

## **29c Overview of Membrane Bioreactors**

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Membrane bioreactors were originally developed to facilitate enzymatic transformations and cell-based synthesis of pharmaceutically active compounds. Notwithstanding their continued development for those applications, in the last five years there has been an explosive growth of membrane bioreactors for water treatment processes due to novel membrane material structures and innovative process technology. This presentation will provide an overview of membrane bioreactor engineering principles, materials, equipment, process applications, and prospects for the future.