EuroSciCon

2nd Edition of EuroSciCon Conference on

Chemistry

February 19-20, 2019
Prague, Czech Republic

Seunghun Hyun et al., J Org Inorg Chem 2019, Volume: 5
DOI: 10.21767/2472-1123-C1-021

REMOBILIZATION POTENTIAL OF METALLIC ELEMENTS (CU, ZN, AS, CD, AND PB) FROM AMENDED MINE SOIL UNDER UNSTEADY-STATE SEEPAGE CONDITIONS

Seunghun Hyun[2] and Juhee Kim[1]

[1]Civil and Environmental Engineering-Georgia Institute of Technology, USA
[2]Environmental Science and Ecological Engineering-Korea University, South Korea

Remobilization potential of several metallic elements (Cu, Zn, As, Cd, and Pb) from mine soils amended with three stabilization materials (mine sludge, steal slag, and limestone) was evaluated by consecutive batch leaching, sequential extraction, and 1-D seepage flow experiments. Metallic elements were effectively immobilized by amendments treatment for one month, as proved by the decrement (10.6–92.7%) of the labile fraction compared to non-amended soil. However, metallic elements were remobilized during 14 consecutive leaching and 400 PV of seepage. In particular, repeated wetting-drying treatments during batch leaching tests and flow interruption events during seepage flow facilitated the remobilization, as demonstrated by increase in elution mass in effluents (gm), leaching rate (*k*, min-1) to seepage water, and labile fraction in soil phase. Mechanism for increased remobilization potential as affected unsteady state soil-water interaction is being investigated

Biography

Seunghun Hyun is a Professor in the Department of Environmental Science and Ecological Engineering at Korea University since 2006. He has received a PhD degree from Purdue University in 2003. He had BS and MS degree from Korea University. His expertise is of contaminant fate/clean-up in (potentially) contaminated sites such as abandoned mines, landfill, etc. His recent research project funded by Korean Government is Assessing Long-Term Fate of Heavy Metal by Understanding Nonequilibrium Characteristics of Natural Attenuation Process.

soilhyun@korea.ac.kr