

Biomineralization and bioremediation

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In the last decade, we developed a series of biomineralization based bioremediation technologies for heavy metals and organic pollutants contaminated soils and waters. In this presentation we briefly review the following typical technologies and their application in China. 1) Microbial induced calcite precipitation for immobilization of multiple heavy metals in soils; 2) Bioconsolidation of mine tailings and reduction of leaching of heavy metals; 3) Biological selenite reduction for sequestration of mercury and other heavy metals; 4) Biogenic of Mn oxides for stabilization of heavy metals and degradation of organic pollutants in soil; and 5) Biomineralized granular sludge for removal of heavy metals and organic pollutants in wastewater/leachate. Some of these technologies were successfully applied to remediate soils in northwest China.