OAK RIDGE NATIONAL LABORATORY
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Fiber-Based Adsorbents Having High Adsorption Capacities for Recovering Dissolved Metals

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Technology Summary

Adsorbents made of polyolefin fibers or other polymer fibers and containing amidoxime and hydrophilic groups are capable of recovering dissolved metals from seawater or other aqueous solutions including uranium, vanadium, nickel, cobalt, titanium and other metals. Research on these types of adsorbents has been conducted since the 1980s for the purpose of developing economical adsorbents for recovering uranium from seawater; however the adsorbents developed thus far have been limited in their cost-effectiveness due to their low uranium adsorption capacity. The present invention provides new adsorbents that have demonstrated up to 7 times higher uranium adsorption capacity compared to the best uranium adsorbents reported to-date.

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