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Sommario/riassunto

"Water pollution is topic of immense and common concern throughout the world. With a rapidly escalating global population and increased industrial development in a growing number of countries, the world's freshwater resources have become stressed. One way to get more out of less is 'treatment and reuse'. Nickel and chromium are toxic metals and they are used extensively in numerous industries such as textiles, beverages, steel, pulp and paper, and electroplating. Their industrial effluent contains large measures of non-biodegradable traces that are harmful to flora, fauna, and human beings. Although there are a number of methodologies used for treatment of metal-containing industrial effluents and waste water, there is not one up to now that offers a high capacity removal rate at an economical cost. This book presents the results and data from research and adsorption experiments carried out on the removal of nickel and chromium (as well as other metals) from aqueous solutions using modified silica sand. The data resulting from detailed kinetic, equilibrium and thermodynamic studies, show that the removal capacity is increased so the treated water has a higher quality or purity. It also demonstrates that the extraction of metals is achieved at a significant lower cost because the treated water adsorption is a simple process with less maintenance, and because silica is a nontoxic natural material widely available in all parts of the world. "--