



# Materials scientist

Project code	57
Supervisor	Richard Catherall
Department	EN
<b>Title</b>	
Materials scientist	
<b>Description</b>	
<p>A number of isotopes still constitute challenging cases for secondary beam production at ISOLDE and MEDICIS. This project focuses on investigating new target materials and isotope release concepts. Proposed areas of research include synthesis and characterization of novel nano materials, investigations on liquid metal eutectics and their compatibility with reactive gasses, study of the reaction kinetics of refractory metal molecules.</p> <p>We are in particular interested in improving production methods for our actinide and non-actinide nano materials in view of the ongoing construction of our dedicated nano laboratories, the production of exotic tin isotopes towards Sn-100, as relevant isotope in the NuPECC Long Range Plan 2017 and the production of Pt isotopes for biomedical applications and nuclear medicine from the approved MEDICIS isotope program.</p>	
<b>Functions and Training Value</b>	
<p>You will be embedded in the ISOLDE target and ion source development team and will drive the outlined target material research projects, guided by the local team. The research will be conducted in parts within a collaboration between CERN and other ISOL facilities world-wide.</p> <p>You will gain expertise in materials under extreme conditions (radiation fields, temperature), ion sources, chemical synthesis, nanomaterials, metal eutectics, material characterization methods, isotope production, applications of radioisotopes at ISOLDE and MEDICIS.</p>	
<b>Qualifications/Skills</b>	
<p>Ideally a Masters degree or experience in the following:</p> <ul style="list-style-type: none"><li>· Inorganic chemistry / physical chemistry</li><li>· Material sciences / material engineering</li><li>· Solid-state physics</li><li>· Experience in nanomaterials, actinide materials is a plus</li></ul>	