Application of Nano Iron in the Remediation of Cr-Contaminated Soil and its Effect on Plant Growth and Soil Bacteria

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Abstract

Recently, a huge amount of laboratory-scale research and field tests are being carried out internationally in order to assess the effectiveness of iron nanotechnology in environmental cleanup. Published results have shown that nano iron is an effective tool for remediation of water and soil from various kinds of organic and inorganic pollutants. Together with this, increasing attention is also paid to the impact of nano iron on the biosphere.

In this research, nano iron will be applied to remediate soil samples contaminated with chromium. Hexavalent chromium is a well-known pollutant in water and soil, particularly in the vicinity of industrial regions. In addition to this, the effect of nano iron on plant growth and soil bacteria will be investigated. Nano iron will be synthesized, and its efficiency toward Cr(VI) removal will be tested using laboratory scale experiments at the department of Chemistry. The experiments will be performed under various experimental conditions. The assessment of nano iron impact on plant growth and soil bacteria will be realized.