Preface

Nanotechnology has been developed as a consequence of significant advances in the materials science community. In the excitement surrounding these materials and technologies, however, their potential has been, frequently overhyped. The book explores these kinds of materials and forward-looking potential applications for water engineering. The book chapters are organized in a good way and make extensive use of illustrations.

The first chapter introduces an overview of the water technologies and nanomaterials for water purification. From chapter two to chapter five, the aim is to provide the readers with information about the advanced nanomaterials and their methods of preparation with more focus on green methods such as microwave-assisted methods for the synthesis of nanomaterials and fundamentals and sources of magnetic nanoparticles. Biomaterials are good sources for the preparation of nanomaterials and their use as a support as well. Thus, chapters six and seven introduce scientific insights into modified and non-modified biomaterials and the production of activated carbon for pollutants removal. Next chapter will introduce cost-effective sources and ideas for utilizing waste polymers either as adsorbents or as sources for the production of adsorbents.

Sources such as chitosan have been proven to be potential efficient adsorbents which will be discussed in chapter ten. The next chapter will focus more providing examples on the use of chitosan micro/nanoparticles to remove hexavalent chromium from waters. The last chapter will highlight the applications of nanomaterials for water treatment with types of future research suggestion in the field.

We welcome suggestions from readers towards improvements that can be incorporated in future editions of this book.

We hope that you enjoy the book!

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