



Contribution ID: 229

Type: Poster

Separation and preconcentration of trace amounts of Sr-90 and Tc-99 from primary coolant water using commercially available sorbents and ion-exchangers.

Monday, 12 May 2014 17:15 (1h 30m)

Among the fission products of U-235 are: Sr-90 and Tc-99. Information on their content in primary coolant water is very important because it indicates the state of the fuel rods in NPP. Different analytical methods could be used for the determination of Tc-99 and Sr-90, however each method requires separation and/or preconcentration of determined radionuclide. The problems are also related to large volume of samples, what is the case of coolant water. This study outlines some batch and column studies for selective separation of strontium and rhenium (as an analogue of technetium) using commercially available sorbents and ion-exchangers. Preliminary results suggest, that it is possible to separate strontium and technetium from boric acid (main components of primary coolant water and from other beta-emitters).

Acknowledgments:

Research task No. 8 „Study of processes occurring under regular operation of water circulation systems in nuclear power plants with suggested actions aimed at upgrade of nuclear safety” partly financed by the National Research and Development Centre in the framework of the strategic research project entitled „Technologies Supporting Development of Safe Nuclear Power Engineering”.

Primary author: Dr CHAJDUK, Ewelina (Institute Of Nuclear Chemistry And Technology)

Co-authors: Dr BOJANOWSKA-CZAJKA, Anna (Institute Of Nuclear Chemistry And Technology); Prof. POLKOWSKA-MOTRENKO, Halina (Institute Of Nuclear Chemistry And Technology); Mrs PYSZYNSKA, Marta (Institute Of Nuclear Chemistry And Technology)

Presenter: Mrs PYSZYNSKA, Marta (Institute Of Nuclear Chemistry And Technology)

Session Classification: Poster Session - Separation Methods, Speciation

Track Classification: Separation Methods, Speciation