Actinide reCycling by SEPeration and Transmutation

Fact Sheet

Project Information

ACSEPT

Grant agreement ID: 211267

Status
Closed project

Funded under
FP7-EURATOM-FISSION

Overall budget
€ 23 783 360,40

EU contribution
€ 8 999 000

Coordinated by
COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES

France

This project is featured in...

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Objective

Actinide recycling by separation and transmutation is considered worldwide and particularly in several European countries as one of the most promising strategies to reduce the inventory of radioactive waste, thus contributing to make nuclear energy sustainable. Consistently with potentially viable recycling strategies, the Collaborative Project ACSEPT will provide a structured R&D framework to develop chemical separation processes compatible with fuel fabrication techniques, with a view to their future demonstration at the pilot level. Considering technically mature aqueous separation processes, ACSEPT will optimise and select the most promising ones dedicated to actinide partitioning and those featuring a group separation. These developments will be appropriately balanced with an exploratory research focused on the design of new molecules. In parallel, promising group actinide separation pyro-processes will be developed beyond the current state-of-the-art, as an alternative option, for a longer term. ACSEPT will also pave the way towards more integration between Partitioning and Transmutation by carrying dissolution as well as actinide conversion studies. All experimental results will be integrated by carrying out engineering and systems studies on aqueous and dry (pyro) processes to prepare for future demonstration at a pilot level. A training and education programme will also be implemented to share the knowledge among partitioning community and present and future generations of researchers. The challenging objectives of ACSEPT will be addressed by a multi-disciplinary consortium composed of European universities, nuclear research bodies and major industrial players. This consortium will generate fundamental improvements for a future design of an Advanced Processing Pilot Unit. ACSEPT will thus be an essential contribution to the demonstration, in the long term, of the potential benefits of actinide recycling to minimise the burden on the geological repositories.

Field of science

/ engineering and technology / environmental engineering / energy and fuels / nuclear energy
/ engineering and technology / environmental engineering / waste management / recycling
Programme(s)

Topic(s)

Call for proposal

FP7-Fission-2007

Funding Scheme

CP - Collaborative project (generic)

Coordinator

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