

Adsorption of radionuclides in granite pores and micropores

ABSTRACT

This graduation thesis deals with laboratory determination of adsorption isotherms parameters. Granite from the central moldanubian pluton, site Panské Dubenky, Czech Republic, was chosen to the experiment. The place is one of the candidate sites to build a deep nuclear waste disposal. A batch experiment was performed in two modes, differing in the way of addition of radioactive nuclide ^{90}Sr . From this experiment, distribution coefficients for a linear isotherm or parameters for Langmuir isotherm were obtained. Beside this, a through-diffusion experiment was performed. The objective of this experiment was to identify whether some of the radionuclides used (^{137}Cs , ^{90}Sr , ^{125}I) is able to penetrate through the pores of a granite slice barrier between two solutions of different concentrations. During the period of the experiment no radionuclide was detected reliably.