Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary information

Polyethyleneimine for copper absorption II: kinetics, selectivity and efficiency from seawater

Johan B. Lindén,[a] Mikael Larsson,[*a] Simarpreet Kaur,[a] William M. Skinner,[a] Stanley J. Miklavcic,[b] Thomas Nann,[a] Ivan M. Kempson[a] and Magnus Nydén

[a] Ian Wark Research Institute, University of South Australia, Mawson Lakes, SA, 5095, Australia.
[b] Phenomics and Bioinformatics Research Centre, University of South Australia, Mawson Lakes, SA, 5095, Australia.
[*] To whom correspondence should be addressed. E-mail: larsson.mikael@gmail.com; Fax: +61-8-830-23493 Tel: +61-8-830-23493

S1. Copper speciation in the PEI coatings

Copper speciation in the PEI coatings was investigated using X-ray Absorption Near Edge Spectroscopy (XANES) and compared to a variety of standards, see Figure S1. None of the XANES spectra of the standards investigated gave a reasonable fit through linear least square fitting with the spectra of PEI in solution.

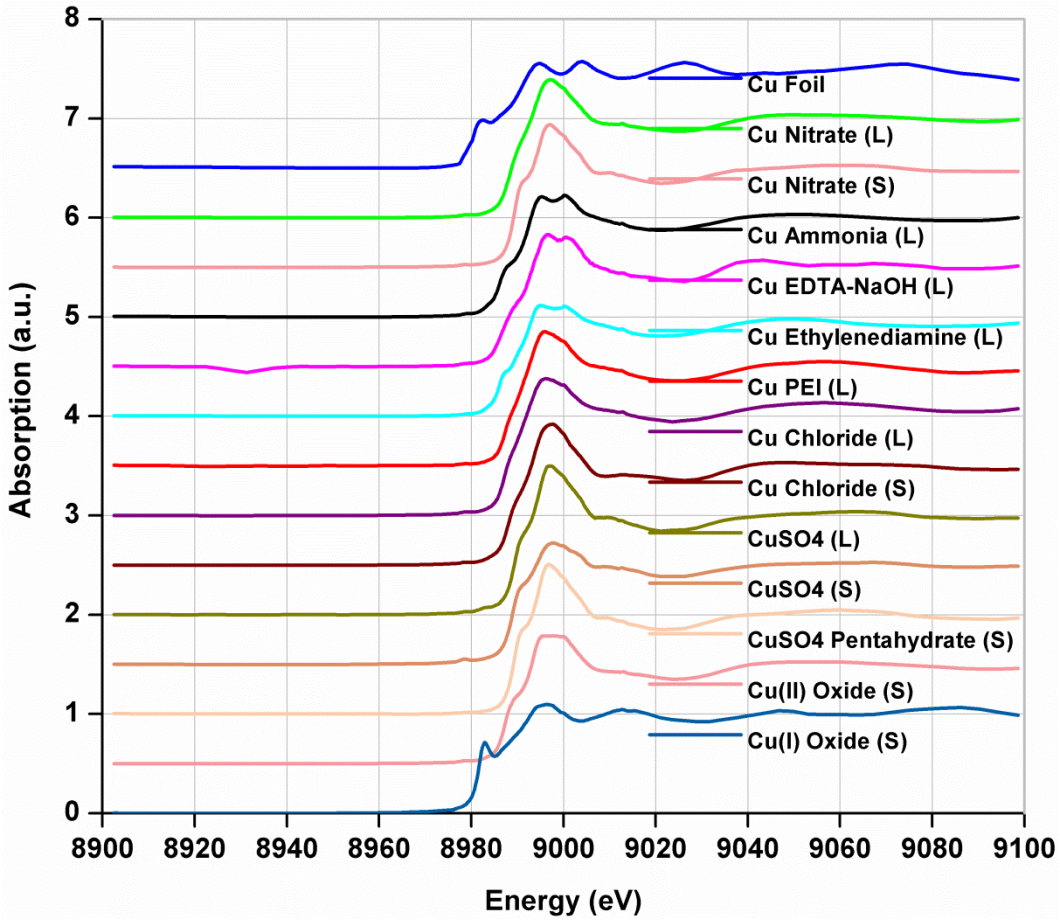

Figure S1 Copper standards analysed by XANES. (L) = liquid standard in Milli-Q water, concentration 1000 ppm. (S) = solid standard prepared by mixing with microcrystalline cellulose (powder, 20 µm) to a concentration of 10 000 ppm. All samples were sealed in Kapton tape. Samples of liquid standards were plunge frozen in liquid nitrogen before analysis. Cu(I) oxide (S) was prepared in glove box under argon atmosphere.