



Agilent Technologies



Georgia Institute
of Technology

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

Suene 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

Rapid Phenotyping and Visual Screens Enabled by Microfluidics

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



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