

University of Burgundy

Interfaces/ SIOM team, University of Burgundy, Dijon, France

Ph-D student position: Elaboration and characterization of Janus-like nanostructures based on metallic oxides thin films

Starting date: 1 october 2018

Description of the research project: A Ph-D position is available in the Interfaces / SIOM team, based at the University of Burgundy, Dijon (France). The aim of the project is to elaborate columnar thin films by GLAD (Glancing Angle Deposition) magnetron co-sputtering based on tungsten and copper. These metals are chosen because of the immiscibility character of the W/Cu binary system. W and Cu atoms actually prefer to form single element domains, which should favor well-defined interfaces between W and Cu phases in an oriented or normal GLAD columnar structure.

After elaboration, the samples will be characterized with various techniques including XRD, SEM and XPS. Emphasis will be put on high resolution transmission electron microscopy. TEM is an essential technique to understand the structure of the nanometric 3D systems. With associated TEM techniques such as EDX, EFTEM and EELS, informations about crystallography, structure and chemistry will be obtained at the same nanometric scale. Moreover, these 3D systems will be studied with electron tomography recently implemented. Obtained tomograms will allow to discriminate between the areas rich in different metallic species.

Profile of the successful applicant: The successful candidate will have a recent European master. This thesis being mainly experimental, knowledge in growth techniques and/or transmission electron microscopy are valuable. Good level in French and/or English are mandatory.

For further information, please contact:

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Interfaces/SIOM Team

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To apply: Please email your CV, a motivation letter for this PhD, two reference letters and official transcripts to Dr. Valérie Potin (<mailto:valerie.potin@u-bourgogne.fr>)