



Seminar

Dynamics in the Configuration Space of a Supercooled Liquid



Peter Harrowell

School of Chemistry, University of Sydney, Australia

Time: 2:00 pm, Oct.18, 2013 (Friday)

2013 10 18

2:00

Venue: Conference Room B(630), No. 5 Science Building
630

Abstract

Understanding the microscopic origins of the increasing viscosity of liquids as they are supercooled and the glass transition that finally results as the relaxation times become too slow to observe represents a central challenge for condensed matter physics and materials science. Our progress in this task is best understood from the perspective of the dynamics of the liquid configurations through the high dimensional space (the configurational space) consisting of all the particle coordinates. In this talk we will review what we have learnt about the existence of cooperative length scales, the origin of fragility, the breakdown of Stokes-Einstein scaling and the role of dynamic heterogeneities in supercooled liquids.

About the Speaker

Peter Harrowell is Professor of Theoretical Chemistry at the University of Sydney. He completed his PhD from the University of Chicago in 1986. After a postdoc with Marshall Fixman at Colorado State, he took up a lectureship at the University of Sydney in 1989. Professor Harrowell research has included theoretical and computational studies of crystal nucleation and growth, shear induced disordering in colloidal suspensions, thin film lubrication and the glass transition.