



Thorium binding by biochar fibres derived from *Luffa Cylindrica* after controlled surface oxidation

Ioanna Liatsou, Eleni Christodoulou, and Ioannis Paschalidis

Department of Chemistry, University of Cyprus, P.O. Box 20537, Cy-1678 Nicosia, Cyprus (liatsou.ioanna@ucy.ac.cy)

Controlled surface modification of biochar fibres derived from *Luffa Cylindrica* sponges has been carried out by nitric acid and the degree of oxidation could be controlled by changing the acid concentration or the reaction time. The extent of surface oxidation has been quantified by acid-base titration and FTIR-spectroscopy. Furthermore, thorium binding has been studied as a function of various parameters and the experimental results show that even under strong acidic conditions the relative sorption is above 70% and the sorption capacity of the biochar fibres for Th(IV) at pH 3 is $q_{max} = 70 \text{ g} \cdot \text{kg}^{-1}$.