Bong Ho Lee et al., Biosens J 2018, Volume 7
DOI: 10.4172/2090-4967-C1-003

Synthesis of quinone derivatives and its application to redox electrode

Bong Ho Lee and **Yeajoon Bon**
Hanbat National University, South Korea

Physical mixing of activated carbon (AC) and a quinone derivative, 2, 5-bis (pro-2-ny-1-ylamino) cyclohexa-2, 5-diene-1, 4-dione (coded HBU-281) was used to design a composite electrode for supercapacitors. The process proves to be simple and cost-effective because it demands only the initial synthesis of the organic additive. The electrode properties were probed in terms of composite composition, redox behavior, specific capacitance, and cycle life. The capacitance performance of the AC electrode is enhanced due to the extra redox reaction of hydroquinone/quinone couple of HBU-281. AC facilitated electron distribution to the HBU-281 making pronounce its redox activity. The composites due to the synergistic effect of AC and HBU-281 gave higher capacitance and indicating excellent cycle stability than the individual electrodes. These findings led to the conclusion that physical mixing of AC and HBU-281 can be adopted to design cheap and excellent composite electrodes for supercapacitor.

Biography

Bong Ho Lee have been studying electrical energy storage materials including electrolytes and electrodes based on organic and inorganic chemistry for many kinds of batteries and supercapacitors.

lbh011@hanbat.ac.kr