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CALL FOR APPLICATIONS 2025 – FELLOWS

Supervisor	Alexandre Courac
Supervisor page	https://scholar.google.com/citations?user=359cPHIAAAAJ&hl=en
Host Institution	Sorbonne Université https://www.sorbonne-universite.fr/en
Research Lab	Institute of Mineralogy, Physics of Materials and Cosmochemistry https://impmc.sorbonne-universite.fr/en/index.html
Research Team	Design et étude de nouveaux matériaux à propriétés remarquables https://impmc.sorbonne-universite.fr/fr/equipes/design_et_etude_de_nouveaux_materiaux_a_proprietes_remarquables.html

Project Title

In situ synthesis of photovoltaic forms of silicon at high pressure, high temperature conditions

Project Description

Silicon is a reference material that undergoes a number of irreversible transformations accompanied with changes of electrical properties (wide and narrow-band-gap semiconductors, metal and superconductor) in the pressure range of interest up to 20 GPa. The produced pure silicon forms will be tested for optical and semiconductor applications. Probing the chemical interactions and phase transformations in Si-rich systems will be performed by in situ techniques (calorimetry, x-ray diffraction).

Keywords

high pressure, in situ synthesis, silicon allotropes

Description of the Host Research Lab

The Institute of Mineralogy, Physics of Materials and Cosmochemistry (IMPMP) is a multidisciplinary institute of physics, earth sciences and biophysics-bioinformatics, located in the heart of Paris within Sorbonne University and the National Museum of Natural History.

To submit your application, please send an email with the required documents to
mcsa-pf@sorbonne-universite.fr