

## SEPARATION OF MINOR ACTINIDES AND FISSION PRODUCTS BY USING SOLID EXTRACTANTS

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### *Abstract*

The solid type extractants are able to be applied to the chromatographic technique. The chromatographic technique is appropriate for the separation methods which there are many kinds of requiring elements i.e., the nuclide separation from spent nuclear fuels. We have been studied the separation of trivalent minor actinides and many kinds of fission products. The pyridine resin, crown ether resin, chelating resin, a kind of ion exchanger, and so on is used as solid type extractants. The pyridine resin is used for the separation of minor actinides from lanthanide, the mutual separation of minor actinides, the recovery of platinum group elements, etc. the crown ether resin is used for the separation of alkaline earth elements. Ferrocyanides, the adsorbent with carbonate ion and others have been also tested. In this report, the separation methods in the situation of many cases are described. One is the nuclide separation in the newly developed reprocessing process “Adv. Orient cycle”, which process is base on hydrochloric solution. One is the nuclide separation adding the PUREX or advanced aqueous reprocessing processes. One is the minor actinide separation from the molten salt waste. Another is the separation of radio elements from aqueous waste with sea water.

This work was supported by Grant-in-Aid for Scientific Research (B), MEXT (No.23360423)