



Chapter 2

Advances in Wastewater Treatment Using Natural and Modified Zeolites

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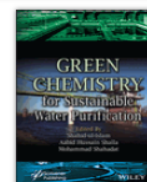
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Summary

Because of their bioaccumulation and poisonous nature, heavy metal ions in wastewater pose a major health risk. There is a variety of traditional methods for removing harmful metal ions from wastewater, but ion exchange/sorption is one of the most successful, cost-effective, and simple to utilize. As sorbents, various materials, such as cellulose, coal, and peat, have been employed in recent years. However, emphasis has been placed on the utilization of low-cost materials as promising sorbents for eliminating hazardous metal ions from wastewater. Aluminosilicate minerals with strong thermal and chemical resistance are known as zeolites. The sorption of various metal ions on different zeolites with variable Si/Al ratios, pore diameters, and surface areas will be the main focus of this chapter. Also discussed are the effects of pH, concentration, temperature, and contact time on adsorption.

References



Green Chemistry for Sustainable Water Purification



References



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Kinetics of Sorption, Desorption, and Diffusion in Zeolites

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Angewandte Chemie International Edition in English

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Treatment of wastewater containing copper, zinc, nickel and cobalt using Duolite ES-467

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