



Okinawa Institute of Science and Technology
Graduate University

Workshop:
Recent Trends in Microrheology and Microfluidics

Day 1: 10th January 2023 (location: OIST Center Building Room C209)

9:00-9:30 Opening remarks by Prof. Amy Q. Shen

Session 1 (chair: Amy Shen, OIST)

9:30-10:20 Frank Scheffold, University of Fribourg, Switzerland

Title: “**Linear and Non-Linear Microrheology of Soft Particle Suspensions**”

10:20-10:40 Coffee break

10:40-11:30 Atsushi Matsumoto, University of Fukui, Japan

Title: “**Microrheological Analysis on the Entanglement Properties of Polyelectrolyte Semidilute Solutions**”

11:30-12:20 Erika Eiser, University of Cambridge, UK

Title: “**Passive Microrheology in DNA-Hydrogels**”

12:20-14:20 Lunch and campus tour

Session 2 (chair: Simon Haward, OIST)

14:20-15:10 Kaori Kuribayashi-Shigetomi, Hokkaido University, Japan

Title: “**Construction of Three-Dimensional Structures of Cells using Combinations of Micro/nano Process, Computational Origami and Cell Origami Techniques**”

15:10-16:00 James Harden, University of Ottawa, Canada

Title: “**Rheo-XPCS Studies of Yielding and Recovery in Nanocolloidal Soft Glasses**”

16:00-16:30 Break and transfer to OIST Conference Center

16:30-18:00 Poster Session at OIST Conference Center

18:15-20:30 Dinner at OIST Conference Center

Day 2: 11th January 2023 (location: Seaside House)

Session 1 (chair: Eric Furst)

9:00-9:50 Irmgard Bischofberger, MIT, USA

Title: **“Instabilities and Flow-Induced Structures in Nematic Liquid Crystals”**

9:50-10:40 Patrick Spicer, University of New South Wales, Australia

Title: **“Multiple Length Scale Flow and Mechanics of Complex Bacterial Nanocellulose Structures”**

10:40-11:00 Coffee break

11:00-11:30 Tatiana Porto dos Santos, OIST, Japan

Title: **“Flow and Alignment of Protein Nanofibril Suspensions”**

11:30-12:20 Anderson Shum, University of Hong Kong, Hong Kong

Title: **“Droplets and Microfluidics: What’s Next?”**

12:20-13:30 Lunch

Session 2 (chair: Irmgard Bischofberger)

13:30-14:20 Katsuhiko Sato, Hokkaido University, Japan

Title: **“Cortical Flow Beneath the Plasma Membrane Induces Cluster Cell Migration”**

14:20-15:10 Eliot Fried, OIST, Japan

Title: **“Impact of Peplomer Charge Heterogeneity on the Rotational Diffusivity of a Suspension of Coronavirions”**

15:10-18:30 Free time/excursion (Okashi Goten Sweet Factory, Busena Marine Park Underwater Observatory, Cape Manzamo).

19:00-21:00 Dinner at **Chura Hall, Seaside House**

Day 3: 12th January 2023 (location: Seaside House)

Session 1 (chair : Erika Eiser)

9:10-10:00 Eric Furst, University of Delaware, USA

Title: **“Diffusing Wave Spectroscopy of Colloidal Dispersions”**

10:00-10:30 Vincenzo Calabrese, OIST, Japan

Title: **“A Unified Framework to Describe Shear- and Extension-Induced Alignment of Macromolecules of Various Flexibility”**

10:30-10:50 Coffee break

10:50-11:40 Jun Dong Park, Sookmyung Women’s University, Korea

Title: **“Exploring Complex Rheological Behavior of Soft Materials with Large Amplitude Oscillatory Shear (LAOS)”**

11:40-12:10 Simon Haward, OIST, Japan

Title: **“Optimized Microfluidic Device for Homogeneous Uniaxial and Biaxial Extension of Mobile Fluids”**

12:10-13:10 Lunch

Session 2 (chair: Vincenzo Calabrese)

13:10-14:00 Norbert Willenbacher, KIT, Germany

Title: **“Microheterogeneities Everywhere: A Microrheological Approach for Visualization and Characterization”**

14:00-14:50 Akihiro Kusumi, OIST, Japan

Title: **“Development of the Ultrafast Camera for Single-Molecule Imaging and the Discovery of Metastable Nano-Liquid Signaling Platforms on the Cell Membrane”**

14:50-15:10 Coffee break

15:10-16:00 Kenji Urayama, Kyoto University, Japan

Title: **“Crack Tip Analysis for Fast Moving Crack in Elastomers”**

16:00-16:50 Jeff Giacomini, Queens University, Canada

Title: **“Confinement and Complex Viscosity”**

16:50-18:30 Free time, 19:00-21:00 Dinner at **Chura Hall, Seaside House**