

Effect of carbon felt pretreatment as electrodes for capacitive deionization

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As increasing incidence of contamination and shortage of clean water for human consumption, many researches were focused on improving water treatment. A typical water treatment facility involves in filtration, sedimentation and biological treatment, etc. However, these techniques require addition of chemicals that produce problem of proper disposal. Capacitive deionization (CDI) is a technology for removing ionic species from aqueous solutions. This process is conducted at ambient conditions and low voltages and requires no high-pressure pumps, membranes, distillation columns, or thermal heaters. CDI removes ions by charge separation and therefore may avoid the scaling problem commonly associated with membrane and distillation processes.

In this work, we investigated the effect of carbon felt pretreatment as electrodes for CDI. The effect of pretreatment was evaluated by cyclic voltammetry, SEM and BET. The capacitance of carbon felt was enhanced by chemical, thermal and/or electrochemical activation.

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