

# PhD position open!

Environmental and Isotope Geochemistry Group  
Faculty of Environmental Sciences  
Czech University of Life Sciences Prague



**KGEV**

katedra geoenvironmentálních věd

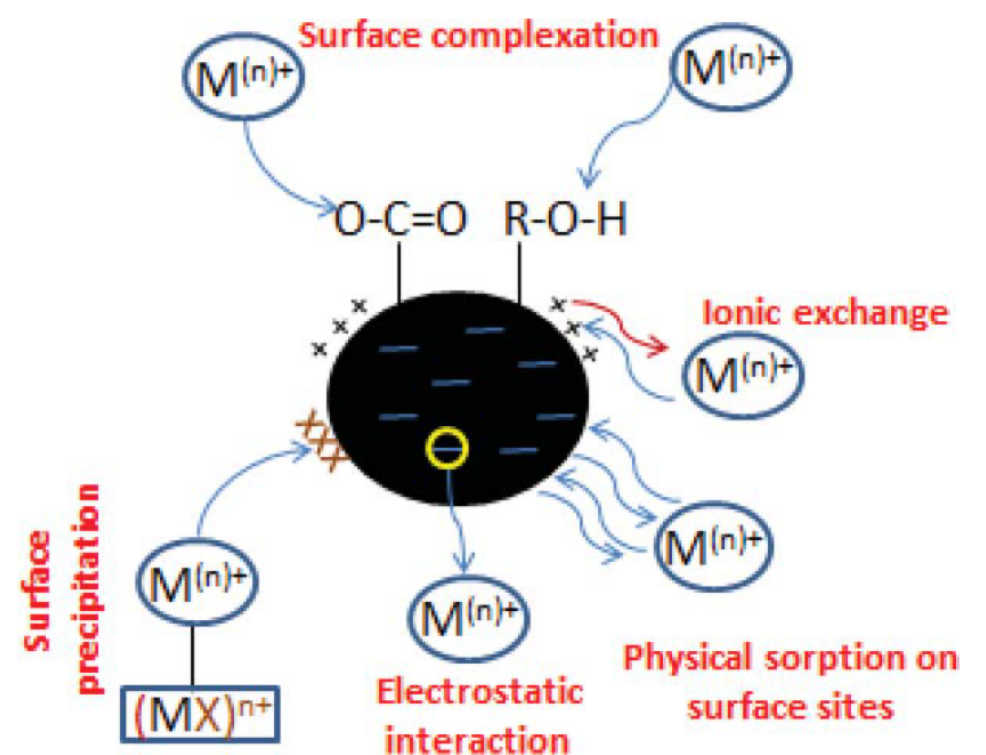
## Modelling of transport of selected metals in remediated soil by biochar using the reaction-transport HPx model

The Environmental and Isotope Geochemistry Group invites applications for a PhD position within the topic “Modelling of transport of selected metals in remediated soil by biochar using the reaction-transport HPx model”.

### Short description

Biochar is an efficient biosorbent that is being used for the removal of metals from contaminated soils. Metal sorption contains following possible mechanisms: (i) ion exchange; (ii) complexation onto free specific functional groups; and (iii) physical adsorption or surface precipitation.

While numerous studies have investigated metal uptake from solution by biochar (including the sorption mechanisms description; see the Figure), almost none of these have developed a modelling approach of the metal binding to biochar. In this study, we are, therefore, trying to describe the interaction of free metals with a biochar surface as (i) specific sorption to functional groups; (ii) non-specific accumulation of (counter)ions near the surface by electrostatic forces; and as (iii) (co-)precipitation, when for each specific biochar are these mechanisms individual.



*Inyang, et al., 2016*

### Requirements

- Diploma in a relevant natural or environmental science discipline (e.g., geochemistry, soil science, hydro(geo)logy)
- At least elemental modelling background
- Ability to work in an interdisciplinary team of various fields of geosciences

Salary: 20,000-25,000 CZK/month net (785-980 EUR) + bonuses

Application deadline: March 10 2019

Start: October 1 2019

Please email applications together with CV and a letter of recommendation by supervisor to: [trakal@fzp.czu.cz](mailto:trakal@fzp.czu.cz)