INTERNATIONAL IBERIAN NANOTECHNOLOGY LABORATORY

Project Title:	*Quantitative characterization by FIB/SEM "slice and view"*
Project Short description	The combination of Focused Ion Beam (FIB) and Scanning Electron Microscopy (SEM) allows imaging the cross-sections from a variety of samples, ranging from porous thin films to nanostructured electronic devices. The automated and sequential cross-section imaging ("slice and view") can yield 3D structural reconstructions up to 10 nm spatial resolution. The achievable spatial resolution of FIB/SEM "slice and view" depends on the optimization of many parameters related to the FIB cutting and SEM imaging procedures. In addition, a proper 3D reconstruction and the phases segmentation are fundamental to the reliable extraction of quantitative information from the sample, such as features dimensions, phases' fractions and overall composition. This project aims at the optimization of the "slice and view" experimental procedure and the development of a standard procedure for the phases segmentation on the 3D reconstruction.
Expected Start/end date	Feb/2015 – Feb/2016
Required degree and Background knowledge of students, minimum gradepoint average, etc…	Ideal candidates should have an Engineering (Materials, Physics, Electronic, or related) or Science (Physics, Chemistry) degree. Basic knowledge in materials science is required for this project. Fluent English language, experience on SEM imaging and image treatment are desirable.

Supervisor at INL

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