JOB OFFER: Post Doctoral Position

To support the project MICROFOR "MICROstructural investigations of low alloyed steel FORging" funded by SCK Studiecentrum voor Kernenergie/Centre d'Etude de l'Energie Nucléaire (Belgium), the French Research laboratory « Groupe de Physique des Matériaux » (Materials Physic Group) is looking for a Post Doc researcher.

Company Informations

Groupe de Physique des Matériaux is a joint research unit between CNRS, Université de Rouen Normandie and INSA Rouen Normandie. GPM is leader in instrumental/material sciences and develops an international expertise in materials characterization at the atomic scale, particularly radioactive materials using its instrumental platform GENESIS. The GPM is organized around five scientific departments: the scientific instrumentation related to the atom probe, metallurgy, nanostructures, polymers, and the last one at the interface physics/biology. The main partner of this project is the SCK center. The research will be performed in the Metallurgy department.

Position	**Post Doctoral position**		
Laboratory	**Materials Physic Group (UMR6634 CNRS)** **GPM Groupe de Physique des Matériaux (UMR6634 CNRS)** http://gpm.univ-rouen.fr/ http://genesis.univ-rouen.fr/		
Laboratory Director	**Pr Philippe PAREIGE**		
Position Location	**Université de Rouen Normandie - Campus Sciences et Ingénierie Rouen Normandie – St-Etienne du Rouvray-FRANCE** **(mobility is required between GPM Rouen and SCK Mol Belgium)**		
Job	**Non permanent position** **Full-time**	Starting date/duration	**Begin early 2019** **One Year** **+ one year renewable**

Description	Candidate will : • support the team in charge of the MICROFOR project and will use Atom probe Tomography and electron microscopies (SEM and TEM); • participate to the study of materials from SCK CEN • conduct sample preparation and run analyses with state of art instruments LEAP 4000, TEM JEOL 200KV. • Participate to the technical workshop related to the MICROFOR project • Share his/her activities with other collaborators involved in the project • Report frequently technical advances to superior coworkers (GPM and SCK) • Contribute to the global organization and functional activities of the GENESIS Platform
Requirements/	Requirements are • Large experience in atom probe and/or electron microscopy methods • Large experience in sample preparation (chemical polishing or SEM Dual Beam) • Good relationship; open mind and ability to share or discuss technical ideas • Ability to present technical advances during project workshop • Working on radioactive materials in specific environment • Dynanism and motivation • Technical english language
Skills and Experience	• PhD in metallurgy (irradiation effects more welcome), experience in microscopies (Atom Probe and TEM)
Salary	• According to experience after PhD
Contact	Thanks to send complete CV with motivation letter to. philippe.pareige@univ-rouen.fr

MICROFOR project :

Low alloyed ferritic steels are widely used in the fabrication of large nuclear components. Under neutron irradiation, the mechanical properties can be affected depending primarily on their chemical composition, in particular the radiation sensitive elements such as Cu, P and Ni. The induced-irradiation defects form obstacles to dislocation motion which macroscopically translate in an increase of hardness or strength (irradiation hardening) which in turn results in increase of the ductile-to-brittle transition temperature (irradiation embrittlement). In most cases, the irradiation embrittlement is essentially due to irradiation hardening, which means that the amount of embrittlement is proportional to the hardening. In this case, it is implicitly assumed

that the fracture strength is not affected by irradiation. If the fracture strength is also affected (reduced) by irradiation, an additional embrittlement may occur without strength increase. In this case, we refer to as non-hardening embrittlement. Different materials will be studied at the atomic scale in order to explain some mechanisms.