VACANCY NOTICE FOR A CONTRACT AGENT SELECTION

Job title	**FGIV - Scientist - Exploratory Research Project - Mechanical Engineering, Materials Science**
Reference	EC-2026-JRC-529518
Application deadline	**14/12/2026 - 12.00 (noon, Brussels time)**
Directorate-General (full name)	Joint Research Centre (JRC)
Unit	Unit Digital Systems for Safeguards and Non-Proliferation
Place of assignment	Ispra, Italy
Domain	Science and Research
Contract type and Function Group	Contract Agent 3b FGIV

About us

The Joint Research Centre (JRC) provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society.

The Directorate Nuclear Safety & Security supports the relevant policy DGs with independent, technical and scientific evidence in the areas of nuclear safety, security and safeguards. The Directorate is also an active key partner in international networks and collaborates with international organisations and prominent Academia and Research Institutes.

The current vacancy is within the Unit Digital Systems for Safeguards and Non-Proliferation. Further information: https://joint-research-centre.ec.europa.eu/scientificactivities/nuclear-safeguards-and-non-proliferation_en

The Unit's scientific activities focus on the elaboration of concepts and approaches for safeguards and non-proliferation, on the development of new technology, equipment and tools for safeguards verifications and on delivering education and training to nuclear inspectors and students.

The Unit Centre for Advanced Studies oversees the overall JRC Exploratory Research Programme.

The vacancy is within the **Exploratory Research Project 'Additive Tamper-proof Optimised Metal Safeguard systems' (ATOMs)**. The JRC Exploratory Research Programme is a strategic initiative characterised by ideas that might lead to novel results and qualitatively enrich current JRC scientific work.

About the role

We offer a position in a highly specialised research environment focused on strengthening nuclear safeguards through advanced containment and surveillance technologies.

The position is embedded in an exploratory research project centred on the development of advanced containment and surveillance seals through metal additive manufacturing. A key emphasis of the work is the use of metal AM not simply as a production method, but as an enabler of seal designs with complex, non-replicable internal features that would be difficult or impossible to achieve with conventional manufacturing. The research explores how these additively manufactured structures can improve robustness, authenticity and safeguards performance, while supporting remote verification in challenging environments. To do so, the project combines investigation into unique acoustic signatures for seal authentication with electronic monitoring for remote status checking and tamper detection.

The work environment is dynamic, multidisciplinary and provides a unique opportunity to support EU policies. The project team is friendly and informal. The possibility for online collaboration and occasional travel is given.Please see also Working at the European Commission

The jobholder will contribute to the most relevant technical parts of the exploratory project concerning the use of metal additive manufacturing to create robust, non-replicable tamper-indicating devices. A central task will be the characterisation and comparison of the ultrasonic transparency and acoustic response of metal structures produced by LPB-F and DED. This includes analysing anisotropy, wave propagation behaviour and the suitability of printed materials for reliable passive verification.

The successful candidate will contribute to:
• Design of test samples and tamper indicating geometries;
• Material and acoustic characterization, including investigating ultrasonic transparency, acoustic response, wave propagation, and anisotropy in printed metal components;
• Authentication feature engineering, evaluating embedded internal features that function as tamper-resistant acoustic signatures;
• Sensor review, selection, and integration;
• Testing, analysis, and optimization of the design;
• Provide regular and accurate reports on scientific activities every twelve months and a final report;
• Report to the Project Leader on progress, achievements and potential problems in a timely manner;
• Provide feedback and maintain interactive communication with colleagues;
• Explain the research activities and achievements to third parties, such as scientific communities and the public;
• Write, disseminate and publish results, among other in peer-reviewed journals.



Qualifications, experience and skills
We are looking for a highly motivated researcher with the following essential qualifications: • A doctoral diploma in mechanical engineering, materials science or equivalent; alternatively, completed university studies of at least three years attested by a diploma and at least five years professional experience in a field relevant to the position; • Experience in metal additive manufacturing; • Experience in additive manufacturing mechanical design; • Good oral and written communication skills in English (C1). In addition, the following competences will be considered an advantage: • Knowledge of ultrasonic inspection techniques; • Record of research activities relevant for the post including publications in international peer-reviewed journals; • Experience of design for harsh environments; • Proven ability to work in a team and in a multi-cultural environment. The candidate is expected to be creative and work independently.
How to express your interest? Please submit your application via the JRC Recruitment Portal. Being registered for at least one of the two following databases is also necessary: • the Selection process for contract staff | EU Personnel Selection – EU Careers (EPSO CAST FG IV), which is used by a wide range of organisations (institutions, bodies, offices and agencies of the European Union), or • the JRC Open Call for Researchers, (JRC Call COM/1/2015/GFIV – Research), which is mainly used by the JRC.
Eligibility
For eligibility please consult this page with all the information needed.