

## Production of high-purity water by membrane processes

Rajindar Singh

Siemens Water Technologies Corp., Colorado Springs, CO, USA  
Tel. +1 719 265 6213; email: rajindar.singh@hotmail.com\*

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### ABSTRACT

Membrane processes, especially reverse osmosis, have played a major role since the early 1990s in the production of high-purity water for power, pharmaceutical, beverage and semi-conductor industries, and will continue to play a critical role in the growth of this water sector to meet ever-increasing demands of water purity, especially in microelectronics applications. Power plants are the single largest user of high-purity water. Membrane processes are also being increasingly used in the reduction of wastewater, water reclamation, recycle and conservation, and environmental pollution control. The production of high-purity water and ultra-pure water for the above-mentioned industries is described in detail. Recent advances, new processes and membrane development such as high performance systems, hot water sanitisation and shrinking line width in microelectronics devices to meet critical requirements are discussed.

*Keywords:* RO; Ion exchange; EDI; Power; Microelectronics; USP water; HERO™

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\* Present address.