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Purification of Isotopically Enriched 92Mo from Reprocessing of CerMet Mo-based Transmutation Fuel

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The aim of this work is a separation of 137Cs from model solutions of ammonium molybdate, which probably will be issuing from a reprocessing of CerMet Mo-based transmutation fuel for ADS. Comparing the effectiveness of different sorbents were performed based on the Dg values. The best material KNiFC-PAN (inorganic-organic composite ion exchanger based on potassium-nickel hexacyanoferrate active compound and polyacrylonitrile binding matrix) was characterized by kinetic studies and determination of weight distribution coefficients dependence of ceasium on the pH and the concentration of molybdenum and determination of sorption isotherms. The final column experiment confirmed the suitability of KNiFC-PAN for separation caesium from slightly alkaline, concentrated solution of molybdenum.

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