



Marie Curie Training Network, 7th, EU Framework Programme

Multiscale Complex Fluid Flows and Interfacial Phenomena (multiflow)

Postdoc position (1 year fixed-term)

At the Beckman Coulter Biomedical GmbH in Munich, Germany
In collaboration with Prof. Achim Wixforth at the University of Augsburg

The postdoc position (Marie Curie Experienced Researcher) will be funded by the EU-Network programme Multiflow (www.multiflow-itn.eu) that has started in Jan.2009.

The candidates are required to have a PhD and a non German nationality (or spent the last 3 years abroad). They should be in the first five years of their research career, starting at the date of obtaining the degree which would formally entitle them to embark on a doctorate.

The project will give the opportunity to work directly in a development group and to visit workshops, lectures and project partners in the network.

Beckman Coulter Biomedical GmbH develops products in the field of medical diagnostics (Advalytix products, www.advalytix.com), microfluidics and surface wave technology.

The research work should address two phase oil/water droplets on solid support with heterogeneous surface chemistry that are applied as biochemical reactors. The biochemical process, called polymerase chain reaction (PCR), demands temperature cycles between 50° and 95°C. We want to increase the stability of the droplet reactor and understand the heat dependent dynamics in the droplets. In detail we are interested in:

- Structure and stability of the droplets depending on the pattern of the heterogeneous surface chemistry
- The dynamics and the convective flow inside the droplets during fast temperature changes or at elevated temperatures
- Temperature and pressure distribution in the droplets during static substrate temperatures
- The behavior of gas bubbles close to the liquid/solid and the liquid/liquid interfaces
- Sliding of two phase droplets on structured surface chemistry

The candidate should preferably be able to do both experimental work and numerical simulations on the two phase droplet system.

You should have a PhD preferably in Physics or a related academic discipline and have a strong interest and track record of the dynamics of soft condensed matter systems.

The ideal candidate would have experience with free surface flow or physico-chemical hydrodynamics.

The willingness to visit and collaborate with other groups of the Marie Curie network MULTIFLOW is essential.

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