



2018-IPR-G-000-9868

**Mechanical Design of Operator Applied
Sealing Bolt**

<p>Position for:</p> <p>Trainee</p>	<p>As the science and knowledge service of the Commission, the mission of Joint Research Centre is to support EU policies with independent evidence throughout the whole policy cycle.</p> <p>The JRC is located in 5 Member States (Belgium, Germany, Italy, the Netherlands and Spain). Further information is available at: http://www.jrc.ec.europa.eu</p> <p><u>Short description of activity:</u></p> <p>The trainee position is available at the Nuclear Security Unit. The unit focus is on state of the art enabling research, the use of specific technology, development of instruments and methods, delivering technical services and training in the domain of nuclear safeguards, non-proliferation and nuclear security. In this way, the unit supports the verification of international treaties and agreements related to nuclear safeguards and non-proliferation. The Nuclear Security Unit develops Sealing and Identification Techniques for nuclear safeguards, especially underwater and dry storage casks.</p> <p>In this field of application, there is an urgent need for sealing system that can be installed and possibly removed by an operator without the physical presence of nuclear inspectors.</p> <p>In this framework the Seal Team has patented an innovative sealing system composed of a sealing bolt including various features (ultrasonic identity & integrity, connection via an optical fiber to an electronic Active Optical Loop Seal, connection to an inspector cabinet, ...) and various additional components. The aim of this traineeship is the mechanical design of the sealing bolt itself based on the existing preliminary design and various prototypes already manufactured and/or 3D printed. Following the design phase, samples will be manufactured by colleagues in the workshop and tested by the trainee.</p>
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	<p>The trainee will be part of a small team of specialists and will be guided through the various aspects of the project. The lab has several CNC machines in its workshop, 3D printers and testing machines (vibration, drop, temperature, humidity, ...). The lab is using SolidWorks CAD software for design and finite elements studies. The planned contributions of the trainee are suitable for presentation as a thesis project at MSc level.</p> <p><u>Qualifications:</u></p> <p><u>Essential:</u></p> <ul style="list-style-type: none"> - 3rd or 4th year university student in mechanical engineering (in this case the thesis has to be registered and the subject has to match with the project itself) - Advanced knowledge of SolidWorks - Good knowledge of English (B2 level) <p><u>Advantage:</u></p> <ul style="list-style-type: none"> - knowledge of finite elements <p><u>For general eligibility requirements, please read the rules governing the traineeship scheme of the JRC:</u></p> <p>https://ec.europa.eu/jrc/en/working-with-us/jobs/temporary-positions/jrc-trainees</p>
Unit / Directorate	<p>Unit G.II.7 – Nuclear Security Directorate G – Nuclear Safety and Security</p> <p>Further information: https://ec.europa.eu/jrc/en/research-topic/nuclear-safeguards-and-security</p>
Indicative duration	5 months
Preferred starting date	As soon as possible
JRC Site	Ispra
Country	Italy
<u>JRC contact details</u>	<p>For any technical problems with your application, please contact: HR-AMC8-RECRUITMENT-TOOLS-SUPPORT@ec.europa.eu</p>