



<i>Project Title:</i>	<i>High-resolution STEM with controlled electron dose</i>
<i>Project Short description</i>	<p>High-resolution scanning transmission electron microscopy (HRSTEM) is a comprehensive characterization technique as it allows atomic resolution imaging, diffraction and spectroscopy in a single experiment. Significant part of HRSTEM limitation is related to the sample damage, as the interaction with high energy electrons tends to modify or even to destroy the specimen structure.</p> <p>An approach to reduce the damage in HRSTEM experiments is to decrease the electron dose applied to the sample. However, the images and spectra obtained with a reduced number of electrons are noisier and data post-processing becomes vital to the extraction of quantitative information.</p> <p>This project aims at the optimization of low-dose HRSTEM imaging and spectroscopy experiments and the evaluation of data processing procedures for the extraction of information from noisy data.</p>
<i>Expected Start/end date</i>	Feb/2015 – Feb/2016
<i>Required degree and Background knowledge of students, minimum grade point average, etc...</i>	<p>Ideal candidates should have an Engineering (Materials, Physics, or related) or Science (Physics, Chemistry, Biology) degree.</p> <p>Basic knowledge in materials science is required for this project.</p> <p>Fluent English language, knowledge on electron/matter interaction and image treatment are desirable.</p>

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