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**EXTRACTION OF URANIUM, NEPTUNIUM
AND PLUTONIUM FROM CAUSTIC MEDIA**

Lætitia H. Delmau¹, Peter V. Bonnesen¹, Nancy L. Engle¹,
Kenneth N. Raymond² and Jade Xu²

¹Chemical Separations Group, Chemical Sciences Division,
Oak Ridge National Laboratory, P.O. Box 2008, MS-6119, Oak Ridge, TN 37831-6119
delmaulh@ornl.gov

²College of Chemistry, UC Berkeley

Fundamental research on uranium, neptunium and plutonium separation from alkaline media using solvent extraction is being conducted. Specific extractants for these actinides from alkaline media have been synthesized to investigate the feasibility of selective removal of these elements. Two families of extractants have been studied: terephthalamide and tetra(hydroxybenzyl)ethylene diamine derivatives. Fundamental studies were conducted to characterize their extraction behavior from a wide variety of aqueous conditions. The terephthalamide derivatives exhibit a significant extraction strength along with a discriminatory behavior among the actinides, plutonium being extracted the most strongly. Quantitative extraction of plutonium and moderate extraction of neptunium and uranium was achieved from a simple caustic solution. Interestingly, strontium is also quantitatively extracted by these derivatives. However, their stability to highly caustic solutions still needs to be improved. Tetra(hydroxyl-

benzyl)ethylene diamine derivatives exhibit a very good stability to caustic conditions and are currently being studied.