

# PREFACE

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The Centre for Water Engineering and Management came into existence in July 2010 and is presently offering five-year integrated MTech, two-year MTech degrees, and a separate PhD program in Water Engineering and Management. With a mission to encourage innovative approaches of thinking, the center is in the process of developing highly skilled manpower in the field of water engineering. Water is at the core of sustainable development and is critical for socioeconomic development, healthy ecosystems, and for human survival itself.

The world's population is increasing and concentrating more and more in urban areas. This trend is particularly intense in developing countries, where an additional 2.1 billion people are expected to be living in cities by 2030. These cities produce billions of tons of waste every year, including sludge and wastewater. In India, the estimated sewage generation from Class I cities and Class II towns (representing 72% of urban population) is 38,524 million liters/day (MLD), of which there exists a treatment capacity of only 11,787 MLD (about 30%). How the treated wastewater is being used is something that needs to be looked into. India needs a national wastewater reuse policy to help address the urban and rural water demand by quantifying the targets and laying out legislative, regulatory, and financial measures to achieve those targets. It is a matter of great pride that the Government of Jharkhand has devised a Jharkhand Waste Water Policy 2017 to ensure increased use of recycled water for other purposes apart from drinking, through the provision of appropriate technologies for water recycling and protection of the environment.

The International Conference on Water and Wastewater Management and Modelling was held January 16–17, 2018 at Ranchi, India. The conference received a good number of research papers and review articles. The research papers were reviewed critically, and we are happy to have them collected in this volume. This will ensure larger distribution and circulation of the edited book in the research and teaching community across the world. The book is organized in chapters covering major themes of the conference; the chapters are divided into sections, and the sections into topical subsections.

The authors want to record their gratitude to all the contributing authors who participated in the conference. We take this opportunity to express our

gratitude towards our Honorable Vice Chancellor, Prof. Nand Kumar Yadav 'Indu,' for his constant encouragement and support. I would like to thank the editorial staff, Sandy Jones Sickels, Vice President, and the production team at Apple Academic Press, Inc., for considering this book to publish when reuse of wastewater needs to be encouraged and streamlined in developing nations. Special thanks are due to the AAP production staff for bringing the quality production.

I request readers to offer their valuable and constructive suggestions that may help to improve future endeavors.

I express my deep admiration to my wife, Punam, and daughter Anushka, for their unconditional support and cooperation during the preparation of this book.

—Ajai Singh, PhD, FIE