

GENIORS

GEN IV Integrated Oxide fuels recycling strategies

A H2020 project to **turn spent nuclear fuel into a resource** through science-based innovative solutions and chemical processes

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24 partners from 10 countries



The current situation

- **Open fuel cycle:** less than **1%** of the energy contained in uranium is used.
- **Closed fuel cycle:** the plutonium can be recovered from the spent nuclear fuel made up of uranium oxide (UOX) and **recycled once into Mixed Oxide (MOX) fuel.**
- **The 4th generation of reactors (GEN IV)** could provide a solution for reducing the volume, radiotoxicity and life expectancy of the waste generated through **chemical multirecycling of plutonium and Partitioning and Transmutation operations (P&T).**

What GENIORS will achieve

- **Develop scientific knowledge and expertise** on nuclear fuel recycling and waste reduction for GEN IV systems.
- Increase the safety of interim storage installations during normal operations and in case of a nuclear accident.
- **Foster collaboration** between all key stakeholders of the European separation chemistry community (researchers, industrials, policymakers and students).

For which future impacts

By 2020: build **a strong fuel chemistry and separation community of experts.**

By 2025: support **new energy policies** that reinforce Europe's independence and competitiveness.

By 2050: make **multiple recycling of nuclear fuel a common practice**, reinforcing the positive public perception of nuclear energy and radioactive waste management.



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