Nanostructured membranes functionalized with graphene oxide

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Graphene oxide (GO) is a promising candidate as membrane material for aqueous separations thanks to the fast water permeation by the low-friction flow of a monolayer of water through 2D-capillaries, combined with size and electrostatic exclusion mechanisms able to increase membrane selectivity and to reduce fouling. This work focus on design and production of high performing and "green" graphene oxide (GO) membranes for desalination and water treatment by two different methods: blending of GO in a polymer solution to produce mixed matrix membranes and deposition of GO on a porous membrane to obtain composite GO membranes. The results evidence improved performance in comparison to traditional polymeric membranes.

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