Dessalinização Eletroquímica

Electrochemical Desalination

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Desalination is a challenging issue regarding to the provision of drinking water to semiarid regions in which brackish water is available in large volumes in the underground. Capacitive deionization (CDI) is an electrochemical technology emerging as a cost-effective alternative for desalination, besides its easy operation and maintenance. CDI is an electrosorption process removing and storing ions in the double electric layer, according to Figure 1a. After saturation, the electrodes can be regenerated by short-circuiting the electrodes or applying a reverse potential, as illustrated in Figure 1b. The development of electrodes capable to store large amounts of ions is of paramount importance for the effective application of this technology. In this talk, different strategies adopted in our research group at the Laboratory for Environmental Technologies (Latea) to improve electrode capability and kinetics are addressed, as well as the future perspectives regarding to the development of CDI.

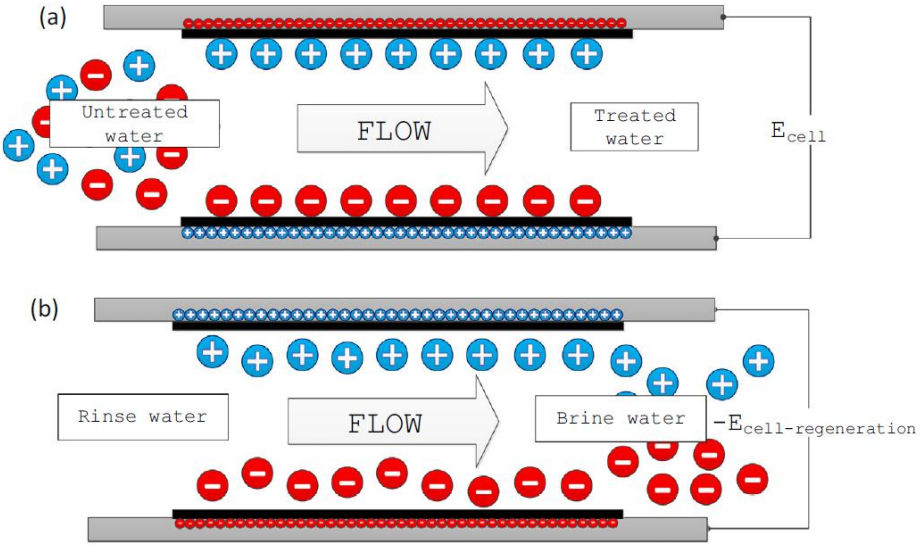

Figure 1. Scheme of a CDI device: (a) electrosorption and (b) regeneration.

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Referências:
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