



Postdoctoral position in x-ray coherent diffraction imaging of biogenic and synthetic biocrystals

A 36-month postdoctoral position is available now at Institut Fresnel in Marseille, France, an academic joint laboratory of Aix-Marseille University, CNRS and Ecole Centrale.

Biomineralization is the capability exhibited by many living organisms to produce hard tissues (shells, exoskeletons) with specific functions. In the framework of a project funded by the European Research Council (ERC Consolidator 3D-BioMat), our group [1] is exploring the possibilities offered by x-ray coherent diffraction imaging [2] to progress in the understanding of the mechanisms of biomineralization. To this aim, we want to obtain a structural description of bio-crystals obtained from calcareous marine shells and exploit our findings to guide in vitro organo-mineral crystallisation synthesis. The used x-ray microscopies, among which Bragg ptychography [2], will provide access to the detailed description of the crystalline properties of nanostructured crystals.

Position

The selected post-doctoral candidate will take active part into the ERC project, which requires to

- Design, implement and analyse Bragg ptychography experimental campaigns at synchrotron sources on biogenic and biomimetic samples, using the resources available in our group (numerical codes and super computer).
- Confront the structural findings to the available biomineralization scenarios.

The selected postdoc should demonstrate a sound scientific background allowing him/her to conduct research activities in relation with the above project description. He/she will work under the direct supervision of a CNRS senior scientist and will interact with other researchers in the team, physico-chemists and biologists also involved in the project.

Requirements

- PhD degree with sound expertise in synchrotron science, material structure analysis, coherent x-ray diffraction, crystallography or a related discipline.
- Sound knowledge of computer programming.
- Highly rigorous data analysis skills.
- Capability to work in an interdisciplinary team.

Terms of employment

The post-doctoral position is a three-year full-time appointment under contract with the French National Centre for Scientific Research (CNRS), starting preferentially on September 2018. Gross salary will depend on the experience of the employee, up to approx. 43,000 €/year (net salary: up to approx. 34,000 €/year).

Application

Candidates are requested to submit:

- a cover letter explaining shortly the relevancy of the application with the Position description
- a detailed CV
- 2 publications
- 2 reference names

to virginie.chamard@fresnel.fr

Selection will be based on merit and potential, measured in terms of the academic record and personal achievements. Creativity, proactivity and capacity for teamwork will also be taken into account.

The selection process will be closed as soon as a good candidate will be recruited.

References

[1] COMIX team @ www.fresnel.fr

[2] F. Mastropietro *et al.*, Nature Materials (2017), 10.1038/nmat4937

Contact project Principal Investigator for further information

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