

POSTDOCTORAL POSITIONS AVAILABLE FOR 2017

There are two postdoctoral positions available within the project “*Organizing matter: colloids formed by association of surfactants, polymers and nanoparticles*”. These grants include a monthly payment of R\$ 6 820.00 (around USD 2120.00), free of taxes, for up to four years, air tickets for those who live outside the state of São Paulo, and ancillary funds for covering research costs such as consumables and for participation in conferences related to this project.

These positions are available under a 5-years project funded by the São Paulo Research Foundation (FAPESP) involving research groups from the Institute of Chemistry of the University of Campinas (UNICAMP) and the Center for Research in Materials and Energy (CNPEM), both located in Campinas, SP. Both are leading Institutions in Brazil and Latin America equipped with state-of-the-art facilities for research and funded by both Government Agencies and industries. Campinas is a pleasant city, with ca. 1 million inhabitants, located 100 km from the city of São Paulo, with many options for culture and leisure.

We are seeking highly motivated young researchers with background in Chemistry or related areas, experience in the field of colloids supported by a strong publication record. Previous experience in interdisciplinary projects is highly commended to engage in this ambitious project.

Candidates should send a brief motivation letter describing the candidate experience relevant to the topic and an indication of the preferred project, a detailed CV and two recommendation letters to cardosomb@lnls.br, until 31st October. These postdocs are expected to begin in early 2017.

Project 1. Magnetic Janus Nanoparticles

This project aims at exploring the functionalization of magnetic nanoparticles with selected polymers that may display surface segregation. This approach may lead to particles with amphiphilic character by displaying hydrophilic and hydrophobic hemispheres, the so-called Janus particles. The project follows an approach that we successfully applied to gold nanoparticles (*Chem. Commun.* 2016, 4278) and that will be extended to metallic oxides. These Janus nanoparticles will be characterized and explored towards their self-assembling and interfacial behavior. For further details about Project 1, please contact Prof. Watson Loh (wloh@iqm.unicamp.br).

Project 2. Sweet Nanoparticles

Bacteria cell membrane is very simple if compared to mammalian cells which have several specific receptors that are used in the targeting of drugs or functionalized nanoparticles. Thus, due to the lack of specific receptors on the bacteria surface, the nanoparticle-bacteria interaction is mainly driven through electrostatic attraction and/or chemical affinity (*Langmuir* 2014, 7456). In this context, it is possible that nanoparticles coated with saccharide moieties may preferably be adsorbed onto the surface of the bacteria due to the presence of lipopolysaccharides on the existing membrane (*J. Biomed. Nanotech.* 2013, 1817). The core idea of this project is to synthesize nanoparticles (which may or may not have antibiotic in their structure) and

functionalize them with distinct saccharide methacrylate oligomers to obtain nanocarriers which will be specifically targeted to bacteria membrane. For further details about Project 2, please contact Dr. Mateus Cardoso (cardosomb@lnls.br).

Potential candidates are also invited to find more information about:

The Institute of Chemistry: <http://www.iqm.unicamp.br>

UNICAMP: <http://www.unicamp.br/unicamp/?language=en>

CNPEM: <http://cnpem.br>

Campinas: https://www.youtube.com/watch?v=nool_9y02vE