

# **The geochemistry and mineralogy of contaminated environments**

6<sup>th</sup> June 2018, Royal Society of Chemistry, Burlington House, London

## **9.30 – 9.55 Arrival & registration**

## **9.55 – 10.00 Welcome address**

## **10.00 – 11.15 Session 1**

10.00 – 10.15 Jim Entwistle, Newcastle University

Interactions between clay minerals and aqueous Fe(II) and their role in contaminant remediation

10.15 – 10.30 Mohameed Alyami, University of Bangor

Hydrocarbon background concentration in Saudi Arabia sands and potential biological effects

10.30 – 10.45 Katherine Rothwell, Newcastle University

Assessing the effect of naturally occurring electron shuttling compounds on the reactivity of iron-bearing clay minerals

10.45 – 11.00 Ian Ross, Arcadis

Detailed site investigation of unsaturated and saturated zones for poly- and perfluoroalkyl substances (PFAS) using advanced analytical tools

11.00 – 11.15 Sulaiman Mulroy, University of Manchester

Crystal chemistry of cobalt and nickel in lateritic manganese oxides

## **11.15 – 11.45 Break & posters**

## **11.45 – 13.00 Session 2**

11.45 – 12.00 Malama Chisanga, University of Manchester

Raman spectroscopy and reverse isotopic probing: novel method for identifying microbes associated with degradation of environmental pollutants

12.00 – 12.15 Daniel Niepsch, Manchester Metropolitan University

Biomonitoring urban atmospheric pollution in the city of Manchester: lichen carbon, nitrogen and sulfur contents and stable isotope ratio signatures

12.15 – 12.30 Joanna Wragg, British Geological Survey

Can sequential extraction data identify the mineralogical source(s) of bioaccessible Potentially Harmful Elements?

12.30 – 12.45 Tobias Roetting, WSP

Investigation of the impact of heap leach pad seepage on rock mineralogy and geochemistry

12.45 – 13.00 Felipe Sepulveda, University of Glasgow

Development of a sustainable low-cost bio-active amendment for the in situ remediation of urban brownfield sites

## **13.00 – 14.00 Lunch & posters**

## **14.00 – 15.00 Keynote speaker Tom Sizmur (University of Reading)**

Mercury biogeochemistry in the intertidal zone

## **15.00 – 15.30 Break & posters**

### **15.30 – 16.30 Session 3**

15.30 – 15.45 Richard Murphy, Arcadis

Chemistry and engineering aspects of the application of soluble phosphates for uranium treatment in groundwater

15.45 – 16.00 Adrian Cleary, University of Manchester

Co-treatment of strontium, technetium and uranium in radioactively contaminated land with glycerol phosphate

16.00 – 16.15 Sam Bingham, University of Bristol

The role of the Upper Greensand aquifer as a sink and source of phosphate within the Hampshire Avon catchment

16.15 – 16.30 Joseph Nwachukwu, Manchester Metropolitan University

Urban development and human exposure to chemical contaminants: Owerri, southeast Nigeria

### **16.30 – 16.45 prize awards & close**

#### **Posters**

Harry Brooksbank, Newcastle University

Assessing the sustainability of Fe-bearing clay mineral redox reaction for application in engineered systems

Victoria Frankland, University of Surrey

Characterisation of uranium species by time-resolved laser fluorescence and Raman spectroscopy

Lisa Füllenbach, University College London

Using siderite dissolution for in situ Pb immobilisation

Daniel Geddes, University of Sheffield

Applications for metakaolin based geopolymers as an encapsulant for intermediate level waste

Emma James, University of Leeds

Assessment of the impact of leak zone processes in the natural attenuation of radionuclides

Tom Kelly, University of Reading & British Geological Survey

Flood duration and its effect of potentially toxic element (PTE) mobility in soils

Alicja Lacinska, British Geological Survey

Novel solution for immobilisation of toxic Cr(VI) with simultaneous capture of CO<sub>2</sub> in siderite - pilot study

Aminu Lawal, University of Bristol

Weathering processes in agricultural karst landscapes in southwest China

Evangelos Mouchos, University of Bristol

Determination of the origins and rate of phosphorus release to groundwater in the Upper Greensand, Hampshire Avon Catchment, UK

Josephina Mulders, University College London

The effect of organic acids on siderite dissolution

Julia Parker, Diamond Light Source

A hard X-ray nanoprobe for multi-modal analysis of geochemical samples at Diamond Light Source

Jessica Ponting, University of Reading

Influence of floodplain topography on soil chromium concentrations

Ian Ross, Arcadis

In situ bio-oxidation of a petroleum hydrocarbon plume by stimulation of denitrifying and aerobic microbial populations

Hannah Smith, University of Sheffield

Effect of transmutation of high-level nuclear waste glass on long term durability

Agustín Solano Arguedas, University of Manchester

Natural biogeochemistry of Co, Ni and Cr in Costa Rican lateritic soils

Sophie Sutherland-Harper, University of Manchester

Heat treatments of  $\text{Cl}^-$  and water-contaminated  $\text{PuO}_2$  and its analogues

Luke Townsend, University of Manchester

Evolution of uranium speciation during sulfidation of iron (oxyhydr)oxides

Gianni Vettese, University of Manchester

Searching for the elusive U(V) during microbially mediated reduction of U(VI)

Matthew White-Pettigrew

The use of PHREEQC in characterising the fate of heavy metals in mine water

Jing Zhang, University of Manchester

Interaction of molybdenum with hematite and magnetite