PhD Student at Bmax/ICube-Research in collaboration with CERN to develop innovative high velocity impact forming of Superconducting Radio Frequency cavities with characterization of their material and efficiency

Description of the Project:
Marie Sklodowska-Curie ITN: “EASITrain” – European Advanced Superconductivity Innovation and Training is a European Project based on the collaboration of several companies and universities. The project includes 4 main work packages (WP). You can find more information at the following link: https://euraxess.ec.europa.eu/jobs/244031

Tasks
A PhD student is wanted to perform manufacturing activities for superconductive materials. More in details, the main objectives of the project include:
- Determination of forming limit diagram and constitutive relations for Niobium and Copper at high strain rates.
- Development of set-up for electro-hydro forming of superconductive cells. Relate the electro-hydro forming parameters with the microstructure found for both niobium and copper.
- Compare the microstructure of electro-hydro formed half-cells with traditional forming methods (deep drawing, spinning, hydroforming).

Most of the activity related to forming and manufacturing will be performed at the company I-Cube Research/Bmax in Toulouse, France (see www.bmax.com).
For microstructure analyses, the PhD candidate will work in close collaboration with institutes involved in work package 2 (WP2) and he/she might be required to spend some months at CERN (Geneva).

The PhD student will be required to produce papers to be published in peer reviewed journals.

**Required skills**
The applicant does not have to be French and not have spent more than 12 consecutive months in France in the last 3 years.
Master Degree in Materials Engineering (Preferable) or Mechanical Engineering with a focus in metallurgy.
Good knowledge of metallurgy and structural mechanics. Capable to perform both simulation and experimental work.
Knowledge of Solidworks or LS-DYNA is a plus but not mandatory. In the application, please include a certificate with the exams taken at the university and the corresponding grades.
Two letters of recommendation from your past supervisors or professors.
Available to spend 3 years in Toulouse (FR) and to travel to participate to conferences.

**Spoken Languages**
Very good English, basic knowledge of French is a plus. If you hold language certificates please include them in your applications.

**Salary**
3.100 €/month gross salary (37.200 €/ year). The project covers all the expenses coming from travelling to conferences and in between CERN and Bmax

**Duration**
A full time contract of 36 months.

**Contacts**
If interested, please send a detailed CV to the following email addresses:
elisa.cantergiani@icube-research.com
elisa.cantergiani@bmax.com

**Deadline for applications:** 4th December 2017