

**Research Group: Atomic Structure-Composition of Materials**

The Atomic Structure-Composition of Materials Research Group is dedicated to investigating the atomic structure, atomic composition, and defect behavior of nanomaterials, through transmission electron microscopy.

<b>Job Title:</b>	<b>Research Fellow (Postdoc) – Electrolyte/electrode interfaces and electrolytes of Li-based and Na-based batteries by in situ electron microscopy</b>
<b>PRR Agenda (s):</b>	New Generation Storage
<b>Project Title (s):</b>	<i>Production of sodium-ion based structural batteries</i>
<b>Job Reference:</b>	<i>RRP.12.42.01.3/1</i>
<b>Contract duration:</b>	<i>26 months</i>
<b>Expected hiring date:</b>	<i>November 2023</i>
<b>Main Job Duties:</b>	<ul style="list-style-type: none"> <li>• Conduct and produce high quality original research, following the objectives of the aforementioned project, in particular determining the morphology, structure and composition of Li-based solid electrolytes by aberration corrected TEM/STEM and monitor the electrodes/electrolyte interfaces as a function of cycling by in situ aberration corrected TEM/STEM.</li> <li>• Compound research activities and results and disseminate such results in research papers and reports.</li> <li>• Engage in collaborative research with researchers from other clusters and Institutions.</li> <li>• Engage in RTDI activities together with industrial and other entities ensuring timely and accurate deployment of compounded knowledge to such entities.</li> <li>• Participate in national and international conferences.</li> </ul>
<b>Required Qualification:</b>	PhD in Science or Engineering.
<b>Mandatory requirements:</b>	<ul style="list-style-type: none"> <li>• Experience with aberration corrected TEM and STEM imaging techniques.</li> <li>• Experience with SEM/FIB.</li> <li>• Experience with electron diffraction techniques, namely selected area diffraction and nanobeam diffraction.</li> <li>• Experience with In-Situ Gas and/or Liquid TEM/STEM microscopy.</li> <li>• Experience with Energy Dispersive Spectroscopy (EDS).</li> <li>• Experience with Electron Energy Loss Spectroscopy (EELS).</li> <li>• Experience with image processing and standard software for electron microscopy.</li> <li>• Experience with sample preparation of materials for TEM/STEM observations.</li> </ul>
<b>Other preferred qualifications:</b>	<ul style="list-style-type: none"> <li>• Experience with battery materials and/or oxide-based materials.</li> <li>• Experience with STEM-DPC.</li> <li>• Experience with 4D STEM.</li> </ul>
<b>Supervisor:</b>	Dr. Paulo Ferreira