

Available PhD position

Structure and dynamics of disordered molecular systems



In his PhD thesis Albert Einstein connected the macroscopic description of a liquid with the microscopic movement of its molecules at long times. However his theory was not able to explain why the viscosity of some liquids increases so much that they seem to be solids at the human time scale. One example of such a liquid is window glass that at room temperature has the characteristic viscosity of a solid being its molecules disordered as in a liquid.

We can find examples of such liquids in rubbers, in many foods such as candy, in rewritable CD's, and even in some frogs that avoid freezing to death in winter. However, in spite of the great efforts of many scientists, there is no theory able to explain nowadays all the features of such liquids. Our research group is devoted to develop both experiments and molecular models to explain both the dynamics and the structure of disordered systems such as those liquids.

Experimental techniques:

The main technique to be used by the PhD student will be **neutron scattering experiments** to be held in large installations all around Europe.

Modelling:

Molecular dynamics simulation will also be used to describe the physics behind the experiments at a microscopic level.

How to apply:

Applications and CV might be sent to luis.carlos.pardo@upc.edu before 20th December.

For more information you can also visit <http://gcm.upc.edu>