

Joint APS/CNM WK#8: Dynamics in Soft Matter with Emphasis on Complex Fluids (XPCS)

Tuesday, May 11, Morning

9:00 – 9:15 Suresh Narayanan (Advanced Photon Source, Argonne National Laboratory) and Xiao-Min Lin (Center for Nanoscale Materials, Argonne National Laboratory)
Opening Remarks

9:15 – 9:45 Qingteng Zhang (Advanced Photon Source, Argonne National Laboratory)
APS-U SA-XPCS Beamline

Session 1 Chair: Samanvaya Srivastava, University of California, Los Angeles

9:45 – 10:15 Mahesh Mahanthappa (University of Minnesota)
XPCS Analyses of Disordered and Ordered Sphere-forming Diblock Polymer Melts

10:15 – 10:45 Arthi Jayaraman (University of Delaware)
New Computational Methods to Analyze and Interpret Small-angle Scattering Profiles for Polymers and Soft Materials

10:45 – 11:05 Samanvaya Srivastava (University of California, Los Angeles)
Session Discussion

11:05 – 11:20 Break

Session 2 Chair: Jeffrey Richards, Northwestern University

11:20 – 11:50 Ryan Poling-Skutvik (University of Rhode Island)
Relating Dynamics of Soft Materials across Nano, Micro, and Mesoscales

11:50 – 12:20 Sanat Kumar (Columbia University/Brookhaven National Laboratory)
Dynamic Scattering Techniques to Understand the Unusual Transport Behavior of Grafted Nanoparticle Melts

12:20 – 12:50 Michael Hore (Case Western Reserve University)
Polymer Structure and Dynamics in the Corona of Hairy Nanoparticles

12:50 – 1:20 Jeffrey Richards (Northwestern University)
Session Discussion

1:20 – 1:30 Suresh Narayanan (Advanced Photon Source, Argonne National Laboratory)
Closing Remarks

Wednesday, May 12, Morning

9:00 – 9:15 Xiao-Min Lin (Center for Nanoscale Materials, Argonne National Laboratory)
Overview: Rheo-XPCS Capability

Session 1 Chair: Simon Rogers, University of Illinois, Urbana-Champaign

9:15 – 9:45 Robert Leheny (Johns Hopkins University)
Connecting Microscopic Dynamics and Rheology of Soft Materials with X-ray Photon Correlation Spectroscopy

9:45 – 10:15 Emanuela Del Gado (Georgetown University)
Computational Rheology of Soft Particulate Gels and Jammed Soft Solids: Microscopic Dynamical Processes and Stress Relaxation

10:15 – 10:45 Lilian Hsiao (North Carolina State University)
Spatiotemporal Heterogeneities of Gelling Nanoemulsions

10:45 – 11:05 Simon Rogers (University of Illinois, Urbana-Champaign)
Session 1 Discussion

11:05 – 11:20 Break

Session 2 Chair: James Harden, University of Ottawa

11:20 – 11:50 Srinivasa Raghavan (University of Maryland)
Wormlike Micelles and Vesicles in Polar Organic Solvents: Extending Self-assembly to New Systems and Sub-zero Temperatures

11:50 – 12:20 Daniel Blair (Georgetown University)
Opto-Rheology of Shear Thickening in Living Active Matter

12:20 – 12:50 Lilo Pozzo (University of Washington)
Interfacial Structure and Dynamics in Emulsion Systems from Neutron and X-ray Scattering

12:50 – 1:20 James Harden (University of Ottawa)
Session 2 Discussion

1:20 – 1:30 Suresh Narayanan (Advanced Photon Source, Argonne National Laboratory) and Xiao-Min Lin (Center for Nanoscale Materials, Argonne National Laboratory)
Closing Remarks and Plans for Workshop Summary