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明胶基多孔碳球电极材料的制备及电化学性能研究

Gelatin-based Porous Carbon Beads: Preparation and Application as Electrodes in Super-capacitors

中文关键词：明胶基多孔碳球； 活化温度； 超级电容器； 性能

英文关键词：gelatin-based carbon beads; activation temperature; super-capacitor; properties

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中文摘要：

英文摘要：

Gelatin-based porous carbon beads have been fabricated from gelatin micro-spheres by means of solidification, carbonization and chemical activation with KOH. The physical properties of gelatin-based porous carbon beads were studied by a *t*-plot method based on N_2 adsorption isotherms. The gelatin-based porous carbon beads activated at 800 ℃ exhibited the largest specific surface area and resulted in the highest capacitance. Carbon/carbon super-capacitors cells assembled with the electrode materials in 1.0 mol · L^{-1} NEt_4BF_4 / acetonitrile electrolyte have also been studied. The electrochemical properties of gelatin-based porous carbon beads electrode were studied by using constant-current discharge tests. The results indicate that the gelatin-based porous carbon beads electrode is with good cycling stability and specific capacitance of 119.8 F · g^{-1}.

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