
Preface

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The desire for pure drinking water is not a modern phenomenon. Early humans thought that the taste of the water determined its purity. The *Sus'ruta Samhita*, Sanskrit writings about medical concerns, of approximately 2000 BC, offers evidence that water treatment may well be as ancient as humans are. The Greeks and Romans are well known for their elaborate water systems. These early water treatment professionals used a variety of methods to control taste and odour problems in their water supplies. A correlation between water quality and health was made, in the mid-19th century in London, when a decrease in cholera deaths epidemics were noticed where slow sand filters had been installed.

The World Health Organization (WHO) has set international guidelines for drinking water. Almost all countries have drinking water quality regulations, often inspired by the WHO's guidelines. According to the United Nations, over 1.1 billion people are currently without safe drinking water. It is predicted that a significant fraction of the global population (over 3.5 billion people) will live in areas facing severe water shortages by the year 2025. According to WHO estimates, more than two million children die every year owing to water-borne diseases. More than half of the world's hospital beds are occupied by patients suffering from these diseases. Water-borne diseases cost the Indian economy 73 million working days a year. Many of these diseases can be prevented by safe drinking water. The United Nations General Assembly has proclaimed the years 2005–2015 as the International Decade for Action 'Water for Life'. The government of India has launched 'Bharat Nirman' Yojana, which includes drinking water as an important programme.

It is in this context that the role of desalination and water purification becomes very important. Bhabha Atomic Research Centre (BARC) has been in the forefront in the field of desalination and water purification technologies and is characterised by a unique synergism of capabilities from laboratory development to project implementation. There is a need to build interfaces amongst academia, R&D laboratories, industries and users to create an environment for innovation and invention with support from policymakers. The position paper and technical report on desalination and water purification technologies prepared based on a brainstorming session convened by Principal Scientific Adviser, Government of India, on 23 August 2005, and subsequent national level discussion organised by BARC on 27 February 2006, emphasised the need for technical meetings in the form of symposia and seminars at periodic intervals to exchange information and debate the problems to identify solutions.

The Trombay Symposium on Desalination and Water Reuse (TSDWR-07), which took place in February 2007, was one such step in that direction. It addressed the issues related to desalination and water reuse, including integrated water resource management, and brought together desalination and water purification technologists from government R&D, academia and industry, as well as representatives from NGOs and user groups, including policymakers.

There was an excellent response from the water community. The papers received covered a wide range of topics from water resource management to different aspects of desalination and water purification. In all, about 70 papers were accepted. They were arranged into nine technical sessions with each of them having invited talks from eminent experts in the field along with oral and poster presentations spread over three days. This special issue of *IJND* contains a selection of those papers.

It is my privilege to thank all the contributors, patrons, advisors and organising committee members of TSDWR-07 and the Executive Committee members of the Indian Desalination Association for their wholehearted cooperation and support in this societal endeavour.