



Collaborative Doctoral Partnerships (CDP)

Poland Info day
21 October 2024

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Collaborative Doctoral Partnerships (CDP) program Coordinator

Scientific Development Programs Unit S.4

European Commission, Joint Research Centre (JRC), Ispra (Italy)

JRC sites

Headquarters in **Brussels**
and research facilities located
in **5 EU Countries**:

- Belgium (Geel)
- Germany (Karlsruhe)
- Italy (Ispra)
- The Netherlands (Petten)
- Spain (Seville)



9 JRC Priorities (JRC proposal to the new Commission)

**Societal
resilience and
preparedness**

**EU
competitiveness
and innovation**

**Integrated
approach to
security and
defence**

**Green Deal
ambitions and
climate neutrality**

**Competencies
and technologies
for digital
transformation**

**Social, economic
and territorial
impacts**

**Migration and
demography**

**Preparation for
enlargements**

**Innovation in
policymaking**

Anticipatory & Exploratory Science

33

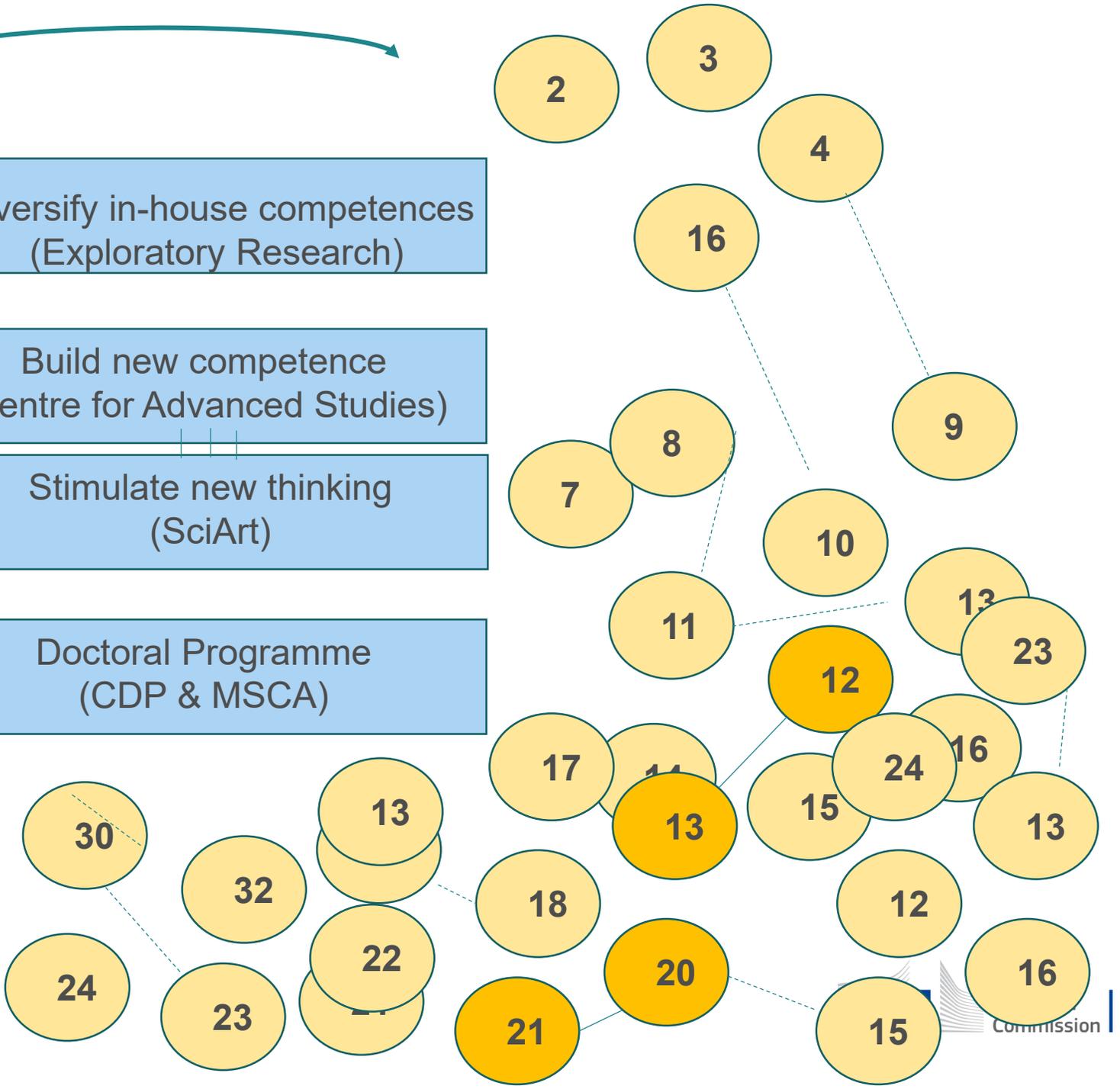
Diversify in-house competences (Exploratory Research)

Build new competence (Centre for Advanced Studies)

Stimulate new thinking (SciArt)

Doctoral Programme (CDP & MSCA)

5% of JRC projects



JRC Doctoral Programmes

Collaborative Doctoral Partnership (CDP) program (2024)

- **21 PhD students at JRC:** Brussels (1), Geel (1), Ispra (12), Karlsruhe (3), Petten (1), and Sevilla (3) **working on the following thematic areas:** **Energy/Transport, Digital Governance and Data Analysis, Soil and land use, Bio-Economy, Nuclear and non-nuclear technologies, Genomics and bio-informatics, Health promotion and prevention of NCDs, among others.**

Marie Curie Skłodowska Actions (MSCA) Doctoral Networks

- **10 MSCN PhD fellows hosted at the JRC**

Collaborative Doctoral Partnership (CDP) Programme

- The CDP is a scheme offered to higher education institutions (HEIs) to benefit from a strategic, **win-win collaboration with the JRC** bearing in mind the importance of science-based evidence for policy making.
- The scheme will allow universities to gain a better understanding of research needs throughout the **policy** cycle while at the same time providing the JRC with **innovative** research input and exchange of information with leading academic institutions in the field.



Collaborative Doctoral Partnership (CDP) Programme

- Interested **universities may apply to calls** in which **collaboration topics** are proposed by JRC and to which research groups in academia can match **specific PhD proposals**, all aligned with the overall JRC strategic lines.
- Selected applications may lead to the signature of an **Agreement between the university and the JRC**, whose implementation needs the **joint selection of a student**. **IPR** (foreground) is entirely owned by the university.



Collaborative Doctoral Partnership (CDP) Programme

- A **Call for students** is launched by the university and supported by the JRC, following the guidelines set in the Agreement.
- The selected PhD student should be **enrolled in a PhD academic program**, whilst there, her/his contract should be paid by the university.
- That student may stay **up to 24 months at the JRC** host unit, whilst there, **JRC pays for the contract.**



Collaboration with Polish HEIs

- There is a **current collaboration** between:
 - The Joint Research Centre, **JRC** (Peter Haehner, Unit GI4 Reactor Safety and Components, Petten, NL) and the National Centre for Nuclear Research, **NCBJ** (Prof. Łukasz Kurpaska, NOMATEN, Otwock, PL)
 - Topic: "Non-power nuclear and radiological technologies to achieve the SDGs 2030" (Portfolio 29, Cancer & NCD) under Call 2020 of the CDP.
- We are now recruiting a **PhD candidate** ([call](#), 31/10/2024) to join JRC in 2025).



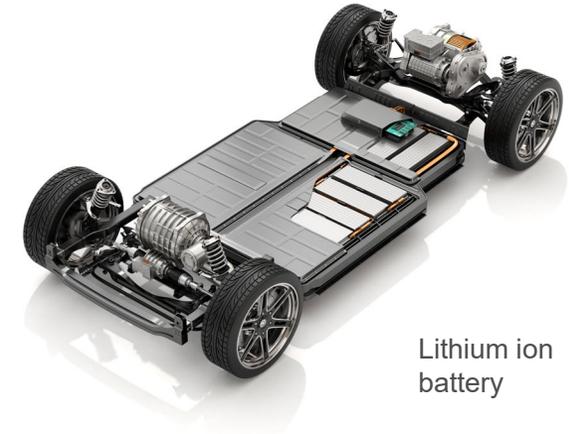
CDP Programme: present status

- A new agile **CDP** is currently being elaborated and expected to be launched soon:
 - with **more frequent calls**
 - **collaboration topics aligned with the overall JRC strategic lines and the Portfolios/projects**
 - **a fixed number of PhD students in every call**
 - a more **agile administrative procedure** and a greater dissemination of the calls for EoI (Expression of Interest) of HEIs (Higher Education Institutions).



CDP project

Chemical Engineering



Lithium ion battery

Thesis subject: Safety of lithium ion batteries

Background: Solvents used to dissolve electrolyte salts in the electrolyte solution of lithium ion batteries are hazardous and toxic for human health.

Aim: To study the chemical changes within an electrolyte cloud, in various air flow and temperature gradient conditions.

Policy applications: The design of warning systems and ventilation of electric vehicles to prevent and mitigate electrolyte leaks.

Call 2020, Directorate C: Energy, Mobility and Climate

CDP project

Materials Science

Thesis subject: Behaviour of natural/synthetic clays exposed to nuclear waste corrosion products in the near-field of a geologic repository for nuclear waste disposal



Bentonite clays

Background: Deep geological disposal is a promising solution to store nuclear waste. However, there is a risk of groundwater dissolving the waste and generating ionizing radiation.

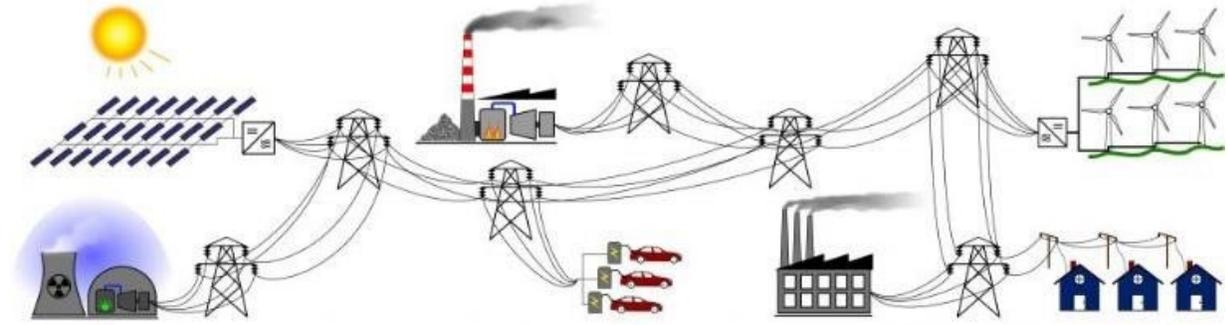
Aim: The student's work focuses on evaluating the capacity of various clays to act as a buffer against groundwater leakage.

Policy applications: A strategy that allows nuclear waste to decay in safe and secure conditions for people and the environment.

Call 2020, Directorate G: Nuclear Safety and Security

CDP project

Electrical Engineering



Renewable energy with the power system

Thesis: Long-term Active Distribution Network Planning with High Shares of Variable Renewable Energy

Background: Many renewable energy system scenarios predict a large number of distributed energy resources to be connected in the power distribution network. This poses challenges to the planning of the power system.

Aim: This student's work analyses distribution network expansion planning with high shares of distributed energy resources.

Policy applications: improving the efficiency of renewable energy power distribution networks in order to minimise the overall cost for society, thus contributing to the energy transition.

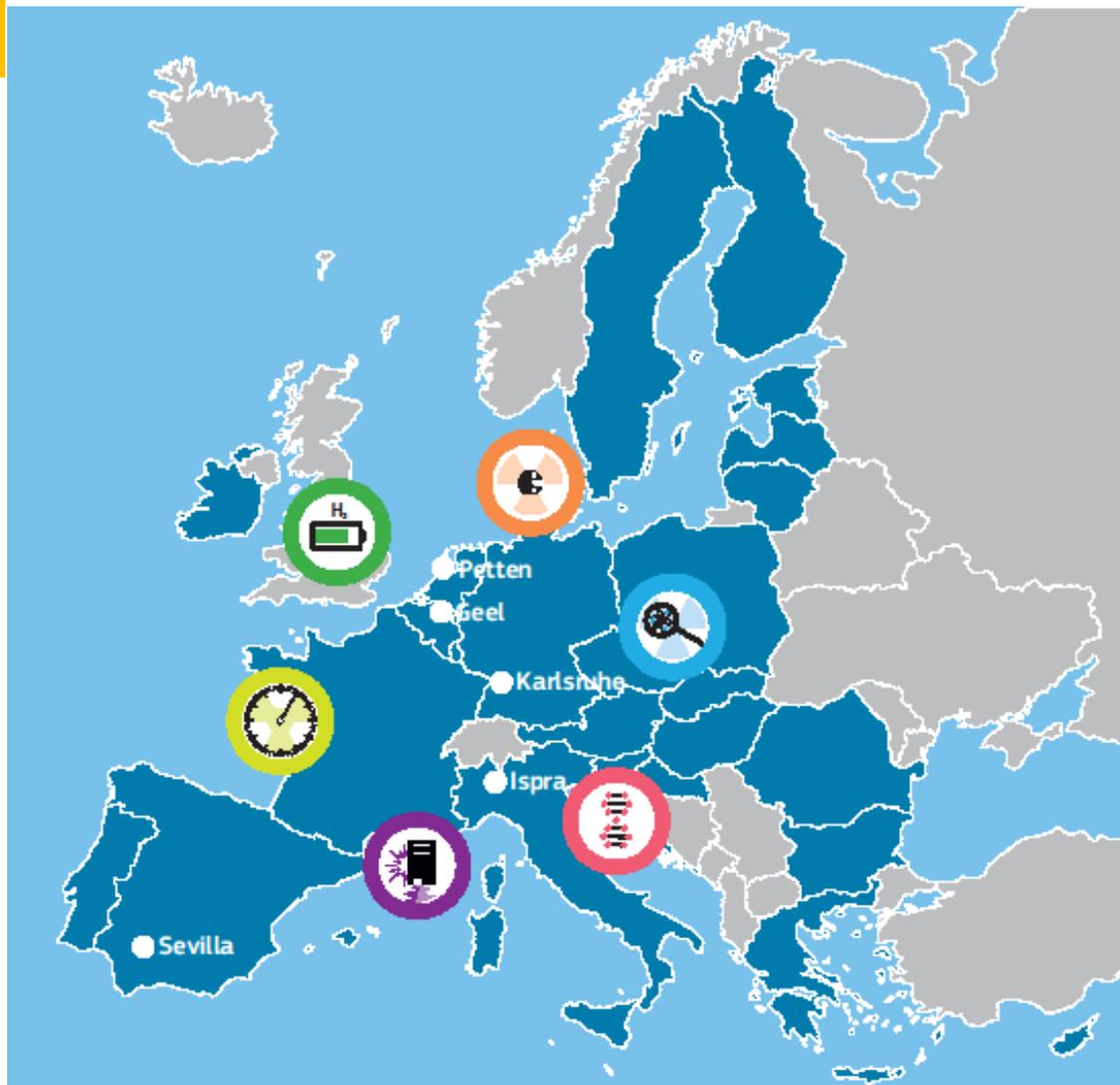
Call 2020, Directorate C: Energy, Mobility and Climate

Marie Skłodowska-Curie Actions (MSCA)

JRC Case

- **JRC's Role in a Consortium:** Associated Partner for a MSCA Network.
- **Administrative format for visiting researcher:** Secondment (UVS for JRC).
- **Duration of Secondment:**
 - Standard DN: 1/3 of fellowship duration (i.e., max 12 months).
 - ID and JD: No duration limit

Marie Skłodowska-Curie Actions (MSCA)



The map shows Europe with several icons and location labels. The icons include: a green circle with a battery icon, an orange circle with a Euro symbol, a blue circle with a magnifying glass, a yellow circle with a clock, a purple circle with a smartphone, and a red circle with a book icon. Location labels include Sevilla, Petten, Geel, Karlsruhe, and Ispra.

Did you know?

JRC publishes more than 1100 scientific publications annually, 40% of them in the most cited journals, and more than 500 briefs and reports providing evidence-based support to policy makers?

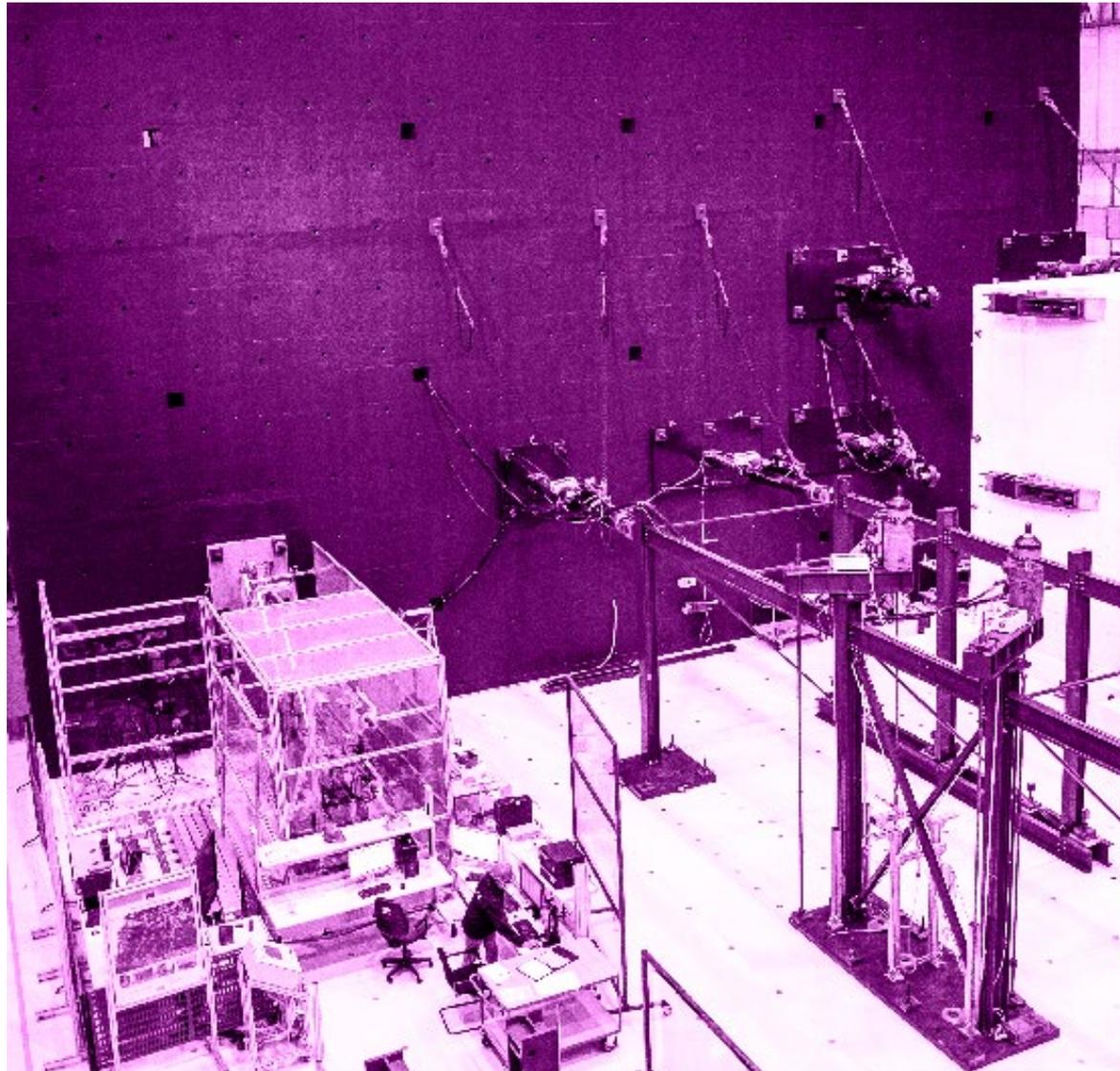


Do you know?

JRC trains **Marie Skłodowska-Curie Action (MSCA)** doctoral candidates and postdoctoral fellows?



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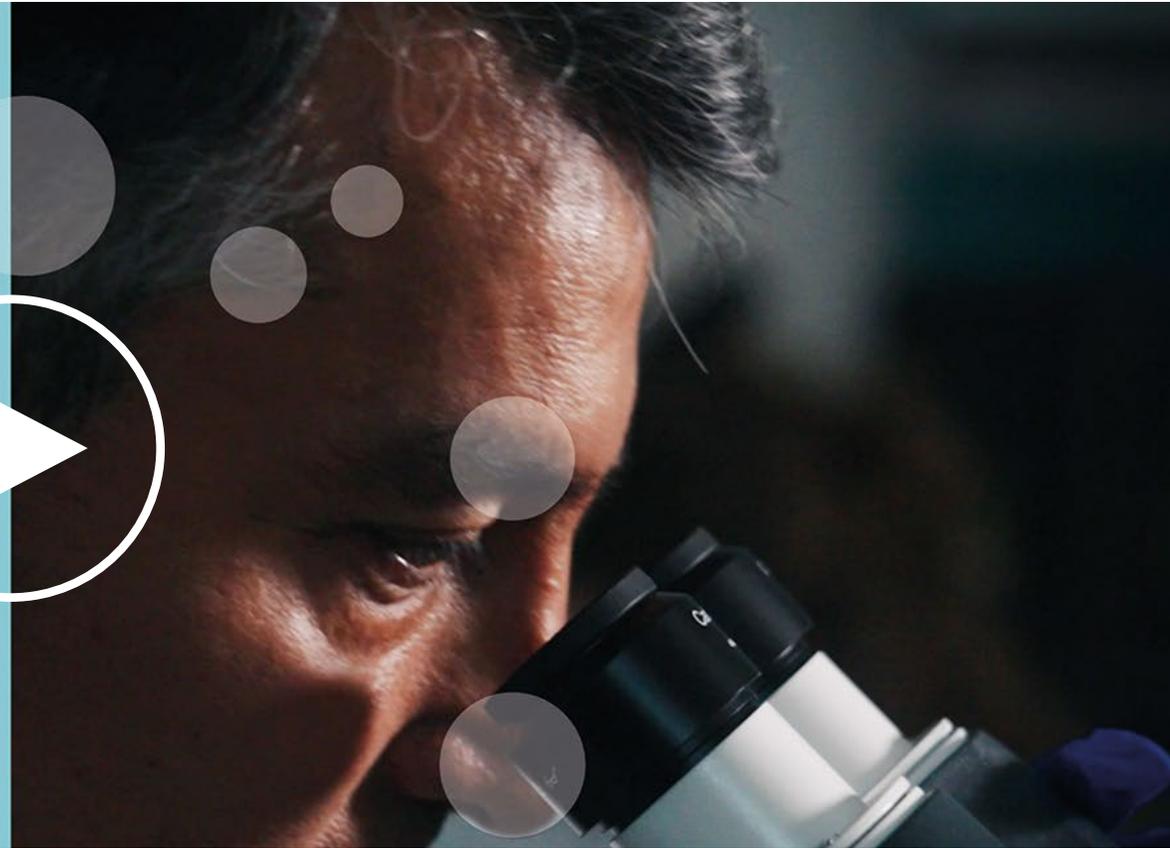
European Laboratory for Structural Assessment



We do science for policy

Joint
Research
Centre

Watch our video!



We are hiring



Check our vacancies
recruitment.jrc.ec.europa.eu

Thanks

For more information:

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