

ELECTROKINETIC DECONTAMINATION OF SOILS POLLUTED BY COBALT

ELEKTROKINETICKÁ DEKONTAMINACE PŮD ZNEČIŠTĚNÝCH KOBALTEM

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Abstract:

Electrokinetic decontamination uses electric field to extract heavy metals, radionuclides, and certain organic compounds from soils. The application of electric potential on electrodes placed in soil causes transport of contaminant ions to the electrodes of opposite charge. Concurrently occurring electrolysis of water can substantially influence this process.

The efficiency of electrokinetic decontamination has been tested on soil artificially contaminated by cobaltous chloride using modified commercial horizontal electrophoresis unit with acetic acid as a conditioning solution. The results showed significant cobalt migration towards the cathode in soil under electric field. After fifteen days, less than ten per cent of the initial content of cobalt remained in the treated soil.

Keywords:

Electrokinetic decontamination, electrolysis of water, soil, cobalt, acetic acid