**POST–DOC proposition:** Nano engineering of reactive nanolaminate for on chip energy production

**Location**: LAAS-CNRS, Toulouse, FRANCE

**Duration:** 18 months (re conductible once)

LAAS-CNRS seeks a self-motivated post-doctoral researcher to take in charge a French-US research project aiming at developing Al-CuO nanolaminates and understanding the interface formation in reactive nanomaterials. The position will involve a combination of PVD development to synthesize CuO and ZnO model surface, nano fabrication and advanced characterization (HR-TEM, XPS, DRX) as well thermal analysis (DSC, nanocalorimetry) to characterize accurately the energetic capabilities. The candidate will be actively working in a Class 100 and 1000 clean room facility.

The synthesis of nanolaminates energetic materials and their integration into complex micro and nano-systems is an active technological field of research called nanoenergetics in which our research team is highly involved and recognized. One challenging issue in this research field is to understand the interface formations between metal and oxide that control the stability and reactivity of the overall energetic material. LAAS in collaboration with the University of Dallas have a huge research program on that particular challenge. In case of success, it will be possible to nanoengineer tailored reactive materials for targeted applications (for both defense and civilian applications) and for the integration into micro-nano-scale electronic package to provide a high-energy-density source of heat.

The successful candidate will be expected to conduct his/her own research project and will work with strong collaborations with a US laboratory in Texas, one French academic laboratory and 2 French industries. The candidate will be integrated in a dynamic team of 5 researchers (phD students and fulltime researchers).

**Requirements:**

Qualified applicants should have strong academic background in one or more of the following fields: material engineering, thin film deposition and material characterization. Experience in PVD is also interesting.

**Contact:**

For further information you can contact Carole Rossi, LAAS-CNRS, N2IS Group: [rossi@laas.fr](mailto:rossi@laas.fr)