

## **EST on Biomimetic Systems**

2 Ph.D. positions in biological physics are available in the Institute for Condensed Matter Physics at the Heinrich-Heine-University in Düsseldorf, Germany, under the supervision of Prof. S. Egelhaaf. The projects might be performed in collaboration with other participants in the Marie Curie EST on “Biomimetic Systems”, in particular The University of Edinburgh. The experimental projects are concerned with the

### **Physics of Model Living Cells.**

Amphiphiles, such as surfactants or lipids, are ‘schizophrenic’ molecules with a part which likes water and a part which does not like water. In aqueous solution, they can self-assemble into bilayer membranes which form so-called vesicles: nanometer to micrometer-sized, closed, spherical shells containing solvent. These structures attract considerable attention due to their interesting physical properties, as well as due to substantial technological potential, medical importance and, increasingly, their resemblance to living cells. Bilayer membranes form an important part of cells as they not only enclose and compartmentalize cells, but also play an important role in vital cell processes. Using modern experimental methods, such as confocal microscopy and/or laser and neutron scattering techniques, we aim to shed more light on the physics of bilayer membranes to further our scientific understanding of the properties and behaviour of cell membranes and their crucial role for any living organism.

The projects will tentatively start on June 1, 2005 or as soon as possible after this date. The annual salary is expected to be around 31 T€.

Candidates should have a strong background in physics, biophysics or physical chemistry and an interest in biological topics. Depending on the background and interests of the successful candidates, the above projects can be adjusted upon mutual agreement.

Application deadline is March 31, 2005. Applications arriving after this date will be considered if there are still positions available. Applicants should consult <http://www.BiomimeticSystems.org/appli.html> to download the application form and for further instructions. For additional information or informal inquiries, please, send your email to [Stefan.Egelhaaf@uni-duesseldorf.de](mailto:Stefan.Egelhaaf@uni-duesseldorf.de).