

Preparation and Characterization of Activated Carbon Sheet for Capacitive Deionization of NaCl

박준형, 이재욱*
조선대학교
(jwlee@chosun.ac.kr*)

Electrosorption is a promising method for water purification and desalination. Activated carbon powder was coated with polyvinylidene fluoride (PVdF) binder in a thin sheet-like formulation for electrosorption process. The morphology, structure, porous and electrochemical properties prepared according to the binder contents and different thickness are characterized by scanning electron microscopy, nitrogen adsorption at 77K X-ray diffraction, contact angle goniometer and electrochemical workstation. Desalination experiments were carried out under key operating conditions including flow rate, concentration and potential (Fig. 1). It was found that the activated carbon sheet electrode prepared with 10 wt% PVDF exhibits enough mechanical strength, good electrochemical stability, and favorable adsorption characteristics for electrosorption of ions.