# Title
## Soil pullution: a hidden reality

**Presenter**:
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**Date and time:**
Date: 11 June 2026
Time: 14:00

**Location:**
Building XIX. seminar room
Address: KFKI campus

**Seminar link:**
https://teams.microsoft.com/meet/396084517530912?p=jSVIPCcVWzrLa4x8C2

**Abstract:**

Soil pollution is a serious global problem posing significant health risks to ecosystems and living organisms due to the detrimental effects pollutants may exert on (a)biotic systems. Major causes of soil pollution are intentional anthropogenic activities like agriculture, industry, military, transportation, and waste(water) disposal, but also accidents like oil spills. Thus, the variety of soil pollutants is enormous, comprising of inorganic (e.g., metal(loids)s, cyanides, radionuclides) and organic (dioxins, BTEX, PAHs, PCBs, PFAS, DDT, etc.) pollutants. Various physical, chemical, and biological remediation methods can be applied alone or combined to tackle soil pollution. Chemical immobilization is an in situ, environmentally friendly and cost-effective remediation technique for non-biodegradable pollutants like metal(loid)s (e.g., Cd, Cr, Cu, Ni, Pb, Zn, As and Sb). This method relies on the use of adsorbents, which, upon being mixed with the polluted soil, adsorb pollutants through various mechanism and thereby reduce their leaching, and hence environmental mobility and bioavailability, and in turn potential health risks. Although several factors affect adsorption efficiency (soil quality, pollutant properties, weather, vegetation, etc.), it can be enhanced by tailoring material characteristics of the adsorbent through e.g., surface coating and functionalization. In fact, adsorbent development for environmental cleanup applications is a hot research topic to date. At BNC, synthesis, characterization, and use of silica-based adsorbents for metal(loi)d removal from wastewater through adsorption have been investigated for several years already. Hence, with my expertise in adsorbent use for environmental remediation, I am going to contribute to this research during my postdoc here at BNC.

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