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Advantages obtained through the elimination of chemical products in the pre-treatment process of large desalination plants for the control of fouling, biofouling and scaling in reverse osmosis membranes

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ABSTRACT

This paper presents the results of research work conducted as part of a doctoral thesis and undertaken with the aim of resolving the problem of *accelerated fouling* of *reverse osmosis membranes* (made from spiral-wound polyamide), as a result of the deposition of colloidal particles (particulate fouling), the precipitation of inorganic salts (scaling) and the accumulation of living and/or dead biological matter (biofouling). The reverse osmosis modules affected form part of the Las Palmas III (LP3) desalination plant run by the company EMALSA (Spanish initials: Empresa Mixta de Aguas de Las Palmas). This plant is located on the island of Gran Canaria (Spain) and supplies potable water to around half a million people.

Keywords: Scaling; Fouling; Biofouling; Reverse osmosis

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