



Invited speaker: Dr. Byoungkwan Kim received

Present title title: Immobilization of low- and intermediate-level radioactive waste using alkali or acid-activated geopolymer waste forms

Short CV - Dr. Byoungkwan Kim received a Ph.D. from the Division of Advanced Nuclear Engineering (DANE) at Pohang University of Science and Technology (POSTECH). The title of his dissertation was Immobilization of Radioactive Borate Waste Using Alkali or Acid-Activated Geopolymer Waste Form (Advisor: Prof. Wooyong Um).

Following his Ph.D., Dr. Kim worked as a postdoctoral fellow in the Sustainable Materials at Sheffield (SMASH) Group at The University of Sheffield (Advisor: Prof. Brant Walkley), where he investigated the immobilization mechanisms of radionuclides and radioactive waste in phosphate geopolymer waste forms, as well as the structural evolution of geopolymer frameworks, using high-field solid-state nuclear magnetic resonance spectroscopy.

Dr. Kim is currently working as a Senior Researcher at the Radioactive Waste Management Center of Korea Atomic Energy Research Institute (KAERI). His current research focuses on the development of technologies for the treatment and disposal of various radioactive wastes in South Korea.

Over the years, Dr. Kim has conducted extensive research on the immobilization of radioactive borate waste, organic ion-exchange resins, acidic liquid waste, radionuclide-organic complexes, and radioactive oxyanions (e.g., Tc, I, and Se) using alkali-activated metakaolin-based geopolymers and phosphate geopolymers. He has also developed porous geopolymer adsorbents for the removal of radionuclides from aqueous environments. In addition, Dr. Kim has been involved in research on bentonite materials for spent nuclear fuel disposal, decontamination technologies for radioactive contaminated soils, and radionuclide transport behaviour at nuclear power plant sites.