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Autore	Homaeigohar Shahin
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Sommario/riassunto	Given that the threat of water shortage is expanding across the globe, the evolution of advanced technologies that enable water purification and, thus, water re-use in an energy and resource efficient manner are of great importance. In this regard, nanomaterials have been playing a crucial role and offering new opportunities for the construction of permeable and selective membranes and adsorbents. Such features are of paramount importance, particularly given the limited available energy resources. In this book, several recent studies are introduced that deal with water treatment via nanomaterial-based technologies. Such state-of-the-art technologies have employed nanomaterials that are made of polymer, composite, ceramic, and carbon, etc., and are shaped in various dimensionalities and forms such as particle (0D), fiber (1D), and film (2D-3D). The nanostructured membranes and adsorbents as well as photocatalytic nanosystems capable of active photodecomposition of organic pollutants, e.g., dyes, are the main focal points of discussion.