

## **Postdoctoral position in (Micro)biology**

A 14-month post-doctoral position is available starting in April-May 2009 in the *Laboratoire des Interactions Ecotoxicologie, Biodiversité, Ecosystèmes* – LIEBE CNRS UMR 7146 (Metz, France, <http://www.liebe.univ-metz.fr>). The position is funded by a grant provided through the French government's *Agence Nationale de la Recherche*.

The general aim of research project (named *AgingNano&Troph* [Environmental Hazard Assessment of Residues from the Degradation of Commercialized Nanomaterials: Fate, biotransformation and toxicity towards living organisms from aquatic media]) is to set up a multidisciplinary group (physicochemists, chemists, biologists, microbiologists, ecotoxicologists, genotoxicologists) to determine the mechanisms of degradation of four categories of nanomaterials already on the market (cosmetics, paint, self-cleaning glasses and cements) and to characterize the nature, the structure and the physical-chemical properties of the formed residues. From this description, the behaviour of these residues of degradation will be studied with a set of biological targets (bacteria, algae, invertebrates, fishes, human cells) via different exposures and transfer by the water and the food. It will be a question of characterizing the bio-transformations of the Residues of Degradation of Nanomaterials (RDNs) and their ecotoxic and toxic effects on aquatic organisms of different trophic levels and human cells.

Within this general framework, the proposed post-doctoral project will be to:

**1. Evaluate the effect of bacteria** (wild-type and mutant strains from our laboratory collections) **and algae** (*Chlorella vulgaris*; *Scenedesmus subspicatus*; *Selenastrum capricornutum*) **on RDNs**. The aim is to determine to which extent (accumulation, adsorption, transformation, degradation...) the metabolisms of both organisms can affect the mobility and the physicochemical properties of RDNs.

**2. Evaluate the toxicity of RDNs on bacteria and algae**. For bacteria, toxicity of RDNs will be assessed on individual (bacterial growth inhibition) as well as on the community level (bacterial population shift during RDN exposure). For the algae (mentioned above) classical assessment endpoints (growth inhibition, esterase inhibition; ATP energy loss; photosynthetic parameters) will be used.

### **Required qualifications:**

We are seeking highly motivated candidate with a PhD or equivalent degree in (Micro)biology, Molecular Biology, Environmental Sciences, or related areas, with a strong background in cellular and molecular biology. Ideally, he/she will have experience in the study of metal resistance mechanisms.



Laboratoire des Interactions Ecotoxicologie,  
Biodiversité, Ecosystèmes (L.I.E.B.E.)  
CNRS UMR 7146

**Contact:**

Applicants should send a CV describing their skills and work experience, recommendation letter(s) and relevant publications to :

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