Contribution ID : **87** Type : **Oral Presentation**

Ion Beam Irradiation of Ceramic-glass Waste Form at ANSTO

Tuesday, 31 October 2017 16:30 (15)

Radioactive wastes are generated from the entire nuclear fuel cycle from mining to the burning of uranium fuel in the nuclear reactors. Pyrochlore (ABTi2O7) and zirconolite (CaZrTiO7) based glass-ceramics have been became an immerging candidate waste form matrix and attracted attention as it combines the process and chemical flexibility of glasses with the chemical durability of ceramics. It also has a potential ability to immobilize some compositionally diverse actinide-rich radioactive wastes, e.g. plutonium residue wastes and separated minor actinides. The efforts to evaluate the radiation resistance of the glass-ceramic waste form by ion beam irradiation have been undertaken using accelerators at ANSTO. This paper reported ANSTO's capability and development in this area and gave the results of the irradiation-induced structure modification in the glass-ceramics irradiated by helium and gold ions.

Summary

Primary author(s) : Dr WEI, Tao (ANSTO)

Co-author(s) : Dr XU, Alan (ANSTO); Dr GREGG, Daniel (ANSTO); Dr LUMPKIN, Greg (ANSTO); Dr KARATCHEVTSEVA, Inna (ANSTO); Dr KONG, Linggen (ANSTO); Dr VANCE, Lou (ANSTO); Dr IONESCU, Mihail (ANSTO); Dr ZHANG, Yingjie (ANSTO)

Presenter(s) : Dr WEI, Tao (ANSTO)

Session Classification : Radiation Damage

Track Classification : National and international collaborative waste management programs