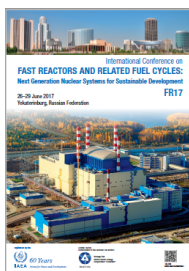


International Conference on Fast Reactors and Related Fuel Cycles: Next Generation Nuclear Systems for Sustainable Development (FR17)



Contribution ID: 228

Type: ORAL

DYNAMIC TEST OF EXTRACTION PROCESS FOR AMERICIUM PARTITIONING FROM THE PUREX RAFFINATE

Wednesday 28 June 2017 16:10 (20 minutes)

The fast reactors and related fuel cycle technologies are extensively development at present. It is possible to transmutate the radiotoxic nuclides, contained in PUREX raffinates (primarily minor actinides), in fast reactors. This raises the challenge of minor actinides recovery from PUREX raffi-nats.

The process for actinides (III) partition with solvent based on N,N,N',N'-tetraocthyl-diglycolamide (TODGA) in meta-nitrobenzotrifluoride (F-3) was proposed. The process includes actinides (III) and REE co-extraction, Zr and Pd scrubbing, HNO₃ scrubbing, selective actinides stripping with buffered DTPA solution and REE stripping. The dynamic test using mixer-settlers set-up was carried out. The feed solution contained about 4.5 g/L REE and trace amounts of ²⁴¹Am. Not less 99,97 % of americium were recovered. Decontamination factor for the removal of REE from Am product was about 100. Most of the zirconium, molybdenum and palladium were in the raffinate. The testing and improving of the process will continue.

Country/Int. Organization

Russia, Rosatom

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Session Classification: 4.3 Partitioning and Sustainability

Track Classification: Track 4. Fuel Cycle: Sustainability, Environmental Considerations and Waste Management Issues