

HoTMiX project is a joint French-German academic research project funded for 3 years by the ANR and DFG agencies. It brings together 6 academic labs and is supported by the St Gobain and Safran companies. The aim of the project is to provide a deep understanding of the relationships between the nonlinear mechanical response of oxide materials at very high temperature and their microstructure at the nanoscale. The relationship between microstructure and mechanical properties will be explored by combining two different approaches. In situ measurements at very high temperature or under applied stresses will be carried out using X-ray based advanced techniques at synchrotron radiation beamlines and accurate microstructural modelling based on virtual microstructures submitted to temperature and external stresses evolutions will be developed. More details on the HoTMiX project can be found here: www.bam.de/hotmix

Recruitment of a PhD student (m/f)

"Microstructural analysis of oxide nanostructured materials through *in situ* high temperature X-ray scattering using synchrotron radiation"

1. Your responsibilities include:

- ✓ Preparation and participation of X-ray diffraction and scattering experiments at synchrotron radiation sources on different beamlines
- ✓ Samples preparation, data reduction and treatment according to physical and mechanical models
- ✓ Presentation and publication of the results
- ✓ Interdisciplinary exchange within the national and international scientific community
- ✓ Supervision of master students

2. Your qualifications:

The candidate should hold a master degree or an equivalent diploma in materials science, condensed matter physics, solid-state mechanic or other closely related fields. She/he will get an ability to work independently, to plan and carry out intricate tasks. She/he will have to be part of a large multidisciplinary and international research group. Basic knowledge on crystallography, diffraction and mechanics of materials is mandatory. Additional experiences on the experimental approaches of the characterization of microstructures, and ability to perform numerical computations (*e.g.* using python) would be also appreciated. Excellent communication skills (both written and oral) in English will be an asset.

3. We offer:

The PhD student will be employed by the CNRS in Limoges but will work both at the IRCER lab. in Limoges and at the PIMM lab. in Paris. Moreover, a significant part of the experimental work will be done at the European Synchrotron Radiation Facility (ESRF) in Grenoble and at the BESSY II in Berlin. This full-time position will be available from October 2020 and is offered on a fixed-term 36 months contract. The gross monthly salary will be equal to 2135 €

4. Your application:

Applications, consisting of a CV, scores of master 1 and 2 or equivalent diploma, a letter of motivation and a letter of recommendation, should be sent to the following addresses: rene.guinebretiere@unilim.fr, olivier.castelnau@ensam.eu and elsa.thune@unilim.fr before June 2nd. Please attach detailed application documents to the email as a summarized unique file in PDF format.

