

Postdoctoral Research Position

Structure and Dynamics of Responsive Contractile Supramolecular Self-Assemblies and Gels-Development of Artificial Muscles

*Matière et Systèmes Complexes (MSC) Laboratory
University Paris Diderot-Paris 7, France*

The “*Matière et Systèmes Complexes*” Laboratory (MSC) at Paris Diderot University has an opening for a postdoctoral research associate to study responsive contractile gels and supramolecular self-assemblies using scattering techniques (light, neutron, and X-ray):

- 1-year term (with possible 1-year extension depending on the results)
- Salary range: defined by ANR (“Agence Nationale de la Recherche”) and University Paris Diderot-Paris 7
- Starting date: 2015

Requirements:

- A recent Ph.D. or Postdoc in scattering. Degree in Physics, Physical-Chemistry, Soft Matter, Polymer Science, Biophysics, Colloids or other closely related field
- Intensive experience in scattering is essential: Light Scattering (Static and Dynamic Light Scattering, Cross-correlation, DWS) and/or Small-Angle Scattering (Neutron and X-ray), Reflectometry.

In this ANR project, we propose to focus our work on well-defined molecular nano-machines for the construction of responsive contractile polymeric materials such as supramolecular self-assemblies, gels or films, which can behave as artificial muscles. **The postdoctoral associate will study the physical properties of i) supramolecular self-assemblies producing linear motions (contraction and extension) by the integration of thousands contractile nano-switches of rotaxane-based monomers and of ii) contractile gels based on the connection of rotary motors within a cross-linked polymer network that display macroscopic changes as a function of environmental parameters (pH or $h\nu$).** Structural, dynamical, and surface features will be collected using scattering techniques (light, neutron and X-ray, reflectometry). In practice this project will bring together a team of chemists (N. Giuseppone and E. Moulin), a team of soft matter theorists (A. Johner, I. Kulic, and H. Meyer) and a team of experimental physicists (E. Buhler and M. Rawiso). The successful Post Doctoral Fellow will interact closely with university and ANR collaborators: University of Strasbourg, Large Facilities.

Applications:

Applicants should submit a detailed curriculum vitae, a list of publications, and the names, email, and addresses of professional references to:

Prof. Eric BUHLER (tél : 01 57 27 61 39)
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