

Abstract

Title:	The Preparation of Porous Materials for Radionuclide Capture
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Type of thesis:	Master's
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Abstract:

The use of radionuclides is still increasing and with it also increases the amount of radioactive waste and this waste have to be processed. This thesis is focused on the preparation, characterization and testing of porous materials which could be used for the process of this waste. There were prepared and characterized materials based on silica and zirconia with a modified surface. For the modification were used styren with divinilbenzene, polyacrylonitrile and diglycolamides at different configurations of these materials. Furthermore, there were prepared materials based on hydroxyapatite and its modifications. Prepared sorbents were tested for radionuclide capture – flow through the column and also in the static experiments. The capture of ^{227}Ac and its daughter's radionuclides were tested in our laboratory, the capture of ^{87}Sr , ^{137}Cs and ^{152}Eu in laboratory of Ústav jaderného výzkumu in Řež.

Key words

radionuclides, porous materials, radionuclide capture