

Report of Estela Reinoso-Maset (University of Plymouth) for travel grant award

The 11th International Symposium on Environmental Radiochemical Analysis was held at the Best Western Queens Hotel in Chester (UK) from 15th to the 17th of September 2010. This symposium is organised by the Radiochemistry Group of the Royal Society of Chemistry every 4 years and provides an international forum for presentation of research in all aspects of environmental radiochemistry.

Estela's abstract entitled "Is EDTA able to solubilise Th in real environments?" was accepted for oral presentation and she attended the symposium along with her supervisor Miranda Keith-Roach and PhD colleague Jane Eagling, who both also presented their research work carried out at the University of Plymouth. The work presented by Estela included the study of Th(IV) sorption to Drigg sand in the presence of EDTA as a function of experimental conditions. EDTA is a strong complexing agent used in decontamination processes at nuclear sites and its presence as co-contaminant in radioactive waste is of concern in terms of its impact on the mobility of radionuclides in the environment. Radionuclide and complexing agent sorption to the solid phase were determined using ICP-MS and ion chromatography / UV spectrometry respectively; metal desorption was measured using ICP-OES; and metal and radionuclide complex speciation were studied qualitatively using electrospray ionisation-mass spectrometry (ESI-MS). The results have shown that the effect of EDTA on Th(IV) solubility was dependent on the Th(IV) concentration as well as the EDTA concentration and, competition from matrix metals was of fundamental importance in determining whether EDTA solubilised Th(IV). The presentation demonstrated the importance of characterising the mechanisms of radionuclide interactions in real environmental matrices by studying all components of the system under different experimental conditions.

The symposium gave the opportunity to Estela to present and discuss her research work with the UK and international delegates. The conference program included the conference dinner on Thursday and a last-minute visit of the Lord Mayor of Chester and his wife to attend the Wednesday's reception and dinner.

Estela would like to thank the RSC-Atomic Spectroscopy Group for providing her with a grant to cover her conference travel expenses respectively, which have enabled her to attend the conference.