KEMIJSKI INŠTITUT

Vabilo na Preglov kolokvij / Invitation to the Pregl colloquium

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Četrtek / Thursday 21. 10. 2021, ob / at 13:00

Velika predavalnica Kemijskega inštituta /
Great Lecture Hall
National Institute of Chemistry
Hajdrihova 19, Ljubljana, Slovenia

Environmental issues tackled by novel analytical chemistry: from stranded whales to arsenic in rice

The lecture will give an overview about the philosophy of environmental analytical chemistry with the focus on elemental speciation. Using at least two examples in which the interdisciplinary nature of toxic elements in the environment will be illustrated. Using total element concentrations rarely correlate well with their mobility and toxicity of trace elements, hence the molecular forms of the elements need to be determined. This concept will be illustrated why rice is a hyperaccumulator of arsenic and how this research helped to implement a new EU regulation about the maximum concentration of inorganic arsenic in rice and rice-based products. How can this new regulation be monitored? The second example will illustrate how mercury bioaccumulates in the marine food chain and why pilot whales develop a detoxification strategy in which mercury selenide nanoparticles are biosynthesized in the liver or the brain of pilot and sperm whales. Is the formation of these nanoparticles a reason for the mass stranding of whales?

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Vljudno vabljeni / Kindly invited