3rd South-East Workshop on Soft Materials and Interfaces
Georgia Institute of Technology – Emory University
May 15, 2009

Marcus Nano Building on Georgia Institute of Technology Campus

Registration, Breakfast, Breaks, and Lunch:
1st Floor Center Gallery
Seminars: 1st Floor Conference Room 1116

8:30 AM - 9:00 AM
Breakfast and Registration, 1st Floor Center Gallery

9:00 AM - 9:15 AM
Welcome (Riedo)

Morning Invited Speakers (Weeks)
9:15 AM - 10:00 AM
Harold Craighead, Cornell University
“Single Molecule Manipulation and Analysis in Nanofluidic Systems”

10:00 AM - 10:45 AM
Cheng Zhu, Georgia Tech
“Single-molecule biomechanics ”

10:45 AM - 11:15 AM
Coffee Break and Poster Session

11:15 AM - 12:15 PM
Sound Bites I: Biological and Soft Matter (Goldman)
Andrew Lyon, Georgia Tech
Ultra-squishy Microgels
Todd Shulek, Georgia Tech
Counting Biological Bonds through Force
Ashlee St. John, Georgia Tech
Quantum Dot Mobility in Live Cells
Venkata Gundabala, Georgia Tech
Applying Electric Fields to Coflowing Liquid Streams in a Microfluidic Device
Daniel Goldman, Georgia Tech
Influence of Volume Fraction on Granular Impact of Dynamics and Cratering
Nick Gravish, Georgia Tech
Onset of Stick Slip Oscillations During Drag in Granular Media of Varying Compaction
Lionel London, Georgia Tech
Fluctuations and Jamming During Penetration into Granular Media
Chen Li, Georgia Tech
Experiments and model of a robot walking on sand
Yang Ding, Georgia Tech
Resistive force theory of sand swimming
Nicole Mazouchova, Georgia Tech
Laboratory Experiments on the Formation of Tunnels of Digging Fire Ants
Catherine Rivet, Georgia Tech
Microfluidics for Magnitude and Frequency Analysis of Calcium Dynamics in T Cells
Boyang Zhang, Georgia Tech
Particle Physics in Microfluidic Mixers
Bryan Baker, Georgia Tech
Using Double-stranded DNA Probes to Assemble and Disassemble Colloidal Satellite Structures
Hyewon Lee, Georgia Tech
Multiplex Pressure Measurement in Microsystems
Matthew Crane, Georgia Tech
Automation of Model Organism Imaging
Vamsi Kodali, Georgia Tech
Fc Receptor Spacing and Clustering
Kyle Anderson, Georgia Tech
Plasma-Enhanced Deposition of Ultrathin Crosslinked Amino Acid Films for Conformal Biometallization

12:15 PM - 1:30 PM
Lunch and Discussion

Afternoon Invited Speakers
1:30 PM - 2:15 PM
Moonhor Ree, PAL Synchrotron, Korea
“Synchrotron X-Ray Scattering Studies of Nanostructured Functional Polymer Systems and Bio-Macromolecules (Proteins and Polynucleic Acids) in Nature”

2:15 PM - 3:00 PM
Jennifer Curtis, Georgia Tech
“Untangling the Cell Coat Mystery: A Physical Investigation”

3:00 PM - 4:00 PM
Sound Bites II: Complex and Soft Matter (Kindt)
James Kindt, Emory University
The Puzzle of Porous Vesicles in Bicelle Mixtures
Dandan Chen, Emory University
Shear Induced Structural Relaxation in a Supercooled Colloidal Liquid
Jae Kyu Cho, Georgia Tech
Anomalous Diffusion of Stimuli-responsive Colloids under Geometric Confinement
Joaquim Clara-Rahola, Georgia Tech
Morphology of Temperature Sensitive PNIPAM-PEG Microgels by Dynamic and Static Light Scattering
Kazem Edmond, Emory University
The Role of Cooperative Motion in a Confined Colloidal System
Qiong Guo, Georgia Tech
Charge Induced by AOT Reversed Micelles I Non-polar Liquids
Juan-Jose Lietor-Santos, Georgia Tech
Effects of Hydrostatic Pressure over the Phase Behavior of Microgel Particles by Neutron Scattering
Ekapop Pairam, Georgia Tech
Toroidal Droplets
Alexander Popov, Georgia Tech
Stochastic and Particle Models for Suspensions of Swelling Colloids
Vikram Prasad, Emory University
2D or not 2D? That's the question
Rahimian, Georgia Tech
Dynamics of Inextensible Vesicles Suspended in a Two-Dimensional Stokes Flow
Benjamin Sierra, Georgia Tech
Viscoelasticity and Flow of Ionic Microgel Suspensions
Srikanth Singamaneni, Georgia Tech
Mechanical Instabilities in Periodic, Porous Polymer Microtruss Structures
Ana West, Emory University
Modeling the Dynamic Properties of Reversible Polymer Networks
Jennifer Lynch, Emory University
Memory in Aging Colloidal Glasses
Teresa Lopez Leon, Georgia Tech
Spherical Shells of Liquid Crystal: Transitions Between Defect Structures

4:00 PM - 4:30 PM
Coffee, Cookies and Poster Session

4:30 PM – 5:00 PM
Sound Bites III: Nano and Soft Matter (Lu)
Gregory Book, Georgia Tech
The Nanotechnology Research Center at Ga Tech
Deborah Ortiz, Georgia Tech
AFM Slippage Study of Water
Suenne Kim, Georgia Tech
Synthesis of Nano-sized PPV Polymer in Ambient Condition by TCNL
Keith Carroll, Georgia Tech
DNA Patterning: The TCNL Way
Anthony Giordano, Georgia Tech
Phosphonic Acids for Surface Modification
Matthew Sartin, Georgia Tech
Optical Limiting Materials
Delong Song, Georgia Tech
Surface Modification of Cellulose Fibers via Starch Grafting
James Hardin, Georgia Tech
Controlled Release of DNA from Gelatin Hydrogels for Potential Application to Drug Delivery
Ivan Caceres, Georgia Tech
Rapid Phenotyping and Visual Screens Enabled by Microfluidics
Kwanghun Chung, Georgia Tech
Automated Microsystem for High-throughput Imaging and Sorting of C
Posters (during Coffee Breaks)

William March
Bounded N-body Summation of Atomic Integrals

Min Sang Park
Study of Orientation States and Dynamics in Thermotropic Biaxial Nematic LC

James Waters
Multi-Tree Algorithms for Classical Molecular Dynamics

Beom-Jin Yoon
Orientational Fluctuation Study in Nematic Liquid Crystals by High Speed Micrograph

Kenneth Desmond
Jamming in 2D Emulsions

Liang Guo
High Capacity Elastronics

Mateo Garcia
CT Reconstruction of 3D Tunnel Formation by Digging Fire Ants

Adam Kamor
Numerical Model of a Sand Swimming Lizard

Ryan Maladen
Hi Speed X-ray Observation of a Sand Swimming Lizard

Andrei Savu
Attempts to Crystallize a Fluidized Bed

Sarah Steinmetz
Recording of Muscle Activity During Sand Swimming and Burial

Hamdi Torun
Micromachined Membrane-Based Active Probes for Biomolecular Force Spectroscopy