OAK RIDGE NATIONAL LABORATORY
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Supported Liquid Inorganic Membranes for Nuclear Waste Separation

Disclosure Number

200902271

Technology Summary

The process of the present invention employs membranes to facilitate the nearly complete removal of americium from spent nuclear fuel. The new process offers a superior method of removal over other potential pathways of americium removal resulting in a higher efficiency removal. The new process eliminates removal limitations caused by equilibrium effects and uses only solvents employed elsewhere in a recycling process. Additionally, phase mixing of the solvents used does not occur, eliminating the generation of secondary toxic waste and the potential for emulsion problems. The net result of removal of americium is the elimination of close-packing constraints caused by the large amount of decay heat produced by americium in spent nuclear fuel. Thus, spent nuclear fuel can be stored in much smaller spaces, lessening the need to find new storage locations.

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