

2017 Notre Dame–Purdue Symposium on Soft Matter & Polymers and Poster Session

Saturday, September 16th, 2017 • Wilmeth Active Learning Center • Purdue University

Organizers: Jianguo Mei (jgmei@purdue.edu), Haifeng Gao (hgao@nd.edu), and Bryan Boudouris (boudouris@purdue.edu)

Registration link: <http://www.jianguomei.com/nd-2017.html>

Agenda

8:30am	Check-in (Wilmeth Active Learning Center) Outside ROOM 3087	
	Technical Session 1 • Jianguo Mei (jgmei@purdue.edu)	
	<i>Presenter</i>	<i>Title of talk</i>
9:20am	Jean Chmielewski, Purdue University <i>Chemistry</i>	Hierarchical Assembly of Peptide-Based Materials for Regenerative Medicine
9:40am	William A. Phillip, Notre Dame <i>Chemical & Biomolecular Engineering</i>	Manufacturing Functional Membranes from Nanostructured Polymers
10:00am	Tengfei Luo, Notre Dame <i>Aerospace and Mechanical Engineering</i>	Chain Confirmation and Thermal Conductivity in Bulk Amorphous Polymers
10:20am	Coffee Break, • Wilmeth Active Learning Center	
10:40am	Brett Savoie, Purdue University <i>Chemical Engineering</i>	High-throughput Design of Polymer Electrolytes for Battery Applications
11:00am	Matthew J. Webber, Notre Dame <i>Chemical & Biomolecular Engineering</i>	Supramolecular Design of Soft Materials and Assemblies
11:20am	Shelley Claridge, Purdue University <i>Chemistry</i>	Sub-nm-Thick Functional Polymer Skins for 2D Materials
11:40pm	Taking Photo, Lunch Break, WALC	
	Technical Session 2 • Haifeng Gao (hgao@nd.edu)	
	<i>Presenter</i>	<i>Title of talk</i>
1:30pm	Jianjun Cheng, UIUC <i>Materials Science and Engineering</i>	Cooperative Polymerization of N-Carboxyanhydride
2:00pm	Jonathan K. Whitmer, Notre Dame <i>Chemical & Biomolecular Engineering</i>	Thermodynamics of Charging in Weak Polyelectrolytes
2:20pm	You-Yeon Won, Purdue University <i>Chemical Engineering</i>	Polymer Lung Surfactants
2:40pm	Break, WALC, Poster Setup (can continue after the last talk)	
3:00pm	Ruilan Guo, Notre Dame <i>Chemical & Biomolecular Engineering</i>	Hierarchically Functional Polymers for Advanced Membrane Applications
3:20pm	Amar H. Flood, Indiana University <i>Chemistry</i>	Towards anion-templated supramolecular polymers
4:00–6:00pm	Graduate Student and Postdoc Poster Session & Science Forum • RM3087	

07.20.17



1	James Dobscha	Indiana University	Shape-persistent Carbazole Macrocycles as Candidates for Self-organized Bulk Heterojunctions	James R. Dobscha, Henry D. Castillo, Rose D. Taylor, Rachel E. Fadler, Yun Liu, John Michael Espinosa-Duran, Sibali Debnath, Yuriy V. Sereda, Krishnan Raghavachari, Peter J. Ortoleva, Steven L. Tait, Amar H. Flood
2	Wei Zhao	Indiana University	Stimuli-responsive Self-assemblies of Cyanostar and Organophosphates	Wei Zhao, Bo Qiao, and Amar H. Flood
3	Francisco Montes	Purdue University	Using Cellulose Nanocrystals (CNCs) with Portland Cements – Effect on Rheology	Francisco J. Montes, Tengfei Fu, William J. Weiss, Jeffrey P. Youngblood
4	Alexander Wei	Purdue University	Scalable Manufacturing of Nanoporous Membranes Using Nanoparticle-Guided Etching	Naveen Kadasala, Mojib Saei, Taehoo Chang, Biwei Deng, Gary J. Cheng, Alexander Wei
5	Jeremiah Bechtold	Purdue University	Patterning Noncovalent Mixed Monolayers with Langmuir–Schaefer Deposition	Jeremiah Bechtold, Tyson Davis, Shelley A. Claridge
6	Jiemin Zhao	Purdue University	Post-Assembly Stabilization of Rational Designed DNA Crystals	Jiemin Zhao, Qian Li, Xiang Li, Nadrian Seeman and Chengde Mao
7	Aristide Gumyusenge	Purdue University	Solution Processed Isoindigo-based Semiconducting Nanofibers for Flexible and Stretchable Electronics	Aristide Gumyusenge, Xikang Zhao, Yan Zhao, Ge Qu, Ying Diao, and Jianguo Mei
8	Megan Forshey	Purdue University	Microlayered PET/PVDF Films: Mechano-Optical Behavior In Uniaxial Extension	Megan Forshey, Dr. Miko Cakmak
9	Yan Zhao	Purdue University	Continuous Melt-Drawing of Highly Aligned Flexible and Stretchable Semiconducting Microfibers for Organic Electronics	Yan Zhao, Aristide Gumyusenge, Jiazhi He, Ge Qu, William W. McNutt, Yuan Long, Hongyi Zhang, Libai Huang, Ying Diao, Jianguo Mei*
10	Daniel Wilcox	Purdue University	Manipulating Energy Transfer between a Photoexcited Conjugated Polymer and Open-Shell Small Molecules	Daniel Wilcox, Sanjoy Mukherjee, Bryan Boudouris
11	Zeynep MUTLU	Purdue University	Mechano-optical Behavior of Nanocomposite Hydrogels	Zeynep Mutlu, Siamak Shams Es-haghi, Mukerrem Cakmak

12	Miran Mavlan	Purdue University	Cellulose Nanomaterials: Chemo-mechanical Surface Modifications and Chemical Composition Analysis	Miran Mavlan, Reaz Chowdhury, Mehdi Shishehbor, Thora Maltas, Jeffery Youngblood, Pablo Zavattieri, Alexander Wei
13	Zhe Li	Purdue University	Reconfiguration of DNA molecular arrays driven by information relay	Zhe Li
14	Jiayingzi Wu	Purdue University	Semiconducting Polymer Nanoparticles for Centimeters-Deep Photoacoustic Imaging in the Second Near-Infrared Window	Jiayingzi Wu, Liyan You, Lu Lan, Hyeon Jeong Lee, Saadia T. Chaudhry, Rui Li, Ji-Xin Cheng*, Jianguo Mei*
15	Longfei Liu	Purdue University	Programming DNA Self-assembly without Base Pairing	Longfei Liu, Chengde Mao
16	Qian Li	Purdue University	Can Strand Displacement Take Place in DNA Triplex?	Qian Li, Chengde Mao
17	ARMEN YILDIRIM	Purdue University	Field Assisted Roll-to-Roll Process for Flexible Electronics	Armen Yildirim, Siamak Shams Es-haghi, Miko Cakmak
18	Martha Hay	Purdue University	Controlling Open-Shell Loading in Norbornene-Based Radical Polymers Modulates the Solid-State Charge Transport Exponentially	Martha E. Hay, Si Hui Wong, Sanjoy Mukherjee, Bryan W. Boudouris
19	Sanjay Debnath	Purdue University		
20	SungHo Yook	Purdue University	Electric-Field Alignment of Polymer Blends with Dispersed Nanoparticles for Mesoporous Reactive Membranes	SungHo Yook, Yuanhao Guo, Miko Cakmak*
21	Tae Hoo Chang	Purdue University	Beacon Like Aptamer Based Bio-sensors Using by Metal-enhanced Fluorescence	Taehoo Chang, Junkai Xie, Kyle Wettschurack, Ericka Kistler, Oscar Sanchez-Medina, Chongli Yuan, Alexander Wei
22	Noelia Almodovar	Purdue University	Molecular Simulation Evaluation of Macromolecular Transport through Nanofiltration Membranes	Noelia Almodovar, Bryan Boudouris, and David Corti
23	Jaeyub Chung	Purdue University	Surface Tension Behavior of Aqueous Solutions of a Propoxylated Surfactant and Interfacial Tension Behavior against a Crude Oil	Jaeyub Chung, Prof. Bryan W. Boudouris, and Prof. Elias I. Franses

24	Varad Vinayak Agarkar	Purdue University		Varad Agarkar, Yongho Joo, Bryan W. Boudouris
25	Yongho Joo	Purdue University	Doping Effect of Radical Polymer on SWCNT Electrode	Yongho Joo, Sanjoy Mukherjee, Bryan W. Boudouris
26	Shane Russell	Purdue University	A Spectroscopic Probe of Noncovalent Monolayer Ordering on Layered Materials	Shane R. Russell, Shelley A. Claridge
27	Heather Siebert	Purdue University	Mimicking Nature to Design Biodegradable Adhesives from Renewable Resources	Heather Siebert, Courtney Jenkins, Jonathan Wilker
28	Erfan Mohammadi	University of Illinois at Urbana-Champaign	Dynamic-template-directed multiscale assembly for large-area coating of highly-aligned conjugated polymer thin films	Erfan Mohammadi, Ying Diao
29	Ziyuan Song	University of Illinois at Urbana-Champaign	Modulation of polypeptide conformation through donor-acceptor transformation of side-chain hydrogen bonding ligands	Ziyuan Song, Rachael A. Mansbach, Hua He, Ryan Baumgartner, Andrew L. Ferguson, Lichen Yin, Jianjun Cheng
30	Michael VandenBerg	University of Notre Dame	Peptide-functionalized benzenetricarboxamides as supramolecular biomaterials	Michael VandenBerg, Matthew Webber
31	Qinnan Zhang	University of Notre Dame		
32	Feng Gao	University of Notre Dame	The Effects of Charge Patterning on Ion Transport through Charge Mosaic Membranes	Feng Gao, Aaron Hunter, William Phillip
33	Weiping Gan	University of Notre Dame	Explore the Effect of Ligand on the Synthesis of Hyperbranched Polymers via Copper-catalyzed Azide-Alkyne Cycloaddition (CuAAC) Polymerization of AB ₂ monomers	Weiping Gan, Xiaosong Cao, Yi Shi, Lei Zou and Haifeng Gao*
34	RUIMIN MA	University of Notre Dame	Interfacial thermal transport in boron nitride nanocomposite	Ruimin Ma, Teng Zhang, Nuo Yang, Tengfei Luo

35	Xingfei Wei	University of Notre Dame	Molecular Fin Effect from Heterogeneous Self-Assembled Monolayer Enhances Thermal Conductance across Hard-Soft Interfaces	Xingfei Wei, Teng Zhang, Tengfei Luo
36	Yizhou Zhang	University of Notre Dame	High-flux, high capacity membrane adsorber platform based on block copolymer composite	Yizhou Zhang, William A. Phillip
37	Drake Neilands	University of Notre Dame	rROP of MPDL: Improved Kinetics Through Miniemulsion	Drake Neilands, Haifeng Gao
38	Xiaosong Cao	University of Notre Dame	Orthogonal Loading of Various Functional Groups onto One Hyperbranched Polymer with Layered Structure	Xiaosong Cao, Yi Shi, Weiping Gan, Haifeng Gao
39	zou lei	University of Notre Dame	Molecularly Well Defined Nanomedicine with Quantitative Modular Drug Loading	Lei Zou, Matthew Webber
40	Jugal Sahoo	University of Notre Dame	Self-Assembly of Tripeptide amphiphiles and their Sequence-Dependent Nanostructures	Jugal Kishore Sahoo, Calvin Nazareth, Michael VandenBerg, Matthew J. Webber
41	Hunter Ford	University of Notre Dame	Crosslinked Ionomer Films For Use As Magnesium Sulfur Battery Cathode Coatings	Hunter O. Ford, Laura C. Merrill, Jennifer L. Schaefer
42	Tanner Corrado	University of Notre Dame	Enhanced gas separation performance in a novel triptycene-incorporated polysulfone membrane	Tanner Corrado, Joseph Aboki, Shuangjiang Luo, Ruilan Guo
43	Hannah Naguib	University of Notre Dame	Synthesis of Hyperbranched Polymers with Post-Functionalization Specificity	Hannah Naguib, Xiaosong Cao, Haifeng Gao
44	Reaz Chowdhury	Purdue University	Continuous roll-to-roll fabrication of transparent cellulose nanocrystal (CNC) coatings with controlled anisotropy	Reaz A Chowdhury, Jeffrey Youngblood
45	MD NURUDDIN	Purdue University	Leaching of Organic Molecules From Cured-In-Place Pipe (CIPP)	Md Nuruddin, John Howarter, Jeffrey Youngblood
46	Amelia Putnam	Purdue University	Enhancing the adhesive bonding of a low-modulus, biomimetic polymer	Amelia A. Putnam, Jonathan J. Wilker

47	Armen Yildirim	Purdue University	Production of Flexible and Transparent PZT/Graphene based Pieznanogenerators (PENGs) for Self-Powered Electronics and Sensor Applications	Armen Yildirim, Siamak Shams Es-haghi, Tingting Shen, Joerg Appenzeller, Miko Cakmak
48	Terry Villarreal	Purdue University	Modulating wettability of layered materials by controlling ligand polar headgroup dynamics	Terry A Villarreal, Shane R Russell, Jae Jin Bang, Justin K Patterson, Jacob T Brooks, Shelley A Claridge
49	Zijiong Li	Purdue University	Activated pyrene decorated graphene with enhanced performance for electrochemical energy storage	Zijiong Li, Weiyang Zhang, Yanchun Li, and Zhen Qin
50	Ashlin Porter	Purdue University	Controlling Wettability of 2-D Materials Through Lateral Hydrogen Bonding Networks in Noncovalent Monolayers	Ashlin G. Porter, Ashley M. Arcidiacono, Jae Jin Bang, Shane R. Russell, Shelley A. Claridge
51	Tingting Shen	Purdue University	Production of Flexible and Transparent PZT/Graphene based Pieznanogenerators (PENGs) for Self-Powered Electronics and Sensor Applications	Armen Yildirim, Siamak Shams Es- Haghi, Tingting Shen, Joerg Appenzeller, Miko Cakmak
52	Jae Jin Bang	Purdue University	Investigating mechanisms of Langmuir-Schaefer transfer for controlled assembly of amphiphiles on layered materials	Jae JIn Bang, Tyson C. Davis, Shelley A. Claridge
53	Rachel Fadler	Indiana University	Phosphate-templated Rotaxanes Towards Molecular Machines	Rachel E. Fadler, Bo Qiao, Niklas F. König, Jean-François Lutz, Abhishek Singharoy, Amar H. Flood
54	Yunsong Pang	University of Notre Dame	Polyethylene/Graphene Nanocomposite Film with Superior Mechanical Strength	Junlong Yang, Tengfei Luo
55	Gregory Kline	University of Notre Dame	New Macromolecular Design of PEO-rich Membranes for CO ₂ -selective gas separations	Gregory K. Kline, Jennifer R. Weidman, Qinnan Zhang, and Ruilan Guo
56	Monessha Nambiar	Purdue University	Higher-order assembly of coiled-coil trimers into banded microstructures	Monessha Nambiar, Li-Sheng Wang, Jean Chmielewski

57	Maria Guix Noguera	Purdue University	Advanced Micro-Force Sensing Mobile Microrobots with polymeric-based compliant structures for mechanobiological studies and theranostics	Maria Guix, Jianxiong Wang, Ze An, Benjamin V. Johnson, David Cappelleri
58	Yelin Ni	Purdue University	Linear Viscoelastic Relaxation For Crosslinked Polymer Network Above Glass Transition	Yelin Ni, Grigori A. Medvedev, James M. Caruthers
59	Ge Qu	University of Illinois Urbana-Champaign	Understanding Interfacial Alignment in Solution Coated Conjugated Polymer Thin Films	Ge Qu, Xikang Zhao, Gregory M. Newbloom, Fengjiao Zhang, Erfan Mohammadi, Joseph W. Strzalka, Lilo D. Pozzo, Jianguo Mei, Ying Diao
60	Vikramjit Rathee	University of Notre Dame		
61	Md Rejaul Hoq	Purdue University	Development of Inhibitor Modified Affinity Capture Grids for High Resolution Single Particle Reconstruction Analysis of p97	Md Rejaul Hoq, Advisor: David H. Thompson.
62	Yuichi Hirai	University of Notre Dame	Luminescence of lanthanide(III) coordination polymers induced by UV irradiation and mechanical force	Yuichi Hirai, Takayuki Nakanishi, Yuichi Kitagawa, Koji Fushimi, Yasuchika Hasegawa
63	Chelsea Davis	Purdue University	Mechanophore Activation in a Cross-Linked Polymer Matrix via Instrumented Scratch	Chelsea Davis
64	Ruibo Wang	UIUC	Controlled Ring-Opening Polymerization of O-Carboxyanhydrides Using β -Diiminate Zinc Catalyst	Ruibo Wang
65	Liyan You	Purdue University	Tunable green electrochromic polymers via C-H activation	Liyan You, Jiazhi He, Jianguo Mei*