

## **Sequestration of Se(VI) using S-ZVI under oxic and anoxic conditions**

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Sulfidation of zero valent iron (S-ZVI) has been recently received growing attention as a promising material to remove pollutants from contaminated water, due to its higher reactivity and selectivity characteristics compared to zero valent iron. In this work, we study the efficiency of S-ZVI to remove selenate Se(VI) from water. Scanning electron microscopy (SEM) coupled with energy-dispersive X-ray spectroscopy (EDS) were used to characterize surface morphology and elemental mapping of the S-ZVI samples. X ray diffraction was performed to predict S-ZVI transformation and X-ray photoelectron spectroscopy (XPS) was used to distinguish the different oxidation state of sulfur, iron and selenium. Experiments were performed at both oxic and anoxic environment and under various conditions (pH, initial concentration of Se(VI), S/Fe ratio). The general outcome will help to understand the Se(VI) sequestration process and therefore improve the effective use of S-ZVI in remediating inorganic pollutants.