Postodoctoral position at MATEIS (INSA Lyon) and ILM (University Claude Bernard Lyon 1)

Description

In the framework of a three-year project founded by the ANR (French Agency for Research), you will be responsible of different tasks related to in situ TEM nanocompression experiments. The main objective of the project is related to the improvement of the accuracy when measuring the mechanical properties of nanoparticles. It will consist in crossing and linking the results obtained by different techniques (in situ compression inside a transmission electron microscope (TEM) and Brillouin spectroscopy performed under pressure) to better identify the different sources of error inherent to these experimental techniques. Experimental results will be compared to reference data obtained from numerical simulations. A real coupling of experimental devices will then be performed by adapting the TEM sample holder on a Brillouin spectrometer, so that both techniques can be used to measure the mechanical properties of the same nanoparticle

You will be in charge of the measurements performed by both techniques on the same nanoparticle by using the TEM sample holder on the spectrometer. You will work in both laboratories involved in the project (MATEIS laboratory at INSA Lyon and ILM laboratories at University Claude Bernard Lyon 1), making the link between both techniques. The measurement by Brillouin spectrometer on a nanometer-size nanoparticle on the TEM sample holder requires an optimized substrate (with a precise localization of the nanoparticle on the substrate). The substrate will be prepared by Focused Ion Beam nanostructuration. You might also be in charge of the substrate nanostructuration in strong relation with the staff in charge of the Focused Ion Beam.

Requirements

- PhD in material sciences, in physics in which the focus of your project was on transmission electron microscopy.
- at least **2 years well-documented, hands-on expertise in high resolution transmission electron imaging.** TEM in situ nanocompression experiments would be a plus.
- **proficiency in spoken and written English**, French is an asset
- capacity for interdisciplinary and international teamwork and excellent communication skills
- **excellent publication records**
- documented experience in elastic/plastic behavior of materials and the determination of mechanical properties

Starting date: 1st September 2019
Fixed term: 18 months
Salary: according to public service grids depending on the experience of the applicant

Your application MUST contain the following information:

- **cover letter** of maximum **2 pages** that should include (1) a **statement about the research you have done**, and (2) **how you fit** the above described **tasks and qualifications**,
- **CV including a publication list** and **coordinates of at least 2 referees**.

and has to be sent to **lucile.joly-pottuz@insa-lyon.fr** and **karine.masenelli-varlot@insa-lyon.fr**