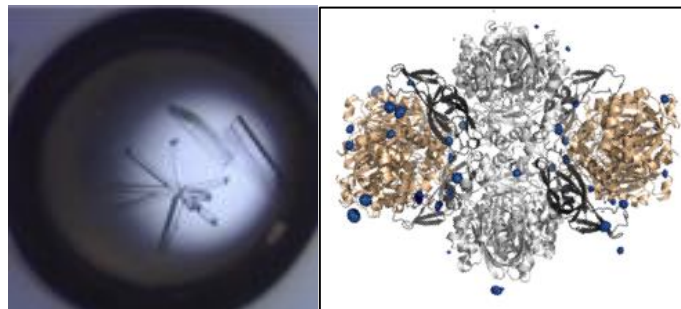


Funded PhD position at the Institute for Structural Biology, Grenoble, France.

DEVELOPMENTS OF LANTHANIDE COMPLEXES FOR STRUCTURAL BIOLOGY

With 90 % of structures deposited in the Protein Data Bank, crystallography represents at present the most productive method to get structural details of biological macromolecules. Despite this success, the method still suffers from two major locks: producing well-diffracting crystals and solving the structure. Different improvements such as synchrotron beamlines, automation of crystallization process, automation of data collection and more recently developments of free electron lasers have been proposed.

In this context, we recently proposed a new molecule named crystallophore (Engilberge et al. (2017) Chemical Science). Crystallophore is a cationic lanthanide complex that possesses exceptional properties. Indeed this molecule is able to promote crystallization and thanks to the high-phasing power of lanthanide atoms, crystallophore highly facilitated the structure determination process (Vogeli et al. (2018) PNAS). In conclusion, crystallophore overcomes the two major bottlenecks of macromolecular crystallography. The molecule is now commercialized by the startup Polyvalan (<http://www.polyvalan.com>).



The multi-disciplinary project will concentrate on the development of the second generation of crystallophore in order to improve further their capabilities. The work will notably involve biochemistry and advanced X-ray crystallography. The project will also explore the possibility of using lanthanide complexes for other structural methods.

The project will be carried out in collaboration with the group of O. Maury (ENS-Lyon), expert in lanthanide complex design and synthesis, and with the Polyvalan startup.

Grenoble is situated in the middle of the beautiful French Alps, and the IBS provides a unique environment for state-of-the-art integrated cellular and structural biology (<http://www.ibs.fr/>) with access to large scale facilities such as European Synchrotron Radiation Source.

Candidates should have a strong background in biophysics and/or biochemistry. Preliminary experience in protein crystallography and molecular biology will be key advantages.

Applications are open until the position is filled. Please send a CV and 2 reference letters to Eric Girard (eric.girard at ibs.fr).