

Hydrometallurgical TRU Separations

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Hydrometallurgy (solvent extraction) is a suitable technique for separating transuranium elements (TRU = neptunium, plutonium, americium, and curium) from used nuclear fuels. Following a brief description of the basics of solvent extraction, the suite of hydrometallurgical TRU separation processes developed in European research projects is discussed. These are: the DIAMEX process for separating trivalent actinides (An(III)) and lanthanides (Ln(III)) from PUREX raffinate; the SANEX process for separating An(III) from Ln(III); processes for separating trivalent americium (Am(III)) from trivalent curium (Cm(III)); innovative processes for directly separating An(III) or only Am(III) from PUREX raffinate; GANEX processes for co-separating TRU.