

Review of PhD Thesis entitled „Bioremediation of Persistent Aromatic Pollutants“ submitted by Tatiana Stella.

The thesis deals with remediation of soil contaminated by aromatic compounds and by degradation mechanism of chlorinated organic pollutants.

The first chapter of thesis describes fate of PCB in contaminated environment, methods of bioremediation and phytoremediation. In Chapter 2 author describe „Mycoremediation experiment with PCB contaminated soils. Chapter 3 studies mechanism of fungal degradation of organic pollutants. Concluding remarks are summarised in Chapter 4.

The major results may be summarised that integrated chemical, toxicological and molecular biology techniques provide a comprehensive evaluation of key parameters affecting the technical feasibility and the efficiency of the mycoremediation process.

I have following question/remarks to the presented text:

page 37 – As, Be are not heavy metals, Be is light, As is metalloid. Information about soil parameters determination (pH, S, N, humic and fulvic acid etc) is not mentioned in the Methodology section. The role of inorganic components is not in detail discussed in the text.

page 38 – why chapter with kinetic model description is called „Bioavailability of PCBs“ ? This part is dealing with kinetic model. What is the limiting parameters of described first order kinetics ? How was the described kinetic equation selected from other first or second order models ?

page 43 CEC and S content are similar values. Is it correct or typing error?


Is it possible to express e.g. accesible Ca to 5 digits ? if cooperating company used standard techniques ICP OES or AAS it si not. Similarly Zn ... I suggest that no.

References – journal name should be writen either in abbreviation or in full titles, not both

The thesis is well written, in clear and correct English. The topics are clear and of scientific importance but also have clear applied components. The main result were published in two papers: Stella et al. (2013) Journal of hazardous materials 260, Kresinova et al. International journal of environmental analytical chemistry (in press).

I considered that the document presented by the candidate is of the very good quality as required, and to my opinion Ms. Tatiana Stella should be authorized to defend her thesis in order to obtain the PhD degree.

Prague, May 25, 2014


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