

Furukawa LAB.

[Nonlinear and nonequilibrium phenomena in complex fluids]

Department of Fundamental Engineering

Physics of Complex Fluids

Department of Applied Physics

<http://www.complexfluid.iis.u-tokyo.ac.jp>

We theoretically investigate non-linear and non-equilibrium phenomena in various soft materials and complex fluids, from glasses, colloids and granular systems to bacteria.

In recent years, we have primarily focused on the following problems:

- (1) The origin and role of spatial correlations of anomalous hydrodynamic transport in supercooled liquids
- (2) Non-Newtonian rheology of glassy and granular materials (shear-thinning, shear-thickening, fracture, etc.)
- (3) The effects of (near-field) hydrodynamic interactions on the collective dynamics of bacterial suspensions.

