

# 609<sup>th</sup> ASRC Seminar

Date: 15:00-17:00 Monday 7 December

Location: Meeting room 302, ASRC Building

Speaker: 1) Dr. Wansik Cha (Korea Atomic Energy Research Institute)

2) Dr. Zhijun Guo (Lanzhou University)

1) "Aqueous Phase Actinide Chemistry Research at KAERI: Complexation and Nanoparticle Formation of U and Pu under Reducing Conditions"

2) Surface complexation modeling of radionuclides on minerals

Abstract: 1) In KAERI, over the past decade they have studied to specify various actinide metal ions (e.g., U(VI), Pu(VI), Np(VI)) in aqueous phase mainly using laser-based spectroscopic techniques including laser-induced breakdown detection (LIBD), time-resolved laser-induced fluorescence spectroscopy (TRLFS) and micro-Raman spectroscopy. Recently, advanced analytical methods such as ATR-FTIR spectroscopy and computational chemistry have been utilized as we have put more focuses on reduced species like Pu(III) and U(IV) since the anoxic and reducing environment of deep groundwater is one of the key determinants for the speciation of actinide metal ions. In this seminar, research activities of Aqueous Phase Actinide Chemistry Research Group at KAERI are overviewed and some recent progresses are introduced.

2) In Lanzhou University, the sorption behavior of Ln and An are studied to elucidate the migration in geological formation. They have studied adsorption of trivalent Ln and An and hexavalent An on Beishan granite and Na-bentonite. They also analyzed chemical species of the sorbed An and Ln by complexation modeling. In the seminar, research activities on An and Ln chemistry at SNST are overviewed and some recent progresses are introduced.

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