Preparation of Activated Carbon Derived From Licorice Residue and its Electrochemical Properties

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Licorice residue was used as the raw material and pre-carbonized to form a preliminary carbon skeleton at 400 °C followed by activation with KOH and carbonization at 800 °C for 2 hours to produce bio-carbon. Nevertheless, the specific surface area of the prepared carbon was 2103 m²/g which shows KOH has strong pore expansion performance. So far, GC-C03 obtained has a specific capacitance of 320 F/g at 0.5 A/g in a 6 M KOH aqueous solution, very good cycle stability under 1 A/g after 5000 charging and discharging cycles, and can retain 93%. However, to encourage the production of biomass energy, the potential development of supercapacitor and electrode materials presents new ideas for reusing licorice residue which is crucial for green energy production.

Keywords: Licorice residue; Carbonization; pores expansion; electrochemical performance

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