

## RESEARCH TOPICS:

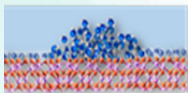
Current research topics aim at identifying and analyzing long range correlated (collective) effects in fluids



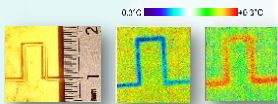
**Structural studies:** Self-organized systems (thermotropic, lyotropic, ionic), polymer melts (usual, mesomorphic, semiconductor), simple liquids, ionic, paramagnetic liquids (Van der Waals, hydrogen bonded) and physiological fluids. Scaling laws.



**Extreme conditions:** hydrostatic pressure, confinement (nanotubes), flow near phase transitions, chain conformation under flow, liquid-surface interactions, etc studied using **Large Research Facilities:** elastic & inelastic scattering, diffraction & neutron imaging.



**Dynamics:** Low frequency mechanical behavior: a no man's land revealing mesoscopic collective liquid properties. Dynamic (viscoelastic and flow), optical (birefringence), magnetic (liquid crystals, ionic liquids, paramagnetic liquids) and **microthermal** study of fluids as well as **phononic approach** of the liquid-solid interactions.



**Thermal emissivity:** Identifying the thermal response of confined fluids to mechanical stress (without thermal source).