

Job opening: Post-doctoral Position

Laboratoire Léon Brillouin (CNRS-CEA) – Saclay (France)

Job Description	
Research Project Title	Effect of pressure on the structure and dynamics of C-phycoyanin
Research Field(s)	Biology
Starting date & Duration	As early as October 2018 ; 18 months
Project supervisor(s)	Sophie Combet and Annie Brûlet (LLB)

Detailed Job Profile	
<p>Scientific Context: The Laboratoire Leon Brillouin (LLB) is a French Research Infrastructure jointly supported by CEA and CNRS (http://www-llb.cea.fr). The LLB operates both as a large-scale facility and a research institute. Neutrons are an invaluable technique to study a large variety of issues, including, for biological ones, protein folding/unfolding. The structure and the dynamics of proteins can be elucidated by small-angle neutron scattering (SANS) and inelastic/quasi elastic neutron scattering (INS/QENS), due to the characteristics time and length scales probed by these techniques (from ns to few hundred μs and from fraction up to several hundreds nm). So far, only few experiments have addressed the structure and dynamics of biological materials upon application of high pressure (HP).</p> <p>Project Summary: The LLB has a long experience in the development of HP cells for SANS and INS/QENS. In particular, a HP device has recently been developed for SANS experiments up to 6 kbars and has been applied to study the role of ligands and hydrophobic cavities in the unfolding of myoglobin, a small globular protein. The project is to study the effect of pressure on the structure and dynamics of C-phycoyanin (CPC), a hexameric light-harvesting pigment-protein complex. CPC unfolding occurs through the dissociation of the hexamer into monomers until the complete unfolding of its subunits. Structural and dynamical changes may occur not only at “high” pressure (3-6 kbars), where proteins generally unfold completely, but also at “lower” pressure (1.5-2 kbars), where the input of water in the hydrophobic cavities of proteins may provide intermediate folding conformations so far undetected.</p> <p>Candidate Profile: The successful candidate will be part of the “Soft Matter and Biophysics” scientific group. The position will allow the successful candidate to take advantage of the large in-house capabilities in biophysics research, neutron spectrometers, laboratory techniques, and access to the large scientific area around the “Plateau de Saclay”. Candidates are expected to have a PhD or similar in biophysics, biology, and/or biochemistry. Experimental experience in protein folding/unfolding would be highly appreciated. Experience with radiation techniques (X-ray or neutron scattering) would be advantageous.</p>	
How to apply ?	Applications for this position should be sent by e-mail to sophie.combet@cea.fr and annie.brulet@cea.fr and include a C.V., the names of at least two references, and a cover letter summarizing current and future research initiatives.