

Zero Valent Iron Nanoparticles

The solution for contaminated sites or another threat for health and environment induced by human activity

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Zero valent iron nanoparticles (nZVI) are one of the newest environmental remediation technologies used especially in case of in situ applications. First of all due to their small size (10 -100 nm) and thus their large surface area nZVI particles are more efficient compared to other technologies for groundwater cleanup. This small size makes it possible that the particles are spread easily in soil by the flow of groundwater, what can lead into reduction of cleanup time. The above mentioned abilities make nZVI a cost efficient treatment tool. The option for further modifications in the future could lead to even lower operation expenses. nZVI can be used to treat several compounds e.g. nitrite, chlorinated methanes, brominated methanes, trihalomethanes, chlorinated ethenes, chlorinated benzenes, other polychlorinated hydrocarbons, pesticides and dyes.

The core of this project is to describe the benefits of this green nanotechnology and analyze the possible unforeseen side effects of using nZVI.