionic conductivity of PEO/graphene oxide nanocomposite</u> Shan Cheng , Derrick Smith , Grace Hsuan , Christopher Li
12:15PM - 12:27PM	<u>J49.00004: Nucleation and Crystallization in nucleated Polymers</u> Christoph Schick , Evgeny Zhuravlev , Andreas Wurm
12:27PM - 12:39PM	<u>J49.00005: Spherulite Growth in Polymer-Nanoparticle Blends</u> Goran Ungar , Eunwoo Lee , Ruibin Zhang , Jyongsik Jang
12:39PM - 12:51PM	<u>J49.00006: Synthesis and morphology of hydroxapatite/polyethylene oxide nanocomposites with block copolymer compatibilized interfaces</u> Ji Hoon Lee , Meisha Shofner
12:51PM - 1:03PM	<u>J49.00007: Confined crystallization in compatibilized Polyamide 6/High Density Polyethylene blends</u> Simona Ceccia , Alexandra Argoud , Lise Trouillet-Fonti , Didier R. Long , Paul Sotta
1:03PM - 1:39PM	<u>J49.00008: Crystallization and Microphase Separation in Chiral Block Copolymers</u> Invited Speaker: Rong-Ming Ho
1:39PM - 1:51PM	<u>J49.00009: Chain conformation and crystallization in PEO / layered silicate nanocomposites</u> Spiros H. Anastasiadis , K. Chrissopoulou , S. Bollas , K.S. Andrikopoulos , S. Fotiadou , G.A. Voyiatzis
1:51PM - 2:03PM	<u>J49.00010: Lamellar Orientation Inversion under Dynamic Interplay between Simultaneous Crystallization and Phase Separation</u> Charles Han , Weichao Shi
2:03PM - 2:15PM	<u>J49.00011: Phase separation of DMDBS from iPP, and controlled crystalline orientation</u> K. Sreenivas , Guruswamy Kumaraswamy , R.S. Basargekar

57

Tuesday, February 28, 2012

11:15AM - 2:15PM

**Session J50: Focus Session: Translocation through Nanopores - Novel Devices and Computational Approaches**

Sponsoring Units: DPOLY DBIO  
Chair: Samuel Amanuel, Union College  
Room: 162B

11:15AM - 11:27AM	<u>J50.00001: Integrated Nanopore Detectors in a Standard Complementary Metal-Oxide-Semiconductor Process</u> Ashfaque Uddin , Chin-Hsuan Chen , Sukru Yemenicioglu , Kaveh Milaninia , Ellie Corigliano , Madoo Varma , Luke Theogarajan
11:27AM - 11:39AM	<u>J50.00002: Graphene Gating of Solid State Nanopores for DNA Translocation</u> Kimberly Venta , Matthew Puster , Marija Drndic
11:39AM - 11:51AM	<u>J50.00003: Nanochannel Device with Embedded Nanopore: a New Approach for Single-Molecule DNA Analysis and Manipulation</u> Yuning Zhang , Walter Reisner
11:51AM - 12:03PM	<u>J50.00004: fd Virus as a Model Stiff Polymer for Translocation Experiments with Solid-State Nanopores</u> Angus McMullen , Xu Liu , Mirna Mihovilovic , Derek Stein , Jay Tang
12:03PM - 12:15PM	<u>J50.00005: Studies of DNA Translocation Dynamics Using Asymmetrical Nanopores</u> Xu Liu , Karri DiPetrillo , Jason Chan , Derek Stein
12:15PM - 12:27PM	<u>J50.00006: First-passage-time analysis of DNA translocation in solid-state nanopores</u> Daniel Ling , Xinsheng Ling
12:27PM - 1:03PM	<u>J50.00007: Some aspects of polymer translocation dynamics through nanopore: comparison of recent the theories with simulation results</u> Invited Speaker: Aniket Bhattacharya
1:03PM - 1:15PM	<u>J50.00008: DNA translocation measurements in solid-state nanopores fabricated using helium-ion microscope</u> Liping Liu , Wang Miao , Chuong Huynh , Quanjun Liu , Xinsheng Ling
1:15PM - 1:27PM	<u>J50.00009: Dynamics of Simultaneous, Single Ion Transport through Two Single-Walled Carbon Nanotubes: Observation of a Three-State System</u> Steven Shimizu , Wonjoon Choi , Chang Young Lee , Moon-Ho Ham , Michael Strano
1:27PM - 1:39PM	<u>J50.00010: Polymer Translocation through a Nanopore Modulated by a Sticky Site</u> Hendrick W. de Haan , Gary W. Slater
1:39PM - 1:51PM	<u>J50.00011: Translocation dynamics of a semi-flexible chain through a nano-pore</u> Ramesh Adhikari , Andy W.C. Lau , Aniket Bhattacharya

Tuesday, February 28, 2012

11:15AM - 2:15PM

**Session J51: Liquid Crystals: Smectic, Ferroelectric, Nanocomposites and DNA**

Sponsoring Units: DCMP DFD  
Chair: Luz J Martinez-Miranda, University of Maryland  
Room: Boston Conference Center 154

11:15AM - 11:27AM	<u>J51.00001: Two-Dimensional Microfluidics: Hydrodynamic Interactions in Ultra-Thin Smectic Liquid Crystal Films</u> Zoom Nguyen , Aaron Goldfain , Cheol Park , Joe MacLennan , Matt Glaser , Noel Clark
11:27AM - 11:39AM	<u>J51.00002: Two-Dimensional Microfluidics: hydrodynamics of drops and interfaces in flowing smectic liquid crystal channels</u> Zhiyuan Qi , Zoom Nguyen , Cheol Park , Joe MacLennan , Matt MacLennan , Noel Clark
11:39AM - 11:51AM	<u>J51.00003: Smectic liquid crystal cells with a "dirty" substrate</u> Quan Zhang , Leo Radzihovsky
11:51AM - 12:03PM	<u>J51.00004: Structural Reorganization of 4 - Cyano - 4' - octyloxybiphenyl (8OCB) revealed by Fast Scanning Calorimetry</u> Dongshan Zhou , Jing Jiang , Zhijie Huang , Wei Jiang , Gi Xue
12:03PM - 12:15PM	<u>J51.00005: A Biaxial Banana Liquid Crystal Phase with Short-range Layer Ordering</u> Yongqiang Shen , Tao Gong , Dong Chen , Renfan Shao , Chenhui Zhu , Matthew Glaser , Joseph MacLennan , David Walba , Noel Clark
12:15PM - 12:27PM	<u>J51.00006: A Bent -- Shape Leaning Smectic Liquid Crystal Material</u> Cuiyu Zhang , Nick Diorio , S. Radhika , B.K. Sadashiva , Antal Jakli
12:27PM - 12:39PM	<u>J51.00007: Effective Conductivity due to Continuous Polarization Reorientation in Fluid Ferroelectrics</u> Joseph MacLennan , Yongqiang Shen , Tao Gong , Renfan Shao , Eva Korblova , David Walba , Noel Clark
12:39PM - 12:51PM	<u>J51.00008: Microscopic origins of first-order SmA-SmC phase behavior and electro optics in de Vries smectic liquid crystals</u> Z. Kost-Smith , M.A. Glaser , P.D. Beale , N.A. Clark
12:51PM - 1:03PM	<u>J51.00009: Morphology and Dynamics of Liquid Crystalline Molecules Confined in Nano-pores</u> Malgorzata Jasiurkowska , Wilhelm Kossack , Roxana Ene , Ciprian Iacob , Wycliffe Kipnusu , Periklis Papadopoulos , Joshua Sangoro , Maria Massalska-Arodz , Friedrich Kremer
1:03PM - 1:15PM	<u>J51.00010: Temperature Dependence of Smectic Liquid Crystals Mixed With Magnetic Nanoparticles</u> Jefferson W. Taylor , Lynn K. Kurihara , Luz J. Martinez-Miranda
1:15PM - 1:27PM	<u>J51.00011: The Role of ZnO Particle Size, Shape and Concentration on Liquid Crystal Order and Current-Voltage Properties for Potential Photovoltaic Applications</u> Luz J. Martinez-Miranda , Janelle Branch , Robert Thompson , Jefferson W Taylor , Lourdes Salamanca-Riba
1:27PM - 1:39PM	<u>J51.00012: ZnO Nanowire Arrays with Liquid Crystals for Photovoltaic Applications</u> Lourdes Salamanca-Riba , Joshua Taillon , Luz Martinez-Miranda
1:39PM - 1:51PM	<u>J51.00013: Ligation of Complementary Oligomers in Liquid Crystals of nanoDNA</u> Gregory Smith , David Walba , Noel Clark , Weixian Xi , Tao Gong , Christopher Bowman , Tommaso Fraccia , Giuliano Zanchetta , Tommaso Bellini

1:51PM - 2:03PM J51.00014: Liquid Crystal Ordering of Random DNA Oligomers  
 Tommaso Bellini , Giuliano Zanchetta , Tommaso Fraccia , Roberto Carbino , Ethan Tsai , Mark Moran , Gregory Smith , David Walba , Noel Clark

Tuesday, February 28, 2012

11:15AM - 2:15PM

**Session J52: Focus Session: Extreme Mechanics - Plates**

Sponsoring Units: GSNP DFD  
 Chair: Christian Santangelo, University of Massachusetts  
 Room: 153C

11:15AM - 11:27AM	<u>J52.00001: Radial stretching of thin sheets: A prototypical model for morphological complexity</u> Benny Davidovitch
11:27AM - 11:39AM	<u>J52.00002: Bending of a surface with spontaneous curvature</u> Catherine Quilliet , Philippe Marmottant , Alexandre Farutin , Chaouqi Misbah
11:39AM - 11:51AM	<u>J52.00003: Deformations of 2D Random Elastic Networks</u> Hendrik Florijn , M. van Deen , Henk Imthorn , Martin van Hecke
11:51AM - 12:03PM	<u>J52.00004: Packing with a twist: from Wrinkles to Scrolls</u> Arshad Kudrolli , Julien Chopin
12:03PM - 12:15PM	<u>J52.00005: Geometry and Mechanics of Chiral Pod Opening</u> Eran Sharon , Shahaf Armon , Efi Efrati , Raz Kupferman
12:15PM - 12:27PM	<u>J52.00006: Flat-twisted-helical transition in composed gel sheets and self assembled chiral molecules</u> Shahaf Armon , Eran Sharon , Efi Efrati , Raz Kupferman
12:27PM - 12:39PM	<u>J52.00007: Curvature and defects in soft membranes with orientational order</u> Thanh Son Nguyen , Jun Geng , Jonathan V. Selinger
12:39PM - 12:51PM	<u>J52.00008: Capillary induced buckling of floating sheets</u> Miguel Pineirua , Jose Bico , Benoit Roman , Narayanan Menon
12:51PM - 1:03PM	<u>J52.00009: The wrinkle transition of a sheet on a drop</u> Robert Schroll , Benny Davidovitch , Hunter King , Narayanan Menon
1:03PM - 1:15PM	<u>J52.00010: Transition from Wrinkling to Crumpling in a Sheet Floating on a Drop</u> Hunter King , Narayanan Menon , Robert Schroll , Benny Davidovitch
1:15PM - 1:27PM	<u>J52.00011: Supported conical defects</u> Efi Efrati
1:27PM - 1:39PM	<u>J52.00012: Stamping and wrinkling of elastic plates</u> Jeremy Hure , Jose Bico , Benoit Roman
1:39PM - 1:51PM	<u>J52.00013: Deterministic Wrinkling Patterns of Thin Polymeric Coatings on Soft Substrates</u> Jie Yin , Jose L. Yague , Karen K. Gleason , Mary C. Boyce
1:51PM - 2:03PM	<u>J52.00014: Wrinkles in reinforced membranes</u> Atsushi Takei , Fabian Brau , Benoit Roman , Jose Bico
2:03PM - 2:15PM	<u>J52.00015: Mechanics of Graphene Electronics</u> Xuanhe Zhao

Tuesday, February 28, 2012

2:30PM – 5:30PM

**Session L42: Focus Session: Physics of Cancer II -- Physical Aspects**

Sponsoring Units: DBIO  
 Chair: Robert Austin, Princeton University  
 Room: 156C

Tuesday, February 28, 2012

2:30PM – 5:30PM

**Session L43: Invited Session: Precursors to the Folding and Aggregation of Biological Molecules**

Sponsoring Units: DBIO DPOLY  
 Chair: Peter G. Vekilov, University of Houston and Vassiliy Lubchenko, University of Houston  
 Room: 157AB

2:30PM - 3:06PM	<u>L43.00001: Postranslational modifications significantly alter the binding-folding pathways of proteins associating with DNA</u> Invited Speaker: Garegin Papoian
3:06PM - 3:42PM	<u>L43.00002: Mesoscopic Aggregation in Protein Solutions</u> Invited Speaker: Vassiliy Lubchenko
3:42PM - 4:18PM	<u>L43.00003: Protein misfolding and aggregation</u> Invited Speaker: Dave Thirumalai
4:18PM - 4:54PM	<u>L43.00004: The impact of conformational transformations on the pathways and kinetics of protein self-assembly into extended matrices</u> Invited Speaker: Jim De Yoreo
4:54PM - 5:30PM	<u>L43.00005: The role of proteins and peptides in shaping the structure and microstructure of biogenic and biomimetic crystals</u> Invited Speaker: Boaz Pokroy

Tuesday, February 28, 2012

2:30PM – 5:30PM

**Session L44: Focus Session: Nano to Mesoscale Structure in Ordered Soft Matter: Liquid Crystal Phases**

Sponsoring Units: DPOLY

Chair: Jan Lagerwall, Seoul National University and Edward Samulski, University of North Carolina  
Room: 157C

2:30PM - 3:06PM	<u>L44.00001: DILLON MEDAL BREAK</u>
3:06PM - 3:42PM	<u>L44.00002: Nano to Meso-scale Structure in Liquid Crystals: the Cybotactic Nematic Phase of Bent-core Mesogens</u> Invited Speaker: Oriano Francescangeli
3:42PM - 3:54PM	<u>L44.00003: Nanoscale Positional Order Correlations: Swarms, Cybotactic Groups, Clusters, and Pretransitional Fluctuations in Liquid Crystals</u> Satyendra Kumar , Dena Agra-Kooijman , Bharat Acharya
3:54PM - 4:06PM	<u>L44.00004: Randomized Grain Boundary Liquid Crystal Phase</u> D. Chen , H. Wang , M. Li , M. Glaser , J. MacLennan , N. Clark
4:06PM - 4:18PM	<u>L44.00005: Resonant X-ray Scattering Studies of Smectic and Columnar Bent-Core Liquid Crystal Phases</u> Ronald Pindak , Philippe Barois , Virginie Ponsinet , Cesar Folcia , Josu Ortega , LiDong Pan , Shun Wang , Suntao Wang , Cheng-Cher Huang
4:18PM - 4:30PM	<u>L44.00006: Polyhedral Liquid Crystalline Vesicles</u> Mark Bowick
4:30PM - 4:42PM	<u>L44.00007: Packing Cheerios: Simulation studies of torus-shaped hard particles</u> Andrew Konya , Robin Selinger
4:42PM - 4:54PM	<u>L44.00008: Effect of CNTs and Induced Chirality on Smectic-Smectic Liquid Crystal Phase Transitions</u> P. Kalakonda , G.S. Iannacchione , R. Basu , C. Rosenblatt , R.P. Lemieux
4:54PM - 5:06PM	<u>L44.00009: Evaporation induced orientational order in soft solid phases of clays</u> Elisabeth Lindbo Hansen , Henrik Hemmen , Paul Dommersnes , Jon Otto Fossum
5:06PM - 5:18PM	<u>L44.00010: Mesophase behavior and effect of polydispersity in assemblies of polyhedral particles</u> Fernando Escobedo , Umang Agarwal
5:18PM - 5:30PM	<u>L44.00011: Submolecular organization of de Vries smectics with tuned frustration between SmA- and SmC- promoting elements</u> Dena Mae Agra-Kooijman , S Dey , Q. Song , D. Nonnenmacher , F. Giesselmann , R. Lemieux , Satyendra Kumar

Tuesday, February 28, 2012

2:30PM – 5:30PM

**Session L45: Friction and Brushes**

Sponsoring Units: DPOLY

Chair: Mark Stoykovich, University of Colorado

Room: 159

2:30PM - 3:06PM	<u>L45.00001: DILLON MEDAL BREAK</u>
3:06PM - 3:18PM	<u>L45.00002: Velcro<sup>®</sup> as a Mesoscopic Model System for Stick-Slip Motion</u> Lisa Mariani , Cara Esposito , Piotr Hbadas , Paul Angiolillo
3:18PM - 3:30PM	<u>L45.00003: The Use of Microscale Geometry to Tailor Stimulus-Responsive Surface Friction</u> Lin Han , Jie Yin , Lifeng Wang , Khek-Khiang Chia , Robert Cohen , Michael Rubner , Mary Boyce , Christine Ortiz
3:30PM - 3:42PM	<u>L45.00004: Viscous friction of hydrogen-bonded matter</u> Aykut Erbas , Dominik Horinek , Roland R. Netz
3:42PM - 3:54PM	<u>L45.00005: Molecular mechanisms of friction at soft polymer interfaces</u> Frederic Restagno , Celine Cohen , Christophe Poulard , Liliane Leger
3:54PM - 4:06PM	<u>L45.00006: Frictional properties of the end-grafted polymer layer in presence of salt solution</u> Maryam Raftari , Zhenyu Zhang , Graham J. Leggett , Mark Geoghegan
4:06PM - 4:18PM	<u>L45.00007: Nanofluidity of Polymer Melt: Two velocity hydrodynamics</u> Sergei Obukhov , Albert Johner
4:18PM - 4:30PM	<u>L45.00008: Poly(ethylene oxide) Chains Are Not "Hydrophilic" When They Exist As Polymer Brush Chains</u> Hoyoung Lee , Dae Hwan Kim , Kevin N. Witte , Kimberly Ohn , Je Choi , Kyungil Kim , Mati Meron , Binhua Lin , Bulent Akgun , Sushil Satija , You-Yeon Won
4:30PM - 4:42PM	<u>L45.00009: Bundling in polymer brushes of directed polymers</u> Panayotis Benetatos , Annette Zippelius , Eugene Terentjev
4:42PM - 4:54PM	<u>L45.00010: Tunable Surface Properties from Bioinspired Polymers</u> Wendy van Zoelen , Adrienne M. Rosales , Ronald N. Zuckermann , Rachel A. Segalman
4:54PM - 5:06PM	<u>L45.00011: Concentration Fluctuations of a Semidilute Polymer Solution in Good Solvent Near a Repulsive Surface</u> Catherine Yeh , Philip Pincus , Alexandra Zidovska
5:06PM - 5:18PM	<u>L45.00012: Kinetics of Polymer Interfacial Reaction</u> Shuo Zhang , Jeffrey Koberstein
5:18PM - 5:30PM	<u>L45.00013: Influence of Substrate Surface Energy on the Morphological Evolution of PS/PMMA Blend Thin Films</u> Yifu Ding , Dae-Up Ahn , Zhen Wang , Ian Campell , Mark Stoykovich

Tuesday, February 28, 2012

2:30PM – 5:30PM

### Session L46: Dillon Medal Symposium

Sponsoring Units: DPOLY

Chair: Frank Bates, University of Minnesota

Room: 160ABC

2:30PM - 3:06PM	<u>L46.00001: John H. Dillon Medal Lecture: Self-assembly of rod-coil block polymers</u> Invited Speaker: Rachel Segalman
3:06PM - 3:18PM	<u>L46.00002: Wrinkles and Folds as Photonic Structures in Polymer Photovoltaics</u> Yueh-Lin Loo , Jong Bok Kim , Pilnam Kim , Howard Stone , Nicolas Pegard , Jason Fleischer , Soong Ju Oh , Cherie Kagan
3:18PM - 3:30PM	<u>L46.00003: Molecular Exchange Dynamics in Block Copolymer Micelles</u> Frank Bates , Jie Lu , SooHyung Choi , Timothy Lodge
3:30PM - 3:42PM	<u>L46.00004: Direct Imaging of Nanoscale Ionic Clusters in a Polymer Electrolyte Membrane</u> Nitash Balsara , Kenneth Downing , Sergey Yakovlev
3:42PM - 3:54PM	<u>L46.00005: Mechanisms underlying conductivity of lamellar block copolymer electrolytes</u> Venkat Ganesan , Victor Pryamitsyn
Tuesday, February 28, 2012	<u>L46.00006: Physical Aspects of Photodynamic Corneal Collagen Crosslinking</u>
3:54PM - 4:06PM	Julia Kornfield
4:06PM - 4:18PM	<u>L46.00007: Directed Assembly of Block Copolymer Cylinders: Fundamental Physical Limits to Cylinder Spacing</u> Vindhya Mishra , Glenn H. Fredrickson , Edward J. Kramer
4:18PM - 4:30PM	<u>L46.00008: Measurement of Diffusion in Entangled Rod-Coil Triblock Copolymers</u> B.D. Olsen , M. Wang
4:30PM - 4:42PM	<u>L46.00009: Taking a Hard Look at Soft X-ray Scattering</u> Alexander Hexemer , Cheng Wang
4:42PM - 4:54PM	<u>L46.00010: Neither crystalline nor amorphous: measuring disorder in polymers and assessing its effect on charge transport</u> Alberto Salleo , Jonathan Rivnay , Rodrigo Noriega , Michael Toney
4:54PM - 5:06PM	<u>L46.00011: Shear Alignment of Perpendicular Lamellae in Block Copolymer Thin Films</u> Richard Register , Saswati Pujari , Paul Chaikin
5:06PM - 5:18PM	<u>L46.00012: Role of nanoscale morphology on the nano and macro-scale performance of polythiophene based polymer solar cells</u> Peter Green , Jojo Amonoo , Emmanouil Glynos , Chelsea Chen
5:18PM - 5:30PM	<u>L46.00013: Semiconducting block copolymers as nano-structuring agents for high-efficiency and annealing-free bulk hetero-junction organic solar cells</u> Georges Hadziioannou , S'ebastien-Jun Mougner , Cedric Renaud , Cyril Brochon , Guillaume Fleury , Dargie Deribew , Eric Cloutet , Laurence Vignau

Tuesday, February 28, 2012

2:30PM – 5:30PM

### Session L48: Polymers and DNA Coated Colloid Particles

Sponsoring Units: DPOLY DBIO

Chair: Alexei Tkachenko, Brookhaven National Laboratory

Room: 161

2:30PM - 3:06PM	<u>L48.00001: DILLON MEDAL BREAK</u>
3:06PM - 3:18PM	<u>L48.00002: Structure and Assembly of Polymeric Dots Formed by Conjugated Polymers</u> Naresh Osti , Dilru Ratnaweera , Thusitha Etemapawala , Umesh Shrestha , Dvora Perahia
3:18PM - 3:30PM	<u>L48.00003: Molecular dynamics study of polymer-silica nanoparticle hybrids: Building blocks for directed assembly</u> Sabina Maskey , Flint Pierce , Gary Grest , Dvora Perahia
3:30PM - 3:42PM	<u>L48.00004: Structural and Dynamical Characteristics of Polyelectrolyte Dendrimer Solutions Revealed by Neutron Scattering and Atomistic Simulation</u> Bin Wu , Yun Liu , Lionel Porcar , Peter Falus , Changwoo Do , Michalea Zamponi , Kunlun Hong , Gregory Smith , Wei-Ren Chen
3:42PM - 3:54PM	<u>L48.00005: A theoretical study of the phase behavior of spherical colloids decorated with adhesive domains</u> Homin Shin , Kenneth Schweizer
3:54PM - 4:06PM	<u>L48.00006: In situ electrochemical small-angle neutron scattering (eSANS) for quantitative structure and redox properties of polymer-coated nanoparticles</u> Vivek Prabhu , Vytas Reipa , Peter Bonnesen , Adam Rondinone , Eric Formo
4:06PM - 4:18PM	<u>L48.00007: Topological Interaction by Entanglement of DNA</u> Lang Feng , Ruojie Sha , Nadrian Seeman , Paul Chaikin
4:18PM - 4:30PM	<u>L48.00008: Measuring in situ primary and competitive hybridization events on microspheres</u> Valeria Milam , James Hardin
4:30PM - 4:42PM	<u>L48.00009: You can always get what you want</u> Zorana Zeravcic , Sahand Hormoz , Jesse Collins , Vinothan Manoharan , Michael Brenner
4:42PM - 4:54PM	<u>L48.00010: Rigid and Soft Minima of DNA-colloid Clusters</u> Jesse Collins , Zorana Zeravcic , Vinothan Manoharan , Michael Brenner
4:54PM - 5:06PM	<u>L48.00011: Uniform colloidal clusters from random aggregation of bidisperse spheres</u> Nicholas B. Schade , Miranda C. Holmes-Cerfon , Elizabeth R. Chen , Dina Aronzon , Jesse W. Collins , Jonathan A. Fan , Vinothan N. Manoharan
5:06PM - 5:18PM	<u>L48.00012: The Internal Structure of Nanoparticle Dimers Linked by DNA</u> Fernando Vargas Lara , Ching-Jung Cheng , Oleg Gang , Francis W. Starr
5:18PM - 5:30PM	<u>L48.00013: Specific interactions in complex mixtures: effects on the thermodynamic stability of multicomponent protein solutions</u> William Jacobs , Daan Frenkel

Tuesday, February 28, 2012

2:30PM – 5:30PM

**Session L49: Focus Session: Fluctuation-Induced Forces in Soft Matter and Polymeric Systems - Charge, Shape and Nucleation**

Sponsoring Units: DPOLY

Chair: Zvonimir Dogic, Brandeis University

Room: 162A

2:30PM - 3:06PM	<u>L49.00001: DILLON MEDAL BREAK</u>
3:06PM - 3:18PM	<u>L49.00002: Ion-induced interactions between charged macroions and dielectric inhomogeneities</u> Jos Zwanikken , Monica Olvera de la Cruz
3:18PM - 3:30PM	<u>L49.00003: Dielectric many-body effects in arrays of charged cylindrical macromolecules</u> Daniel W Sinkovits , Kipton Barros , Jure Dobnikar , Matej Kandu{v{c} , Ali Naji , Rudolf Podgornik , Erik Luijten
3:30PM - 3:42PM	<u>L49.00004: Harnessing Electrostatic Forces to Grow Bio-inspired Hierarchical Vascular Networks</u> Kristopher Behler , Zachary Melrose , Andrew Schott , Eric Wetzel
3:42PM - 4:18PM	<u>L49.00005: Influence of probe shape on polymer configurations and entropic forces</u> Invited Speaker: Yacov Kantor
4:18PM - 4:30PM	<u>L49.00006: Topological obstacles and the forces on them in systems of strongly interacting directed polymers</u> David Zeb Rocklin , Paul M. Goldbart , Shina Tan
4:30PM - 4:42PM	<u>L49.00007: Critical exponents in the presence of a tip</u> Mohammad F. Maghrebi , Yacov Kantor , Mehran Kardar
4:42PM - 4:54PM	<u>L49.00008: Trapping fluctuations in confined carbon dioxide near the supercritical ridge</u> Manfred Heuberger , Erich Schurtenberger
4:54PM - 5:06PM	<u>L49.00009: Homogeneous crystal nucleation from the melts of flexible <math>\text{Sn}</math>-alkanes by molecular simulation</u> Peng Yi , Gregory C. Rutledge
5:06PM - 5:18PM	<u>L49.00010: Molecular Dynamics Study on Nucleation Behavior and Lamellar Mergence of Polyethylene Globule Crystallization</u> Xiaozhen Yang , Simiao Wang

Tuesday, February 28, 2012

2:30PM – 5:30PM

**Session L50: Focus Session: Organic Electronics and Photonics - Morphology**

Sponsoring Units: DMP DPOLY

Chair: Mark Dadmun, University of Tennessee

Room: 162B

2:30PM - 3:06PM	<u>L50.00001: DILLON MEDAL BREAK</u>
3:06PM - 3:18PM	<u>L50.00002: Real-time observation of optoelectronic properties during poly(3-alkylthiophene) crystallization</u> Victor Ho , Bryan Boudouris , Leslie Jimison , Michael Toney , Alberto Salleso , Rachel A. Segalman
3:18PM - 3:30PM	<u>L50.00003: In Situ Annealing Study of Organic Photovoltaic Morphology via Non-invasive Polarized Neutron Reflectivity</u> Brett Guralnick , Michael Mackay , Brian Kirby , Charles Majkrzak
3:30PM - 3:42PM	<u>L50.00004: Solvent Studies for Solution Processing of Polymer-Fullerene Bulk Heterojunctions</u> Margaret J. Sobkowicz , Ronald L. Jones , R. Joseph Kline , Dean M. DeLongchamp
3:42PM - 3:54PM	<u>L50.00005: Morphology in Hybrid Oxide/Polymer Core-Shell Nanowire Photovoltaics</u> Jie Jiang , Sohrab Ismail-Beigi
3:54PM - 4:06PM	<u>L50.00006: An Improved Forcefield for Molecular Modeling Of Crystalline Poly(3-Hexyl Thiophene)</u> Ram Bhatta , Yeneneh Yimer , David Perry , Mesfin Tsige
4:06PM - 4:18PM	<u>L50.00007: Device simulation of morphologies that are consistent with small angle scattering and reflectometry</u> Daniel Olds , Phillip Duxbury
4:18PM - 4:30PM	<u>L50.00008: Three dimensional device simulations to model conducting probe AFM measurements of organic semiconductors with fibrous morphologies</u> Kanokkorn Pimcharoen , Danial Olds , Jiebing Sun , Pengpeng Zhang , Phillip Duxbury
4:30PM - 4:42PM	<u>L50.00009: Self-Limiting Crystal Microstructure in Poly(3-hexylthiophene)</u> Chad Snyder , Ryan Nieuwendaal , Dean DeLongchamp , Jessica Henry
4:42PM - 4:54PM	<u>L50.00010: X-ray and neutron reflectivity and electronic properties of PCBM-poly(bromo)styrene blends and bilayers with poly(3-hexylthiophene)</u> Stuart Kirschner , Nathaniel Smith , Kevin Wepasnick , Howard Katz , Brian Kirby , Julie Borchers , Daniel Reich
4:54PM - 5:06PM	<u>L50.00011: Controlled phase separation in conjugated polymer blends using quadruple hydrogen bonding interactions</u> Yen-Hao Lin , Rafael Verduzco
5:06PM - 5:18PM	<u>L50.00012: Synthesis and Characterization of All-Conjugated Block Copolymers Prepared via Click Chemistry</u> Rafael Verduzco , Kendall Smith
5:18PM - 5:30PM	<u>L50.00013: Undulation instability in drop-cast poly(3-hexylthiophene) film originated from self-assembly</u> Min Sang Park , Avishek Aiyar , Jung Ok Park , Elsa Reichmanis , Mohan Srinivasarao

Tuesday, February 28, 2012

2:30PM – 5:30PM

### Session L51: Self Assembly: Mostly Colloids, Lipids and Surfactants

Sponsoring Units: DCMF DFD

Chair: Arjun G Yodh, University of Pennsylvania

Room: Boston Convention Center 154

- 2:30PM - 2:42PM [L51.00001: Basic parameters affecting nanoparticle self-assembly: An experimental approach](#)  
Chakra Joshi , Yevgen Kryukov , Jacques Amar , Terry Bigioni
- 2:42PM - 2:54PM [L51.00002: Self-assembly of gold nanoparticles at water/vapor interface](#)  
Gary S. Grest , J. Matthew D. Lane
- 2:54PM - 3:06PM [L51.00003: Electric Field Driven Self-Assembly of Colloidal Rods](#)  
Jaime Juarez , Kundan Chaudhary , Qian Chen , Steve Granick , Jennifer Lewis
- 3:06PM - 3:18PM [L51.00004: Electron-induced Three Dimensional Self-assembly and Disassembly of Molecules on a Gold Surface](#)  
Qing Li , Chengbo Han , Miguel Fuentes-Cabrera , Humberto Terrones , Bobby Sumpter , Jerry Bernholc , Jieyu Yi , Zheng Gai , Art Baddorf , Petro Maksymovych , Minghu Pan
- 3:18PM - 3:30PM [L51.00005: Self assembly of anisotropic colloidal particles](#)  
Daniel Florea , Hans Wyss
- 3:30PM - 3:42PM [L51.00006: Adsorption of Core-Shell Nanoparticles at Liquid-Liquid Interfaces](#)  
Emanuela Del Gado , Lucio Isa , Esther Amstad , Konrad Schwenke , Patrick Ilg , Martin Kroegeer , Erik Reimhult
- 3:42PM - 3:54PM [L51.00007: Dynamics of Early-stage Self-assembly of Objective Structures](#)  
Henrik van Lengerich , Richard James
- 3:54PM - 4:06PM [L51.00008: Encapsulation by Janus Oblate Spheroids](#)  
Wei Li , Ya Liu , Genevieve Brett , James Gunton
- 4:06PM - 4:18PM [L51.00009: Particle Deposition in Drying Drops of Colloidal Suspensions Containing Different Surfactants](#)  
Tim Still , Peter J. Yunker , A.G. Yodh
- 4:18PM - 4:30PM [L51.00010: Formation of Lipid-Based Nanodiscs and Their Dependence of Temperature and Chemical Composition](#)  
Ying Liu , Yongkun Yang , Mu-Ping Nieh
- 4:30PM - 4:42PM [L51.00011: How to control GUV shape transformations](#)  
Kejia Chen , Adam Szmelter , Sung Chul Bae , Steve Granick
- 4:42PM - 4:54PM [L51.00012: Aqueous Gemini Surfactant Self-Assembly into Complex Lyotropic Phases](#)  
Mahesh Mahanthappa , Gregory Sorenson
- 4:54PM - 5:06PM [L51.00013: Shear-Driven Circulation Patterns in Lipid Membrane Vesicles](#)  
Francis Woodhouse , Aurelia Honerkamp-Smith , Raymond Goldstein
- 5:06PM - 5:18PM [L51.00014: Self standing nanoparticulate networks by self assembly surfactant HS<sub>1</sub> mesophase](#)  
Guruswamy Kumaraswamy , Kamendra Sharma , Sayam Sen Gupta

5:18PM - 5:30PM

[L51.00015: SAXS on ice crystals reveals fractal structure on nanometer length scales](#)

Jesse Hopkins , Ryan Badeau , Matthew Warkentin , Robert Thorne

### DPOLY Business Meeting

Room: 160ABC

5:45PM - 6:45PM



Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P26: Focus Session: Friction, Fracture and Deformation Across Length Scales - Friction and Geometric Effects**

Sponsoring Units: DCOMP GSNP  
Chair: Michael Chandross, Sandia National Laboratories  
Room: 257B

8:00AM - 8:12AM	<u>P26.00001: Effect of Atomic Scale Geometry on Contact and Friction Between Rough Solids</u> Tristan A. Sharp , Mark O. Robbins
8:12AM - 8:24AM	<u>P26.00002: Breakdown of Amontons' Law of Friction in Sheared-Elastomer with Local Amontons' Friction</u> Hiroshi Matsukawa , Michio Otsuki
8:24AM - 8:36AM	<u>P26.00003: Geometry and elasticity for detachment fronts in friction</u> Alessandro Taloni , Andrea Benassi , Stefano Zapperi
8:36AM - 8:48AM	<u>P26.00004: Local friction at a rubber/glass multicontact interface</u> Antoine Chateauinois , Danh Toan Nguyen , Christian Fretigny , Yohan Le Chenadec , Maude Portigliatti
8:48AM - 9:00AM	<u>P26.00005: Adhesive contact of randomly rough surfaces</u> Lars Pastewka , Mark Robbins
9:00AM - 9:12AM	<u>P26.00006: The Effect of Surface Topography on Interface Stresses During Peeling</u> Ye Xu , Eric Dufresne
9:12AM - 9:24AM	<u>P26.00007: Direction dependence of static friction for commensurate and moderately incommensurate surfaces</u> Michael Wolloch , Peter Mohn , Josef Redinger , Andras Vernes
9:24AM - 9:36AM	<u>P26.00008: Laser induced projectile impact test (LIPIT): A micron-scale ballistic test for high-strain rate mechanical study of nano-structures</u> Jae-Hwang Lee , David Veysset , Keith Nelson , Edwin Thomas
9:36AM - 9:48AM	<u>P26.00009: Probing the sliding interactions between bundled actin filaments</u> Andy Ward , Zvonimir Dogic
9:48AM - 10:00AM	<u>P26.00010: Harnessing polymer gels to regulate friction between sliding surfaces</u> Hassan Masoud , Alexander Alexeev
10:00AM - 10:12AM	<u>P26.00011: On the Equilibrium of an Heavy Elastic Cylinder on Horizontal Nondeformable Plane</u> Lavrent Shekhan , Sergey Verlinski
10:12AM - 10:24AM	<u>P26.00012: Internal friction peak in silicon revealed by moderate temperature annealing</u> Thomas Metcalf , Xiao Liu , Jeremy Robinson
10:24AM - 10:36AM	<u>P26.00013: Anharmonic modal coupling in a bulk micromechanical resonator</u> Tyler Dunn , Josef-Stefan Wenzler , Pritiraj Mohanty
10:36AM - 10:48AM	<u>P26.00014: Investigation of stability for an electrostatically actuated flexible electrode</u> Cory Hinton , Matthew McFarland , Thomas Ward

70

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P40: Protein Fluctuations and Conformation Changes**

Sponsoring Units: DBIO  
Chair: Daniel Cox, UC Davis  
Room: 156A

8:00AM - 8:12AM	<u>P40.00001: Atomistic simulations of the MS2 coat protein conformational transition</u> Matthew Perket , Francesco Pontiggia , Michael Hagan
8:12AM - 8:24AM	<u>P40.00002: Weak intra-ring allosteric communications of the archaeal chaperonin thermosome revealed by normal mode analysis</u> Manori Jayasinghe , Pooja Shrestha , Xiongwu Wu , George Stan
8:24AM - 8:36AM	<u>P40.00003: Conformational changes of surface immobilized proteins studied by combined Atomic Force Microscopy and Fluorescence Spectroscopy</u> Daniel Rizzo , Cristian Staii
8:36AM - 8:48AM	<u>P40.00004: The Glassy State of Crambin and the THz Time Scale Fluctuations Related to Protein Function</u> Kristina Woods , Bediha Beser
8:48AM - 9:00AM	<u>P40.00005: Stabilization of peptide helices by length and vibrational free energies: Lemph{Ab initio} case study of polyaniline</u> Mariana Rossi , Volker Blum , Matthias Scheffler
9:00AM - 9:12AM	<u>P40.00006: A Physics-based Approach of Coarse-graining the cytoplasm of E. coli</u> Qian Wang , Margaret Cheung
9:12AM - 9:24AM	<u>P40.00007: Investigation of flexibility in Myosin V using a new 3D mechanical model</u> Mahdi Haghshenas-Jaryani
9:24AM - 9:36AM	<u>P40.00008: Barrel fluctuation and oxygen diffusion pathways in the monomeric fluorescent proteins</u> Chola Regmi , Prem Chapagain , Yuba Bhandari , Ilan Chemmama , Bernard Gerstman
9:36AM - 9:48AM	<u>P40.00009: Protein Dynamics Studied by Quasi-elastic Neutron Scattering</u> Xiang-qiang (Rosie) Chu , Eugene Mamontov , Marco Lagi , Sow-Hsin Chen , Manavalan Gajapathy , Joseph Ng , Kevin Weiss , Leighton Coates , Emiliano Fratini , Piero Baglioni
9:48AM - 10:00AM	<u>P40.00010: Intrinsic Mean Square Displacement in Proteins</u> Derya Vural , Henry R. Glyde
10:00AM - 10:12AM	<u>P40.00011: Scaling Behavior in Twisted, Helical and Undulating Lysozyme Amyloid Fibrils</u> Raffaele Mezzenga , Cecile Lara , Jozef Adamcik , Ivan Usov , Sophia Jordens
10:12AM - 10:24AM	<u>P40.00012: Probing Volume Changes and the Intracellular Water in Single Erythrocytes</u> Sanghoon Park , Silki Arora , Jennifer Mauser , Debopam Chakrabarti , Alfons Schulte
10:24AM - 10:36AM	<u>P40.00013: Effects of pressure on the protein barrel and the chromophore interactions in mCherry</u> Yuba Bhandari , Prem Chapagain , Chola Regmi , Bernard Gerstman
10:36AM - 10:48AM	<u>P40.00014: Thermal response of proteins (histone H2AX, H3.1) by a coarse-grained Monte Carlo simulation with a knowledge-based phenomenological potential</u> Miriam Fritsche , Dieter Heermann , Ras Pandey , Barry Farmer

71

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P41: Drops, Bubbles and Interfacial Fluid Mechanics**

Sponsoring Units: DFD

Chair: Kripa Varanasi, Massachusetts Institute of Technology

Room: 156B

8:00AM - 8:12AM	<u>P41.00001: Multiscale Simulation of Gas Film Lubrication During Liquid Droplet Collision</u> Xiaodong Chen , Prashant Khare , Dongjun Ma , Vigor Yang
8:12AM - 8:24AM	<u>P41.00002: The Life and Death of the Air Film Beneath an Impacting Drop</u> John Kolinski , Shmuel Rubinstein , L. Mahadevan
8:24AM - 8:36AM	<u>P41.00003: Manipulating Leidenfrost temperature with surface modification</u> Hyuk-Min Kwon , Jacy Bird , Kripa Varanasi
8:36AM - 8:48AM	<u>P41.00004: Impingement of Molten Metal Droplets on Nanoengineered Surfaces</u> Rajeev Dhiman , Kripa Varanasi
8:48AM - 9:00AM	<u>P41.00005: Hydrodynamic self-rectification: A novel mechanism for generating uniform static droplet arrays</u> Siva Vanapalli , Swastika Bithi , Meng Sun
9:00AM - 9:12AM	<u>P41.00006: In Situ Observation of Liquid Capillary Bridges on Superhydrophobic Surfaces</u> Adam Paxson , Sushant Anand , Kripa Varanasi
9:12AM - 9:24AM	<u>P41.00007: Two particle microrheology of quasi-2D viscous systems in the limit of shallow bulk layer</u> Thibaut Divoux , Kenneth Desmond , James Sebel , Eric Weeks
9:24AM - 9:36AM	<u>P41.00008: Measuring interfacial viscosity using macro- and micro-rheology</u> James Sebel , Kenneth Desmond , Eric R. Weeks , Thibaut Divoux
9:36AM - 9:48AM	<u>P41.00009: Molecular Modeling of Three Phase Contact for Static and Dynamic Contact Angle Phenomena</u> Ateeque Malani , Miguel Amat , Anilkumar Raghavanpillai , Ernest Wysong , Gregory Rutledge
9:48AM - 10:00AM	<u>P41.00010: Nonlinear electrohydrodynamics of a viscous droplet</u> Paul Salipante , Petia Vlahovska
10:00AM - 10:12AM	<u>P41.00011: Breakup of Bubbles or Drops by Capillary Waves Induced by Coalescence or Other Excitations</u> Feng hua Zhang , Peter Taborek , Justin Burton , Boo Cheong Khoo , Sigg Thoroddsen
10:12AM - 10:24AM	<u>P41.00012: Thermo-actuated migration in a micro-system</u> Marie-Caroline Jullien , Bertrand Selva , Isabelle Cantat
10:24AM - 10:36AM	<u>P41.00013: Towards an effective surface tension at a foam/water interface</u> Herve CAPS , Ariane Bronfort , Charles Dubois , Giles Delon
10:36AM - 10:48AM	<u>P41.00014: Continuous dielectrophoretic centering of compound droplets</u> Greg Randall , Brent Blue
10:48AM - 11:00AM	<u>P41.00015: The Dynamics of Coupled Droplets Under Gravity Condition</u> Haider Hekiri , Takumi Hawa

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P43: Invited Session: High Content Biophysical Data for Dynamic Studies in Cancer**

Sponsoring Units: DBIO

Chair: Larry Nagahara, National Cancer Institute

Room: 157AB

8:00AM - 8:36AM	<u>P43.00001: Tissue Refractive Index Fluctuations Report on Cancer Development</u> Invited Speaker: Gabriel Popescu
8:36AM - 9:12AM	<u>P43.00002: TBA</u> Invited Speaker: Nongjian Tao
9:12AM - 9:48AM	<u>P43.00003: Time-lapse Microscopy of Colorectal Tumorigenesis In Vivo</u> Invited Speaker: Seok-Hyun (Andy) Yun
9:48AM - 10:24AM	<u>P43.00004: High Content Bio-Chemo-Mechanical Screening and Modeling to Study Heterogeneity and Metastasis of Cancer for Drug Target Discovery</u> Invited Speaker: Stephen Wong
10:24AM - 11:00AM	<u>P43.00005: The Fluid Phase of Solid Tumors: Real-time Access to Cancer in Individual Patients</u> Invited Speaker: Peter Kuhn

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P44: Focus Session: Block Copolymer Micelles and Polymersomes**

Sponsoring Units: DPOLY

Chair: You-Yeon Won, Purdue University

Room: 157C

8:00AM - 8:12AM	<u>P44.00001: Modeling of Interactions Between Spherical Micelles for Diblock Copolymers in Selective Solvents</u> Raghuram Thiagarajan , David Morse
8:12AM - 8:24AM	<u>P44.00002: Dissipative particle dynamics study of relationship between wall thickness and size in polymer vesicles</u> Mengying Xiao , Rong Wang , Daiqian Xie
8:24AM - 8:36AM	<u>P44.00003: Effect of Hydrophobic Block Length on Vesicle Formation of Block Copolymers</u> Rong Wang , Mengying Xiao , Daiqian Xie
8:36AM - 9:12AM	<u>P44.00004: Nanostructured assemblies from amphiphilic ABC multiblock polymers</u> Invited Speaker: Marc A. Hillmyer
9:12AM - 9:48AM	<u>P44.00005: Block Copolymer Micelles</u> Invited Speaker: Christine Allen
9:48AM - 10:00AM	<u>P44.00006: Phase Behavior and Kinetics of Diblock Copolymer in Selective Solvent</u> Julian Spring , Rama Bansil
10:00AM - 10:12AM	<u>P44.00007: Phase Behavior of Gradient Copolymer Solution</u> Gunja Pandav , Keith Gallow , Yueh-Lin Loo , Venkat Ganesan
10:12AM - 10:24AM	<u>P44.00008: Self-Assembly of Novel Amphiphilic 21-Arm, Star-Like Coil-Rod Diblock Copolymers at Interfaces</u> Zhiqun Lin , Lei Zhao , Xinchang Pang , Chaowei Feng
10:24AM - 10:36AM	<u>P44.00009: Formation and Characterization of Anisotropic Block Copolymer Gels</u> Chya Yan Liaw , Derk Joester , Wesley Burghardt , Kenneth Shull
10:36AM - 10:48AM	<u>P44.00010: Stimuli-responsive block copolypeptides</u> Venkata Krishna Kotharangannagari , Antoni Sanchez-Ferrer , Janne Ruokolainen , Raffaele Mezzenga

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P45: Surfaces, Interfaces, and Polymeric Thin Films - Surface Instabilities**

Sponsoring Units: DPOLY

Chair: Jyotsana Lal, Argonne National Laboratory

Room: 159

8:00AM - 8:12AM	<u>P45.00001: Buckling in a particle film</u> Andrew Croll
8:12AM - 8:24AM	<u>P45.00002: Defect induced shape instabilities in textured Membranes</u> Daniel A. Vega , Marcelo A. Villar , Aldo D. Pezzutti
8:24AM - 8:36AM	<u>P45.00003: Dewetting Dynamics from Polymer Interfaces</u> Andrei Flueraşu , Laurence Lurio , Jyotsana Lal
8:36AM - 8:48AM	<u>P45.00004: Nanoscale Confinement Induced Control of Polymer Thin Film Instabilities</u> Diya Bandyopadhyay , Arvind Modi , Alamgir Karim
8:48AM - 9:00AM	<u>P45.00005: The influence of the solid/liquid interface on the dewetting of ultra thin polymer films</u> Matthias Lessel , Mischa Klos , Oliver Baemchen , Karin Jacobs
9:00AM - 9:12AM	<u>P45.00006: Viscoelastic properties of ultrathin polystyrene films by dewetting from liquid glycerol</u> Jinhua Wang , Gregory McKenna
9:12AM - 9:24AM	<u>P45.00007: Evolution of non-equilibrium entanglement networks in spincast thin polymer films</u> Kari Dalnoki-Veress , Joshua McGraw , Paul Fowler
9:24AM - 9:36AM	<u>P45.00008: Evolution of Chitosan Film Thickness Profiles During Spincoating</u> Christopher Murray , Maximiliano Giuliani , John Dutcher
9:36AM - 9:48AM	<u>P45.00009: Spreading of polymer droplets on thin polymer films</u> Sara L. Cormier , Joshua D. McGraw , Kari Dalnoki-Veress
9:48AM - 10:00AM	<u>P45.00010: Experimental Study of Particle Behavior on a Curved Polymer Interface</u> Kathleen McEnnis , Chuan Zeng , Benny Davidovitch , Anthony D. Dinsmore , Thomas P. Russell
10:00AM - 10:12AM	<u>P45.00011: Tension amplification in branched macromolecules</u> Alexandru Bacanu , James Brock , Sergey Panyukov , Michael Rubinstein
10:12AM - 10:24AM	<u>P45.00012: Viscous memory effects on the generation of hierarchical morphologies at an emulsified oil/water interface</u> Melanie L. Morris , Michael C. Gross , Asmi Panigrahi , Ryan M. Deacon , Patrick Chan , Jason J. Benkoski
10:24AM - 10:36AM	<u>P45.00013: Effect of Molecular Architecture on the Wetting Properties of Polymers</u> Emmanouil Glynos , Bradley Frieberg , Peter Green
10:36AM - 10:48AM	<u>P45.00014: Surface Segregation of Well-Defined Comb Polymers</u> Boxi Liu , Roderic Quirk , Mark Foster , David Wu
10:48AM - 11:00AM	<u>P45.00015: Size Dependant Nucleation of Confined 2-Decanol</u> Samuel Amanuel , Hillary Bauer , Alexandra Safiq , Jargalsaikhan Dulmaa , Amer Khraisat

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P46: Invited Session: DNA-Programmable Particle Assembly**

Sponsoring Units: DPOLY

Chair: Oleg Gang, Brookhaven National Laboratory

Room: 160AB

8:00AM - 8:36AM	<u>P46.00001: Self-Replication of Nanoscale tiles and patterns</u> Invited Speaker: Paul Chaikin
8:36AM - 9:12AM	<u>P46.00002: Inverse Problem in Self-assembly</u> Invited Speaker: Alexei Tkachenko
9:12AM - 9:48AM	<u>P46.00003: Structural flexibility of DNA-Nanoparticle Assemblies</u> Invited Speaker: Dmytro Nykypanchuk
9:48AM - 10:24AM	<u>P46.00004: Nanoparticle Superlattice Engineering with DNA</u> Invited Speaker: Chad Mirkin
10:24AM - 11:00AM	<u>P46.00005: Real-space crystallography and transformations of DNA-directed particle superlattices</u> Invited Speaker: John Crocker

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P47: Biopolymers: Molecules, Solutions, Networks, and Gels**

Sponsoring Units: DPOLY

Chair: Gary Slater, University of Ottawa

Room: 160C

8:00AM - 8:12AM	<u>P47.00001: Sub-nm porous membrane based on cyclic peptide nanotubes</u> Chen Zhang , Rami Hourani , Changyi Li , Brett Helms , Ting Xu
8:12AM - 8:24AM	<u>P47.00002: Gel-on-Brush Model of Airway Surface of the Lung: its Predictive Role in Chronic Pulmonary Disease</u> Liheng Cai , Brian Button , Camille Ehre , Richard Boucher , Michael Rubinstein
8:24AM - 8:36AM	<u>P47.00003: Experimental and Computational Analysis of Structural and Mechanical Properties of Fibrin Gels</u> Oleg Kim , Zhiliang Xu , Alisa Wolberg , Elliot Rosen , Mark Alber
8:36AM - 8:48AM	<u>P47.00004: Block copolymer self-assembly for the responsive reinforcement of injectable protein hydrogels</u> M.J. Glassman , S. Li , J. Chan , B.D. Olsen
8:48AM - 9:00AM	<u>P47.00005: Electrophoresis of DNA-protein conjugates: hydrodynamic end effects and electrostatic interactions</u> Mykita V. Chubynsky , Gary W. Slater
9:00AM - 9:12AM	<u>P47.00006: The local dynamics of unfolded versus folded tRNA in comparison to synthetic polyelectrolytes and the role of electrostatic interactions</u> Joon Ho Roh , Madhu Tyagi , Robert M. Briber , Sarah A. Woodson , Alexei Sokolov
9:12AM - 9:24AM	<u>P47.00007: Physical Structure of Methylcellulose Hydrogels</u> Joseph Lott , John McAllister , Sara Arvidson , Frank Bates , Timothy Lodge
9:24AM - 9:36AM	<u>P47.00008: Mesoscopic Simulations of Free Solution Electrophoresis of Polyelectrolytes with Finite Debye Length</u> Gary Slater , Owen Hickey , Tyler Shendruk
9:36AM - 9:48AM	<u>P47.00009: Interfacial adsorption and aggregation of amphiphilic proteins</u> David Cheung
9:48AM - 10:00AM	<u>P47.00010: Viscoelastic and poroelastic relaxations of polymer-loaded gels</u> Edwin Chan , Blessing Deeyaa , Peter Johnson , Christopher Stafford
10:00AM - 10:12AM	<u>P47.00011: Mechanical Characterization of Photo-crosslinkable Hydrogels with AFM</u> Alyssa McKenna , Myunghwan Byun , Ryan Hayward , Katherine Aidala
10:12AM - 10:24AM	<u>P47.00012: Tough hydrogels from hydrophobically associating polymers</u> Robert Weiss , Jinkun Hao
10:24AM - 10:36AM	<u>P47.00013: Characterization of the Interfacial Adhesion for Responsive Hydrogels on Substrates</u> Chandler Benjamin , John Springmann , Shahzad Chindhy , Wendy Crone
10:36AM - 10:48AM	<u>P47.00014: Resilient Synthetic PEG/PDMS Hydrogels Inspired by Natural Resilin</u> Jun Cui , Melissa Lackey , Gregory Tew , Alfred Crosby
10:48AM - 11:00AM	<u>P47.00015: pH-dependent and pH-independent self-assembling behavior of surfactant-like peptides</u> Leonid Gurevich , Peter Fojan

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P48: Focus Session: Crystallization in Single-, Multicomponent, and Hybrid Systems II**

Sponsoring Units: DPOLY

Chair: Lei Zhu, Case Western Reserve University

Room: 161

8:00AM - 8:12AM	<u>P48.00001: Shear-induced homogeneous crystallisation in confined columns of polymer</u> Jessica L. Carvalho , Kari Dalnoki-Veress
8:12AM - 8:24AM	<u>P48.00002: Chain Folding in Polymer Crystals Detected by Solid-state NMR</u> Toshikazu Miyoshi
8:24AM - 8:36AM	<u>P48.00003: Forming hierarchically ordered hybrid materials using polymer crystallization</u> Christopher Li , Bin Dong , Tian Zhou , Wenda Wang
8:36AM - 8:48AM	<u>P48.00004: Understanding Molecular Epitaxial Mechanism of the <math>\gamma</math>-form Crystal and Chain Tilt in the <math>\alpha</math>-form Single Crystal of Isotactic Polypropylene</u> Yan Cao , Ryan Van Horn , Guoliang Zhang , Hao-Jan Sun , Kwang-Un Jeong , Finizia Auriemma , Claudio De Rosa , Bernard Lotz , Stephen Cheng
8:48AM - 9:00AM	<u>P48.00005: Kinetic Control of the Halogen Distribution in Crystals of Precisely Substituted Polyethylenes</u> Rufina Alamo , Papatya Kaner , Carolina Ruiz-Orta , Emine Boz , Kenneth, B. Wagener
9:00AM - 9:12AM	<u>P48.00006: On the Width of the Crystallization Process</u> Andrew Ochoa , Mircea Chipara
9:12AM - 9:48AM	<u>P48.00007: Crystallization and Ordering of Giant Molecules based on Nano-atoms</u> Invited Speaker: Stephen Z.D. Cheng
9:48AM - 10:24AM	<u>P48.00008: Morphologies in Semi-Crystalline Precise Acid- and Ion-Containing Polymers</u> Invited Speaker: Karen Winey
10:24AM - 10:36AM	<u>P48.00009: Nanohybrid shish kebab paper: Crystal growth and film properties</u> Eric D. Laird , Bing Li , Shan Cheng , Bin Dong , Ranjita K. Bose , Kenneth K.S. Lau , Christopher Y. Li
10:36AM - 10:48AM	<u>P48.00010: Role of lamellar thickness in the kinetics of polymer crystal growth</u> Wenbing Hu
10:48AM - 11:00AM	<u>P48.00011: Isothermal crystallization kinetics of Poly (lactic acid) studied by ultrafast chip calorimeter</u> Jing Jiang , Wei Jiang , Zijie Huang , Dongshan Zhou , Gi Xue

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P49: Focus Session: Organic Electronics and Photonics - Interfaces and Contacts**

Sponsoring Units: DMP DPOLY

Chair: Lynn Loo, Princeton University

Room: 162A

8:00AM - 8:36AM	<u>P49.00001: Charge transfer and polarization at interfaces with conjugated molecules</u> Invited Speaker: Norbert Koch
8:36AM - 8:48AM	<u>P49.00002: Tuning Contact Recombination and Open-Circuit Voltage in Polymer Solar Cells via Self-Assembled Monolayer Adsorption</u> He Wang , Enrique Gomez , Zelei Guan , Cherno Jaye , Daniel Fischer , Antoine Kahn , Yueh-Lin Loo
8:48AM - 9:00AM	<u>P49.00003: Electronic Structure of Organic-Metal Interfaces</u> Sung-young Hong , Po-Chun Yeh , Jerry Dadap , Richard M. Osgood
9:00AM - 9:12AM	<u>P49.00004: Fermi level pinning by integer charge transfer at electrode-organic semiconductor interfaces</u> Deniz Cakir , Menno Bokdam , Geert Brocks
9:12AM - 9:24AM	<u>P49.00005: Analysis of interface states in blend of polythiophene and polyselenophene: experiments and theory</u> Helene Antaya , Maciej Sakowicz , Carlos Silva , Michel Cote
9:24AM - 9:36AM	<u>P49.00006: Controlling Side Chain Density of Electron Donating Polymers for Improving <math>V_{OC}</math> in Polymer Solar Cells</u> B.J. Kim , K.H. Kim , C.H. Cho , H. Kang , S.C. Yoon
9:36AM - 9:48AM	<u>P49.00007: Spectroscopic signatures of ambipolar injection in narrow gap donor-acceptor polymer transistors</u> Omar Khatib , Jonathan D. Yuen , Jim Wilson , Rajeev Kumar , Fred Wudl , Massimiliano Di Ventra , Alan J. Heeger , Dimitri N. Basov
9:48AM - 10:00AM	<u>P49.00008: Charge Injection Mechanism at Carbon Nanotube-Organic Semiconductor Interface</u> Biddut K. Sarker , Saiful I. Khondaker
10:00AM - 10:12AM	<u>P49.00009: Does Organic Field Effect Transistors (OFETs) Device Performance using Single-walled Carbon Nanotubes (SWNTs) Depend on the Density of SWNT in the Electrode?</u> Narae Kang , Biddut K. Sarker , Saiful I. Khondaker
10:12AM - 10:24AM	<u>P49.00010: Work function recovery of air exposed molybdenum oxide thin films with vacuum annealing</u> Irfan Irfan , Alexander Turniske , Zhenan Bao , Yongli Gao
10:24AM - 10:36AM	<u>P49.00011: Ab-initio calculation of energy level alignment and vacuum level shift at CuPc/C60 interfaces</u> Na Sai , Xiaoyang Zhu , James Chelikowsky , Kevin Leung
10:36AM - 10:48AM	<u>P49.00012: Solution based cathode deposition for polymer light emitting devices</u> Marian Tzolov , Stephen Swiontek
10:48AM - 11:00AM	<u>P49.00013: Organic solar cells: How can the theory guide the experience?</u> Nicolas Berube , Vincent Gosselin , Hugo Lepage , Michel Cote

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P50: Focus Session: Dynamics of Polymers: Phenomena due to Confinement: Glass Transition**

Sponsoring Units: DPOLY

Chair: Rodney Priestly, Princeton University

Room: 162B

8:00AM - 8:36AM	<u>P50.00001: Theoretical prospects for understanding the glass transition in polymer thin films</u> Invited Speaker: Scott Milner
8:36AM - 8:48AM	<u>P50.00002: Cooperative Length Scale and Fragility of Polystyrene under Confinement</u> Chuan Zhang , Yunlong Guo , Rodney Priestley
8:48AM - 9:00AM	<u>P50.00003: Impact of systematic chain architecture changes on the glass transition and modulus of thin polymer films</u> Bryan Vogt , Jessica Torres , Christopher Stafford , Richard Register , David Uhrig
9:00AM - 9:12AM	<u>P50.00004: A Direct Relationship between Enhanced Surface Mobility and T<sub>g</sub> Reduction in Thin Polymer Films</u> Zahra Fakhraei , James A. Forrest , Dongping Qi
9:12AM - 9:24AM	<u>P50.00005: Reduced Glass Transition Temperatures of Thin Polymer Films - Confinement Effect or Artifact?</u> Oliver Bäumchen , Joshua D. McGraw , James A. Forrest , Kari Dalnoki-Veress
9:24AM - 9:36AM	<u>P50.00006: Confinement in thin polymer films near T<sub>g</sub> leads to factors of 10 to 1000 reductions in dye translational diffusion</u> John Torkelson , Hui Deng , Manish Mundra
9:36AM - 9:48AM	<u>P50.00007: Measuring the glass transition of polymer nanodroplets</u> Chad Daley , James Forrest
9:48AM - 10:00AM	<u>P50.00008: Molecular motion in polymer thin films exhibits fast and slow subpopulations.</u> Keewook Paeng , Mark Ediger
10:00AM - 10:12AM	<u>P50.00009: Confinement Effects of Neighboring Polymer Domains on the T<sub>g</sub>s of Infinitely Dilute Blend Components and Ultrathin Film Layers</u> Christopher Evans , Robert Sandoval , John Torkelson
10:12AM - 10:24AM	<u>P50.00010: Molecular Weight Dependent and Independent Glass Transition Temperature Reductions Coexisting in High MW Free-Standing Polystyrene Films</u> Justin Pye , Connie Roth
10:24AM - 11:00AM	<u>P50.00011: Glass Transition and Physical Aging in Thin Polymer Films: A Unified Picture of Confinement</u> Invited Speaker: Connie Roth

Wednesday, February 29, 2012

8:00AM - 11:00AM

**Session P51: Colloids III: Shear and Hydrodynamics**

Sponsoring Units: DCMP DFD

Chair: Vinothan N Manoharan, Harvard University

Room: Boston Convention Center 154

8:00AM - 8:12AM	<u>P51.00001: Confined colloidal suspensions under simple shear</u> Xinliang Xu , Stuart Rice , Aaron Dinner
8:12AM - 8:24AM	<u>P51.00002: The nonlinear structural response of colloidal suspensions under large amplitude oscillatory shear</u> Neil Y.C. Lin , Xiang Cheng , Itai Cohen
8:24AM - 8:36AM	<u>P51.00003: Imaging the microscopic structure of shear thinning and thickening colloidal suspensions</u> Xiang Cheng , Jonathan McCoy , Jacob Israelachvili , Itai Cohen
8:36AM - 8:48AM	<u>P51.00004: Shear induced diffusion in hard sphere glasses</u> Nick Koumakis , George Petekidis , John Brady
8:48AM - 9:00AM	<u>P51.00005: Diffusion in sheared athermal soft-particle suspensions: the role of inertia and dissipation mechanism</u> Craig Maloney , Kamran Karimi
9:00AM - 9:12AM	<u>P51.00006: Shear thinning in soft particle suspensions</u> Panayiotis Voudouris , Berco van der Zanden , Daniel Florea , Zahra Fahimi , Hans Wyss
9:12AM - 9:24AM	<u>P51.00007: Anisotropic Diffusion of Colloidal Particles in a Shear Flow</u> Brian Leahy , Desmond Ong , Xiang Cheng , Itai Cohen
9:24AM - 9:36AM	<u>P51.00008: Pattern formation in colloidal explosions: Theory and experiment</u> Arthur Straube
9:36AM - 9:48AM	<u>P51.00009: Universal Scaling Law of Diffusion and Hydrodynamic Corrections in Colloidal Monolayers</u> Xiao-guang Ma , Wei Chen , Ziren Wang , Yuan Peng , Yilong Han , Penger Tong
9:48AM - 10:00AM	<u>P51.00010: Long Range Hydrodynamic Correlations in Quasi-One-Dimensional Circular and Linear Geometries</u> Ekaterina Kosheleva , Brian Leahy , Haim Diamant , Stuart A. Rice , Binhua Lin
10:00AM - 10:12AM	<u>P51.00011: Using artificial microswimmers for particle separation</u> Vyacheslav R. Misko , Wen Yang , Kwinten Nelissen , Minghui Kong , Francois M. Peeters
10:12AM - 10:24AM	<u>P51.00012: Diffusion in Dense Inhomogeneous Colloid Suspensions in Narrow Channels</u> Binhua Lin , Emily Wonder , Stuart A. Rice
10:24AM - 10:36AM	<u>P51.00013: Flow of concentrated emulsion in a microchannel: walls effects and roughness impact</u> Vincent Mansard , Annie Colin , Lyd'eric Bocquet
10:36AM - 10:48AM	<u>P51.00014: Non-equilibrium dynamics in particle-interface systems</u> Anna Wang , Ryan McGorty , David M. Kaz , Vinothan N. Manoharan
10:48AM - 11:00AM	<u>P51.00015: Granular Fluid Kinetics Approach to Modeling Soft Colloid and Polymer Materials</u> Dimitar Petsev , Jhoan Toro-Mendoza , Frank van Swol

Wednesday, February 29, 2012

11:15AM - 2:15PM

**Session Q39: Focus Session: Materials and Functional Structures for Biological Interfaces - Micro and Nanofluidics**

Sponsoring Units: DMP DBIO DPOLY  
 Chair: Robert Riehn, North Carolina State University  
 Room: 109B

11:15AM - 11:51AM	<u>Q39.00001: Integration of Materials and Functions in Microfluidic Devices</u> Invited Speaker: Marcella Chiari
11:51AM - 12:03PM	<u>Q39.00002: Dynamic micromolds to fabricate multi-layered hydrogel microstructures</u> Halil Tekin , Tonia Tsinman , Jefferson G. Sanchez , Brianna J. Jones , Robert Langer , Ali Khademhosseini
12:03PM - 12:15PM	<u>Q39.00003: Implementation of a Peltier-based cooling device for localized deep cortical deactivation during in vivo object recognition testing</u> Kyle Marra , Brett Graham , Samantha Carouso , David Cox
12:15PM - 12:27PM	<u>Q39.00004: Droplet Microfluidics for Artificial Lipid Bilayers</u> Srikoundinya Punnamaraju , Andrew Steckl
12:27PM - 12:39PM	<u>Q39.00005: Density fluctuations in nanochannel-confined DNA</u> Joshua Carpenter , Alena Karpusenko , Chunda Zhou , Shuang Fang Lim , Junhan Pan , Robert Riehn
12:39PM - 12:51PM	<u>Q39.00006: Extension and Diffusion of DNA in Nanochannels</u> Douglas Tree , Yanwei Wang , Kevin Dorfman
12:51PM - 1:03PM	<u>Q39.00007: DNA conformation and dynamics in quasi-2D and -1D confinement</u> Yeng-Long Chen
1:03PM - 1:15PM	<u>Q39.00008: Mapping the yeast genome by melting in nanofluidic devices</u> Robert L. Welch , Ilja Czolkos , Rob Sladek , Walter Reisner
1:15PM - 1:27PM	<u>Q39.00009: Spatially Varying Nanoconfinement as a Probe of Polymer Physics</u> Alexander Klotz , Walter Reisner
1:27PM - 1:39PM	<u>Q39.00010: The Nanofluidic Staircase: A Brownian Motor for Polymer Characterization and Transport</u> Frederick Phelan Jr. , Christopher Forrey , Jon Geist , Samuel Stavitski , Elizabeth Strychalski
1:39PM - 1:51PM	<u>Q39.00011: Entropic Ratchet DNA Separation in Nanofluidic Structures</u> Gavin Osterhoudt , Stephen Levy
1:51PM - 2:03PM	<u>Q39.00012: Geometrically induced polarization and alignment of cells on nanopillar arrays</u> Yolanda Vasquez , Michael Bucaro , Benjamin Hatton , Joanna Aizenberg

82

Wednesday, February 29, 2012

11:15AM - 2:15PM

**Session Q41: Biofluids**

Sponsoring Units: DFD  
 Chair: Saverio Spagnolie, Brown University  
 Room: 156B

11:15AM - 11:27AM	<u>Q41.00001: Fool's Gold Footprinting: microfluidic probing of nucleic acids</u> Christopher D. Jones , Joerg C. Schlatterer , Michael Brenowitz , Lois Pollack
11:27AM - 11:39AM	<u>Q41.00002: Dislocation dynamics and bacterial growth</u> Ariel Amir , David Nelson
11:39AM - 11:51AM	<u>Q41.00003: Signal Relay During Cell Migration</u> Can Guven , Erin Rericha , Edward Ott , Wolfgang Losert
11:51AM - 12:03PM	<u>Q41.00004: Intracellular Transport in Beta Cells - from Anti-Corelated to Active</u> Stanislav Burov , Ali Tabei , Aaron Dinner , Norbert Scherer
12:03PM - 12:15PM	<u>Q41.00005: Acoustic streaming in the cochlea under compressive bone conduction excitation</u> Katherine Aho , Megha Sunny , Taoufik Nabat , Jenny Au , Charles Thompson
12:15PM - 12:27PM	<u>Q41.00006: Subtle exchange model of flow depended on the blood cell shape to enhance the micro-circulation in capillary</u> Iatneng Chan
12:27PM - 12:39PM	<u>Q41.00007: Modeling fluid diffusion in cerebral white matter with random walks in complex environments</u> Amichai Levy , Gabriel Cwilich , Sergey V. Buldyrev , Van J. Weeden
12:39PM - 12:51PM	<u>Q41.00008: Adhesion of a Cylindrical Bacterium in the Presence of DLVO Potential</u> Jiayi Shi , Sinan Muftu , April Gu , Kai-Tak Wan
12:51PM - 1:03PM	<u>Q41.00009: Hydrodynamic behavior of tumor cells in a confined model microvessel</u> Zeina S. Khan , Siva A. Vanapalli
1:03PM - 1:15PM	<u>Q41.00010: Flow and rupture of vesicles in narrow channels</u> Alison Harman , Martin Bertrand , Bela Joos
1:15PM - 1:27PM	<u>Q41.00011: Simulations of cardiovascular blood flow accounting for time dependent deformational forces</u> Amanda Peters Randles , Simone Melchionna , Jonas Latt , Sauro Succi , Efthimos Kaxiras
1:27PM - 1:39PM	<u>Q41.00012: Using vortex corelines to analyze the hemodynamics of patient specific cerebral aneurysm models</u> Greg Byrne , Fernando Mut , Juan Cebal
1:39PM - 1:51PM	<u>Q41.00013: Molecular Dynamics simulations of flow-structure interactions in fluids containing cylindrical micelles and micelle-nanoparticle complexes</u> Radhakrishna Sureshkumar , Ashish Sangwai , Abhinandan Sambasivam
1:51PM - 2:03PM	<u>Q41.00014: Picoliter droplet-based digital peptide nucleic acid clamp PCR and dielectric sorting for low abundant K-ras mutations</u> Huidan Zhang , Ralph Sperling , Assaf Rotem , Lianfeng Shan , John Heyman , Yizhe Zhang , David Weitz
2:03PM - 2:15PM	<u>Q41.00015: Liquid solution delivery through the pulled nanopipette combined with QTF-AFM system</u>

83

Sangmin An , Corey Stambaugh , Gunn Kim , Manhee Lee , Yonghee Kim ,  
Kunyoung Lee , Wonho Jhe

Wednesday, February 29, 2012

11:15AM - 2:15PM

**Session Q43: Invited Session: Techniques to Study Dynamic Cellular Processes One Molecule at a Time (Including Delbruck Award Lecture)**

Sponsoring Units: DBIO

Chair: Steve Kowalczykowski and Daniel Cox, University of California, Davis

Room: 157AB

11:15AM - 11:51AM	<u>Q43.00001: Max Delbruck Prize in Biological Physics Lecture: Single-molecule protein folding and transition paths</u> Invited Speaker: William Eaton
11:51AM - 12:27PM	<u>Q43.00002: ATP-induced helicase slippage reveals highly coordinated subunits</u> Invited Speaker: Michelle D. Wang
12:27PM - 1:03PM	<u>Q43.00003: Unraveling the motion of single-stranded DNA binding proteins on DNA using force and fluorescence spectroscopy</u> Invited Speaker: Taekjip Ha
1:03PM - 1:39PM	<u>Q43.00004: Beholding the subcellular world in your PALM: nanometer resolution optical measurements of protein assemblies in cells</u> Invited Speaker: Hari Shroff
1:39PM - 2:15PM	<u>Q43.00005: Single-molecule conductance measurements of biomolecule translocation across biomimetic nuclear pores</u> Invited Speaker: Cees Dekker

84

Wednesday, February 29, 2012

11:15AM - 2:15PM

**Session Q44: Focus Session: Interparticle Interactions in Polymer Nanocomposites - Transport and Dynamics**

Sponsoring Units: DPOLY

Chair: Mohan Srinivasarao, Georgia Institute of Technology

Room: 157C

11:15AM - 11:51AM	<u>Q44.00001: Multiscale structure, interfacial cohesion, adsorbed layers, miscibility and properties in dense polymer-particle mixtures</u> Invited Speaker: Ken Schweizer
11:51AM - 12:03PM	<u>Q44.00002: Organically Modified Nanoclay-Reinforced Rigid Polyurethane Films</u> Yong Tae Park , Yuqiang Qian , Chris Lindsay , Andreas Stein , Christopher Macosko
12:03PM - 12:15PM	<u>Q44.00003: Shear viscosity of polymer nanocomposites from NEMD simulations</u> Jagannathan T. Kalathi , Sanat K. Kumar , Gary S. Grest
12:15PM - 12:27PM	<u>Q44.00004: Towards the Next Generation of Polymer Nanocomposites: More Rigid, Lighter Weight, Yet Easier to Process</u> JeongJae Wie , Jonathan Seppala , Michael Mackay , Woo Jin Chung , Jeffrey Pyun
12:27PM - 12:39PM	<u>Q44.00005: A Comparative Study of Interfacial Slip in Polymer Blends with Nanoparticles and Diblock Copolymer Compatibilizers</u> Joseph Ortiz , Dilip Gersappe
12:39PM - 12:51PM	<u>Q44.00006: The Effect of Elongational Flow on the Placement and Orientation of Nanorods in Polymer: Modeling and Experiments</u> Jay Park , Vibha Kalra , Yong Joo
Wednesday, February 29, 2012	<u>Q44.00007: Directed Self-Assembly of Nanoparticles via Flexible-Blade Flow Coating</u>
12:51PM - 1:03PM	Dong Yun Lee , Jonathan Pham , Jimmy Lawrence , Cheol Hee Lee , Hyun Suk Kim , Cassandra Parkos , Todd Emrick , Alfred Crosby
1:03PM - 1:15PM	<u>Q44.00008: Properties of Macroscopic Nanoparticle Assemblies Fabricated by Flexible Blade Flow Coating</u> Jonathan T. Pham , Dong Yun Lee , Jimmy Lawrence , Cheol Hee Lee , Todd Emrick , Alfred J. Crosby
1:15PM - 1:27PM	<u>Q44.00009: Reversible Shear-Flow-Induced Polymer and Colloid Aggregates</u> Hsieh Chen , Alfredo Alexander-Katz
1:27PM - 1:39PM	<u>Q44.00010: Impact of Carbon Nanoparticle Shape on Polymer Dynamics in Nanocomposites</u> Brad Miller , Mark Dadmun
1:39PM - 1:51PM	<u>Q44.00011: Modifying Fragility and Length Scales of Polymer Glass Formation with Nanoparticles</u> Beatriz A. Pazmino , Jack F. Douglas , Francis W. Starr
1:51PM - 2:03PM	<u>Q44.00012: Glass transition temperature of polymer nanocomposites with polymer and filler interactions</u> Katsumi Hagita , Hiroshi Takano , Masao Doi , Hiroshi Morita
2:03PM - 2:15PM	<u>Q44.00013: Payne effect in model nanocomposite the role of polymer confinement</u> Helene Montes , Fran[c]ois Lequeux

85



Wednesday, February 29, 2012

11:15AM - 2:15PM

### Session Q45: Elastomers and Gels

Sponsoring Units: DPOLY

Chair: Jan-Michael Carrillo, University of Connecticut

Room: 159

11:15AM - 11:27AM	<u>Q45.00001: Can a Rheological Experiment Distinguish Between a Gel and a Soft Glass? If yes, which Experiment?</u> Horst Winter
11:27AM - 11:39AM	<u>Q45.00002: Effects of crosslinker concentration and chemical disorder on the nonlinear mechanics of thermoreversibly associating networks</u> Glenn H. Fredrickson , Robert S. Hoy
11:39AM - 11:51AM	<u>Q45.00003: Mechanically induced oscillations in Belousov-Zhabotinsky gels</u> Irene Chen , Olga Kuksenok , Victor Yashin , Anna Balazs , Krystyn Van Vliet
11:51AM - 12:03PM	<u>Q45.00004: Nonlinear Elasticity of Entangled Polymer Networks</u> Ozan Sariyer , Sergey Panyukov , Michael Rubinstein
Wednesday, February 29, 2012	
12:03PM - 12:15PM	<u>Q45.00005: Coarse grain modeling of the high-rate stress-strain behavior for select model Poly[urethane urea] (PUU) elastomers</u> T.L. Chantawansri , Y.R. Sliozberg , A. Hsieh , J.W. Andzelm
12:15PM - 12:27PM	<u>Q45.00006: Swelling Behavior of Crosslinked Rubber: Does the Peak in Dilational Modulus Exist?</u> Ben Xu , Xiaojun Di , Gregory B. McKenna
12:27PM - 12:39PM	<u>Q45.00007: Microphase Separation and Dynamics of Elastomeric Polyureas</u> James Runt , Alicia Castagna , Taeyi Choi , Youmi Jeong
12:39PM - 12:51PM	<u>Q45.00008: Opening and Closing of Nanocavities under Stress in Soft Nanocomposites: A Real Time Small Angle X-ray Scattering (SAXS) Observation</u> Huan Zhang , Jordan de Crevoisier , Arthur Scholz , Fabien Vion-Loisel , Edward J. Kramer , Costantino Creton
12:51PM - 1:03PM	<u>Q45.00009: Reversible shape memory</u> Sergei Sheiko , Jing Zhou , Sarah White , Valerie Ashby
1:03PM - 1:15PM	<u>Q45.00010: Inscribing dynamical patterns within heterogeneous self-oscillating gels.</u> Anna C. Balazs , Victor V. Yashin , Seiichi Suzuki , Ryo Yoshida
1:15PM - 1:27PM	<u>Q45.00011: Swelling instabilities in patterned, microscale gels</u> Ryan Toomey , Samuel DuPont
1:27PM - 1:39PM	<u>Q45.00012: Thermoresponsive hydrogels from ABC triblock terpolymers</u> Can Zhou , Timothy Lodge , Marc Hillmyer
1:39PM - 1:51PM	<u>Q45.00013: Single Quantum Dot Tracking in Heterogeneous Polyacrylamide Hydrogels</u> Cheol Hee Lee , Alfred Crosby , Ryan Hayward , Todd Emrick
1:51PM - 2:03PM	<u>Q45.00014: Modeling Photo-Reconfiguration and Directed Motion of Spirobenzopyran-Containing Polymer Gels</u> Olga Kuksenok , Anna C. Balazs
2:03PM - 2:15PM	<u>Q45.00015: Gelation of Copolymers Photo-crosslinked by Pendent Benzophenones</u> Scott Christensen , Ryan C. Hayward

Wednesday, February 29, 2012

11:15AM - 2:15PM

### Session Q47: Focus Session: DNA-Coated Colloid Particles

Sponsoring Units: DPOLY DBIO

Chair: Dmytro Nykypanchuk, Brookhaven National Laboratory

Room: 160C

11:15AM - 11:27AM	<u>Q47.00001: Heterogeneous 3D Assembly of DNA-encoded Quantum Dots and Gold Nanoparticles</u> Dazhi "Peter" Sun , Oleg Gang
11:27AM - 11:39AM	<u>Q47.00002: Self-Assembly of Octopus Nanoparticles into Pre-Programmed Finite Clusters</u> Jonathan Halverson , Alexei Tkachenko
11:39AM - 11:51AM	<u>Q47.00003: DNA-induced 2D-to-1D Phase Transition of Nanoparticle Assemblies at Liquid-Vapor Interface</u> Sunita Srivastava , Dmytro Nykypanchuk , Masafumi Fukuto , Oleg Gang
11:51AM - 12:27PM	<u>Q47.00004: Structural Diversity of DNA-Coated Particle Assemblies</u> Invited Speaker: Francis W. Starr
12:27PM - 12:39PM	<u>Q47.00005: DNA Mediated Nanoparticle Crystallization: Characterizing How Equilibrium is Reached</u> Christopher Knorowski , Alex Travesset
12:39PM - 12:51PM	<u>Q47.00006: Packing of DNA-assembled Nanocubes and Nanooctahedra</u> Fang Lu , Yugang Zhang , Kevin Yager , Daniel van der Lelie , Oleg Gang
12:51PM - 1:03PM	<u>Q47.00007: Making DNA competitive: a new strategy to improve the self-assembly properties of DNA-coated particles</u> Mirjam Leunissen , Bortolo Mognetti , Daan Frenkel
1:03PM - 1:15PM	<u>Q47.00008: DNA Regulated Clusters: Structure and Self-limiting Assembly</u> cheng Chi , Fernando Vargas Lara , Francis Starr , Alexei Tkachenko , Oleg Gang
1:15PM - 1:27PM	<u>Q47.00009: Kinetics of the Association of DNA Coated Colloids</u> Kun-Ta Wu , Lang Feng , Ruojie Sha , Remi Dreyfus , Alexander Grosberg , Nadrian Seeman , Paul Chaikin
1:27PM - 1:39PM	<u>Q47.00010: Phase Behavior and Magnetic Response of DNA-mediated Gold and Iron Oxide Nanoparticle Assemblies</u> Yugang Zhang , Fang Lu , Kevin G Yager , Daniel van der Lelie , Oleg Gang
1:39PM - 1:51PM	<u>Q47.00011: Modeling of DNA-Directed Colloidal Self-Assembly and Crystallization</u> Ting Li , Rastko Sknepnek , Robert J. Macfarlane , Chad A. Mirkin , Monica Olvera de la Cruz
1:51PM - 2:03PM	<u>Q47.00012: DNA coated rods: pure Biological materials for self assembly studies</u> Rafael Cabanas , Seth Fraden
2:03PM - 2:15PM	<u>Q47.00013: Linear DNA-linked colloidal chains: a model to visualize polymer dynamics</u> Sibani Biswal , Julie Byrom , Daniel Du

Wednesday, February 29, 2012

11:15AM - 2:15PM

### Session Q48: Polymer Blends and Crystallization

Sponsoring Units: DPOLY  
Chair: Ryan Howard, University of Massachusetts  
Room: 161

11:15AM - 11:27AM	<u>Q48.00001: How Pure Components Control Polymer Blend Miscibility</u> Ronald White , Jane Lipson , Julia Higgins
11:27AM - 11:39AM	<u>Q48.00002: Tailoring Co-continuous Nanostructured Morphologies in Polymer Blends</u> Le Li , Sung-Woo Hong , Xiaobo Shen , Ryan Hayward , Thomas Russell
11:39AM - 11:51AM	<u>Q48.00003: Structure and elasticity of crosslinked polymer blends</u> Bing Lu , Xiangjun Xing , Paul Goldbart
11:51AM - 12:03PM	<u>Q48.00004: Assessing the Strength Enhancement of Heterogeneous Networks of Miscible Blends of 1,2-Polybutadiene and Polyisoprene</u> Carl Giller , Mike Roland
12:03PM - 12:15PM	<u>Q48.00005: Compatibilization of polymer blends with star polymers containing a gamma-cyclodextrin core and polystyrene arms</u> C.M. Balik , A.E. Tonelli , Ryan Libert
12:15PM - 12:27PM	<u>Q48.00006: Theory of Hydrogen-Bonding in Diblock Copolymer/Homopolymer Blends</u> Ashkan Dehghan , An-Chang Shi
12:27PM - 12:39PM	<u>Q48.00007: Effect of mid-block on the morphology and properties of PDLA-softblock-PDLA/PLLA Blends</u> Sahas Rathi , E. Bryan Coughlin , Shaw Ling Hsu
12:39PM - 12:51PM	<u>Q48.00008: Crystallization and melting kinetics of oligomer under confinement</u> Arkadiusz Gradyś , Arkadii Arinstein , Eyal Zussman
12:51PM - 1:03PM	<u>Q48.00009: Molecular Dynamics Simulations of Polypropylene: Crystallization and Melting</u> Manish Agarwal , Shyno Mathew , Sanat Kumar
1:03PM - 1:15PM	<u>Q48.00010: Molecular simulations of semi-crystalline polymers: Focus on defects</u> Shyno Mathew , Manish Agarwal , Sanat Kumar
1:15PM - 1:27PM	<u>Q48.00011: Molecular simulation of plastic deformation of semicrystalline polyethylene</u> Junmo Kim , Sanghun Lee , Gregory Rutledge
1:27PM - 1:39PM	<u>Q48.00012: Diffusion-limited, diameter-tunable growth of hybrid-polymeric nanofilaments</u> Bret Flanders , Govind Paneru
1:39PM - 1:51PM	<u>Q48.00013: Digestive Ripening: A Quantitative Thermodynamic Analysis of Stable Nanocrystals</u> Michael Clark , Sanat Kumar , Igal Szleifer , Rikkert Nap
1:51PM - 2:03PM	<u>Q48.00014: Morphology and Shear Viscosity for a Phase-separating Polymer Blend of Polybutadiene and Polyisoprene under Simple Shear Flow</u> Xia Dong , Fasheng Zou , Charles C Han
2:03PM - 2:15PM	<u>Q48.00015: Dynamics of Polymer Blend Film Formation During Spin Coating</u> Youma Mouhamad , Nigel Clarke , Richard A.L. Jones , Mark Geoghegan

88

Wednesday, February 29, 2012

11:15AM - 2:15PM

### Session Q49: Focus Session: Organic Electronics and Photonics - Photophysics and Excited State Dynamics

Sponsoring Units: DMP DPOLY  
Chair: Russell Holmes, University of Minnesota  
Room: 162A

11:15AM - 11:27AM	<u>Q49.00001: Hybrid Phononiton in Organic-Semiconductor Materials</u> David Facemyer , Que Huong Nguyen
11:27AM - 11:39AM	<u>Q49.00002: Effect of structural distortion and polarization in localization of electronic excitations in organic semiconductor materials</u> Iffat Nayyar , Enrique Batista , Sergei Tretiak , Avadh Saxena , Darryl Smith , Richard Martin
11:39AM - 11:51AM	<u>Q49.00003: The Effect of LUMO Level Offset on the Electron Dissociation Rates in Low Bandgap Polymer Heterostructures</u> Matthew Sfeir , Deanna Rodovsky , Jason Azoulay , Guillermo Bazan , Jeffrey Peet
11:51AM - 12:03PM	<u>Q49.00004: First principles study of optical and electronic properties of anthradithiophene based organic conductors</u> Faye Barras , Guenter Schneider
12:03PM - 12:15PM	<u>Q49.00005: Ultrafast exciton energy transfer from giant nanocrystals to layered J-aggregate films</u> Asja Radja , Hue Nguyen , Jennifer Hollingsworth , Anton Malko
12:15PM - 12:27PM	<u>Q49.00006: Picosecond Transient Strain Spectroscopy in ordered poly(3-dodecyl-thienylene-vinylene)</u> Ella Olejnik , Z. Valy Vardeny , Xiaomei Jiang
12:27PM - 12:39PM	<u>Q49.00007: Ultrafast multidimensional spectroscopy of P3HT thin films</u> Cong Mai , Sinan Can , Anne Watson , Harald Ade , Kenan Gundogdu
12:39PM - 12:51PM	<u>Q49.00008: Charge transfer complex in diketopyrrolopyrrole polymers and fullerene blends: Implication for organic solar cell efficiency</u> D. Moghe , P. Yu , C. Kanimozhi , S. Patil , S. Guha
	Preview Abstract
12:51PM - 1:03PM	<u>Q49.00009: Dynamic Monte Carlo Modeling of Exciton Dissociation in Organic Donor-Acceptor Solar Cells</u> Michael Heiber , Ali Dhinojwala
	Preview Abstract
1:03PM - 1:15PM	<u>Q49.00010: Ultrafast Photo Physics of P3HT/PCBM blends for Organic Photovoltaic applications</u> Bill Pandit , Sanjeev Singh , Zeev Valy Vardeny
1:15PM - 1:27PM	<u>Q49.00011: Can Singlet Fission Enhance the Performance of Organic Solar Cells?</u> J.A. Munoz , K. Aryanpour , S. Mazumdar
1:27PM - 1:39PM	<u>Q49.00012: Exciton self-trapping and Stark effect in the optical response of pentacene crystals from first principles</u> David A. Strubbe , Sahar Sharifzadeh , Jeffrey B. Neaton , Steven G. Louie
1:39PM - 2:15PM	<u>Q49.00013: Singlet Fission and Multi-Exciton Generation in Organic Systems</u> Invited Speaker: Charles Musgrave

89

Wednesday, February 29, 2012

11:15AM - 2:15PM

## Session Q50: Focus Session: Dynamics of Polymers: Phenomena due to Confinement II

Sponsoring Units: DPOLY  
Chair: Christopher Ellison, University of Texas at Austin  
Room: 162B

11:15AM - 11:27AM	<u>Q50.00001: New insight into adsorption of polymer melts onto impenetrable surfaces</u> Tad Koga , Peter Gin , Naisheng Jiang , Chen Liang , Zexi Han , Bulent Akgun , Sushil Satija , Maya Endoh
11:27AM - 11:39AM	<u>Q50.00002: Effect of the interfacial interaction on the relaxation of polymer melts in nanofilms</u> Lei Li , Yongjin Wang , Jianing Sun
11:39AM - 11:51AM	<u>Q50.00003: Differential AC chip calorimeter for in situ investigation of vapor deposited thin films</u> Mathias Ahrenberg , Christoph Schick , Heiko Huth , Evgeni Schoifet , Mark Ediger , Katie Whitaker
11:51AM - 12:03PM	<u>Q50.00004: Methyl Methacrylate Polymerization in Nanoporous Matrix: Reactivity and Resulting Properties</u> Haoyu Zhao , Fatema Begum , Sindee Simon
12:03PM - 12:15PM	<u>Q50.00005: Polystyrene films confined between gold surfaces</u> Karen Johnston , Vagelis Harmandaris , Kurt Kremer
12:15PM - 12:27PM	<u>Q50.00006: Surface Mobility of Polymeric Systems of Varying Chain Lengths</u> Rohit Malshé , Gregory Toepferwein , Mark Ediger , Lian Yu , Juan de Pablo
12:27PM - 12:39PM	<u>Q50.00007: Shear thinning near the rough boundary in a viscoelastic flow</u> Sayed Hasan , Sergei Obukhov
12:39PM - 12:51PM	<u>Q50.00008: Relaxation of Capillary Wrinkles</u> Kamil Toga , Narayanan Menon , Thomas Russell
12:51PM - 1:03PM	<u>Q50.00009: New insight into the melting behavior of nanoconfined semicrystalline polymers -The effect of an immobile interfacial layer at the substrate-</u> Mitsunori Asada , Naisheng Jiang , Peter Gin , Levent Sendogdular , Maya K. Endoh , Moriya Kikuchi , Atsushi Takahara , Tadanori Koga
1:03PM - 1:15PM	<u>Q50.00010: Solvent Swelling as a Means to Modify the Properties of Polymer Thin Films</u> Andrew Clough , Ophelia Tsui , Mithun Chowdhury , Kaiwan Jahanshahi , Guenter Reiter
1:15PM - 1:27PM	<u>Q50.00011: Equilibration of Polymer Films Cast from Solutions with Different Solvent Qualities</u> Ranxing Nancy Li , Andrew Clough , Dongdong Peng , Zhaohui Yang , Ophelia Tsui
1:27PM - 1:39PM	<u>Q50.00012: Tuning confinement effects at constant film thickness</u> Simone Napolitano
1:39PM - 1:51PM	<u>Q50.00013: Capillary levelling in thin polymer films as a nano-rheological tool to probe interface dynamics</u> Joshua McGraw , Oliver Baeumchen , Melissa Ferrari , Paul Fowler , Kari Dalnoki-Veress
1:51PM - 2:03PM	<u>Q50.00014: Slow physical aging of thin polymer films of varying chain architecture</u> Bradley Frieberg , Emmanouil Glynos , Peter Green
2:03PM - 2:15PM	<u>Q50.00015: Diffusion of adsorbed theta-solvent polymers at a solid-liquid interface</u> Changqian Yu , Sung Chul Bae , Steve Granick

90

Wednesday, February 29, 2012

11:15AM - 2:15PM

## Session Q51: Gels, Complex Fluids and Vesicles

Sponsoring Units: DCMP DFD  
Chair: Jeff Urbach, Georgetown University  
Room: Boston Convention Center 154

11:15AM - 11:27AM	<u>Q51.00001: Linear Viscoelasticity and Swelling of Polyelectrolyte Complex Coacervates</u> Fawzi Hamad , Ralph Colby
11:27AM - 11:39AM	<u>Q51.00002: Multicomponent effects in diffusion within microemulsions</u> Wyatt Musnicki , Stephanie Dungan , Ronald Phillips
11:39AM - 11:51AM	<u>Q51.00003: Determining the structure and properties of complex coacervate crosslinked triblock copolymer hydrogels</u> Daniel Krogstad , Soo-Hyung Choi , Jason Spruell , Nathaniel Lynd , Edward Kramer , Matthew Tirrell
11:51AM - 12:03PM	<u>Q51.00004: Density mode microrheology in polyacrylamide gels</u> Beatriz Burrola Gabilondo , Daniel Sisan , Jonathan Landy , Alex Levine , Jeffrey Urbach
12:03PM - 12:15PM	<u>Q51.00005: Effect of Polymer Molecular Weight and Synthesis Temperature on Structure and Dynamics of Microgels</u> Krista G. Freeman , Kiril A. Streltzyk
12:15PM - 12:27PM	<u>Q51.00006: Gelation and state diagram for a model nanoparticle system with adhesive hard sphere interactions</u> Norman Wagner , Eberle Aaron
12:27PM - 12:39PM	<u>Q51.00007: Hydrodynamics and Rheology of Active Liquid Crystals</u> Zhenlu Cui
12:39PM - 12:51PM	<u>Q51.00008: Electrostatics-driven assembly of uni-lamellar catanionic faceted vesicles</u> Cheuk-yui Leung , Liam Palmer , Sumit Kewalramani , Rastko Sknepnek , Graziano Vernizzi , Megan Greenfield , Samuel Stupp , Michael Bedzyk , Monica Olvera de la Cruz
12:51PM - 1:03PM	<u>Q51.00009: Modeling controlled release from responsive microgel capsules</u> Alexander Alexeev , Hassan Masoud
1:03PM - 1:15PM	<u>Q51.00010: Thermoresponsive microcapsules for controlled release of hydrophilic cargo</u> Esther Amstad , David Weitz
1:15PM - 1:27PM	<u>Q51.00011: A Nano Engineered Membrane for Oil-Water Separation</u> Brian Solomon
1:27PM - 1:39PM	<u>Q51.00012: Tether formation on a settling vesicle</u> Gwenn Boedec , Marc Jaeger , Marc Leonetti
1:39PM - 1:51PM	<u>Q51.00013: Electrohydrodynamic instabilities of biomimetic bilayer membranes</u> Jacopo Seiwert , Petia Vlahovska
1:51PM - 2:03PM	<u>Q51.00014: Polyoxometalate (POM) Nanocluster-Induced Phase Transition and Structural Disruption in Lipid Bilayers.</u> Benxin Jing , Y. Elaine Zhu , Marie Hutin , Leroy Cronin

91

Wednesday, February 29, 2012

2:30PM – 5:30PM

**Session T19: Kavli Foundation Plenary Session: Emergent Physics at the Mesoscale**

Sponsoring Units: APS

Chair: Kate Kirby, American Physical Society

Room: *Ballroom East*

2:30PM - 3:06PM	<u>T19.00001: Perspectives in Emergent Mesoscopic Physics</u> Invited Speaker: Robert Laughlin
3:06PM - 3:42PM	<u>T19.00002: Quantum Information and mesoscale physics</u> Invited Speaker: William Phillips
3:42PM - 4:18PM	<u>T19.00003: Self Assembly on the Mesoscale</u> Invited Speaker: Angela Belcher
4:18PM - 4:54PM	<u>T19.00004: The mesoscale interface between physics and biology</u> Invited Speaker: William Bialek
4:54PM - 5:30PM	<u>T19.00005: Biological physics on the mesoscale</u> Invited Speaker: George Whitesides

Wednesday, February 29, 2012

2:30PM – 5:30PM

**Session T40: Focus Session: Cytoskeleton and Biomechanics - Forced Dynamics**

Sponsoring Units: DBIO DPOLY

Chair: Helim Aranda-Espinoza, University of Maryland

Room: *156A*

2:30PM - 2:42PM	<u>T40.00001: Dynamics of focal adhesions modulates active cellular response</u> Moumita Das , Shiladitya Banerjee , M. Cristina Marchetti
2:42PM - 2:54PM	<u>T40.00002: 3D Neutrophil Tractions in Changing Microenvironments</u> Jennet Toyjanova , Estefany Flores , Jonathan Reichner , Christian Franck
2:54PM - 3:06PM	<u>T40.00003: Force transmission through intercellular fluid transfer</u> Steven Zehnder , Jolie Breaux , Alison Dunn , Gregory Sawyer , Thomas Angelini
3:06PM - 3:42PM	<u>T40.00004: Forcing it on: Cytoskeletal dynamics during lymphocyte activation</u> Invited Speaker: Arpita Upadhyaya

92

3:42PM - 3:54PM	<u>T40.00005: Aging phenomena in a network model of the cytoskeleton</u> Nasrin Afzal , Michel Pleimling
3:54PM - 4:06PM	<u>T40.00006: Mechanical interactions may explain synchronized growth of cytoskeletal actin networks in motile cells</u> Antonio DeSimone , Luca Cardamone , Alessandro Laio
4:06PM - 4:18PM	<u>T40.00007: Investigations of biomechanical activity of macrophages during phagocytosis</u> Daniel Kovari , Jennifer Curtis
4:18PM - 4:30PM	<u>T40.00008: Collective cell migration during inflammatory response</u> Di Wu , Kimberly Stroka , Helim Aranda-Espinoza
4:30PM - 4:42PM	<u>T40.00009: Temperature dependence of optically induced cell deformations</u> Anatol Fritsch , Tobias R. Kiessling , Roland Stange , Josef A. Kaes
4:42PM - 4:54PM	<u>T40.00010: Multiscale Modeling of Cell Oscillation</u> Qi Wang
4:54PM - 5:06PM	<u>T40.00011: Biomechanical changes in endothelial cells result from an inflammatory response</u> Janina Vaitkus , Kimberly Stroka , Helim Aranda-Espinoza
5:06PM - 5:18PM	<u>T40.00012: Healing of small circular model wounds</u> Olivier Cochet , Philippe Marcq , Jonas Ranft , Myriam Refray , Axel Buguin , Pascal Silberzan
5:18PM - 5:30PM	<u>T40.00013: Mechanical coupling of smooth muscle cells using local and global stimulations</u> Craig Copeland , Christopher Chen , Daniel Reich

Wednesday, February 29, 2012

2:30PM – 5:30PM

**Session T41: Swimming, Motility and Locomotion**

Sponsoring Units: DFD

Chair: Paolo Arratia, University of Pennsylvania

Room: *156B*

93

Wednesday, February 29, 2012

2:30PM – 5:30PM

**Session T44: Focus Session: Interparticle Interactions in Polymer Nanocomposites - Grafted Chains**

Sponsoring Units: DPOLY  
Chair: Mesfin Tsige, University of Akron  
Room: 157C

2:30PM - 2:42PM	<u>T44.00001: Colloidal assembly on soft substrates</u> Jure Dobnikar , Tine Curk , Francisco Martinez Veracochea , Daan Frenkel
2:42PM - 2:54PM	<u>T44.00002: Molecular Dynamics Simulations on the Thermal and Mechanical Properties of Blend of Polymer and Polymer Grafted Nanoparticles</u> Sanat Kumar , Dong Meng , Gary Grest
2:54PM - 3:06PM	<u>T44.00003: Self Assembly of Tethered Nanoparticle Telechelics</u> Ryan Marson , Carolyn Phillips , Joshua Anderson , Sharon Glotzer
3:06PM - 3:18PM	<u>T44.00004: Controlling the Phase Behavior of Gold Nanoparticles within Polymer Matrix by Varying Composition and Length of Ligands</u> Seyoung Kim , Misang Yoo , Bumjoon Kim , Joona Bang
3:18PM - 3:30PM	<u>T44.00005: Analytic density functional theory of the polymer-mediated interactions between nanoparticles.</u> Alexander Chervanyov , Gert Heinrich
3:30PM - 3:42PM	<u>T44.00006: Molecular Weight Distribution Effects on the Structure of Strongly Adsorbed Polymers by Monte Carlo Simulation</u> Vikram Kuppa
3:42PM - 3:54PM	<u>T44.00007: Role of Stretchable Arms, Grafting Density and Parallel Reformable Bonds in the Self-Healing of Cross-Linked Star Nanogel Particles</u> Balaji Iyer Vaidyanathan Shantha , Isaac Salib , Victor Yashin , German Kolmakov , Krzysztof Matyjaszewski , Anna Balazs
3:54PM - 4:06PM	<u>T44.00008: Poly(ethylene-oxide)/clay/silica nanocomposites: Morphology and thermomechanical properties</u> Engin Burgaz
4:06PM - 4:18PM	<u>T44.00009: Copolymer mediated interactions in dense nanocomposites: role of chemical heterogeneity and sequence</u> Debapriya Banerjee , Kenneth S. Schweizer
4:18PM - 4:30PM	<u>T44.00010: Effect of bidispersity in grafted chain length on potential of mean force between polymer grafted nanoparticles in a homopolymer matrix</u> Arthi Jayaraman , Nitish Nair
4:30PM - 4:42PM	<u>T44.00011: Concentration, Interaction and Temperature Dependent Chain Dynamics in Polybutadiene / Clay Nanocomposites Characterized by Solid State 1H Double Quantum NMR Spectroscopy</u> Xiaoliang Wang , Pingchuan Sun , H. Henning Winter , Gi Xue
4:42PM - 4:54PM	<u>T44.00012: Structural Transitions of Polymer Grafted Magnetic Nanoparticles</u> Yang Jiao , Pinar Akcora
4:54PM - 5:30PM	<u>T44.00013: Assembly of Highly Grafted Polymer Nanoparticle Hybrids</u> Invited Speaker: Ramanan Krishnamoorti

94

Wednesday, February 29, 2012

2:30PM – 5:30PM

**Session T45: Polymeric Glasses**

Sponsoring Units: DPOLY  
Chair: James Runt, Pennsylvania State University  
Room: 159

2:30PM - 2:42PM	<u>T45.00001: Formation of Polymer Glasses Under Stress and Its Influence on Physical Aging</u> Laura Gray , Paul Yoon , Connie Roth
2:42PM - 2:54PM	<u>T45.00002: Deformation-induced molecular mobility allows polystyrene glasses to flow</u> Mark Ediger , Ben Bending , Kelly Christison
2:54PM - 3:06PM	<u>T45.00003: Temperature Divergence of the Dynamics of a PVAc glass: Dielectric vs. Mechanical Behaviors</u> Gregory McKenna , Jing Zhao
3:06PM - 3:18PM	<u>T45.00004: Determination of effective correlation length in a glassy polymer using electrostatic force microscopy</u> Brant Rumberger , Nathan Israeloff
3:18PM - 3:30PM	<u>T45.00005: Stable Nanostructured Polymer Films Formed Via Matrix Assisted Pulsed Laser Evaporation</u> Yunlong Guo , Kimberly Shepard , Rodney Priestley
3:30PM - 3:42PM	<u>T45.00006: A Scattering Model for Amorphous, Intrinsically Microporous Polymers</u> Amanda G. McDermott , Peter M. Budd , Neil B. McKeown , Coray M. Colina , James Runt
3:42PM - 3:54PM	<u>T45.00007: Non-Equilibrium Water-Glassy Polymer Dynamics</u> Eric Davis , Matteo Minelli , Marco Baschetti , Giulio Sarti , Yossef Elabd
3:54PM - 4:06PM	<u>T45.00008: Self-consistent Mixing Rule for the Viscoelasticity of Heterogeneous Systems</u> Francois Lequeux , Peiluo Shi , Helene Montes
4:06PM - 4:18PM	<u>T45.00009: Understanding failure behavior of polymer glasses: a molecular viewpoint</u> Gregory Zartman , Shiwang Cheng , Shi-Qing Wang
4:18PM - 4:30PM	<u>T45.00010: Heterogeneous Dynamics During Creep of Rod Containing Polymer Nanocomposites</u> Gregory Toepferwein , Robert Riggleman , Juan de Pablo
4:30PM - 4:42PM	<u>T45.00011: Molecular dynamics simulations of highly cross-linked polymer networks: prediction of thermal and mechanical properties</u> Natalia Shenogina , Mesfin Tsige , Sharmila Mukhopadhyay , Soumya Patnaik
4:42PM - 4:54PM	<u>T45.00012: Heterogeneity: A Solution to the Mysteries of the Glass transition?</u> Xiaojun Di , Gregory McKenna
4:54PM - 5:06PM	<u>T45.00013: The effect of polar interactions on the dynamics in vitreous liquids</u> Alexander Agapov , Yangyang Wang , Philip Griffin , Alexei Sokolov
5:06PM - 5:18PM	<u>T45.00014: The Twinkling Fractal Theory of the Glass Transition: Applications to Soft Matter</u> Richard Wool
5:18PM - 5:30PM	<u>T45.00015: Nano-indentation of Polycarbonate and Diamine Blends</u> Suresh Ahuja

95

Wednesday, February 29, 2012

2:30PM – 5:30PM

**Session T47: Focus Session: Heterogeneous Colloids I**

Sponsoring Units: DPOLY

Chair: Michael Engel, University of Michigan

Room: 160C

2:30PM - 3:06PM	<u>T47.00001: Janus and Multiblock Colloids</u> Invited Speaker: Steve Granick
3:06PM - 3:18PM	<u>T47.00002: Synchronized Dancing of Magnetic Janus Particles</u> Jing Yan , Moses Bloom , Sungchul Bae , Erik Luijten , Steve Granick
3:18PM - 3:30PM	<u>T47.00003: Hierarchical assemblies and cluster growth regimes of bipolar Janus nanoparticles: effect of particle characteristics</u> Mahdy Malekzadeh Moghani , Bamin Khomami
3:30PM - 3:42PM	<u>T47.00004: Stability of helical Janus clusters</u> Connor L. Eck , Jonathan K. Whitmer , Qian Chen , Steve Granick , Erik Luijten
3:42PM - 3:54PM	<u>T47.00005: Hierarchical Self-assembly of Triblock Janus Spheres</u> Qian Chen , Sung Chul Bae , Steve Granick
3:54PM - 4:06PM	<u>T47.00006: Janus particles at fluid-fluid interfaces: the third face of Janus particles</u> Daeyeon Lee , Teresa Brugarolas , Bum Jun Park , Myung Han Lee
4:06PM - 4:18PM	<u>T47.00007: Self Assembly of Hard, Space-Filling Polytopes</u> Benjamin Schultz , Pablo Damasceno , Michael Engel , Sharon Glotzer
4:18PM - 4:54PM	<u>T47.00008: Self Assembly of Colloids</u> Invited Speaker: Stefano Sacanna
4:54PM - 5:06PM	<u>T47.00009: Surface Roughness directed Self-Assembly of Patchy Particles into Colloidal Micelles</u> Daniela Kraft , Ran Ni , Frank Smalenburg , Michiel Hermes , Kisun Yoon , David Weitz , Alfons van Blaaderen , Jan Groenewold , Marjolein Dijkstra , Willem Kegel
5:06PM - 5:18PM	<u>T47.00010: Entropic selection of patchy particle assemblies</u> Xiaoming Mao , Qian Chen , Steve Granick
5:18PM - 5:30PM	<u>T47.00011: Assembling Colloidal Clusters from Spherical Codes</u> Carolyn Phillips , Eric Jankowski , Michelle Marval , Sharon Glotzer

96

Wednesday, February 29, 2012

2:30PM – 5:30PM

**Session T48: Focus Session: Advanced Optical Probes of Soft Matter - Microrheology, Microbiography**

Sponsoring Units: DPOLY DBIO

Chair: Daneil Ou-Yang, Lehigh University

Room: 161

2:30PM - 2:42PM	<u>T48.00001: Colloidal Diffusion and Hydrodynamic Interactions near Boundaries</u> Bhaskar Jyoti Krishnatreya , David G. Grier
2:42PM - 2:54PM	<u>T48.00002: Non-contact microrheology at the air-water interface</u> Thomas Boatwright , Roie Shlomovitz , Alex Levine , Michael Dennin
2:54PM - 3:06PM	<u>T48.00003: Competing effects of inertia in passive microrheology</u> Tutomu Indei , Jay Schieber , Andrzej Cichocki
3:06PM - 3:18PM	<u>T48.00004: High bandwidth linear viscoelastic properties of complex fluids from the measurement of their free surface fluctuations</u> Basile Pottier , Laurence Talini , Christian Fréchet
3:18PM - 3:30PM	<u>T48.00005: Holographic microrefractometer</u> Hagay Shpansman , Bhaskar J. Krishnatreya , David G. Grier
3:30PM - 3:42PM	<u>T48.00006: Studying colloidal particles on an emulsion droplet with digital holographic microscopy</u> Jerome Fung , Rebecca W. Perry , Thomas G. Dimiduk , Vinodhan N. Manoharan
3:42PM - 4:18PM	<u>T48.00007: Brownian motion goes ballistic</u> Invited Speaker: Ernst-Ludwig Florin
4:18PM - 4:30PM	<u>T48.00008: Imaging dynamics and transitions in colloidal clusters</u> Rebecca W. Perry , Thomas G. Dimiduk , Jesse W. Collins , Jerome Fung , Guangnan Meng , Vinodhan N. Manoharan
4:30PM - 4:42PM	<u>T48.00009: Holography of Cells fitted to DDA scattering solutions</u> Thomas Dimiduk , Jerome Fung , Rebecca Perry , Ryan McGorty , Vinodhan Manoharan
4:42PM - 4:54PM	<u>T48.00010: Holographic deconvolution microscopy for high resolution particle tracking</u> Lisa Dixon , Fook Chiong Cheong , David Grier
4:54PM - 5:06PM	<u>T48.00011: Measuring Nanoparticle Dynamics with Real-Time, 3D Tracking</u> Kan Du , Andrew Berglund
5:06PM - 5:18PM	<u>T48.00012: Nano-domains of high viscosity and stiffness mapped in the cell membrane by thermal noise imaging</u> Yunhsiang Hsu , Arnd Pralle
5:18PM - 5:30PM	<u>T48.00013: Fluorescence correlation spectroscopy enumerate the number of nanoparticles in optical confinement</u> Yi Hu , Xuanhong Cheng , H. Daniel Ou-Yang

97

Wednesday, February 29, 2012

2:30PM – 5:30PM

**Session T49: Focus Session: Organic Electronics and Photonics: Structure - Property Correlations**

Sponsoring Units: DMP DPOLY  
Chair: Dean DeLongchamp, NIST  
Room: 162A

2:30PM - 2:42PM	<u>T49.00001: Correlating the efficiency and nanomorphology of polymer blend solar cells utilizing resonant soft x-ray scattering</u> Hongping Yan , Brian Collins , Eliot Gann , Cheng Wang , Harald Ade , Christopher McNeill
2:42PM - 2:54PM	<u>T49.00002: Hierarchical Nanomorphologies Promote Exciton Dissociation in Polymer: Fullerene Bulk Heterojunction Solar Cells</u> Wei Chen , Seth Darling
2:54PM - 3:06PM	<u>T49.00003: Unexpected Morphological Traits of Bulk Heterojunction Organic Solar Cells with Exceptional Power Conversion Efficiencies</u> John Tumbleston , Brian Collins , Andrew Stuart , Zhe Li , Hongping Yan , Christopher McNeill , Wei You , Harald Ade
3:06PM - 3:42PM	<u>T49.00004: Correlating Free-Carrier production in P3HT with Solid-State Microstructure using Time-Resolved Microwave Conductivity</u> Invited Speaker: Garry Rumbles
3:42PM - 3:54PM	<u>T49.00005: Controlling Active Layer Morphology in Polymer/Fullerene Solar Cells</u> Suchanun Mounghai , Nikhila Mahadevapuram , Gila Stein
3:54PM - 4:06PM	<u>T49.00006: The Miscibility of PCBM in Low Band-Gap Conjugated Polymers in Organic Photovoltaics</u> Huipeng Chen , Wei You , Jeff Peet , Jason Azoulay , Guillermo Bazan , Mark Dadmun
4:06PM - 4:18PM	<u>T49.00007: Self-assembly Columnar Structure in Active Layer of Bulk Heterojunction Solar Cell</u> Cheng Pan , Jennifer Segui , Yingjie Yu , Hongfei Li , Bulent Akgun , Sushil.K Satjia , Dilip Gersappe , Chang-Yong Nam , Miriam Rafailovich
4:18PM - 4:30PM	<u>T49.00008: Dissipative Particle Dynamics Studies of Rod-Coil Polymer Nanocomposites</u> Charles Starbird , Dongsheng Zhang , Arthi Jayaraman
4:30PM - 4:42PM	<u>T49.00009: Model Hamiltonian for predicting the bandgap of conjugated systems</u> Andre Leitao Botelho , Yongwoo Shin , Xi Lin
	<u>Preview Abstract</u>
4:42PM - 4:54PM	<u>T49.00010: The Effect of Side-Chain Length on the Solid-State Structure and Optical Properties of F8BT: A DFT Study</u> Mohammad Javad Eslamibidgoli , Jolanta B. Lagowski
4:54PM - 5:06PM	<u>T49.00011: Polymer blend photovoltaics with conjugated block copolymers as surfactants</u> Changhe Guo , Matthew Witman , Kiarash Vakshouri , Rafael Verduzco , Enrique Gomez
5:06PM - 5:18PM	<u>T49.00012: Correlation between polymer architecture, mesoscale structure and photovoltaic performance in side-chain-modified PAE-PAV:fullerene bulk-heterojunction solar cells</u> S. Rathgeber , F. Kuehnlitz , H. Hoppe , D.A.M. Egbe , S. Tuerk , J. Perlich , R. Gehrke
5:18PM - 5:30PM	<u>T49.00013: Self-assembly and characterization of two-component films of semiconducting nanoparticles</u> Yipeng Yang , Nagarjuna Gavvalapalli , Harihara Venkatraman , Mina Baghar , Michael Barnes , Dhandapani Venkataraman , Anthony Dinsmore

98

Wednesday, February 29, 2012

2:30PM – 5:30PM

**Session T50: Focus Session: Phase Behavior and Structure in Copolymers**

Sponsoring Units: DPOLY  
Chair: Megan Robertson, University of Houston  
Room: 162B

2:30PM - 2:42PM	<u>T50.00001: Self-assembly of semiflexible-flexible block copolymers</u> Arun Kumar , Venkat Ganesan
2:42PM - 2:54PM	<u>T50.00002: Effect of chain shape on the self-assembly of bioinspired block copolymers</u> Adrienne M. Rosales , Hannah K. Murnen , Ronald N. Zuckermann , Rachel A. Segalman
2:54PM - 3:06PM	<u>T50.00003: Processing-Dependent Self-Assembly of Protein-Polymer Diblock Copolymers</u> C.S. Thomas , L. Xu , B.D. Olsen
3:06PM - 3:18PM	<u>T50.00004: Helical Ordering in Chiral Block Copolymers</u> Wei Zhao , Sung Woo Hong , Dian Chen , Gregory Grason , Thomas Russell
3:18PM - 3:30PM	<u>T50.00005: Phase Behavior of Binary Blends of AB+AC Block Copolymers with compatible B and C blocks</u> Victor Pryamitsyn , Venkat Ganesan
3:30PM - 3:42PM	<u>T50.00006: Universality in block copolymers: a corresponding states hypothesis</u> Jens Glaser , Jian Qin , Pavani Medapuram , David Morse
3:42PM - 3:54PM	<u>T50.00007: Manipulating triblock copolymer morphology using tapered block interfaces</u> Wei-Fan Kuan , Thomas H. Epps, III
3:54PM - 4:06PM	<u>T50.00008: Manipulating the morphological behavior of ABA triblock copolymers with block polydispersity</u> Adam Schmitt , Mahesh Mahanthappa
4:06PM - 4:18PM	<u>T50.00009: Phase Behavior of Linear ABC Tri Block-Random Copolymers with a Semicrystalline Endblock</u> Bryan Beckingham , Richard Register
4:18PM - 4:54PM	<u>T50.00010: Discovering Complex Ordered Phases of Block Copolymers</u> Invited Speaker: An-Chang Shi
4:54PM - 5:06PM	<u>T50.00011: Thermodynamic Behavior of Poly(1,4-isoprene-b-DL-lactide) Diblock Copolymers</u> Timothy M. Gillard , Sangwoo Lee , Frank S. Bates
5:06PM - 5:18PM	<u>T50.00012: Direct Comparisons among Fast Off-Lattice Monte Carlo Simulations, Integral Equation Theories, and Gaussian Fluctuation Theory for Disordered Symmetric Diblock Copolymers</u> Delian Yang , Jing Zong , Qiang Wang
5:18PM - 5:30PM	<u>T50.00013: The power spectrum of thermal composition fluctuations in a lamellar mesophase</u> August Bosse

99

Thursday, March 1, 2012

8:00AM - 11:00AM

**Session V40: Focus Session: Single Molecule Biological Physics - Proteins**

Sponsoring Units: DBIO DPOLY DCOMP

Chair: Everett Lipman, University of California, Santa Barbara

Room: 156A

8:00AM - 8:36AM	<u>V40.00001: From single molecule to single tubules</u> Invited Speaker: Chin-Lin Guo
8:36AM - 8:48AM	<u>V40.00002: Studying spatial gradients of signaling proteins in mitotic spindles with time-integrated multipoint moment analysis</u> Doogie Oh , Daniel Needleman
8:48AM - 9:00AM	<u>V40.00003: New chemical kinetics for description of chemical noise in small, heterogeneous biological systems: Beyond the paradigm of the rate constant concept</u> Jaeyoung Sung
9:00AM - 9:12AM	<u>V40.00004: Generalized Michaelis-Menten equation for conformation-modulated monomeric enzyme catalysis</u> Jianlan Wu , Jianshu Cao
9:12AM - 9:48AM	<u>V40.00005: Conformational-Modulated Enzyme Catalysis: Generalized Michaelis-Menten Equation and Single Molecule Measurements</u> Invited Speaker: Jianshu Cao
9:48AM - 10:00AM	<u>V40.00006: Probing short-lived protein ligand interactions with single-molecule force spectroscopy</u> Ozgur Sahin , Mingdong Dong
10:00AM - 10:12AM	<u>V40.00007: Using Surface Curvature to Control the Dimerization of a Surface-Active Protein</u> Martin Kurylowicz , Maximiliano Giuliani , John Dutcher
10:12AM - 10:24AM	<u>V40.00008: Ligand Binding Stability and Site Specific Chemical Potentials in the Anisotropic Network Model</u> Rahmi Ozisik , Osman Burak Okan , Aravind Rammohan
10:24AM - 11:00AM	<u>V40.00009: Watching Single Enzymes and Fluorescent Proteins in Action in Solution Using a Microfluidic Trap</u> Invited Speaker: Randall Goldsmith

Thursday, March 1, 2012

8:00AM - 11:00AM

**Session V41: Focus Session: Physics of Proteins I: Dynamics and Function**

Sponsoring Units: DBIO DPOLY

Chair: Aihua Xie, Oklahoma State University

Room: 156B

8:00AM - 8:36AM	<u>V41.00001: Two tyrosyl radicals stabilize high oxidation states in cytochrome c oxidase for efficient energy conservation and proton translocation</u> Invited Speaker: Denis Rousseau
8:36AM - 8:48AM	<u>V41.00002: Structural and electronic properties of copper-containing nitrite reductase (CuNiR): elucidating the mechanism of nitrite reduction at the T<sub>S</sub> 2SCu center</u> Yan Li , Miroslav Hodak , Jerry Bernholc
8:48AM - 9:00AM	<u>V41.00003: Nanometer Scale Distance Measurements for Biological Systems using Gd<sup>3+</sup>-based Spin Probes at High Magnetic Fields</u> Devin Edwards , Daniella Goldfarb , Songi Han , Mark Sherwin
9:00AM - 9:12AM	<u>V41.00004: Metal-like transport in proteins: A new paradigm for biological electron transfer</u> Nikhil Malvankar , Madeline Vargas , Mark Tuominen , Derek Lovley
Thursday, March 1, 2012 9:12AM - 9:24AM	<u>V41.00005: Behind the Scene Role of Conserved Threonine in Intein Splicing</u> Albert Dearden , Brian Callahan , Marlene Belfort , Saroj Nayak
9:24AM - 9:36AM	<u>V41.00006: Coherent Oscillations in Hemoglobin and Myoglobin Ligand Complexes and their Dynamical Connection to Global Protein Motion and Gas Discrimination</u> Jacob Jantzi , Kristina Woods
9:36AM - 9:48AM	<u>V41.00007: Vibrational Dynamics of Ferric MbCN-A Revisit by Resonance Raman and Vibrational Coherence Spectroscopy</u> Weiqiao Zeng , Yuhuan Sun , Abdelkrim Benabbas , Paul M. Champion
9:48AM - 10:00AM	<u>V41.00008: Effect of DNA binding on geminate CO recombination kinetics in <i>CooA</i></u> Abdelkrim Benabbas , Venugopal Karunakaran , Hwan Youn , Thomas Poulos , Paul Champion
10:00AM - 10:12AM	<u>V41.00009: Physical control of carrier-mediated ion-transporters by entrainment of their turnover rate</u> Wei Chen , Clausell Mathis , Zhihui Fang , Jason Mast , Karim Hamidi , Patrick Kelly , Max Eve
10:12AM - 10:24AM	<u>V41.00010: Molecular dynamics simulation studies of dielectric response and vibrational energy relaxation in photoactive yellow protein and green fluorescent protein</u> Yao Xu , Ramachandran Gnanasekaran , David Leitner
10:24AM - 10:36AM	<u>V41.00011: Employing Solution X-Ray Scattering to Investigate Conformational Changes of Proteins</u> Mustafa Tekpinar , Wenjun Zheng
10:36AM - 10:48AM	<u>V41.00012: Near-Field Orientation Sensitive Terahertz Micro-Spectroscopy of Single Crystals</u> Gheorghe Acbas , Rohit Singh , Edward Snell , Andrea Markelz



Thursday, March 1, 2012

8:00AM - 11:00AM

**Session V44: Focus Session: Interparticle Interactions in Polymer Nanocomposites - Surface Interactions**

Sponsoring Units: DPOLY  
Chair: Dilip Gersappe, SUNY Stony Brook  
Room: 157C

8:00AM - 8:12AM	<u>V44.00001: The synthesis of metal nanoparticulate catalysts within functional microgel particles</u> Maria Kaliva , Eleni Pavlopoulou , Konstantinos Christodoulakis , Maria Vamvakaki , Spiros H. Anastasiadis
8:12AM - 8:24AM	<u>V44.00002: The role of nanoparticle synergies in modifying the thermal properties of biodegradable polymer blends</u> Kai Yang , Shan He , Rachel Davis , Miriam Rafailovich , Takashi Kashiwagi
8:24AM - 8:36AM	<u>V44.00003: On the Confinement of Nanoparticles within Polymeric Matrices</u> Jorge Alarcon , Karen Lozano , Mircea Chipara
8:36AM - 8:48AM	<u>V44.00004: Supramolecular Assembly in a Polymer Nanocomposite</u> Rick Beyer , Aaron Jackson , Samuel Price , Christopher Gold , Andrew Duncan
8:48AM - 9:00AM	<u>V44.00005: Stabilizing nanotube films with thin polymer layers: Mitigating van der Waals forces through excluded-volume interactions</u> Matthew R. Semler , John M. Harris , Erik K. Hobbie
9:00AM - 9:12AM	<u>V44.00006: SANS Studies of DNA-Templated Silver Nanoclusters</u> Hongyu Guo , Sunil Sinha , Jaswinder Sharma , Jennifer Martinez , Andrew Shreve
9:12AM - 9:24AM	<u>V44.00007: Theory of the Structure and Miscibility of Soft Filler Polymer Nanocomposites</u> Jian Yang , Kenneth Schweizer
9:24AM - 9:36AM	<u>V44.00008: Self-assembly of Nano-rods in Photosensitive Phase Separation</u> Ya Liu , Olga Kuksenok , Egor Maresov , Anna Balazs
9:36AM - 9:48AM	<u>V44.00009: Dynamic mechanical properties of hydroxyapatite/polyethylene oxide nanocomposites: characterizing isotropic and post-processing microstructures</u> Meisha Shofner , Ji Hoon Lee
9:48AM - 10:00AM	<u>V44.00010: Thermodynamic Interactions in Polymer Nanocomposites towards Controlled Nanoparticle Dispersion</u> Alisyn Nedoma , Rajeev Dattani , Joao Cabral
10:00AM - 10:12AM	<u>V44.00011: Effect of competing monomer-monomer and monomer-particle interactions on the assembly of copolymer grafted nanoparticles</u> Tyler Martin , Arthi Jayaraman
10:12AM - 10:24AM	<u>V44.00012: Dielectric Breakdown in Filled Silicone Elastomers at the Particle/Matrix Interface</u> Roger Diebold , Michael Gordon , David Clarke
10:24AM - 11:00AM	<u>V44.00013: The Development of Filler Structure in Colloidal Silica -- Polymer Nanocomposites</u> Invited Speaker: Jeffrey Meth

Thursday, March 1, 2012

8:00AM - 11:00AM

**Session V45: Focus Session: Soft Matter Physics of Heterogeneous Membranes - Experiments**

Sponsoring Units: DPOLY DBIO  
Chair: Gary Grest, Sandia National Laboratories  
Room: 159

8:00AM - 8:12AM	<u>V45.00001: Structure and mechanics of biological fiber-laden membranes</u> Yogesh Kumar Murugesan , Alejandro Rey , Damiano Pasini
8:12AM - 8:24AM	<u>V45.00002: From a single molecule to a membrane of structured ionic polymers: A molecular dynamic simulation study</u> Dipak Aryal , Dvora Perahia , Gary S. Grest
8:24AM - 8:36AM	<u>V45.00003: Investigation of the elastic properties of a lipid bilayer by fluorescence interferometry</u> Dong Gui , Hsiang-ku Lin , Ehsan Noruzifar , Leonid Pryadko , Roya Zandi , Umar Mohideen
8:36AM - 8:48AM	<u>V45.00004: Regulating the Size and Stabilization of Lipid Raft-Like Domains and Using Calcium Ions as Their Probe</u> Uri Raviv , Or Szekely
8:48AM - 9:00AM	<u>V45.00005: Floret-shaped solid domains on giant fluid lipid vesicles induced by pH</u> Stavroula Sofou , Amey Bandekar
9:00AM - 9:12AM	<u>V45.00006: The influence of membrane stress on phase separation and domain shape in phospholipid vesicles</u> Dong Chen , Maria Santore
9:12AM - 9:24AM	<u>V45.00007: Membrane fluctuations alter the fluidity of clathrin protein lattices</u> Andrew Spakowitz , Nicholas Cordella , Shafiq Mehraeen
9:24AM - 9:36AM	<u>V45.00008: The structure of unsupported, self-assembled phospholipid bilayers on an artificially nano-patterned surface</u> Gregory Smith , Seung-Yong Jung , James Browning , Jong Keum , Nickolay Lavrik , Pat Collier
9:36AM - 9:48AM	<u>V45.00009: Peptide-induced Asymmetric Distribution of Charged Lipids in a Vesicle Bilayer Revealed by Small-Angle Neutron Scattering</u> William Heller , Shuo Qian
9:48AM - 10:00AM	<u>V45.00010: Cooperative assembly in targeted drug delivery</u> Debra Augustine
10:00AM - 10:12AM	<u>V45.00011: Polymer-Protein interaction at air/liquid interfaces: X-ray reflectivity and surface spectroscopy studies</u> Wenjie Wang , Nathaniel Anderson , Sanjeeva Murthy , David Vaknin
10:12AM - 10:24AM	<u>V45.00012: Microporous device for local electric recordings on lipid bilayers</u> Theresa Kaufeld , Christopher Battle , Conrad Weichbrodt , Claudia Steinem , Christoph Schmidt

Thursday, March 1, 2012

8:00AM - 11:00AM

**Session V46: Invited Session: Active Matter and Dynamical Systems**

Sponsoring Units: DPOLY DBIO

Chair: Cristina Marchetti, Syracuse University

Room: 160AB

8:00AM - 8:36AM	<u>V46.00001: From filamentous bundles to active random flows</u> Invited Speaker: Zvonimir Dogic
8:36AM - 9:12AM	<u>V46.00002: Statistical mechanics of the genetic code: a glimpse of early life?</u> Invited Speaker: Nigel Goldenfeld
9:12AM - 9:48AM	<u>V46.00003: Synchronization of eukaryotic flagella <i>in vivo</i>: from two to thousands</u> Invited Speaker: Raymond E. Goldstein
9:48AM - 10:24AM	<u>V46.00004: Dynamic Patterns in Active Fluids</u> Invited Speaker: Frank J <sup>u</sup> licher
10:24AM - 11:00AM	<u>V46.00005: Order and instabilities in dense bacterial colonies</u> Invited Speaker: Lev Tsimring

Thursday, March 1, 2012

8:00AM - 11:00AM

**Session V47: Focus Session: Heterogeneous Colloids II**

Sponsoring Units: DPOLY

Chair: David Pine, New York University

Room: 160C

8:00AM - 8:12AM	<u>V47.00001: Self Assembly of Soft Matter Quasicrystals and Their Approximants</u> Christopher Iacovella , Aaron Keys , Sharon Glotzer
8:12AM - 8:24AM	<u>V47.00002: Self-aligning colloidal particles</u> Remi Dreyfus , Tycho Sleator , Daniel Sleator , Kenny Mayoral , Thomas Mason , Paul Chaikin
8:24AM - 8:36AM	<u>V47.00003: Self-assembly of anisotropic colloidal particles under confinement</u> Carlos Avendano Jimenez , Fernando Escobedo
8:36AM - 9:12AM	<u>V47.00004: Towards Structural Complexity with Colloids</u> Invited Speaker: Michael Engel
9:12AM - 9:24AM	<u>V47.00005: Novel Non-Close-Packed Structures Assembled by Spherical Colloids with Anisotropic Interactions under Electric Field</u> Fuduo Ma , Ning Wu
9:24AM - 9:36AM	<u>V47.00006: Self-assembly of polydisperse nanoparticles into monodisperse supraparticles: a computer simulation study</u> Trung D. Nguyen , Yunsheng Xia , Byeongdu Lee , Ming Yang , Aaron Santos , Paul Podsiadlo , Zhiyong Tang , Sharon C. Glotzer , Nicholas A. Kotov
9:36AM - 9:48AM	<u>V47.00007: Particle dynamics in colloidal glasses with short-range attraction</u> Piotr Habdas , Ke Chen , Martin Iwanicki , Daniel Flynn , John Michael Devany , Lisa Mariani , Arjun G. Yodh
9:48AM - 10:24AM	<u>V47.00008: Self-assembly of colloidal surfactants</u> Invited Speaker: Willem Kegel
10:24AM - 10:36AM	<u>V47.00009: The Structure of Dipolar Colloidal Gels in the Dilute Regime</u> Veronica I. Marconi , Marcelo A. Carignano
10:36AM - 10:48AM	<u>V47.00010: Two-Dimensional Crystals of Icosahedral Viruses at Liquid interfaces</u> Masafumi Fukuto , Lin Yang , Antonio Checco , Ivan Kuzmenko , Quyen Nguyen , Nick Mank , Qian Wang
10:48AM - 11:00AM	<u>V47.00011: Active colloids at liquid-liquid interfaces: dynamic self-assembly and functionality</u> Alexey Snezhko , Igor Aranson

Thursday, March 1, 2012

8:00AM - 11:00AM

**Session V48: Focus Session: Advanced Optical Probes of Soft Matter - Forces, Imaging, Excitons**

Sponsoring Units: DPOLY DBIO

Chair: Maria Kilfoil, University of Massachusetts

Room: 161

8:00AM - 8:36AM	<u>V48.00001: Phase behavior of colloidal monolayers in quasiperiodic light fields</u> Invited Speaker: Clemens Bechinger
8:36AM - 8:48AM	<u>V48.00002: Brownian vortex circulation due to spin orbit conversion in a circularly polarized optical tweezer</u> David Ruffner , David G. Grier
8:48AM - 9:00AM	<u>V48.00003: Pulling Particles Backward Using a Forward Propagating Beam</u> Jack Ng , Jun Chen , Zhifang Lin , Che Ting Chan
9:00AM - 9:12AM	<u>V48.00004: Lateral optical binding forces between two colloidal Mie particles</u> Ming-Tzo Wei , Jack Ng , C.T. Chan , H. Daniel Ou-Yang
9:12AM - 9:24AM	<u>V48.00005: Super-Resolution Imaging Using Randomly Diffusing Probes</u> Anna Labno , Hu Cang , Christopher Gladden , Xiang Zhang
9:24AM - 9:36AM	<u>V48.00006: Three-dimensional thermal noise images of single biopolymer filaments allows to determine their orientation and quantify their mechanical properties</u> Martin Kochaneczyk , Tobias Bartsch , Pinyu Thrasher , Ernst-Ludwig Florin
9:36AM - 9:48AM	<u>V48.00007: Microscopy method for the characterization of structural color on a single wing scale of Morpho butterfly</u> Beom-Jin Yoon , Matija Crne , Jung Ok Park , Mohan Srinivasarao
9:48AM - 10:00AM	<u>V48.00008: High Fidelity Detection of Defects in Polymer Films using Surface-Modified Nanoparticles</u> Chaitanya Pratiwada , Sindhuja Chari , Jolanta Marszalek , Matthew Becker , Alamgir Karim
10:00AM - 10:12AM	<u>V48.00009: A Study of the Polarizability of Single-Walled Carbon Nanotubes in an Optical Field</u> Jingyu Wang , H. Daniel Ou-Yang
10:12AM - 10:24AM	<u>V48.00010: Dynamics of Aerial Tower Formation in Bacillus subtilis Biofilms</u> Naveen Sinha , Agnese Seminara , James Wilking , Michael Brenner , Dave Weitz
10:24AM - 10:36AM	<u>V48.00011: The Orientation of Luminescent Excitons in Layered Organic Nanomaterials</u> Jon Schuller , Sinan Karavelli , Keliang He , Shyuan Yang , Jie Shan , John Kymissis , Rashid Zia
10:36AM - 10:48AM	<u>V48.00012: Accessing exciton transport in light-harvesting structures with plasmonic nanotip</u> Semion K. Saikin , Johannes Feist , M.T. Homer Reid , Mikhail D. Lukin , Alan Aspuru-Guzik

106

Thursday, March 1, 2012

8:00AM - 11:00AM

**Session V49: Focus Session: Organic Electronics and Photonics - Solar Cells and Light Emitting Devices**

Sponsoring Units: DMP DPOLY

Chair: Garry Rumbles, National Renewable Energy Laboratory

Room: 162A

8:00AM - 8:12AM	<u>V49.00001: Frequency dependence of magnetoresistance in MEH-PPV</u> Thaddee Kamdem Djidjou , Tho Nguyen , Z. Vally Vardeny , Andrey Rogachev
8:12AM - 8:24AM	<u>V49.00002: Graphene-Based Polymer Bulk Heterojunction Solar Cells</u> Fei Yu , Vikram Kuppa
8:24AM - 8:36AM	<u>V49.00003: Planar Organic Photovoltaics for more Opportunities of Efficiency Enhancement and Parameters Controlling</u> Feras G. Alzubi , Saiful I. Khondaker
8:36AM - 8:48AM	<u>V49.00004: Low band gap polymer bulk heterojunction solar cell on a co-planar digitated electrodes structure</u> Abrar Quadery , Feras Alzubi , Simon Tang , Andre J. Gesquiere , Saiful Khondaker
8:48AM - 9:00AM	<u>V49.00005: Charge Accumulation and Internal Photovoltaic Processes in Organic Solar Cells</u> Huidong Zang , Yu-Che Hsiao , Qing Liu , Ilia Ivanov , Bin Hu
9:00AM - 9:12AM	<u>V49.00006: Photocurrent noise in organic bulk heterojunction solar cells</u> N.S. Vidhyadhiraja , Monojit Bag , K.S. Narayan
9:12AM - 9:48AM	<u>V49.00007: Relating charge transport and performance in single-layer graded-composition organic light-emitting devices</u> Invited Speaker: Russell Holmes
9:48AM - 10:00AM	<u>V49.00008: Sources of high photo-current in inverted organic solar cells</u> Abay Gadisa , Yingchi Liu , Rene Lopez , Edward Samulski
10:00AM - 10:12AM	<u>V49.00009: Better Hybrid Solar Cell Tandems: Comparisons between Parallel versus In-Series Designs</u> Kamil Mielczarek , Alexander Cook , Alexios Papadimitratos , Vladimir Pozdin , Alexander Kuznetsov , Josef Velten , Anvar Zakhidov
10:12AM - 10:24AM	<u>V49.00010: Near-Infrared Photodetector Consisting of J-Aggregating Cyanine Dye and Metal Oxide Thin Films</u> Timothy Osedach , Antonio Iacchetti , Richard Lunt , Trisha Andrew , Patrick Brown , Gleb Akselrod , Vladimir Bulovic
10:24AM - 10:36AM	<u>V49.00011: Electrical Stability Tests of Polymer Light Emitting Devices</u> Jacob Cox , Zac Barcikowski , Marian Tzolov
10:36AM - 10:48AM	<u>V49.00012: Rational design of charge transport molecules for blue organic light emitting devices</u> Asanga Padmaperuma , Lelia Cosimbescu , Phillip Koech , Evgueni Polikarpov , James Swensen , Daniel Gaspar
10:48AM - 11:00AM	<u>V49.00013: Transient Capacitance of Light-Emitting Electrochemical Cells</u> Nancy Haegel , Yevtte Davis , Peter Crooker , J. Devin MacKenzie , Yuka Yoshioka

107

Thursday, March 1, 2012

8:00AM - 11:00AM

### Session V50: Structure and Properties of Copolymers

Sponsoring Units: DPOLY  
Chair: Bradley Olsen, Massachusetts Institute of Technology  
Room: 162B

8:00AM - 8:12AM	<b>V50.00001: Designing 100 K Glass Transition Breadths in Bulk Polymer Systems: Effects of Architecture in Homopolymers, Copolymers, and Copolymer Blends</b> Stephen Marrou , Sean Wundrow , John Torkelson
8:12AM - 8:24AM	<b>V50.00002: Structure and Mechanical Behavior of Elastomeric Multiblock Terpolymers Containing Glassy, Rubbery, and Semicrystalline Blocks</b> Feng Zuo , C. Guillermo Alfonso , Frank Bates
8:24AM - 8:36AM	<b>V50.00003: Energy Storage and Dissipation in Random Copolymers during Biaxial Loading</b> Hansohl Cho , Mary Boyce
8:36AM - 8:48AM	<b>V50.00004: X-ray scattering studies of ordered block copolymer melts during uniaxial extensional flow</b> Wesley Burghardt , Ruinan Mao , Erica McCreedy
8:48AM - 9:00AM	<b>V50.00005: Directed Self-Assembly of Block Copolymers in 3D Templates Fabricated by Multiphoton Lithography</b> Jonathan Singer , Edwin Thomas
9:00AM - 9:12AM	<b>V50.00006: Understanding the Dynamics of Magnetic Field Alignment for Rod-Coil Block Copolymers</b> Bryan McCulloch , Giuseppe Portale , Wim Bras , Alexander Hexemer , Rachel A. Segalman
9:12AM - 9:24AM	<b>V50.00007: In-situ SAXS observation of magnetic field effects on block copolymer ordering and alignment</b> Chinedum Osuji , Manesh Gopinadhan , Pawel Majewski
9:24AM - 9:36AM	<b>V50.00008: Characterizing Mesoporous Block Copolymers by Resonant Soft X-ray Scattering</b> David Wong , Keith Beers , Cheng Wang , Jeffrey Kortright , Nitash Balsara
9:36AM - 9:48AM	<b>V50.00009: Self-assembly Morphology and Crystallinity Control of Diblock Copolymer Inspired by Spider Silk</b> Wenwen Huang , Sreevidhya Krishnaji , David Kaplan , Peggy Cebe
9:48AM - 10:00AM	<b>V50.00010: The Effects of Blockiness on the Chemical Composition Distribution of Partially Functionalized Polystyrene</b> Wayne Powers , Jan Genzer , Chang Y. Ryu
	Preview Abstract
10:00AM - 10:12AM	<b>V50.00011: Large Scale Purification and Characterization of Model Poly(isopropyl methacrylate)-block-Poly(styrene) Diblock Copolymers</b> Asem Abdulahad , Du Yeol Ryu , Chang Yeol Ryu
10:12AM - 10:24AM	<b>V50.00012: Quantifying Fluctuation Effects on the Order-Disorder Transition of Symmetric Diblock Copolymers</b> Jing Zong , Qiang (David) Wang
10:24AM - 10:36AM	<b>V50.00013: Simulation of micelle lattice ordering via nucleation from disorder in a diblock copolymer melt</b> Russell Spencer , Robert Wickham
10:36AM - 10:48AM	<b>V50.00014: Order-to-order Transition in Closed-loop type Block Copolymer</b> Hyunju Ahn , Hoyeon Lee , Sungmin Park , Du Yeol Ryu
10:48AM - 11:00AM	<b>V50.00015: Self-assembly Behavior of Poly(3-alkylthiophene)-<i>block</i>-poly(methyl methacrylate) Block Copolymers Prepared by Anionic Coupling Reaction</b> Jin Kon Kim , Hong Chul Moon

108

Thursday, March 1, 2012

11:15AM - 2:15PM

### Session W39: Focus Session: Materials and Functional Structures for Biological Interfaces: Cells

Sponsoring Units: DMP DBIO DPOLY  
Chair: Robert Ros, Arizona State University  
Room: 109B

11:15AM - 11:51AM	<b>W39.00001: Controlling Cell Function with Geometry</b> Invited Speaker: Milan Mrksich
11:51AM - 12:03PM	<b>W39.00002: Role of fiber functionality and angle on cell migration</b> Sisi Qin , Richard Clark , Miriam Rafailovich
12:03PM - 12:15PM	<b>W39.00003: Anomalous cell migration properties on electrospun fibers</b> Richard Clark , Sisi Qin , Miriam Rafailovich
12:15PM - 12:27PM	<b>W39.00004: Control cell adhesion with dynamic bilayer films</b> Andreas Kourouklis , Ronald Lerum , Harry Bermudez
12:27PM - 1:03PM	<b>W39.00005: Diblock Copolymer Foams with Adhesive Nanodomains Promote Stem Cell Differentiation</b> Invited Speaker: Adam Engler
1:03PM - 1:15PM	<b>W39.00006: Dental Pulp Stem Cell Differentiation on Poly-4-vinyl-pyridine surfaces</b> Giulia Suarato , Aneel Bherwani , Chung-chueh Chang , Miriam Rafailovich , Marcia Simon
1:15PM - 1:27PM	<b>W39.00007: Spontaneous Differentiation of Dental Pulp stem cells on Dental polymers</b> Aneel Bherwani , Giulia Suarato , Sisi Qin , Chung-Cheh Chang , Aaron Akhavan , Joseph Spiegel , Vladimir Jurukovski , Miriam Rafailovich , Marcia Simon
1:27PM - 1:39PM	<b>W39.00008: Interaction of Substrate Mechanics with Dental Pulp Stem Cells (DPSCs) differentiation to generate a scaffold for Bone regeneration</b> Miriam Rafailovich , Divya Bhatnagar , Aneel Bherwani , Marcia Simon
1:39PM - 1:51PM	<b>W39.00009: Neuron Growth on Carbon Nanotube Thread Bio-Scaffolds for Repair of Central Nervous System Damage</b> David Mast , Sarah Pixley , Mark Schulz , Vessilin Shanov
1:51PM - 2:03PM	<b>W39.00010: Stiffness nanotomography of human epithelial cancer cells</b> Jack R. Staunton , Bryant L. Doss , C. Michael Gilbert , Sandor Kasas , Robert Ros
2:03PM - 2:15PM	<b>W39.00011: Snakeskin tribology: How snakes generate large frictional anisotropy</b> Hamidreza Marvi , Jeffrey Streator , David Hu

109

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W40: Focus Session: Single Molecule Biological Physics - Nucleic acids and Proteins**

Sponsoring Units: DBIO DPOLY DCOMP

Chair: Eric Greene, Columbia University and Jennifer Ross, University of Massachusetts

Room: 156A

11:15AM - 11:51AM	<u>W40.00001: Single-molecule Imaging Reveals Molecular Mechanisms of A DNA Stripase</u> Invited Speaker: Eric Greene
11:51AM - 12:03PM	<u>W40.00002: Measuring p53 Binding to Single DNA Molecules in a Nanofluidic Device</u> Amber Whelsky , Nicholas Gonzalez, Jr. , Susannah Gal , Stephen Levy
12:03PM - 12:15PM	<u>W40.00003: Sequence-dependent sliding kinetics of p53</u> Jason Leith , Anahita Tafvizi , Fang Huang , William Uspal , Patrick Doyle , Alan Fersht , Leonid Mirny , Antoine van Oijen
12:15PM - 12:27PM	<u>W40.00004: Single-molecule study of protein-DNA target search mechanisms for dimer-active protein complexes</u> Markita Landry , Wai Mun Huang , Yann Chemla
12:27PM - 1:03PM	<u>W40.00005: Single-Molecule Encoders for Tracking Motor Proteins on DNA</u> Invited Speaker: Everett A. Lipman
1:03PM - 1:15PM	<u>W40.00006: Tuning Cargo Travel via Single Motor Velocity</u> Jing Xu , Zhanyong Shu , Stephen King , Steven Gross
1:15PM - 1:27PM	<u>W40.00007: Study of Large Multimeric Biomolecules by Single-Molecule Manipulation and Imaging</u> Kai Lou , Sitara S. Wijeratne , Jerahme Martinez , Hui-Chun Yeh , Joel Moake , Jing-Fei Dong , Mary C. Farach-Carson , Ching-Hwa Kiang
1:27PM - 1:39PM	<u>W40.00008: Uncovering the microscopic mechanism of strand exchange during RecA mediated homologous recombination using all-atom molecular dynamics simulations</u> Manish Shankla , Jejoong Yoo , Aleksei Aksimentiev
1:39PM - 1:51PM	<u>W40.00009: Transduction of Glycan-Lectin Binding using Near Infrared Fluorescent Single Walled Carbon Nanotubes for Glycan Profiling</u> Nigel Reuel , Jin-Ho Ahn , Jong-Ho Kim , Jingqing Zhang , Ardemis Boghossian , Lara Mahal , Michael Strano
1:51PM - 2:03PM	<u>W40.00010: Comprehensive single molecule dynamics and functions of lysozyme upon linear and cross-linked substrate using a carbon nanotube circuit</u> Yongki Choi , Patrick C. Sims , Brad L. Corso , Issa S. Moody , David Seitz , Larry Blaszcak , Gregory A. Weiss , Philip G. Collins
2:03PM - 2:15PM	<u>W40.00011: A hierarchical coarse-grained (all-atom to all residue) approach to peptides (P1, P2) binding with a graphene sheet</u> Ras Pandey , Zhifeng Kuang , Barry Farmer , Sang Kim , Rajesh Naik

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W42: Focus Session: The Physics of Genome Folding I: Fractal Globules and Condensed Polymer States**

Sponsoring Units: DBIO DPOLY

Chair: Erez Lieberman Aiden, Harvard Society of Fellows

Room: 156C

11:15AM - 11:51AM	<u>W42.00001: How the genome folds</u> Invited Speaker: Erez L. Aiden
11:51AM - 12:03PM	<u>W42.00002: Contact probability scaling of the Hilbert curve</u> Adrian Sanborn , Jian Li , Erez L. Aiden
12:03PM - 12:39PM	<u>W42.00003: Territorial Polymers and Large Scale Genome Organization</u> Invited Speaker: Alexander Grosberg
12:39PM - 12:51PM	<u>W42.00004: Diffusion of Particles in the Melt of Polymeric Rings and Diffusion of Proteins in the Cell Nucleus</u> Kurt Kremer , Jonathan Halverson , Gary Grest , Alexander Grosberg
12:51PM - 1:03PM	<u>W42.00005: Spatial autocorrelation in fractal and knotted globules</u> Miriam Huntley , Erez Lieberman Aiden
1:03PM - 1:39PM	<u>W42.00006: Simulation of Interphase DNA</u> Invited Speaker: Ralf Everaers
1:39PM - 1:51PM	<u>W42.00007: In silico simulations of polymer condensation: the fractal globule as a metastable state</u> Leon Furchtgott* , Ashok Cutkosky* , Najeeb Tarazi , Erez Lieberman Aiden
1:51PM - 2:03PM	<u>W42.00008: Fractal Globule as a model of DNA folding in eukaryotes</u> Maksim Imakaev , Leonid Mirny
2:03PM - 2:15PM	<u>W42.00009: High-order chromatin architecture shapes the landscape of chromosomal alterations in cancer</u> Geoffrey Fudenberg , Gad Getz , Matthew Meyerson , Leonid Mirny

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W43: Invited Session: Physical Mechanisms of Collective Microbial Dynamics**

Sponsoring Units: DBIO DPOLY

Chair: Lev Tsimring, University of California, San Diego

Room: 157AB

11:15AM - 11:51AM	<u>W43.00001: Chiral patterning in Paenibacillus colonies under stress</u> Invited Speaker: Herbert Levine
11:51AM - 12:27PM	<u>W43.00002: The effects of self-induced noise on the onset of collective behavior in suspensions of swimming bacteria</u> Invited Speaker: Igor Aronson
12:27PM - 1:03PM	<u>W43.00003: Synchronization of flagella</u> Invited Speaker: Eric Lauga
1:03PM - 1:39PM	<u>W43.00004: Formation and propagation of high density waves during swarming of <i>P. aeruginosa</i></u> Invited Speaker: Mark Alber
1:39PM - 2:15PM	<u>W43.00005: Alignment vs noise in self-propelled particles: minimal models for collective motion and their continuous descriptions</u> Invited Speaker: Hugues Chate

112

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W44: Focus Session: Interparticle Interactions in Polymer Nanocomposites - Mechanical, Electrical, and Optical Properties**

Sponsoring Units: DPOLY

Chair: Alfredo Alexander-Katz, Massachusetts Institute of Technology

Room: 157C

11:15AM - 11:51AM	<u>W44.00001: Bio-inspired Fillers for Mechanical Enhancement</u> Invited Speaker: LaShanda Korley
11:51AM - 12:03PM	<u>W44.00002: Temperature sensitive mechanical properties of Graphene-epoxy nanocomposites</u> Ardavan Zandiatashbar , Catalin Picu , Nikhil Koratkar
12:03PM - 12:15PM	<u>W44.00003: Mechanical Properties of Polymer Nanocomposites under Large Amplitude Deformation</u> Erkan Senses , Pinar Akcora
12:15PM - 12:27PM	<u>W44.00004: Polymer Nanocomposite Mechanical Properties as a Function of Nanoparticle Dispersion</u> Joseph Moll , Shushan Gong , Ralph Colby , Dimitris Vlassopoulos , Sanat Kumar
12:27PM - 12:39PM	<u>W44.00005: Elastic Moduli of Polymeric Thin Films of Nanocomposites and Blends via Buckling on Elastomeric Substrates</u> Hongyi Yuan , Jolanta Marszalek-Kempke , Prateek Verma , Alamgir Karim
12:39PM - 12:51PM	<u>W44.00006: Electrical Conductivity in Transparent Silver Nanowire Networks: Simulations and Experiments</u> Michelle Sherrott , Rose Mutiso , Aaron Rathmell , Benjamin Wiley , Karen Winey
12:51PM - 1:03PM	<u>W44.00007: Effect of Nanowire Size Dispersity and Orientation on Electrical Conductivity in Polymer Nanocomposites</u> Rose Mutiso , Michelle Sherrott , Ju Li , Karen Winey
1:03PM - 1:15PM	<u>W44.00008: Finite-size effects in nanocomposites: experimental and computational studies</u> L.I. Clarke , M.P. Roman , E.W. Skau , D.R. Stevens , L.N. Downen , T.J. Hoffman , J.R. Bochinski
1:15PM - 1:27PM	<u>W44.00009: Spectral and polarization modulation of quantum dot emission in a one-dimensional liquid crystal photonic cavity</u> Andrea Rodarte , C. Gray , L.S. Hirst , S. Ghosh
1:27PM - 1:39PM	<u>W44.00010: Self-assembly of silicon quantum dot clusters in polymer nanocomposites</u> Austin R. Van Sickle , Joseph B. Miller , Rebecca R. Anthony , Uwe R. Korthshagen , Daniel M. Kroll , Erik K. Hobbie
1:39PM - 1:51PM	<u>W44.00011: Utilizing photothermal heating by metal nanoparticles within polymer composites</u> Somsubhra Maity , Jason Bochinski , Laura Clarke
1:51PM - 2:03PM	<u>W44.00012: What determines photoluminescence and quenching when fluorophores in a polymer matrix?</u> Hyunsook Jang , Ying Wang , Yu Lei , Mu-Ping Nieh
2:03PM - 2:15PM	<u>W44.00013: Microtextured Omniphobic Surfaces by Solution Spraying of Fluorodecyl POSS/PMMA Blends</u> Siddarth Srinivasan , Gareth McKinley , Robert Cohen

113

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W45: Focus Session: Soft Matter Physics of Heterogeneous Membranes - Theory and Simulation**

Sponsoring Units: DPOLY DBIO

Chair: Philip Pincus, University of California, Santa Barbara

Room: 159

11:15AM - 11:51AM	<u>W45.00001: Hybrid Lipids as Line Active Molecules</u> Invited Speaker: Tetsuya Yamamoto
11:51AM - 12:03PM	<u>W45.00002: Turing Patterns on Curved Surfaces</u> John Frank , Jemal Guven , Mehran Kardar
12:03PM - 12:15PM	<u>W45.00003: 2D Ising Model correlation function: Precise functional forms for comparison to membrane experiments</u> Natalie Paquette , Benjamin Machta , Yan-Jiun Chen , James Sethna
12:15PM - 12:27PM	<u>W45.00004: Fluctuating Lipid Bilayer Membranes With Diffusing Protein Inclusions: Hybrid Continuum-Particle Model</u> Jon K. Sigurdsson , Frank L.H. Brown , Paul J. Atzberger
12:27PM - 12:39PM	<u>W45.00005: Influence of chain rigidity on the conformation of model lipid membranes in the presence of cylindrical nanoparticle inclusions</u> Chris DiLoreto , Robert Wickham
12:39PM - 12:51PM	<u>W45.00006: Mechanics, morphology, and mobility in stratum corneum membranes</u> Peter Olmsted , Chinmay Das , Massimo Noro
12:51PM - 1:03PM	<u>W45.00007: Curvature-driven domain formation in ternary lipid membranes</u> Matthew Demers , Rastko Sknepnek , Monica Olvera de la Cruz
1:03PM - 1:39PM	<u>W45.00008: Entropy driven aggregation of adhesion sites of supported membranes</u> Invited Speaker: Oded Farago
1:39PM - 1:51PM	<u>W45.00009: Membrane lateral structure: How immobilized particles can stabilize small domains</u> Richard Vink , Timo Fischer
1:51PM - 2:03PM	<u>W45.00010: In-Plane Dynamics of Membranes with Immobile Inclusions</u> Naomi Oppenheimer , Haim Diamant
2:03PM - 2:15PM	<u>W45.00011: Charge correlations in multicomponent ionic crystalline membranes</u> Creighton Thomas , Monica Olvera de la Cruz

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W47: Focus Session: Polymers for Energy Storage and Conversion - Fundamentals of Ion Transport**

Sponsoring Units: DPOLY DMP

Chair: Evren Ozcam, University of California, Berkeley

Room: 160C

11:15AM - 11:27AM	<u>W47.00001: Decoupling of Ionic Transport from Segmental Relaxation in Polymer Electrolytes</u> Yangyang Wang , Alexander Agapov , Fei Fan , Kunlun Hong , Xiang Yu , Jimmy Mays , Alexei Sokolov
11:27AM - 11:39AM	<u>W47.00002: Ion Dynamics in Solid-State Polymer Electrolyte Electrochemical Cells using <math>\text{in situ}</math> Time-Resolved Infrared Spectroscopy</u> Francis Richey , Yossef Elabd
11:39AM - 11:51AM	<u>W47.00003: Ion Transport in Polymerized Ionic Liquid Block and Random Copolymers</u> Yossef Elabd , Yuesheng Ye , Jae-Hong Choi , Karen Winey
11:51AM - 12:03PM	<u>W47.00004: Ion conduction in phosphonium-polysiloxane ionomers</u> Siwei Liang , U. Hyeok Choi , James Runt , Ralph Colby
12:03PM - 12:15PM	<u>W47.00005: Ion Conduction in Polymerized Ionic Liquid Thin Films</u> Jae-Hong Choi , Yuesheng Ye , Matthew D. Green , Yossef A. Elabd , Timothy E. Long , Karen I. Winey
12:15PM - 12:27PM	<u>W47.00006: Cross-linking of Ordered Pluronic/Ionic Liquid Blends for Solid Polymer Electrolytes</u> Daniel Miranda , Craig Versek , Mark Tuominen , James Watkins , Thomas Russell
12:27PM - 12:39PM	<u>W47.00007: Ionomer Design Principles for Single Ion-Conducting Energy Materials</u> Ralph Colby , Siwei Liang , Wenjuan Liu , U. Hyeok Choi , James Runt , Huai-Suen Shiau , Michael Janik
12:39PM - 12:51PM	<u>W47.00008: Ion Dynamics in Model Ionomer Melts as a Function of Polymer Architecture</u> Lisa M. Hall , Mark J. Stevens , Amalie L. Frischknecht
12:51PM - 1:03PM	<u>W47.00009: Ion Conduction and Dielectric Response of Imidazolium-based Single-ion Conductors</u> U. Hyeok Choi , Minjae Lee , Anuj Mittal , Yuesheng Ye , Yossef Elabd , Harry Gibson , James Runt , Ralph Colby
1:03PM - 1:15PM	<u>W47.00010: Effect of matrix crystallinity on the ionic conductivity in microstructured block copolymer solid electrolytes</u> Nicholas Young , Nitash Balsara
1:15PM - 1:27PM	<u>W47.00011: Solvation Effects on Counterion Transport in Single-Ion Conducting Ionomers</u> Jing-Han Helen Wang , Ralph Colby
1:27PM - 1:39PM	<u>W47.00012: Correlation between superionic behavior and ion aggregation in PEO-based single-ion conductors</u> Kan-Ju Lin , Janna Maranas
1:39PM - 2:15PM	<u>W47.00013: Simulation of Ionic Aggregation and Ion Dynamics in Model Ionomers</u> Invited Speaker: Amalie L. Frischknecht

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W48: New Experimental, Theoretical, and Computational Methods in Polymer and Soft Matter Physics**

Sponsoring Units: DPOLY

Chair: Joanne Budzien, Frostburg State University

Room: 161

11:15AM - 11:27AM	<u>W48.00001: Coherent States Formulation of Polymer Field Theory</u> Xingkun Man , Kris Delaney , Glenn Fredrickson , Henri Orland
11:27AM - 11:39AM	<u>W48.00002: How Reliable Are Soft Potentials? Ensuring Thermodynamic Consistency Between Hierarchical Models of Polymer Melts</u> James McCarty , Marina Guenza
11:39AM - 11:51AM	<u>W48.00003: Simulation of Stress Induced Polymer-Polymer Interfacial Slip</u> Andrew Gustafson , David Morse
11:51AM - 12:03PM	<u>W48.00004: Tumbling dynamics of isolated polymer chains in strong shear flows and the effects of chain resolution</u> Ronald Larson , Indranil Saha Dalal , Alex Albaugh , Nazish Hoda
12:03PM - 12:15PM	<u>W48.00005: The stochastic dynamics of a Brownian particle in a viscoelastic (VE) medium</u> Martin Azese , Sukalyan Bhattacharya
12:15PM - 12:27PM	<u>W48.00006: A Mesoscale Simulation Method for High Salt Concentrations</u> Stefan Medina , Friederike Schmid
12:27PM - 12:39PM	<u>W48.00007: Molten Salt Eutectics from Atomistic Alchemical Simulations</u> Saivenkataraman Jayaraman , Aidan Thompson , O. Anatole von Lilienfeld
12:39PM - 12:51PM	<u>W48.00008: Onset Temperature of Activated Transport: Determination in Model and Actual Liquids</u> Vassiliy Lubchenko , Pyotr Rabochiy
12:51PM - 1:03PM	<u>W48.00009: An [N]PT Ensemble for Studying the Intricate Thermodynamics of Cluster Crystals</u> Kai Zhang , Patrick Charbonneau
1:03PM - 1:15PM	<u>W48.00010: From nucleus to phase: Growing dynamics of critical nucleus in polymer blends</u> Dadong Yan , Xinghua Zhang
1:15PM - 1:27PM	<u>W48.00011: An Interactive 3D Interface to Model Complex Surfaces and Simulate Grazing Incidence X-ray Scatter Patterns</u> Eliot Gann , Slim Chourou , Abhinav Sarje , Harald Ade , Cheng Wang , Elaine Chan , Xiaodong Ding , Alexander Hexemer
1:27PM - 1:39PM	<u>W48.00012: Numerical Computation of Diffusion Properties in Molecular Systems on a Topology-Conforming Grid</u> Ivan Teo , Klaus Schulten
1:39PM - 1:51PM	<u>W48.00013: Fluorescent excitation transfer as a tool for the phase transition studies</u> Alexei Goun
1:51PM - 2:03PM	<u>W48.00014: The Physics of Phase-Separation Fronts</u> Alexander Wagner , Eric Foard
2:03PM - 2:15PM	<u>W48.00015: Protected TERS Probes for the Study of Polymer Surfaces</u> Rebecca Agapov , Alexei Sokolov , Mark Foster

116

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W49: Focus Session: Organic Electronics and Photonics - Thin Film Transistors**

Sponsoring Units: DMP DPOLY

Chair: Oana Jurchescu, Wake Forest University and Saiful Khondaker, University of Central Florida

Room: 162A

11:15AM - 11:27AM	<u>W49.00001: Pressure effect on organic field-effect transistors</u> Yugo Okada , Ken-ichi Sakai , Shin Kitaoka , Takafumi Uemura , Jun Takeya
11:27AM - 11:39AM	<u>W49.00002: Determining the elastic constants of rubrene single-crystals</u> Marcos Reyes-Martinez , Ashwin Ramasubramian , Alejandro Briseno , Alfred Crosby
11:39AM - 11:51AM	<u>W49.00003: Tuning contorted hexabenzocoronene crystal structure and texture for organic field-effect transistors</u> Anna Hiszpanski , Arthur Woll , Yueh-Lin Loo
11:51AM - 12:27PM	<u>W49.00004: Quantitative assessments of the effect of microstructure on transport in organic semiconductors</u> Invited Speaker: Alberto Salleo
12:27PM - 12:39PM	<u>W49.00005: Air-Stable Solution-Processed Thin-Film Transistors with Hole Mobilities of 3.5 cm<sup>2</sup>/Vs</u> Yaochuan Mei , Katelyn Goetz , Marsha Loth , John Anthony , Oana Jurchescu
12:39PM - 12:51PM	<u>W49.00006: Variable-range hopping transport and Hall effect measurements in electrolyte-gated P3HT</u> Shun Wang , Mingjing Ha , Michael Manno , C. Daniel Frisbie , C. Leighton
12:51PM - 1:03PM	<u>W49.00007: Charge Density Dependent Hole Mobility and Density of States Throughout the Entire Finite Potential Window of Conductivity in Ionic Liquid Gated Poly(3-hexylthiophene)</u> Bryan D. Paulsen , C. Daniel Frisbie
1:03PM - 1:15PM	<u>W49.00008: Conductivity Maxima on the Surface of Organic Semiconductor Crystals at High Charge Densities</u> Wei Xie , C. Daniel Frisbie
1:15PM - 1:27PM	<u>W49.00009: Solvent-Resistant Organic Transistors and Thermally-Stable Organic Photovoltaics Based on Crosslinkable Conjugated Polymers</u> H.J. Kim , C.-H. Cho , B.J. Kim , A.-R. Han , J.H. Oh , J.M.J. Frechet
1:27PM - 1:39PM	<u>W49.00010: Surface enhanced Raman spectroscopic studies of the metal-semiconductor interface in organic field effect transistors</u> Danish Adil , Suchi Guha
1:39PM - 1:51PM	<u>W49.00011: Ultra-thin body poly(3-hexylthiophene) transistors with improved short-channel performance</u> Chenchen Wang , Jonathan Rivnay , Scott Himmelberger , Kiarash Vakhshouri , Enrique D. Gomez , Alberto Salleo
1:51PM - 2:03PM	<u>W49.00012: Physical Characterization of Functionalized Silk Material for Electronic Application and Devices</u> Eden Steven , Eric Jobiliong , Jin Gyu Park , Anant Paravastu , Michael Davidson , Michelle Baird , Rufina Alamo , Papatya Kaner , James Brooks , Theo Siegrist

117



Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W50: Focus Session: Micro and Nano Fluidics I: Devices and Applications**

Sponsoring Units: DPOLY DFD

Chair: Dongshin Kim, Brandeis University

Room: 162B

11:15AM - 11:27AM	<u>W50.00001: Self-Sorting of Deformable Particles in a Microfluidic Circuit</u> Marco A. Cartas-Ayala , Mohammed Raafat , Rohit Karnik
11:27AM - 11:39AM	<u>W50.00002: Accelerating Yeast Prion Biology using Droplet Microfluidics</u> Lloyd Ung , Assaf Rotem , Daniel Jarosz , Manoshi Datta , Susan Lindquist , David Weitz
11:39AM - 11:51AM	<u>W50.00003: Microfluidic devices for droplet injection</u> Donald Aubrecht , Ilke Akartuna , David Weitz
11:51AM - 12:03PM	<u>W50.00004: Microfluidic devices for label-free separation of cells through transient interaction with asymmetric receptor patterns</u> S. Bose , R. Singh , M.H. Hollatz , C.-H. Lee , J. Karp , R. Karnik
12:03PM - 12:15PM	<u>W50.00005: Role of Structural Asymmetry in Controlling Drop Spacing in Microfluidic Ladder Networks</u> William Wang , Jeevan Maddala , Siva Vanapalli , Raghunathan Rengasamy
12:15PM - 12:27PM	<u>W50.00006: Synchronized Reinjection and Coalescence of Droplets in Microfluidics</u> Manhee Lee , Jesse Collins , Donald Aubrecht , Shinhyun Kim , Tina Lin , Assaf Rotem , Laura Solomon , David Weitz , Vinothan Manoharan
12:27PM - 1:03PM	<u>W50.00007: Probing cell mechanical properties with microfluidic devices</u> Invited Speaker: Amy Rowat
1:03PM - 1:15PM	<u>W50.00008: Droplet Microfluidics for Virus Discovery</u> Assaf Rotem , Shelley Cockrell , Mira Guo , James Pipas , David Weitz
1:15PM - 1:27PM	<u>W50.00009: Creating 3D chemical gradients with self-folding microfluidic networks</u> Mustapha Jamal , Yevgeniy Kalinin , Aasiyeh Zarafshar , David Gracias
1:27PM - 1:39PM	<u>W50.00010: Control of Mass Transport and Chemical Reaction Kinetics in Ultrasmall Volumes</u> Charles Collier
1:39PM - 1:51PM	<u>W50.00011: Thin Polymer Films as Microvalves in Microfluidic Devices</u> Clemence Vergne , Fabrice Monti , Patrick Tabeling , Yvette Tran , Lucie Devys
1:51PM - 2:03PM	<u>W50.00012: Nanofluidic Transistor Circuits</u> Hsueh-Chia Chang , Li-Jing Cheng , Yu Yan , Zdenek Slouka , Satyajyoti Senapati
2:03PM - 2:15PM	<u>W50.00013: The Lab-on-a-Disc: Miniature Counterpart to the Lab-on-a-CD for Driving Chip-Based Microcentrifugation</u> Leslie Yeo , Nick Glass , Richard Shilton , Peggy Chan , James Friend

118

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W52: Focus Session: Extreme Mechanics - Fluid-Structure Interactions and Swelling**

Sponsoring Units: GSNP DFD

Chair: Prashant Purohit, University of Pennsylvania

Room: 153C

11:15AM - 11:27AM	<u>W52.00001: Capillary rise between exible walls</u> Jos'e Bico , Thomas Cambau , Etienne Reyssat
11:27AM - 11:39AM	<u>W52.00002: Motion of a rigid sphere through an elastic tube</u> Thomas Cambau , Jose Bico , Etienne Reyssat
11:39AM - 11:51AM	<u>W52.00003: Equilibrium and stability of an elastic meniscus</u> Marco Rivetti , Arnaud Antkowiak
11:51AM - 12:03PM	<u>W52.00004: Capillary-Induced Self-Organization of Soft Pillar Arrays into Moir'({e}) Patterns by Dynamic Feedback Process</u> Sung Kang , Ning Wu , Alison Grinthal , Joanna Aizenberg
12:03PM - 12:15PM	<u>W52.00005: Study of waving of grass using a soap film model</u> Ravi Singh , Mahesh Bandi , L. Mahadevan , Amala Mahadevan , Shreyas Mandre
12:15PM - 12:27PM	<u>W52.00006: Direct measurements of flow and deformation of a free reed</u> Peter Buchak , John Bush
12:27PM - 12:39PM	<u>W52.00007: Control and Manipulation of Fluid Flow Using Elastic Deformations</u> Behrouz Tavakol , Douglas Holmes , Guillaume Froehlicher , Howard Stone
12:39PM - 12:51PM	<u>W52.00008: Curling paper</u> Etienne Reyssat , L. Mahadevan
12:51PM - 1:03PM	<u>W52.00009: Walking and jumping spores</u> Philippe Marmottant
1:03PM - 1:15PM	<u>W52.00010: Mechanic instabilities of swelling gels</u> Martine Ben Amar , Julien Dervaux
1:15PM - 1:27PM	<u>W52.00011: Patterns formed by swelling-induced folding of films</u> Sachin Velankar , Victoria Lai , Richard Vaia
1:27PM - 1:39PM	<u>W52.00012: Swelling-Driven Shaping of Thermally Responsive Photo-Patterned Gel Sheets</u> Myunghwan Byun , Jungwook Kim , Ryan Hayward , James Hanna , Christian Santangelo
1:39PM - 1:51PM	<u>W52.00013: Dynamical Actuation and Pattern Formation with Local Swelling in Microgels</u> Howon Lee , Kin Hung Fung , Nicholas Fang
1:51PM - 2:03PM	<u>W52.00014: Separating Viscoelasticity and Poroelasticity of Gels with Different Length and Time Scales</u> Anirudh Mohan , Xuanhe Zhao
2:03PM - 2:15PM	<u>W52.00015: A constitutive theory for visco-hyperelastic gels</u> Shawn Chester

119

Thursday, March 1, 2012

11:15AM - 2:15PM

**Session W53: Focus Session: Common Features of Soft Materials: Polymers, Colloids and Granular Media I**

Sponsoring Units: GSNP  
Chair: Robert Hoy, Yale University  
Room: 153B

11:15AM - 11:27AM	<u>W53.00001: Athermal Jamming Vs Thermalized Glassiness in a Simple Model of Soft-Core Interacting Particles</u> Stephen Teitel , Peter Olsson
11:27AM - 11:39AM	<u>W53.00002: Spontaneous formation of permanent shear bands in a mesoscopic model of flowing disordered matter</u> Kirsten Martens , Lyd'eric Bocquet , Jean-Louis Barrat
11:39AM - 11:51AM	<u>W53.00003: Creep and critical scaling in random spring networks</u> Brian Tighe
11:51AM - 12:03PM	<u>W53.00004: Rheology of particle assemblies close to a jamming transition</u> Claus Heussinger
12:03PM - 12:15PM	<u>W53.00005: Inhomogeneous structure and position-dependent dynamics in complex fluids</u> James Carmer , Gaurav Goel , Jeffrey Errington , Thomas Truskett
12:15PM - 12:27PM	<u>W53.00006: Demonstration of Secondary Currents in the Pressure-Driven Flow of a Concentrated Suspension Through a Square Conduit</u> Arun Ramchandran , Adam Zrehen
12:27PM - 1:03PM	<u>W53.00007: Understanding entangled polymers: What we can learn from athermal chain packings</u> Invited Speaker: Nikos Karayiannis
1:03PM - 1:15PM	<u>W53.00008: Sudden Chain Energy Transfer Events in Vibrated Granular Media</u> Nicol'as Rivas , Suomi Ponce , Rodrigo Soto , Patricio Cordero , Nicol'as Mujica , Dino Risso , Basille Gallet
1:15PM - 1:27PM	<u>W53.00009: Equation of state and jamming density for equivalent bi-, tri- and polydisperse, smooth, elastic sphere systems</u> Vitaliy Ogarko , Stefan Luding
1:27PM - 1:39PM	<u>W53.00010: Recovery of polymer glasses from mechanical perturbation</u> Anton Smessaert , J'org Rottler
1:39PM - 1:51PM	<u>W53.00011: Spatiotemporal stress/strain correlations in a quasi-2D jammed emulsion</u> Kenneth Desmond , Eric R. Weeks
1:51PM - 2:03PM	<u>W53.00012: Low-<math>\beta</math> behavior in Structure Factor and Compressibility Factor for Monodisperse and Bidisperse Packings of Frictionless Spheres</u> Jaime Bohorquez-Ballen , Leonardo Silbert
2:03PM - 2:15PM	<u>W53.00013: Jamming and Unjamming of the Rigid Amorphous Fraction</u> Peggy Cebe , Qian Ma , Georgi Georgiev

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X39: Focus Session: Materials and Functional Structures for Biological Interfaces - Nanoscale Materials**

Sponsoring Units: DMP DBIO DPOLY  
Chair: Marcella Chiari, ICRM, Italy  
Room: 109B

2:30PM - 3:06PM	<u>X39.00001: Bio-inspired Nanomaterials for Biosensing and Cell Response</u> Invited Speaker: Molly Stevens
3:06PM - 3:18PM	<u>X39.00002: Designing super-selectivity in multivalent nanoparticle binding</u> Francisco Martinez-Veracoechea , Daan Frenkel
3:18PM - 3:30PM	<u>X39.00003: Nano-Engineered Cubic Zirconia for Orthopaedic Implant Applications</u> F. Namavar , A. Rubinstein , R. Sabirianov , G. Thiele , J. Sharp , U. Pokharel , R. Namavar , K. Garvin
3:30PM - 3:42PM	<u>X39.00004: Computational characterization of DNA/peptide/nanotube self assembly for bioenergy applications</u> Vanessa Ortiz , Ruriko Araki , Galen Collier
3:42PM - 4:18PM	<u>X39.00005: Engineering upconverting nanophosphors as biosensors and biotherapeutic agents</u> Invited Speaker: Shuang Fang Lim
4:18PM - 4:30PM	<u>X39.00006: Optically Trappable Single Wall Carbon Nanotubes</u> Samantha Roberts , Arthur Barnard , Joshua Kevek , Alexander Ruyack , Ive Silvestre , Rodrigo Lacerda , Paul McEuen
4:30PM - 4:42PM	<u>X39.00007: Self-assembled peptide nanowires on single-layer graphene and MoS<sub>2</sub> with biomolecular doping effect</u> Yuhei Hayamizu , Christopher R. So , Mehmet Sarikaya
4:42PM - 4:54PM	<u>X39.00008: Calculations of Electronic Fingerprints of DNA bases on Graphene</u> Towfiq Ahmed , John J Rehr , Svetlana Kilina , Tanmoy Das , Jason T. Haraldsen , Alexander V. Balatsky
4:54PM - 5:06PM	<u>X39.00009: Controlled Chemical Patterns with ThermoChemical NanoLithography (TCNL)</u> Keith Carroll , Anthony Giordano , Debin Wang , Vamsi Kodali , W.P. King , S.R. Marder , E. Riedo , J. E. Curtis
5:06PM - 5:18PM	<u>X39.00010: Interface-Limited Spherulitic Growth of Hydroxyapatite/Chondroitin Sulfate Composite Enamel-like Films</u> Guobin Ma , Yifei Xu , Xiyang Wang , Mu Wang
5:18PM - 5:30PM	<u>X39.00011: Biomimetic Calcium Phosphate Crystallization: Synchrotron X-ray Studies</u> Ahmet Uysal , Benjamin Stripe , Pulak Dutta , Binhua Lin , Mati Meron

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X40: Focus Session: Single Molecule Biological Physics - Nucleic Acids**

Sponsoring Units: DBIO DPOLY DCOMP

Chair: Lori Goldner and Jennifer Ross, University of Massachusetts

Room: 156A

2:30PM - 3:06PM	<u>X40.00001: From force-fields to photons: MD simulations of dye-labeled nucleic acids and Monte Carlo modeling of FRET</u> Invited Speaker: Lori Goldner
3:06PM - 3:18PM	<u>X40.00002: Quantifying screening ion excesses surrounding stretched, charged polymers</u> Jonathan Landy , Dustin McIntosh , Omar Saleh
3:18PM - 3:30PM	<u>X40.00003: Euler buckling and nonlinear kinking of double-stranded DNA</u> Alexander Fields , Kevin Axelrod , Adam Cohen
3:30PM - 3:42PM	<u>X40.00004: Measuring fluctuations in shear stretched DNAs using site specific labeling</u> Allen Price , Thomas Graham , Joseph Loparo , Joel Eaves
3:42PM - 3:54PM	<u>X40.00005: Electric-field Assisted Deposition of the DNA on Polymer Surface</u> JunHwan Ryu , Ke Zhu , Julia Budassi , Jonathan Sokolov
3:54PM - 4:06PM	<u>X40.00006: Using Microcontact Printing as a Novel Method for Patterned Dyeing of Surface-adsorbed DNA</u> Emily Shea , Julia Budassi , Ke Zhu , Jonathan Sokolov
4:06PM - 4:18PM	<u>X40.00007: Stretching DNA Molecules on a Polymer Surface</u> Jonathan Rosenberg , Ke Zhu , Julia Budassi , Jonathan Sokolov
4:18PM - 4:30PM	<u>X40.00008: Polarization and Angle Dependence of Fluorescence from Aligned DNA</u> Ashish Sridhar , Suri Bandler , Ke Zhu , Yingzhan Gu , Julia Budassi , Jonathan Sokolov
4:30PM - 4:42PM	<u>X40.00009: Calorimetric and Low-Frequency Dielectric Studies of Mesoscopic Ordering in Solutions of Engineered DNA Hairpin Fragments</u> K. Kashuri , H. Kashuri , G.S. Iannacchione
4:42PM - 4:54PM	<u>X40.00010: Modeling of DNA zipper reaction rates</u> Preston Landon , Casey Sanchez , Alexander Mo , Ratnesh Lal
4:54PM - 5:06PM	<u>X40.00011: Moving Beyond Watson-Crick Models of Coarse Grained DNA</u> Kevin Dorfman , Margaret Linak , Richard Tourdot
5:06PM - 5:18PM	<u>X40.00012: Direct comparison of the theory of molecular solvation with molecular dynamics and experiment</u> Tyler Luchko , In Suk Joung , George Giambasu , Darrin York , David A. Case
5:18PM - 5:30PM	<u>X40.00013: Information-based measure of chirality for biomolecules</u> Karol Baca Lopez , B. Roy Frieden , Roberto Lopez , Miguel Mayorga , Enrique Henandez Lemus

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X41: Focus Session: Physics of Proteins II: Folding and Structure**

Sponsoring Units: DBIO DPOLY DCOMP

Chair: Ruhong Zhou, IBM T.J. Watson Research Center

Room: 156B

2:30PM - 3:06PM	<u>X41.00001: Simulations of the folding/unfolding of biomolecules under solvent, and pressure perturbations</u> Invited Speaker: Angel Garcia
3:06PM - 3:18PM	<u>X41.00002: Accurate prediction of explicit solvent atom distribution in HIV-1 protease and F-ATP synthase by statistical theory of liquids</u> Daniel Sindhikara , Norio Yoshida , Fumio Hirata
3:18PM - 3:30PM	<u>X41.00003: Analysis and Interpretation of Single Molecule Protein Unfolding Kinetics</u> Herbert Lannon , Jasna Brujic
3:30PM - 3:42PM	<u>X41.00004: Investigating protein structure and folding with coherent two-dimensional infrared spectroscopy</u> Carlos Baiz , Chunte Peng , Michael Reppert , Kevin Jones , Andrei Tokmakoff
3:42PM - 4:18PM	<u>X41.00005: Protein Folding and Functional Dynamics</u> Invited Speaker: Feng Gai
4:18PM - 4:30PM	<u>X41.00006: Folding a protein with equal probability of being helix or hairpin</u> Chung-Yu Mou , Chun-Yu Lin , Nan-Yow Chen
4:30PM - 4:42PM	<u>X41.00007: Generic transition hierarchies of lattice HP protein adsorption: A Wang-Landau study</u> Ying Wai Li , D.P. Landau , T. W <sup>u</sup> {u}st
4:42PM - 4:54PM	<u>X41.00008: Elucidating Structure and Catalytic Cycles of Anti- or Ferro-magnetic Iron Enzymes from Spin Density Functional Theory</u> Jorge H. Rodriguez
4:54PM - 5:06PM	<u>X41.00009: AWSEM-MD: Coarse-grained Protein Structure Prediction Using Physical Potentials and Bioinformatically Based Local Structure Biasing</u> Aram Davtyan , Weihua Zheng , Nick Schafer , Cecilia Clementi , Peter Wolynes , Garegin Papoian
5:06PM - 5:18PM	<u>X41.00010: Combining first principles and replica exchange for the structure of two large peptides: Ac-Ala\$ {19}\$-LysHS<sup>+</sup>\$ vs. Ac-LysHS<sup>+</sup>-\$-Ala\$ {19}\$</u> Franziska Schubert , Mariana Rossi , Carsten Baldauf , Volker Blum , Matthias Scheffler
5:18PM - 5:30PM	<u>X41.00011: Enhanced Wang Landau Sampling of Adsorbed Protein Conformations</u> Mithun Radhakrishna , Sumit Sharma , Sanat K Kumar

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X42: Focus Session: The Physics of Genome Folding II: Chromosomes and Nucleosomes**

Sponsoring Units: DBIO DPOLY

Chair: Erez Lieberman Aiden, Harvard Society of Fellows

Room: 156C

2:30PM - 3:06PM	<u>X42.00001: Tensegrity</u> Invited Speaker: Donald Ingber
3:06PM - 3:18PM	<u>X42.00002: Polymer-nematic textures in spherical confinement: a coarse-grained model of DNA packing</u> Gregory Grason , Homin Shin
3:18PM - 3:30PM	<u>X42.00003: Conformational Fluctuations of Chromosomal DNA in <i>E. coli</i></u> Clarissa Freeman , Jens-Christian Meiners
3:30PM - 3:42PM	<u>X42.00004: Spatial organization and dynamics of interphase yeast chromosomes</u> Baris Avsaroglu , Susannah Gordon-Messer , Miriam Fritsche , Jungoh Ham , Dieter W. Heermann , James E. Haber , Jane Kondev
3:42PM - 3:54PM	<u>X42.00005: Reverse-engineering Chromatin Folding via The Gaussian Polymer Model</u> Manjul Apratim , Swagatam Mukhopadhyay , Anirvan Sengupta
3:54PM - 4:06PM	<u>X42.00006: Electrohydrodynamics of DNA in confinement</u> Jonathan K. Whitmer , Juan P. Hernandez-Ortiz , Juan J. de Pablo
4:06PM - 4:18PM	<u>X42.00007: Susceptibilities to DNA Structural Transitions within Eukaryotic Genomes</u> Dina Zhabinskaya , Craig Benham , Sally Madden
4:18PM - 4:30PM	<u>X42.00008: Mechanics of DNA Sticky End Joints</u> Ehsan Ban , Catalin Picu
4:30PM - 5:06PM	<u>X42.00009: Statistical physics of nucleosome positioning and chromatin structure</u> Invited Speaker: Alexandre Morozov
5:06PM - 5:18PM	<u>X42.00010: Interrogating Nucleosome Positioning Through Coarse-Grain Molecular Simulation</u> Gordon S. Freeman , Daniel M. Hinckley , Vanessa Ortiz , Juan J. de Pablo
5:18PM - 5:30PM	<u>X42.00011: Dynamics of Histone Tails within Chromatin</u> Morgan Bernier , Justin North , Michael Page , Christopher Jaroniec , Christopher Hammel , Michael Poirier

**Session X43: Invited Session: Bacterial Swimming and Chemotaxis**

Sponsoring Units: DBIO DFD

Chair: Jay X. Tang, Brown University

Room: 157AB

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X44: Focus Session: Directed Assembly of Hybrid Materials - Nanoparticles in Micelles**

Sponsoring Units: DPOLY

Chair: Lynden Archer, Cornell University

Room: 157C

2:30PM - 2:42PM	<u>X44.00001: Multigeometry nanoparticles and higher-order assemblies from block copolymer blends via kinetic control and chemical modification</u> Jiahua Zhu , Shiyi Zhang , Karen Wooley , Darrin Pochan
2:42PM - 2:54PM	<u>X44.00002: Polymer nano-particle hybrid micelles: Encapsulation of POSS into semi-fluorinated polymer micelles</u> Dilru Ratnaweera , Dvora Perahia , Scott Iacono , Joseph Mabry , Dennis Smith
2:54PM - 3:06PM	<u>X44.00003: Efficient Encapsulation of Gold Nanorods into Block Copolymer Micelles</u> Dae Hwan Kim , You-Yeon Won
3:06PM - 3:42PM	<u>X44.00004: Kinetic pathways to organized polymer/nanoparticle assemblies</u> Invited Speaker: Ryan Hayward
3:42PM - 3:54PM	<u>X44.00005: A coarse-grained molecular dynamics approach to shear-directed assembly of nanoparticle arrays in amphiphilic block copolymer solutions</u> Bryan Rolfe , Jaehun Chun , Yong Joo
3:54PM - 4:06PM	<u>X44.00006: Nanoparticle Polymer Suspensions: Structure and Dynamics</u> Samanvaya Srivastava , Lynden Archer
4:06PM - 4:18PM	<u>X44.00007: Pristine graphene dispersions and solution-cast composites</u> Sriya Das , Fahmida Irin , Ahmed Wajid , Abel Cortinas , Micah Green
4:18PM - 4:30PM	<u>X44.00008: Simulation of viscoelastic suspensions using regularized singularities</u> Ronald Phillips , Ryota Aoki
4:30PM - 4:42PM	<u>X44.00009: Polymer mediated solution self-assembly of nanorods</u> Miguel A. Modestino , Rachel A. Segalman
4:42PM - 4:54PM	<u>X44.00010: Quantifying the Thermodynamic Interactions in Carborane Nanoparticle Solutions</u> Mary Mutz , Eric Eastwood , Mark Dadmun

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X45: Focus Session: Soft Matter Physics of Drops, Bubbles, Foams, and Emulsions - Droplet Spreading, Colliding, Wetting**

Sponsoring Units: DPOLY

Chair: Esther Amstad, Harvard University

Room: 159

2:30PM - 3:06PM	<u>X45.00001: Ultrafast interference of splashing dynamics: where is the air?</u> Invited Speaker: Michelle Driscoll
3:06PM - 3:18PM	<u>X45.00002: The drop impact dynamics of complex fluids on textured surfaces</u> Kyoo-Chul Park , Vivek Sharma , Robert Cohen , Gareth McKinley
3:18PM - 3:30PM	<u>X45.00003: Influence of nanoscale surface roughness on mechanism of dropwise water condensation</u> Konrad Rykaczewski
3:30PM - 3:42PM	<u>X45.00004: Effect of Nano-Scale Roughness on Particle Wetting and on Particle-Mediated Emulsion Stability</u> Adriana San Miguel , Sven Behrens
3:42PM - 3:54PM	<u>X45.00005: Relaxation of two colliding drops with trace amounts of insoluble surfactants</u> Carolina Vannozzi
3:54PM - 4:06PM	<u>X45.00006: Life Underneath a Leidenfrost Drop</u> Aaron Sharpe , Justin Burton , Roeland van der Veen , Andres Franco , Sidney Nagel
4:06PM - 4:18PM	<u>X45.00007: Voltage Bursting Drops in Solids</u> Qiming Wang , Zhigang Suo , Xuanhe Zhao
4:18PM - 4:30PM	<u>X45.00008: Spreading dynamics of a water droplet on a soluble polymer: glass transition effects</u> Emilie Verneuil , Julien Dupas , Marco Ramaioli , Laurent Forny , Laurence Talini , Francois Lequeux
4:30PM - 4:42PM	<u>X45.00009: Water droplet spreading on a soluble polymer: what happens close to the contact line?</u> Laurence Talini , Julien Dupas , Emilie Verneuil , Francois Lequeux , Laurent Forny , Marco Ramaioli
4:42PM - 4:54PM	<u>X45.00010: Contact angle dependence of the resonant properties of sessile drops</u> James Sharp
4:54PM - 5:06PM	<u>X45.00011: Interfacial Effects on Droplet Dynamics in Poiseuille Flow</u> Steven Hudson , Jonathan Schwalbe , Kendra Erk , Frederick Phelan Jr. , Petia Vlahovska
5:06PM - 5:18PM	<u>X45.00012: Impact of liquid droplets on granular media</u> Giles Delon , Denis Terwagne , Stephane Dorbolo , Nicolas Vandewalle , Herve Caps
5:18PM - 5:30PM	<u>X45.00013: Droplet Rearrangement in a Sheared Dense Emulsion</u> S.K. Dutta , D.L. Blair

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X46: Invited Session: Deformation and Fracture of Soft Materials**

Sponsoring Units: DPOLY

Chair: Kenneth Shull, Northwestern University

Room: 160AB

2:30PM - 3:06PM	<u>X46.00001: Responsive Gel-Gel Phase Transitions in Artificially Engineered Protein Hydrogels</u> Invited Speaker: B.D. Olsen
3:06PM - 3:42PM	<u>X46.00002: Direct probes of molecular interactions at buried interfaces</u> Invited Speaker: Ali Dhinojwala
3:42PM - 4:18PM	<u>X46.00003: Adhesion of hydrogels under water by hydrogen bonding: from molecular interactions to macroscopic adhesion</u> Invited Speaker: Costantino Creton
4:18PM - 4:54PM	<u>X46.00004: Self-healing polymers and mechanochemistry</u> Invited Speaker: Stephen Craig
4:54PM - 5:30PM	<u>X46.00005: Soft active materials---when mechanics meets chemistry</u> Invited Speaker: Zhigang Suo

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X47: Focus Session: Polymers for Energy Storage and Conversion - Nanostructures and Phase Separated Morphologies**

Sponsoring Units: DPOLY  
Chair: Bryan Boudouris, Purdue University  
Room: 160C

2:30PM - 2:42PM	<u>X47.00001: Nanostructured Organometallic Polymers for Enzymatic Bioenergy</u> Moon Jeong Park , Jungphil Lee
2:42PM - 2:54PM	<u>X47.00002: Comparison of polymer-fullerene heterojunction morphology to bimolecular recombination kinetics</u> Dean DeLongchamp , Deanna Rodovsky , Jeff Peet , Tracey Clarke , Attila Mozer , Lee Richter , Andrew Herzing , Joseph Kline
2:54PM - 3:06PM	<u>X47.00003: Confinement effects on P3HT-PCBM Morphology for Bulk Hetero-Junction Polymer Solar Cells</u> Abul Huq , Dharmaraj Raghavan , Jolanta Marszalek , David Bucknall , Alamgir Karim
3:06PM - 3:18PM	<u>X47.00004: Influence of block copolymer surfactant on the phase and interfacial morphology of organic photovoltaic P3HT/PCBM films studied by neutron reflectometry (NR)</u> Jong Keum , James Browning , Kai Xiao , Zhengzhong Sun , Dawen Li , Kunlun Hong , Iliia Ivanov
3:18PM - 3:30PM	<u>X47.00005: The Role of P3HT Crystallization in the Morphological Development in P3HT/PCBM Thin Films Using Neutron Scattering</u> Mark Dadmun , Wen Yin
3:30PM - 3:42PM	<u>X47.00006: Understanding the Behavior of Poly(3-hexylthiophene) at Liquid/Vacuum Interfaces</u> Yeneneh Yimer , Mesfin Tsige
3:42PM - 4:18PM	<u>X47.00007: Ions in block copolymers: Effects on thermodynamics, structural changes and electric field induced alignment.</u> Invited Speaker: Thomas Thurn-Albrecht
4:18PM - 4:30PM	<u>X47.00008: Understanding Schroeder's Paradox</u> Adam Weber , Ahmet Kusoglu
4:30PM - 4:42PM	<u>X47.00009: Does filler surface chemistry impact filler dispersion, polymer dynamics and conductivity in nanofilled solid polymer electrolytes?</u> Lalitha Ganapatibhotla , Janna Maranas
4:42PM - 4:54PM	<u>X47.00010: Regular Arrays of Germanium Nanoparticles Assisted by Thermoset Polymer Composites for High Capacity Lithium Ion Battery</u> Gyuha Jo , Moon Jeong Park
4:54PM - 5:06PM	<u>X47.00011: Disorder -- Order Transitions in Humidified Block Copolymer Electrolytes Studied by SAXS</u> Keith Beers , Andrew Jackson , Nitash Balsara
5:06PM - 5:18PM	<u>X47.00012: Effects of lithium salts on the lamellar phase of diblock copolymers</u> Issei Nakamura , Zhen-Gang Wang
5:18PM - 5:30PM	<u>X47.00013: Structure of Block Copolymer Hydrogel Formed by Complex Coacervate Process</u> Soohyung Choi , Julia Ortony , Daniel Krogstad , Jason Spruell , Nathaniel Lynd , Songi Han , Edward Kramer

128

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X48: Focus Session: Statistical Physics of Active Systems Away From Detailed Balance: Cytoskeleton, Flagella, and All That**

Sponsoring Units: DPOLY DBIO  
Chair: Michael Hagan, Brandeis University  
Room: 161

2:30PM - 2:42PM	<u>X48.00001: The Role of Dynein in Microtubule Mechanics</u> Tony Ladd , Gaurav Misra , Jun Wu , Robert Russell , Tanmay Lele , Richard Dickinson
2:42PM - 2:54PM	<u>X48.00002: Processivity and collectivity of molecular motors pulling membrane tubes</u> Francisco Fontenele Araujo , Cornelis Storm
2:54PM - 3:06PM	<u>X48.00003: Carbon nanotubes as mechanical probes of equilibrium and non-equilibrium cytoskeletal networks</u> Nikta Fakhri , Matteo Pasquali , Frederick C. MacKintosh , Christoph F. Schmidt
3:06PM - 3:18PM	<u>X48.00004: Towards an active hydrodynamic theory of the metaphase spindle</u> Jan Brugues , Daniel Needleman
3:18PM - 3:30PM	<u>X48.00005: The metaphase and anaphase dynamics is dominated by the physical and mechanical properties of both microtubules and chromatin</u> Luca Grisa , Maria Kilfoil
3:30PM - 3:42PM	<u>X48.00006: Effective temperature and spontaneous collective motion of active matter</u> Shenshen Wang , Peter Wolynes
3:42PM - 3:54PM	<u>X48.00007: An active matter analysis of intracellular Active Transport</u> Bo Wang , Kejia Chen , Sung Chul Bae , Steve Granick
3:54PM - 4:06PM	<u>X48.00008: Flagellar Waveform Dynamics of Freely Swimming Algal Cells</u> Jerry Gollub , Huseyin Kurtuldu , Karl Johnson
4:06PM - 4:18PM	<u>X48.00009: Constant torque in flagellar bacterial motors optimizes space exploration</u> Carlos A. Condat , Mario E. Di Salvo
4:18PM - 4:54PM	<u>X48.00010: Interplay between motor contractility and mechanical stability of active biopolymer networks</u> Invited Speaker: Chase Broedersz
4:54PM - 5:06PM	<u>X48.00011: Propulsion of microorganisms by a helical flagellum</u> Chih-Hung Chen , Bruce Rodenborn , Harry Swinney , Bin Liu , Hepeng Zhang
5:06PM - 5:18PM	<u>X48.00012: Energy Consumption of Actively Beating Flagella</u> Daniel Chen , Daniela Nicastro , Zvonimir Dogic
5:18PM - 5:30PM	<u>X48.00013: A particle based computational model for eukaryotic flagella</u> Raghunath Chelakkot , Michael Hagan

129

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X49: Focus Session: Organic Electronics and Photonics - Polymer Dielectrics and Charge Transport**

Sponsoring Units: DMP DPOLY  
Chair: Peter Green, University of Michigan  
Room: 162A

2:30PM - 2:42PM	<u>X49.00001: Inhomogeneous deformation and instability in soft dielectric transducers</u> Tiefeng Li, Shaoxing Qu, Christoph Keplinger, Zhigang Suo, Wei Yang
2:42PM - 2:54PM	<u>X49.00002: Dielectric Properties of Carbon, Silicon and Germanium Based Polymers: A First Principles Study</u> Chenchen Wang, Ghanshyam Pilania, Chunsheng Liu, Rampi Ramprasad
2:54PM - 3:06PM	<u>X49.00003: Paraelectric Crystalline Polymers for High Energy Density and Low Loss Dielectrics</u> Lei Zhu, Run Su, Jung-Kai Tseng, Mao-Sheng Lu
3:06PM - 3:18PM	<u>X49.00004: Influence of Aqueous Electrolytes on Electrical Insulating Properties of Polyethylene</u> Adam Tornheim, Tom Devine
3:18PM - 3:30PM	<u>X49.00005: Theoretically guided design of efficient polymer dielectrics</u> Philip Taylor, Elshad Allahyarov
3:30PM - 3:42PM	<u>X49.00006: Interface conductivity contribution in Co-Phthalocyanines capacitive type devices</u> Carlos Monton, Ilya Valmiansky, Ivan Schuller
3:42PM - 3:54PM	<u>X49.00007: Nanoscale Correlation of Heterogeneous Morphology and Electrical Transport in Nanostructured Organic and Hybrid Solar Cells</u> Jiebing Sun, Sean Wagner, Xiaoyu Liu, Phillip Duxbury, Pengpeng Zhang
3:54PM - 4:06PM	<u>X49.00008: Gigahertz Probing of Poly(3-hexylthiophene) With A Kiloherzt Detection Scheme</u> Jeff Worne, Corey Slavonic, Kevin Kelly, Douglas Natelson
4:06PM - 4:18PM	<u>X49.00009: Thickness dependence of hole mobility in regioregular poly(3-hexylthiophene) thin films</u> Bingyuan Huang, Emmanouil Glynos, Bradley Frieberg, Peter Green
4:18PM - 4:30PM	<u>X49.00010: Contribution of Increased Extraction Efficiency to Increased Photo-Luminescence in Strained Polymer Films</u> Po-Jui Chen, Arnold Chang-Mou Yang, Jui-Hung Hsu, Jonathon D. White
4:30PM - 4:42PM	<u>X49.00011: Modeling charge and energy transports in <math>\pi</math> S-conjugated systems</u> Yongwoo Shin, Xi Lin
4:42PM - 4:54PM	<u>X49.00012: NMR magnetic susceptibility, and electrical conductivity investigation of doped poly-3-methylthiophene</u> W.G. Clark, G. Gaidos, K.J. Singh, R. Menon, K.P. Ramesh, A.P. Reyes, P. Kuhns, J.D. Thompson
4:54PM - 5:06PM	<u>X49.00013: Improving Order and Mobility in MEH-PPV Films by Reducing Polydispersity</u> Jonathon White
5:06PM - 5:18PM	<u>X49.00014: Charge Transport in Amorphous Polythiophene-Fullerene Blends</u> Kiarash Vakhshouri, Derek Kozub, Chenchen Wang, Alberto Salleo, Enrique Gomez
5:18PM - 5:30PM	<u>X49.00015: Modeling energy transport in <math>\pi</math> S-conjugated dendrimers containing triple bonds</u> Pak Kau Lim, Yongwoo Shin, Xi Lin

130

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X50: Focus Session: Micro and Nano Fluidics II: Structured or Active Surfaces and Electrotransport**

Sponsoring Units: DPOLY DFD  
Chair: Anna Balazs, University of Pittsburgh  
Room: 162B

2:30PM - 2:42PM	<u>X50.00001: Dynamics of self-oscillating cilia designed from active polymer gels</u> Pratyush Dayal, Amitabh Bhattacharya, Olga Kukseonok, Anna C. Balazs
2:42PM - 2:54PM	<u>X50.00002: Using actuated synthetic cilia to enhance microscale heat transport</u> Zachary G. Mills, Alexander Alexeev
2:54PM - 3:06PM	<u>X50.00003: Transport of Micro-particles by Active Cilia Arrays</u> Amitabh Bhattacharya, Gavin Buxton, O. Berk Usta, Anna. C. Balazs
3:06PM - 3:18PM	<u>X50.00004: Fluid flows around nanoelectromechanical resonators</u> O. Svitelskiy, V. Sauer, N. Liu, D. Vick, K.M. Cheng, M.R. Freeman, W.K. Hiebert
3:18PM - 3:30PM	<u>X50.00005: Dynamic Similarity Principle for Nanoscale Resonant Devices in Gaseous Environments</u> Caryn Bullard, Michael Roukes, John Sader, Jianchang Li, Paul Mulvaney
3:30PM - 3:42PM	<u>X50.00006: Computational modeling of traveling wave electrophoresis</u> Robert Correll, Jarrod Schiffbauer, Lloyd Carroll
3:42PM - 3:54PM	<u>X50.00007: Rubinstein-Zaltzman Instability in Micro- and Nano-Channels</u> Jarrod Schiffbauer, Evgeny Demekhin, Georgy Ganchenko
3:54PM - 4:06PM	<u>X50.00008: Experimental test of Schrodinger's first-passage-time theory using colloids in micro-channels</u> Sungcheol Kim, Xinsheng Ling
4:06PM - 4:18PM	<u>X50.00009: Liquid-impregnated surfaces: overcoming the limitations of superhydrophobic surfaces for robust non-wetting and anti-icing surface</u> J. David Smith, Rajeev Dhiman, Ernesto Reza-Garduno, Gareth McKinley, Robert Cohen, Kripa Varanasi
4:18PM - 4:30PM	<u>X50.00010: Using Superhydrophobic Surfaces and Optical Caustics to Detect Nanoparticle Aggregation</u> Antonio Garcia, James Lindsay, Eric Gilmore
4:30PM - 4:42PM	<u>X50.00011: Droplet condensation and growth on nanotextured surfaces impregnated with an immiscible liquid</u> Sushant Anand, Adam Paxson, Jonathan Smith, Rajeev Dhiman, Kripa Varanasi
4:42PM - 4:54PM	<u>X50.00012: Molecular diffusion and tensorial slip at surfaces with periodic and random nanoscale textures</u> Nikolai Priezjev
4:54PM - 5:06PM	<u>X50.00013: Wetting as a basis for a highly selective colorimetric indicator for organic liquids</u> Ian Burgess, Kevin Raymond, Natalie Koay, Anna Shneidman, Mathias Kolle, Marko Loncar, Joanna Aizenberg
5:06PM - 5:18PM	<u>X50.00014: Drag Measurements in Laminar Flows over Superhydrophobic Porous Membranes</u> Ozgur Ozsun, Victor Yakhot, Kamil L. Ekinci
5:18PM - 5:30PM	<u>X50.00015: Thermo-super-hydrophobic effect</u> Jerzy M. Floryan

131

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X52: Focus Session: Extreme Mechanics - Fracture, Friction, and Frequencies**

Sponsoring Units: GSNP DFD

Chair: Karin Dahmen, University of Illinois

Room: 153C

2:30PM - 2:42PM	<u>X52.00001: Geometry of Tearing: crack propagation in brittle sheets</u> Benoit Roman , Jose Bico , Enrique Cerda , Eugenio Hamm , Francisco Melo , Victor Romero
2:42PM - 2:54PM	<u>X52.00002: Spiral and croissant crack in drying thin films</u> Joel Marthelot , Benoit Roman , Jose Bico , Etienne Barthel , Jeremie Teisseire , Davy Dalmas , Francisco Melo
2:54PM - 3:06PM	<u>X52.00003: Rupture of a highly stretchable acrylic dielectric elastomer</u> George Pharr , Jeong-Yun Sun , Zhigang Suo
3:06PM - 3:18PM	<u>X52.00004: How does adhesion impact the formation of telephone cord buckles?</u> Etienne Barthel , Jean-Yvon Faou , Sergey Grachev , Guillaume Parry
3:18PM - 3:30PM	<u>X52.00005: Nonlinear modal interactions in a microcantilever</u> Hidde Westra , Herre van der Zant , Warner Venstra
3:30PM - 3:42PM	<u>X52.00006: Effects of Roughness and Inertia on Precursors to Frictional Sliding</u> Mark O. Robbins , K. Michael Salerno
3:42PM - 3:54PM	<u>X52.00007: Scratch test as a fracture process: from soft to hard materials</u> Ange-Therese Akono , Pedro Miguel Reis , Nicholas Xavier Randall , Franz-Josef Ulm
3:54PM - 4:06PM	<u>X52.00008: Sliding on a Nanotube: Interplay of Friction, Deformations and Defects</u> Hsiang-Chih Chiu , Suenne Kim , Erio Tosatti , Christian Klinke , Elisa Riedo
4:06PM - 4:18PM	<u>X52.00009: Graphene Morphology on Nano-Patterned Electronic Substrates</u> Guangxu Li , Cihan Yilmaz , Xiaohong An , Sivasubramanian Somu , Swastik Kar , Ahmed Busnaina , Kai-tak Wan
4:18PM - 4:30PM	<u>X52.00010: Graphene Blister Adhesion Mechanics</u> Narasimha Bodetti , Steven Koenig , Jianliang Xiao , Scott Bunch , Marlin Dunn
4:30PM - 4:42PM	<u>X52.00011: Novel method for simulation of structural post buckling</u> Rachmadian Wulandana , Sachin Velankar
4:42PM - 4:54PM	<u>X52.00012: Buckling morphologies of crystalline shells with frozen defects</u> Ee Hou Yong
4:54PM - 5:06PM	<u>X52.00013: Do tidal stresses trigger large earthquakes early?</u> Braden Brinkman , Michael LeBlanc , Jonathan Uhl , Yehuda Ben-Zion , Karin Dahmen
5:06PM - 5:18PM	<u>X52.00014: Rearrangements in flow of foam</u> Vijayakumar Chikkadi , Erik Woldhuis , Peter Schall , Martin van Hecke
5:18PM - 5:30PM	<u>X52.00015: Tattoo-Like Strain Gauges Based on Silicon Nano-Membranes</u> Nanshu Lu

Thursday, March 1, 2012

2:30PM – 5:30PM

**Session X53: Focus Session: Common Features of Soft Materials: Polymers, Colloids and Granular Media II**

Sponsoring Units: GSNP

Chair: Joerg Rottler, University of British Columbia

Room: 153B

2:30PM - 2:42PM	<u>X53.00001: Shear thickening and jamming in suspensions of different particle shapes</u> Eric Brown , Hanjun Zhang , Nicole Forman , Douglas Betts , Joseph DeSimone , Benjamin Maynor , Heinrich Jaeger
2:42PM - 2:54PM	<u>X53.00002: Fluctuations and Avalanche Statistics in Sheared Systems of Elliptical Particles</u> Somayeh Farhadi , Robert P Behringer
2:54PM - 3:06PM	<u>X53.00003: Mapping From Soft to Hard-Core Disks Near the Athermal Shear Driven Jamming Transition</u> Peter Olsson , Stephen Teitel
3:06PM - 3:18PM	<u>X53.00004: Hot spots in an athermal system</u> Jerome Crassous , Axelle Amon , Van Bau Nguyen , Ary Bruand , Eric Clement
3:18PM - 3:30PM	<u>X53.00005: Effect of Inertial Mass on Velocity Correlations of Shear Driven Soft-Core Disks Approaching the Athermal Jamming Transition</u> Daniel V[aa]gberg , Peter Olsson , Stephen Teitel
3:30PM - 3:42PM	<u>X53.00006: Stretching dense colloidal suspensions: from flow to fracture</u> Michael Smith , Rut Besseling , Andrew Schofield , James Sharp , Mike Cates , Volfgang Bertola
3:42PM - 3:54PM	<u>X53.00007: Fluctuations for Hopper Flow with Circular and Elliptical Particles</u> Junyao Tang
3:54PM - 4:06PM	<u>X53.00008: Rheology and Jamming in Soft Colloidal System</u> Anindita Basu , Tim Still , Paulo Arratia , Kerstin Nordstrom , Jerry Gollub , Douglas Durian , Arjun Yodh
4:06PM - 4:18PM	<u>X53.00009: Local interactions and global rheology in disordered media</u> Erik Woldhuis , Brian Tighe , Kerstin Nordstrom , Doug Durian , Jerry Gollub , Martin van Hecke
4:18PM - 4:30PM	<u>X53.00010: Jammed by shear: a new perspective of the jamming transition in frictional granular materials</u> Dapeng Bi , Bulbul Chakraborty
4:30PM - 4:42PM	<u>X53.00011: Deformation of inherent structures to detect short- and long-range correlations in supercooled liquids</u> Emanuela Del Gado , Majid Mosayebi , Patrick Ilg , Hans Christian Oettinger
4:42PM - 4:54PM	<u>X53.00012: Experiments on ordering transitions in mechanically stable structures of granular rods</u> Vikrant Yadav , Jean-Yonel Chastaing , Arshad Kudrolli
4:54PM - 5:06PM	<u>X53.00013: Elasticity of floppy amorphous systems</u> Gustavo D[un]ring , Edan Lerner , Matthieu Wyart
5:06PM - 5:18PM	<u>X53.00014: Granular Matter, Foams, and Beyond: Applications of the Granocentric Model</u> Katherine Newhall
5:18PM - 5:30PM	<u>X53.00015: Force landscape for particulate systems</u> Lou Kondic , Miroslav Kramar , Arnaud Gouillet , Konstantin Mischaikow



Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y40: Focus Session: Cytoskeleton and Biomechanics - Role of Motors (Including DBIO Best Thesis Award Lecture)**

Sponsoring Units: DBIO DPOLY

Chair: Arpita Upadhyaya, University of Maryland

Room: 156A

8:00AM - 8:12AM	<u>Y40.00001: Forces driving three-dimensional tissue patterning during morphogenesis</u> Heng Lu , Adam Sokolow , U. Serdar Tulu , Daniel Kiehart , Glenn Edwards
8:12AM - 8:24AM	<u>Y40.00002: Cell Autonomous Shape Changes in Germband Retraction</u> Holley Lynch , Elliott Kim , Robert Gish , M. Shane Hutson
8:24AM - 8:36AM	<u>Y40.00003: Wavefronts and mechanical signaling in early Drosophila embryos</u> Timon Idema , Julien Dubuis , Lisa Manning , Philip Nelson , Andrea Liu
8:36AM - 8:48AM	<u>Y40.00004: Passive cellular microrheology in developing fruit fly embryos</u> Sarah Crews , Xiaoyan Ma , Stacey Lawrence , M. Shane Hutson
8:48AM - 9:00AM	<u>Y40.00005: Remodeling of cellular cytoskeleton drives tissue level morphogenesis</u> Madhav Mani , Thomas Lecuit , Boris Shraiman
9:00AM - 9:12AM	<u>Y40.00006: Investigation of autonomous cell dynamics using holographic laser microsurgery</u> Aroshan Jayasinghe , M. Shane Hutson
9:12AM - 9:48AM	<u>Y40.00007: DBIO Best Thesis Award: Mechanics, Dynamics, and Organization of the Bacterial Cytoskeleton and Cell Wall</u> Invited Speaker: Siyuan Wang
9:48AM - 10:00AM	<u>Y40.00008: Coupling of Active Motion and Advection Shapes Intracellular Cargo Transport</u> Philipp Khuc Trong , Jochen Guck , Raymond Goldstein
10:00AM - 10:12AM	<u>Y40.00009: Motion in partially and fully cross-linked F-actin networks</u> Eliza Morris , Allen Ehrlicher , David Weitz
10:12AM - 10:24AM	<u>Y40.00010: Measurements of the constituent contributions to the physical properties of fibroblast populated collagen microtissues with magnetic micro-tissue stretchers</u> Ruogang Zhao , Alan Liu , Thomas Boudou , Christopher Chen , Daniel Reich
10:24AM - 10:36AM	<u>Y40.00011: Crowding of molecular motors determines microtubule depolymerization</u> Louis Reese , Anna Melbinger , Erwin Frey
10:36AM - 10:48AM	<u>Y40.00012: Physics of the actin cortex in shape oscillations of dividing cells</u> Guillaume Salbreux
10:48AM - 11:00AM	<u>Y40.00013: Geometrical Reorganisation of the Cytoskeleton and Changes in Cellular Stiffness Following Stretch</u> Harikrishnan Parameswaran , Bela Suki

134

Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y41: Focus Session: Physics of Cancer III -- Imaging**

Sponsoring Units: DBIO

Chair: Robert Austin, Princeton University

Room: 156B

Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y42: Physics of Bacteria and Viruses**

Sponsoring Units: DBIO

Chair: Aparna Baskaran, Brandeis University

Room: 156C

8:00AM - 8:12AM	<u>Y42.00001: Membrane-mediated interaction between retroviral capsids</u> Rui Zhang , Toan Nguyen
8:12AM - 8:24AM	<u>Y42.00002: Discrete fracture patterns of virus shells reveal mechanical building blocks</u> Irena L. Ivanovska , Roberto Miranda , Jos\`e L. Carrascosa , Gijs J.L. Wuite , Christoph F. Schmidt
8:24AM - 8:36AM	<u>Y42.00003: Pili-driven surface motility of Myxococcus xanthus</u> Maxim Gibiansky , Wei Hu , Kun Zhao , Hongwei Pan , Wenyuan Shi , Karin Dahmen , Gerard Wong
8:36AM - 8:48AM	<u>Y42.00004: Pili-taxis: Clustering of <i>Neisseria gonorrhoeae</i> bacteria</u> Johannes Taktikos , Vasily Zaburdaev , Nicolas Biais , Holger Stark , David A. Weitz
8:48AM - 9:00AM	<u>Y42.00005: The Psl economy in early <i>P. aeruginosa</i> biofilm development</u> Kun Zhao , Boo Shan Tseng , Fan Jin , Max Gibiansky , Joe Harrison , Matthew Parsek , Gerard Wong
9:00AM - 9:12AM	<u>Y42.00006: Roles of Pel and Psl in very early biofilm development</u> B.J. Cooley , Travis Thatcher , Guillaume L'Her , Erin Reed , Jamie Stuart , April Kissinger , Vernita Gordon
9:12AM - 9:24AM	<u>Y42.00007: Quorum activation at a distance: spatiotemporal patterns of gene regulation from diffusion of an autoinducer signal</u> Gabriel Dilanji , Jessica Langebrake , Patrick Deleenheer , Stephen J. Hagen
9:24AM - 9:36AM	<u>Y42.00008: Biofilm Formation in Microscopic Double Emulsion Droplets</u> Connie Chang , David Weitz
9:36AM - 9:48AM	<u>Y42.00009: Atomic Force Microscope Investigations of Bacterial Biofilms Treated with Gas Discharge Plasmas</u> Kurt Vandervoort , Anna Zelaya , Graciela Brelles-Marino
9:48AM - 10:00AM	<u>Y42.00010: High speed dynamic characterization of an <i>E. coli</i> population using advanced optical methods (DDM and DFM)</u> Rongjing Zhang , Laurence Wilson
10:00AM - 10:12AM	<u>Y42.00011: Bacterial Swimming at Air/Water and Oil/Water Interfaces</u> Michael Morse , Athena Huang , Guanglai Li , Jay Tang
10:12AM - 10:24AM	<u>Y42.00012: Bacterial thermotaxis by modulation of the swimming speed</u> Mahmut Demir , Hanna Salman
10:24AM - 10:36AM	<u>Y42.00013: Role of cell bending and slime navigation in swarms of <i>M. xanthus</i></u>

135

10:36AM - 10:48AM	Cameron Harvey , Dale Kaiser , Mark Alber Y42.00014: Effect of Antimicrobial Agents on MinD Protein Oscillations in <i>E. coli</i> Bacterial Cells
10:48AM - 11:00AM	Corey Kelly , Maximiliano Giuliani , John Dutcher Y42.00015: Residence and transit times of MinD in <i>E. coli</i> bacterial cells

Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y43: Invited Session: Physical Organizing Principles for Amyloid Matter: Prediction, Structure, Function**

Sponsoring Units: DBIO

Chair: Daniel L. Cox, University of California, Davis

Room: 157AB

Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y44: Focus Session: Directed Assembly of Hybrid Materials - Particle Organization and Arrays**

Sponsoring Units: DPOLY

Chair: Dvora Perahia, Clemson University

Room: 157C

8:00AM - 8:36AM	Y44.00001: Simulations of nanoparticle ionic and organic hybrid materials Invited Speaker: Athanassios Z. Panagiotopoulos
8:36AM - 8:48AM	Y44.00002: Reverse-engineering the anisotropic assembly of grafted nano-particles Behnaz Bozorgui , Sanat Kumar
8:48AM - 9:00AM	Y44.00003: Crystalline assembly of hard polyhedra via directional entropic forces Pablo F. Damasceno , Michael Engel , Sharon C. Glotzer
9:00AM - 9:12AM	Y44.00004: Facile Fabrication of 3-D Nanoparticle Arrays in Thin Films toward Photonic Materials Joseph Kao , Seong-Jun Jeong , Vivian Peng-Wei Chuang , Peter Jin Bai , Zhen Zhang , Cheng Sun , Ting Xu
9:12AM - 9:24AM	Y44.00005: Creating Opal Templated Continuous Conducting Polymer Films with Ultralow Percolation Thresholds Using Thermally Stable Nanoparticles D.J. Kang , T. Kwon , M.P. KIM , B.J. Kim , H. Jung , J. Bang
9:24AM - 9:36AM	Y44.00006: Magnetic fields in long-range alignment of functional hybrid soft materials Pawel Majewski , Manesh Gopinadhan , Candice Pelligra , Shanju Zhang , Lisa Pfefflerle , Chinedum Osuji
9:36AM - 9:48AM	Y44.00007: $^2\text{H}$ NMR study of the Assembly of Gold Nanoparticles Dispersed in Nematic Liquid Crystal Linda Reven , J Milette , R. Bruce Lennox , Alejandro Rey , Ezequiel Soule
9:48AM - 10:00AM	Y44.00008: Organization of Gold Nanorods in Cylinder-Forming Block Copolymer Films Guoqian Jian , Robert Riggelman , Russell Composto
10:00AM - 10:12AM	Y44.00009: Nanopatterned poly(ethylene glycol) brushes: A route for highly tunable assembly of Au nanoparticles M. Serdar Onses , Paul F. Nealey
10:12AM - 10:24AM	Y44.00010: Distribution of POSS Nanoparticles in Symmetric Diblock Copolymer Thin Films Umesh Shrestha , Dilru Ratnaweera , Stephen Clarson , Dvora Perahia
10:24AM - 10:36AM	Y44.00011: Long-range Ordering of Symmetric Block-copolymers by Chaining of Superparamagnetic Nanoparticles in External Magnetic Fields V. Raman , A. Bose , B.D. Olsen , T.A. Hatton
10:36AM - 10:48AM	Y44.00012: Highly Ordered Superstructures of Single-Walled Carbon Nanotubes in Polymeric Systems Sung-Min Choi , Hyoung-Sik Jang , Changwoo Doe , Tae-Hwan Kim
10:48AM - 11:00AM	Y44.00013: Block copolymer modified epoxies: Role of localized network damage Carmelo Declet-Perez , Erica Redline , Lorraine Francis , Frank Bates

Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y45: Focus Session: Soft Matter Physics of Drops, Bubbles, Foams and Emulsions - Bubbles, Films, Foams**

Sponsoring Units: DPOLY

Chair: Robert Cohen, Massachusetts Institute of Technology

Room: 159

8:00AM - 8:12AM	<u>Y45.00001: Mechanical properties of surface modified microbubbles by Atomic Force Microscopy (AFM)</u> Jonathan Mckendry , Colin Grant , Stephen Evans
8:12AM - 8:24AM	<u>Y45.00002: Cylindrical bubbles and blobs from a Class II Hydrophobin</u> Paul Russo , Michael Pham , Brad Blalock
8:24AM - 8:36AM	<u>Y45.00003: The collapse and the folding of a particle rafts under compression</u> Chin-Chang Kuo , Michael Dennin
8:36AM - 9:12AM	<u>Y45.00004: Falling drops skating on a film of air</u> Invited Speaker: Shmuel Rubinstein
9:12AM - 9:24AM	<u>Y45.00005: Compression of multiwall microbubbles</u> Natalia Lebedeva , Sam Moore , Andrey Dobrynin , Michael Rubinstein , Sergei Sheiko
9:24AM - 9:36AM	<u>Y45.00006: The life cycle of individual boiling bubbles: Insights from beyond optical imaging</u> Scott Parker , Sung Chul Bae , David Cahill , Steve Granick
9:36AM - 9:48AM	<u>Y45.00007: Nonclassical Thermomigration of an Air Bubble</u> Dominik Michler , Rudolf Sprik , Peter Schall , Daniel Bonn
9:48AM - 10:00AM	<u>Y45.00008: Two-Dimensional Microfluidics: Stable Island Emulsions in Freely Suspended Smectic Liquid Crystal Films</u> Cheol Park , Zoom Nguyen , Chaney Cranfill , Sarah Radzihovsky , Joe MacLennan , Matt Glaser , Noel Clark
10:00AM - 10:12AM	<u>Y45.00009: Spherical and Non-Spherical Double Emulsions with Multiple Components</u> Laura Adams , Thomas Kodger , Jacy Bird , Shin-Hyun Kim , Louise Jawerth , Vinodhan Manoharan , David Weitz
10:12AM - 10:24AM	<u>Y45.00010: Stability of thin liquid films: Influence of interfacial viscoelasticity</u> Gerald Fuller , Liat Rosenfeld
10:24AM - 10:36AM	<u>Y45.00011: Light-controlled air-water interfaces and thin liquid films using photo-surfactants</u> Eloise Chevallier , Christophe Tribet , Francois Lequeux , Cecile Monteux
10:36AM - 10:48AM	<u>Y45.00012: Supercritical Carbon Dioxide Assisted Processing of Silica/PMMA Nanocomposite Foams</u> Deniz Rende , Linda S. Schadler , Rahmi Ozisik
10:48AM - 11:00AM	<u>Y45.00013: Drainage dynamics of aqueous foams generated by sparging and turbulent mixing</u> Matthew J. Kennedy , Michael W. Conroy , Ramagopal Ananth , James W. Fleming

138

Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y47: Soft Matter Physics of Biological Systems**

Sponsoring Units: DPOLY

Chair: Maria Santore, University of Massachusetts

Room: 160C

8:00AM - 8:12AM	<u>Y47.00001: Antiviral activity of squalamine: Role of electrostatic membrane binding</u> Bernard Beckerman , Wei Qu , Abhijit Mishra , Michael Zasloff , Gerard Wong , Erik Luijten
8:12AM - 8:24AM	<u>Y47.00002: Simulating ligand receptor binding at a membrane interface with graphics processing accelerated coarse-grained molecular dynamics</u> Sharon M. Loverde , David N. LeBard , Zhengyu Ma , Michael L. Klein , Dennis E. Discher
8:24AM - 8:36AM	<u>Y47.00003: Stabilization of concentration fluctuations in mixed membranes by hybrid lipids</u> Benoit Palmieri , Samuel Safran
8:36AM - 8:48AM	<u>Y47.00004: Cooperativity in cholesterol-induced demixing of saturated and unsaturated lipids</u> James Kindt
8:48AM - 9:00AM	<u>Y47.00005: Steric Repulsion and Compressibility of Protein Resistant Brushes</u> Maria Santore
9:00AM - 9:12AM	<u>Y47.00006: Topological defects induced by the retina's curvature improve vision</u> Johnatan Aljadef , Tatyana Sharpee
9:12AM - 9:24AM	<u>Y47.00007: Exploring the low temperature thermodynamics of lattice proteins and polymers with chain lengths <math>S &gt; 1000S</math></u> Thomas Wuest
9:24AM - 9:36AM	<u>Y47.00008: Long-range mechanical force in epithelial tubule self assembly</u> Chin-Lin Guo
9:36AM - 9:48AM	<u>Y47.00009: Bottom-up study of flaw tolerance properties of protein networks</u> Zhao Qin , Markus Buehler
9:48AM - 10:00AM	<u>Y47.00010: From Nano to Micro: Importance of Structure and Architecture in Spider Silk Adhesives</u> Vasav Sahni , Ali Dhinojwala
10:00AM - 10:12AM	<u>Y47.00011: Light scattering studies of human crystallin proteins and loss of transparency in cataracts</u> Benjamin Mohr , Murugappan Muthukumar
10:12AM - 10:24AM	<u>Y47.00012: Quantifying the abnormal hemodynamics of sickle cell anemia</u> Huan Lei , George Karniadakis
10:24AM - 10:36AM	<u>Y47.00013: The energetics of tightly bent DNA: a composite elastica model including local melting</u> Arthur Evans , Alex Levine
10:36AM - 10:48AM	<u>Y47.00014: Dispersion-relation phase spectroscopy of neuron transport</u> Ru Wang , Zhuo Wang , Larry Millet , Martha Gillette , Joseph Robert Leigh , Nahil Sobh , Alex Levine , Gabreil Popescu

139

Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y48: Focus Session: Statistical Physics of Active Systems Away From Detailed Balance: Swimmers and All That**

Sponsoring Units: DPOLY DBIO

Chair: Daniel Needleman, Harvard University

Room: 161

8:00AM - 8:12AM	<u>Y48.00001: Flow-controlled densification of E. Coli through a constriction</u> Gast\on Mi\~no , Ernesto Altshuler , Carlos P\{e}rez-Penichet , Lenin del R\{i}o , Anke Lindner , Annie Rousselet , Eric Clem\{e}nt
8:12AM - 8:24AM	<u>Y48.00002: Bidirectional sorting of flocking particles in the presence of asymmetric barriers</u> Jeffrey Drocco , Charles Reichhardt , Cynthia Reichhardt
8:24AM - 8:36AM	<u>Y48.00003: Microfluidic one-way streets for algae</u> Jorn Dunkel , Vasily Kantsler , Marco Polin , Raymond E. Goldstein
8:36AM - 8:48AM	<u>Y48.00004: Concentrating bacterial cells using a ratchet system: a lattice Monte Carlo simulation study</u> Yuguo Tao , Gary Slater
8:48AM - 9:00AM	<u>Y48.00005: Spontaneous Segregation of Self-Propelled Particles with Different Motilities</u> Samuel McCandlish , Aparna Baskaran , Michael Hagan
9:00AM - 9:12AM	<u>Y48.00006: Active Brownian Particles with Active Fluctuations</u> Pawel Romanczuk , Robert Grossmann , Lutz Schimansky-Geier
9:12AM - 9:24AM	<u>Y48.00007: Run and tumble, run and reverse, or run reverse and flick - who wins the chemotaxis race?</u> Vasily Zaburdaev , Sergey Denisov , David Weitz
9:24AM - 9:36AM	<u>Y48.00008: Kinetic theory for systems of self-propelled particles</u> Yen-Liang Chou , Thomas Ihle
9:36AM - 9:48AM	<u>Y48.00009: Diffusional Variation in Autonomously Motile Catalytic Janus Particles</u> R. Lloyd Carroll , Shengrong Ye , Zachary Jones
9:48AM - 10:24AM	<u>Y48.00010: Emergent Collective Behavior of Microscopic Swimmers</u> Invited Speaker: Guillaume Lambert
10:24AM - 10:36AM	<u>Y48.00011: Active crystallization of Artificial Microswimmers</u> Jeremie Palacci , Stefano Sacanna , Joyce Laine , Asher Preska Steinberg , David Pine , Paul Chaikin
10:36AM - 10:48AM	<u>Y48.00012: Motility and the collective motion of bacteria</u> Rebecca Christianson , Jean Huang , Mary Allen , Chase Kernan
10:48AM - 11:00AM	<u>Y48.00013: Collective motility of cells on deformable substrates</u> Arvind Gopinath , Michael Hagan , Bulbul Chakraborty , Aparna Baskaran

140

Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y49: Focus Session: Organic Electronics and Photonics - Small Molecules and General Advances**

Sponsoring Units: DMP DPOLY

Chair: Richard Lunt, Michigan State University

Room: 162A

8:00AM - 8:12AM	<u>Y49.00001: Charge transport calculations of organic semiconductors by the time-dependent wave-packet diffusion method</u> Hiroyuki Ishii , Nobuhiko Kobayashi , Kenji Hirose
8:12AM - 8:24AM	<u>Y49.00002: Investigation of Interfaces between Sub-Phthalocyanine and C60 using First-Principles Calculations</u> Hossein Hashemi , Xiao Ma , John Kieffer , Steven E. Morris , Max Steine , Shaohui Zheng , Eitan Geva , Barry Dunietz
8:24AM - 8:36AM	<u>Y49.00003: First principles study of the electrical and optical properties of SubPc single crystal</u> Xiao Ma , Hossein Hashemi , John Kieffer
8:36AM - 8:48AM	<u>Y49.00004: Density-functional Theory and Beyond for Donor-Acceptor Complexes: The Example of TTF/TCNQ</u> Viktor Atalla , Mina Yoon , Matthias Scheffler
8:48AM - 9:00AM	<u>Y49.00005: Understanding the high device efficiency of a class of solution-processed small-molecule solar cells</u> Andriy Zhugayevych , Olena Postupna , Sergei Tretiak , Guillermo Bazan
9:00AM - 9:12AM	<u>Y49.00006: Relating Molecular-Scale Structure to Spectroscopy in Pentacene-Perfluoropentacene Donor-Acceptor Assemblies from First-Principles</u> Sahar Sharifzadeh , Leeor Kronik , Jeffrey Neaton
9:12AM - 9:24AM	<u>Y49.00007: Quantitative structural analysis of organic thin film deposition: a real time synchrotron X-ray scattering study</u> Ishviene Cour , Christian Schliepuez , Yongsoo Yang , Songtao Wo , Ron Pindak , Randall Headrick
9:24AM - 9:36AM	<u>Y49.00008: Diindenoperylene as donor and acceptor for organic photovoltaic cells</u> Andreas Wilke , Ben Ba\^oker , Johannes Frisch , Patrick Amsalem , Jens Niederhausen , Antje Vollmer , Norbert Koch
9:36AM - 9:48AM	<u>Y49.00009: Gradual thickness change of CuPc on MoOx on Oxygen Plasma Treated ITO</u> Chengcong Wang , Irfan Irfan , Yongli Gao
9:48AM - 10:00AM	<u>Y49.00010: Voltage dependence of the electric double layer structure at an ionic liquid/Au interface</u> Yusuke Wakabayashi , Ryosuke Yamamoto , Hazuki Morisaki , Osami Sakata , Hidekazu Shimotani , Hongtao Yuan , Yoshihiro Iwasa , Tsyoshi Kimura
10:00AM - 10:12AM	<u>Y49.00011: A critical assessment of thiolate self-assembled monolayers (SAMs) on platinum.</u> Yenny Cardona Quintero , Hong Zhu , Rampi Ramprasad
10:12AM - 10:24AM	<u>Y49.00012: Nonlinear light propagation in photopolymers: from self-trapped beams to 3-D optical lattices</u> Kalaichelvi Saravanamuttu
10:24AM - 10:36AM	<u>Y49.00013: Enhancing sensing of nitroaromatic vapors by thiophene-based polymer films</u> G. Nagarjuna , Abhishek Kumar , Akshay Kokil , Kedar Jadhav , Serkan Yurt , Jayant Kumar , D. Venkataraman
10:36AM - 10:48AM	<u>Y49.00014: Giant Electrocaloric Effect in Ferroelectric Polymers with Great Impact on Energy and Environment</u> Xinyu Li , Xiaoshi Qian , Haiming Gu , Shengguo Lu , Qiming Zhang

141

Friday, March 2, 2012

8:00AM - 11:00AM

**Session Y50: Focus Session: Micro and Nano Fluidics III: Microtransport and Thermophysical Properties**

Sponsoring Units: DPOLY DFD  
Chair: Ralph Sperling, Harvard University  
Room: 162B

8:00AM - 8:12AM	<u>Y50.00001: Cavitation in confined water: ultra-fast bubble dynamics</u> Olivier Vincent , Philippe Marmottant
8:12AM - 8:24AM	<u>Y50.00002: Multiphase flow within 3D porous media</u> Sujit Datta , David Weitz
8:24AM - 8:36AM	<u>Y50.00003: Modeling capillary filling of micropores with nanoparticle-filled binary fluid</u> Yongting Ma , Amitabh Bhattacharya , Olga Kuksenok , Dennis Perchak , Anna C. Balazs
8:36AM - 8:48AM	<u>Y50.00004: Label-free Screening of Multiple Cell-surface Antigens Using a Single Pore</u> Karthik Balakrishnan , Matthew Chapman , Anand Kesavaraju , Lydia Sohn
8:48AM - 9:00AM	<u>Y50.00005: Tracking rotation and translation simultaneously in confined liquids</u> Subhalakshmi Kumar , SungChul Bae , Steve Granick
9:00AM - 9:12AM	<u>Y50.00006: Neutron Scattering Applications for Characterizing Phase Behavior and Dynamics of Confined Fluids in Nanoporous Materials</u> Yuri Melnichenko
9:12AM - 9:24AM	<u>Y50.00007: A mathematical model for the transport of a solute through a porous-walled tube</u> Ian Griffiths , Rebecca Shipley
9:24AM - 9:36AM	<u>Y50.00008: Biased and flow driven Brownian motion in periodic channels</u> S. Martens , A. Straube , G. Schmid , L. Schimansky-Geier , P. H <sup>o</sup> anggi
9:36AM - 9:48AM	<u>Y50.00009: Modeling Electrokinetic Effect in Biomolecule Detection by Nanosensors</u> Yaling Liu , Shunqiang Wang , Walter Hu
9:48AM - 10:00AM	<u>Y50.00010: Crossover from the Hydrodynamic to the Kinetic Regime in Confined Nanoflows</u> Charles Lissandrello , Victor Yakhot , Kamil L. Ekinci
10:00AM - 10:12AM	<u>Y50.00011: Viscosity of ultrathin water films confined between oxide surfaces – ab initio and classical molecular dynamics simulations</u> Peter J. Feibelman , Gary S. Grest , Neil Haria , Christian D. Lorenz
10:12AM - 10:24AM	<u>Y50.00012: Submicron flows of polymer solutions</u> Hugues Bodiguel , Amandine Cuenca
10:24AM - 10:36AM	<u>Y50.00013: Nanomechanics and dynamics of confined water and other liquids</u> Peter Hoffmann , Shah Khan
10:36AM - 10:48AM	<u>Y50.00014: Studies of the Density Anomalies of Water in Nanopores by Neutron Scattering</u> Yang Zhang , Antonio Faraone , William Kamitakahara , Kao-Hsiang Liu , Chung-Yuan Mou , Juseclino Leao , Sung Chang , Sow-Hsin Chen
10:48AM - 11:00AM	<u>Y50.00015: Investigation of Nanoscale Structure Using Spin-Echo Small-Angle Neutron Scattering (SESANS)</u> Xin Li , Roger Pynn , Adam Washington

Friday, March 2, 2012

11:15AM - 2:15PM

**Session Z2: Invited Session: Active Responses of Biological Materials to Mechanical Stress**

Sponsoring Units: DCMP DBIO  
Chair: Allen Ehrlicher, Harvard University and Chin-Lin Guo, California Institute of Technology  
Room: 204AB

11:15AM - 11:51AM	<u>Z2.00001: Cellular Mechanics and Mechanotransduction</u> Invited Speaker: Daniel Fletcher
11:51AM - 12:27PM	<u>Z2.00002: Force Transmission in the Actin Cytoskeleton</u> Invited Speaker: Margaret Gardel
12:27PM - 1:03PM	<u>Z2.00003: Environmental properties set cell mechanics and morphology</u> Invited Speaker: Paul Janmey
1:03PM - 1:39PM	<u>Z2.00004: Molecular Mechanotransduction: how forces trigger cytoskeletal dynamics</u> Invited Speaker: Allen Ehrlicher
1:39PM - 2:15PM	<u>Z2.00005: The physics of 3D cell migration</u> Invited Speaker: Denis Wirtz

Friday, March 2, 2012

**Session Z41: Focus Session: Non-Covalent Protein Interactions**

Sponsoring Units: DBIO GSNP  
Chair: Corey O'Hern, Yale University  
Room: 156B

11:15AM - 11:51AM	<u>Z41.00001: Physics of Noncovalent Interactions in Protein Structure and Function</u> Invited Speaker: Wouter D. Hoff
11:51AM - 12:27PM	<u>Z41.00002: Computational design of protein interactions; designing proteins that neutralize influenza by inhibiting its hemagglutinin surface protein</u> Invited Speaker: Sarel Fleishman
12:27PM - 1:03PM	<u>Z41.00003: The power of simple hard-sphere models in protein structure prediction</u> Invited Speaker: Lynne Regan
1:03PM - 1:15PM	<u>Z41.00004: Acetylation of LYS-16 of H4 Histone Tail May Sequester the Tail and Inhibit its Interactions with Neighboring Nucleosomes</u> Davit Potoyan , Garegin Papoian
1:15PM - 1:27PM	<u>Z41.00005: Exploring copper chelation in Alzheimer's disease protein</u> Frisco Rose , Miroslav Hodak , Jerry Bernholc
1:27PM - 1:39PM	<u>Z41.00006: Transition-metal prion protein attachment: Competition with copper</u> Miroslav Hodak , Jerry Bernholc
1:39PM - 1:51PM	<u>Z41.00007: Steric clashes determine differences in side chain dihedral angle distributions: A study of Thr versus Val</u> Alice Zhou , Corey O'Hern , Lynne Regan

144

Friday, March 2, 2012

11:15AM - 2:15PM

**Session Z42: Focus Session: Physics of Biomaterials: Mechanics, Dynamics, and Transport**

Sponsoring Units: DBIO  
Chair: Lester Hedges, Lawrence Berkeley National Laboratory  
Room: 156C

11:15AM - 11:27AM	<u>Z42.00001: Highly parallel computational study of amphiphilic molecules using the Wang-Landau method</u> Thomas Vogel , David Landau
11:27AM - 11:39AM	<u>Z42.00002: Conjugated polymer-based DNA sensors: fundamental aspects of interaction and biosensing approaches</u> Zhongwei Liu , Zhihua Xu , Hsing-Lin Wang , Mircea Cotlet
11:39AM - 11:51AM	<u>Z42.00003: Spatial response variations within biosensor flow cells</u> Nicola Cant , Sarah Harrison
11:51AM - 12:03PM	<u>Z42.00004: Hydrodynamics of Active Permeating Gels</u> Andrew Callan-Jones , Frank J"ulicher
12:03PM - 12:15PM	<u>Z42.00005: Size-dependent mechanical properties of low-dimensional materials: coupling between deformation modes</u> Yiting Ding , Zhiping Xu
12:15PM - 12:27PM	<u>Z42.00006: A QM/MM method for simulating the sequencing of DNA using graphene nanopores: solvent effects on nucleobase selectivity</u> Alexandre Rocha , Gustavo Feliciano , Yuhui He , Ralph Scheicher , Mauricio Coutinho
12:27PM - 12:39PM	<u>Z42.00007: Characterization of Idealized Helical Repeat Proteins in Silicon Nitride Nanopores</u> Jiali Li , Bradley Ledden , David Talaga , Aitziber Cortajarena , Lynne Regan
12:39PM - 12:51PM	<u>Z42.00008: First-Principles Study of Muon Trapping in Singlet and Triplet States of Oxyhemoglobin</u> Roger Pink , S.R. Badu , T.P. Das , N. Sahoo , Lee Chow , R.H. Scheicher , K. Nagamine
12:51PM - 1:03PM	<u>Z42.00009: Branched Polymer Models and the Mechanism of Multilayer Film Buildup</u> Pradeep Waduge , Dhan Khadka , Donald Haynie
1:03PM - 1:15PM	<u>Z42.00010: Reduction of Scattered Light by Müller Cells in the Human Retina</u> Oliver Bendix , Ragnar Fleischmann , Theo Geisel
1:15PM - 1:27PM	<u>Z42.00011: A simplified model of epithelial cell hair orientation in <i>Drosophila</i></u> Mauricio Garcia-Vergara , Gilberto Gomez-Correa , Guillermo Ramirez-Santiago
1:27PM - 1:39PM	<u>Z42.00012: Neutral Mass Spectrometry of Mega-Dalton Particles with Single-Particle Resolution using a Nano-Electromechanical System</u> Scott Kelber , Mehmet Hanay , Akshay Naik , Derrick Chi , Sebastien Hentz , Caryn Bullard , Eric Collinet , Laurent Duraffourg , Michael Roukes
1:39PM - 1:51PM	<u>Z42.00013: Quantifying the deformation of the red blood cell skeleton in shear flow</u> Zhangli Peng , Qiang Zhu
1:51PM - 2:03PM	<u>Z42.00014: Theoretical study of electron transport in DNA</u> Bikan Tan , Miroslav Hodak , Wenchang Lu , Jerry Bernholc

145

Friday, March 2, 2012

11:15AM - 2:15PM

**Session Z43: Invited Session: Applications of Jamming**

Sponsoring Units: GSNP DFD

Chair: Andrea Liu, University of Pennsylvania

Room: 157AB

11:15AM - 11:51AM	<u>Z43.00001: Robotics using sand</u> Invited Speaker: Heinrich Jaeger
11:51AM - 12:27PM	<u>Z43.00002: Shocks in fragile matter</u> Invited Speaker: Vincenzo Vitelli
12:27PM - 1:03PM	<u>Z43.00003: Controlling the jamming transition of sheared hard spheres</u> Invited Speaker: Thomas Haxton
1:03PM - 1:39PM	<u>Z43.00004: Density-Temperature-Softness Scaling of the Dynamics of Glass-forming Soft-sphere Liquids</u> Invited Speaker: Magdaleno Medina-Noyola
1:39PM - 2:15PM	<u>Z43.00005: Active Jamming: Self-propelled particles at high density</u> Invited Speaker: Silke Henkes

Friday, March 2, 2012

11:15AM - 2:15PM

**Session Z46: Invited Session: Self-Assembly of Proteins: From Capsids to Crystals**

Sponsoring Units: DPOLY DBIO

Chair: Steve Whitelam, Lawrence Berkeley National Laboratory and Mike Hagan, Brandeis University

Room: 160AB

11:15AM - 11:51AM	<u>Z46.00001: Experimental and theoretical studies of capsid self-assembly</u> Invited Speaker: Adam Zlotnick
11:51AM - 12:27PM	<u>Z46.00002: Theoretical approach to crystallization: foundations and application to proteins</u> Invited Speaker: James Lutsko
12:27PM - 1:03PM	<u>Z46.00003: Elasticity Theory of Viral Capsids</u> Invited Speaker: Robijn Bruinsma
1:03PM - 1:39PM	<u>Z46.00004: The Role of Multivalent Counterions in Protein Crystallization</u> Invited Speaker: Fajun Zhang
1:39PM - 2:15PM	<u>Z46.00005: Computational studies of capsid- and crystal self-assembly</u> Invited Speaker: Ard Louis

Friday, March 2, 2012

11:15AM - 2:15PM

**Session Z47: Self-Assembly and Polymer Composites**

Sponsoring Units: DPOLY

Chair: Lutz Wiegart, Brookhaven National Laboratory

Room: 160C

11:15AM - 11:27AM	<u>Z47.00001: Highly piezoelectric Biocompatible and Soft Composite Fibers</u> Antal Jakli , Jason Morvan , Ebru Buyuktanir , John West
11:27AM - 11:39AM	<u>Z47.00002: Phase Behavior of Polymer Nanocomposites from Gravity-based Combinatorial Simulations</u> Dong Meng , Sanat Kumar
11:39AM - 11:51AM	<u>Z47.00003: Diffusive and re-orientation dynamics in lyotropic gels of self-assembled organic nanotubes</u> Lutz Wiegart , Pierre Wiegart , Chiara Caronna
11:51AM - 12:03PM	<u>Z47.00004: Carbon Nanotube Liquid Crystals: Nematic Droplets and Coarsening Dynamics</u> Natnael Behabtu , Bohdan Senyuk , Ivan Smalyukh , Matteo Pasquali
12:03PM - 12:15PM	<u>Z47.00005: Free volume in a granular nanocomposite</u> Reghan J. Hill , Ahmad Mohaddespour
12:15PM - 12:27PM	<u>Z47.00006: Polymer Radius of Gyration in Polymer Nanocomposites</u> M.K. Crawford , R.J. Smalley , G. Cohen , B. Hogan , C. Chi , R. Moneta , B. Wood , S. Kumar , Y. Melnichenko , L. He , B. Hammouda
12:27PM - 12:39PM	<u>Z47.00007: Molecular packing in bone collagen fibrils prior to mineralization</u> Benjamin Hsiao , Hong-wen Zhou , Christian Burger , Benjamin Chu , Melvin J. Glimcher
12:39PM - 12:51PM	<u>Z47.00008: Understanding the self-assembly of meso-tetra(4-sulfonatophenyl)porphyrin (H<sub>2</sub>TPPS<sup>4-</sup>) in aqueous solutions</u> Javoris Hollingsworth , Allison Richard , Graca Vicente , Paul Russo
12:51PM - 1:03PM	<u>Z47.00009: Self-Assembly of Polystyrene Tethered Hydrophilic POSS/C60 Nanoparticles</u> Xinfei Yu , Stephen Z.D. Cheng
1:03PM - 1:15PM	<u>Z47.00010: Self-Assembly of Narrowly Dispersed Brush Diblock Copolymers with Domain Spacing more than 100 nm</u> Weiyin Gu , Benjamin Sveinbjornsson , Sung Woo Hong , Robert Grubbs , Thomas Russell
1:15PM - 1:27PM	<u>Z47.00011: Non-Classical Ordering of Sphere Forming SISO Tetrablock Terpolymers</u> Jingwen Zhang , Scott Sides , Frank Bates
1:27PM - 1:39PM	<u>Z47.00012: Tear rotation in reinforced natural rubber</u> Paul Sotta , Brice Gabrielle , Arnaud Vieyres , Loic Vanel , Didier Long , Olivier Saneau , Pierre-Antoine Albouy
1:39PM - 1:51PM	<u>Z47.00013: Quantification of Folding in Sheet-like Nanostructures</u> Durgesh Rai , Gregory Beaucage , Ramanth Ramachandran , Siddharth Pradhan

148

Friday, March 2, 2012

11:15AM - 2:15PM

**Session Z48: Focus Session: Statistical Physics of Active Systems Away from Detailed Balance; Motors, Swimmers and All That**

Sponsoring Units: DPOLY DBIO

Chair: Alexander Grosberg, New York University

Room: 161

11:15AM - 11:27AM	<u>Z48.00001: Mechanical manipulation and bifurcation dynamics of stereociliary bundles</u> Seung Ji , Lea Fredrickson-Hemsing , Robijn Bruinsma , Dolores Bozovic
11:27AM - 11:39AM	<u>Z48.00002: Effective Temperature: from Red-Blood-Cell Membrane Fluctuations to trapped active particles</u> Eyal Isaac Ben Isaac , Nir Gov
11:39AM - 11:51AM	<u>Z48.00003: A phase transition between collective and individual dynamics in suspension of swimming bacteria</u> Andrey Sokolov , Igor Aronson
11:51AM - 12:03PM	<u>Z48.00004: Chemotaxis of Phoretic Swimmers</u> Suropriya Saha , Sriram Ramaswamy , Ramin Goeztanian
12:03PM - 12:15PM	<u>Z48.00005: Active viscosity of E-Coli suspensions</u> Eric Clement , Jeremie Gachelin , Gaston Mino , Helene Berthet , Anke Lindner , Annie Rousselet
12:15PM - 12:27PM	<u>Z48.00006: Molecular Dynamics Study of Self-propelled Droplets on Solid Substrates</u> Murat M <sup>u</sup> layim , Marcus M <sup>u</sup> ller
12:27PM - 12:39PM	<u>Z48.00007: Self-assembled structures in immiscible systems of active, switchable nanocolloids</u> Antonio Osorio-Vivanco , Igal Szleifer , Sharon Glotzer
12:39PM - 12:51PM	<u>Z48.00008: Collective motion in active solids and active crystals</u> Cristian Huepe , Eliseo Ferrante , Ali Emre Turgut
12:51PM - 1:03PM	<u>Z48.00009: Statistics and dynamics in an optical vortex</u> Yael Roichman , Yulia Sokolov , Derek Frydel , David Grier , Haim Diamant
1:03PM - 1:15PM	<u>Z48.00010: Induced Motion by Asymmetric Enzymatic Degradation of Hydrogels</u> Jennifer Hou , Adam Cohen
1:15PM - 1:27PM	<u>Z48.00011: Possible mechanisms for initiating macroscopic left-right asymmetry in developing organisms</u> Christopher L. Henley , Ricky Chachra , Jimmy X. Shen
1:27PM - 1:39PM	<u>Z48.00012: Activation of nanoscale allosteric protein domain motion revealed by neutron spin echo spectroscopy</u> Zimei Bu , Bela Farago , David Callaway
1:39PM - 1:51PM	<u>Z48.00013: Effector CD8<sup>+</sup> T cells migrate via chemokine-enhanced generalized Levy walks</u> Edward Banigan , Tajie Harris , David Christian , Andrea Liu , Christopher Hunter

149



Friday, March 2, 2012

11:15AM - 2:15PM

**Session Z50: Focus Session: Micro and Nano Fluidics IV: Emulsions and Complex Fluids**

Sponsoring Units: DPOLY DFD

Chair: Laura Adams, Harvard University

Room: 162B

11:15AM - 11:51AM	<u>Z50.00001: Active Emulsions: Synchronization of Chemical Oscillators</u> Invited Speaker: Seth Fraden
11:51AM - 12:03PM	<u>Z50.00002: Double Emulsion Templated Celloidosomes</u> Laura R. Arriaga , Samantha M. Marquez , Shin-Hyun Kim , Connie Chang , Jim Wilking , Francisco Monroy , Manuel Marquez , David A. Weitz
12:03PM - 12:15PM	<u>Z50.00003: Viscoelastic Flow Instabilities of Worm-like Micellar Solutions in Microfluidic Devices</u> Thomas Ober , Gareth McKinley
12:15PM - 12:27PM	<u>Z50.00004: Elastic instability in straight channels</u> Annie Colin , Hugues Bodiguel , Julien Beaumont
12:27PM - 12:39PM	<u>Z50.00005: Microfluidic Fabrication of Functional Capsules with ultra-thin membranes</u> Shin-Hyun Kim , Alireza Abbaspourrad , David Weitz
12:39PM - 12:51PM	<u>Z50.00006: Coupled oscillations in a 1D emulsion of Belousov-Zhabotinsky droplets</u> Ning Li , Jorge Delgado , Hector Gonzalez Ochoa , Marcin Leda , Seth Fraden , Irving Epstein
12:51PM - 1:03PM	<u>Z50.00007: Double emulsion templated monodisperse phospholipid liposomes incorporating Doxorubicin hydrochloride</u> Mingtian Hai , David Weitz
1:03PM - 1:15PM	<u>Z50.00008: Drops of Yield-Stress Liquid Impacting a Solid Surface</u> Qin Xu , Heinrich Jaeger
1:15PM - 1:27PM	<u>Z50.00009: Oscillatory shear of non-colloidal fiber suspensions</u> Alexandre Franceschini , Emmanouela Filippidi , Elizabeth Guazzelli , David Pine
1:27PM - 1:39PM	<u>Z50.00010: Dynamics in Semidilute Rod Suspensions</u> Pramukta Kumar , Dan Blair , Jeffrey Urbach
1:39PM - 1:51PM	<u>Z50.00011: The field effect on local temperature distribution in natural convection in a magnetic fluid</u> Jun Huang , Weili Luo
1:51PM - 2:03PM	<u>Z50.00012: Mixing dynamics of slurry in rotating drum</u> Kiwing To , Chun Chung Liao , Shu-San Hsiau
2:03PM - 2:15PM	<u>Z50.00013: Bubble production using a Non-Newtonian fluid in microfluidic flow focusing device</u> Yi-Lin Wang , Thomas Ward , Christine Grant

## SPECIAL DPOLY EVENTS

### DPOLY Reception:

5:30 PM, Sunday, February 26, 2012

Paddy O's

33 Union St. Boston Phone: (617) 367-2114

This DPOLY reception recognizes **Matthew Tirrell** (recipient of the 2012 Polymer Physics Prize) and **Rachel Segalman** (recipient of the 2012 Dillon Medal).

### DPOLY Business Meeting

5:45 PM, Tuesday, February 28, 2012

Boston Convention Center

Room 160 ABC

### DPOLY Award Lectures

#### *Polymer Physics Prize:*

8:00 AM, Tuesday, February 28, 2012

Boston Convention Center

Room 160 ABC

**Matthew Tirrell**

Polymer Physics Prize Lecture: *Polyelectrolyte complexes:*

*New routes to useful soft materials.*

#### *Padden Award Symposium:*

11:15 AM, Tuesday, February 28, 2012

Boston Convention Center

Room 159

#### *Dillon Medal:*

2:30 PM, Tuesday, February 28, 2012

Boston Convention Center

Room 160 ABC

**Rachel Segalman**

Dillon Medal Lecture: *Self-assembly of rod-coil block polymers*

Disclaimer: The information contained in this booklet is unofficial and is accurate as of 1/4/2012. For all official information please refer to the APS March Meeting Program (<http://meeting.aps.org/Meeting/MAR12/>).