

## Advances of Membrane Technology in Water Treatment

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The increase of freshwater supply and better sanitation are two of the world's most pressing challenges. In particular, the continuing water demand, mainly for industrial production, public water supply and in particular agriculture use, combined with climate change, result in a continuously increasing water stress [1]. In this scenario, the development and use of membrane operations has an important role in the water efficiency and water savings by recovering and reusing the different wastewater sources. Membrane technology is already a well-established process in several sectors, as seawater desalination by using Reverse Osmosis (RO), and it can be still considered innovative for many others. In this context, the development of novel materials and approaches for producing membranes, which can be considered the "heart" of the membrane processes, is constantly growing. In this work, some of the recent advances in membrane preparation, dealing with *i*) innovative hydrophilic polymerisable bicontinuous microemulsion (PBM) coating of commercial membranes for reducing their fouling and improving the performance and life of the membranes in water treatment [2-4], and *ii*) innovative catalytic membranes for wastewater treatment [5-6] as membrane pre-treatment for fouling reduction, are discussed in details.

### References

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