

TECHBRIEF

NOVEL SORBENTS FOR RADIOACTIVE CONTAMINANT REMOVAL FROM WASTEWATER

OPPORTUNITY:

This invention describes a technology that can capture radioactive contaminants from wastewater. This technology is available for licensing and/or further collaborative research from the U.S. Department of Energy's National Energy Technology Laboratory.

CHALLENGE:

Radioactive isotopes in liquid nuclear wastes are difficult to remove through conventional methods. Solvent extraction and ion exchange have proved successful for removal, but most of these materials display low selectivity and require the use of environmentally unsafe solvents.



OVERVIEW:

NETL researchers have developed low-cost, scalable and robust amine-based sorbents that have been shown to effectively remove radioactive isotopes from liquids. These materials show promise for commercial-scale processes involving radioactive ions capture from flowing aqueous streams or stagnant aqueous environments.

ADVANTAGES:

These novel sorbents exhibit major advantages over existing methods.

- Fast and easy preparation procedure.
- Low raw material costs.
- Recyclability.

(continued)



FOR MORE INFORMATION:

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APPLICATIONS:

- Commercial-scale removal of radioactive isotopes from any flowing or stagnant aqueous system with radioactive materials, including ponds, rivers, lakes, seawater and groundwater.
- Treatment of flowback water from industrial streams and nuclear waste tanks.

RELATED PATENTS:

U.S. Patent Pending (provisional patent application)

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Title: Novel Sorbents for Radioactive Contaminant Removal from Wastewater

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