



# 3<sup>rd</sup> INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

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“CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD”

## New Technologies in the Tertiary Treatment of Industrial Water

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### Abstract

The dissolved salts removal for process water because a very usual requisite in actual times. Ultrapure water for the most diverse applications, such as high pressure boilers, medication, beverage and microelectronics, the salt removal become a fundamental item with water quality and treatment efficiencies each time more strict.

With the objective to comply with the fast-growing demand for more strict characteristics of process Waters, new Technologies are being developed, allying higher efficiencies to lower operation costs.

In this context, through the application of the Cleaner Production Tools, it was elaborated a change analysis considering a technology increase in the tertiary treatment of industrial water for dissolved salts removal comparing ion Exchange resins versus reverse osmosis followed by one of the latest treatment Technologies, the electrodeionization .

For such analysis, it was evaluated the capital and operational costs of each treatment process (considering the same work conditions) targeting the optimization of the treatment process. Through these costs calculated by volume of water treated, it is possible to conclude clear advantages of the reverse osmosis and electrodeionization units.

**Keywords:** *Cleaner Production, Eletrodeionization, Ion Exchange, Demineralization*

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