



<i>Project Title:</i>	<i>Computational methods for modelling atomic structures and simulating TEM images</i>
<i>Project Short description</i>	<p>Transmission electron microscopy (TEM) is a well-established characterization technique to analyze nanostructures with atomic resolution. However, as TEM image formation mechanism is not straightforward, the interpretation of experimental results and the extraction of quantitative information requires precise atomic structure modelling and image simulation.</p> <p>Even though some software solutions to generate and modify atomic structures and to perform TEM image simulation are available, their connectivity is problematic and their efficiency is reduced depending on the system size (number of atoms) or the image simulation parameters.</p> <p>This project aims the evaluation of the available tools for atomic structure modelling and TEM image simulation, their integration via a user-friendly interface and the improvement of their efficiency by the process parallelization.</p>
<i>Expected Start/end date</i>	Feb/2015 – Feb/2016
<i>Required degree and Background knowledge of students, minimum gradepoint average, etc...</i>	<p>Ideal candidates should have an Engineering (Computer, Physics, or related) or Science (Computer, Physics,) degree.</p> <p>Computer programming knowledge is required for this project.</p> <p>Fluent English language and knowledge on electron/matter interaction are desirable.</p>

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