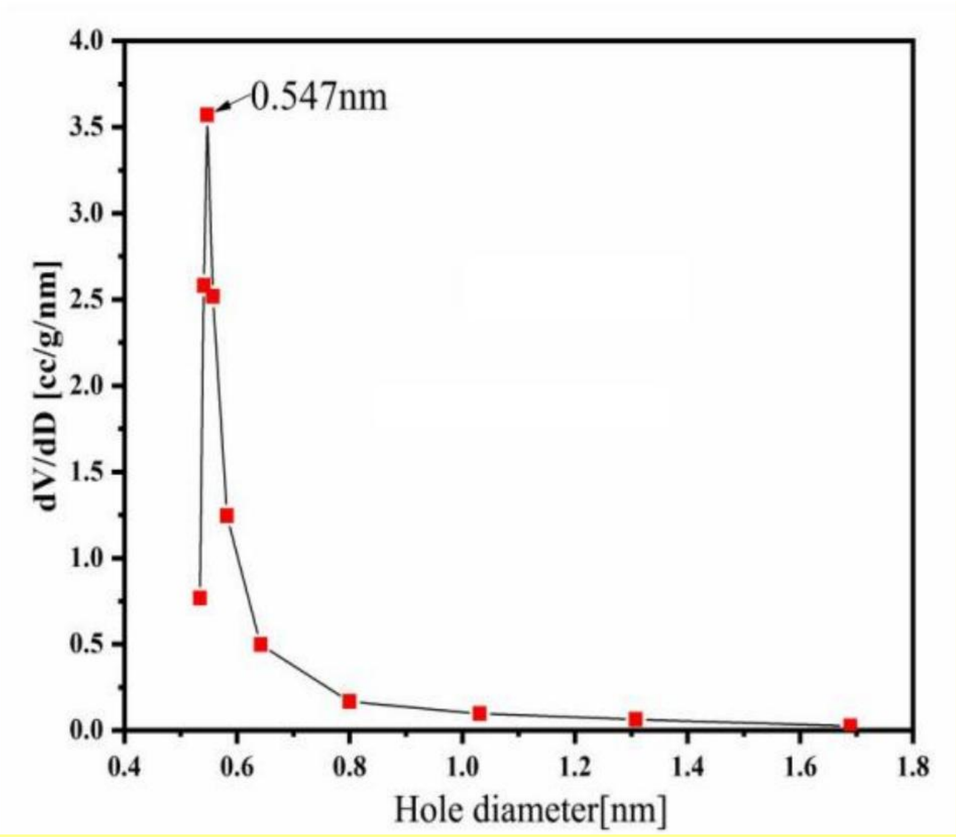
Preparation and Characterization of Gaphene-Doped Carbon-Aerogel Electrode

Zhengshun Wang1*, Kaizheng Wang1 , Jianzhen Mao1, Zaiyong Jiang2
1Key Laboratory of Pulp and Paper Science & Technology of Ministry of Education/Shandong Province, Qilu University of Technology (Shandong Academy of Sciences), Jinan, 250353.
2Shandong Agriculture University, Taian, 271018
*Email: wzsylq@aliyun.com

ABSTRACT

Carbon-aerogel is a kind of nano-porous carbon material with special three-dimensional network structure. Electrode materials with high specific surface area, high porosity, superior conductivity and low density were obtained by adding graphene to prepare graphene-doped carbon-aerogels

.



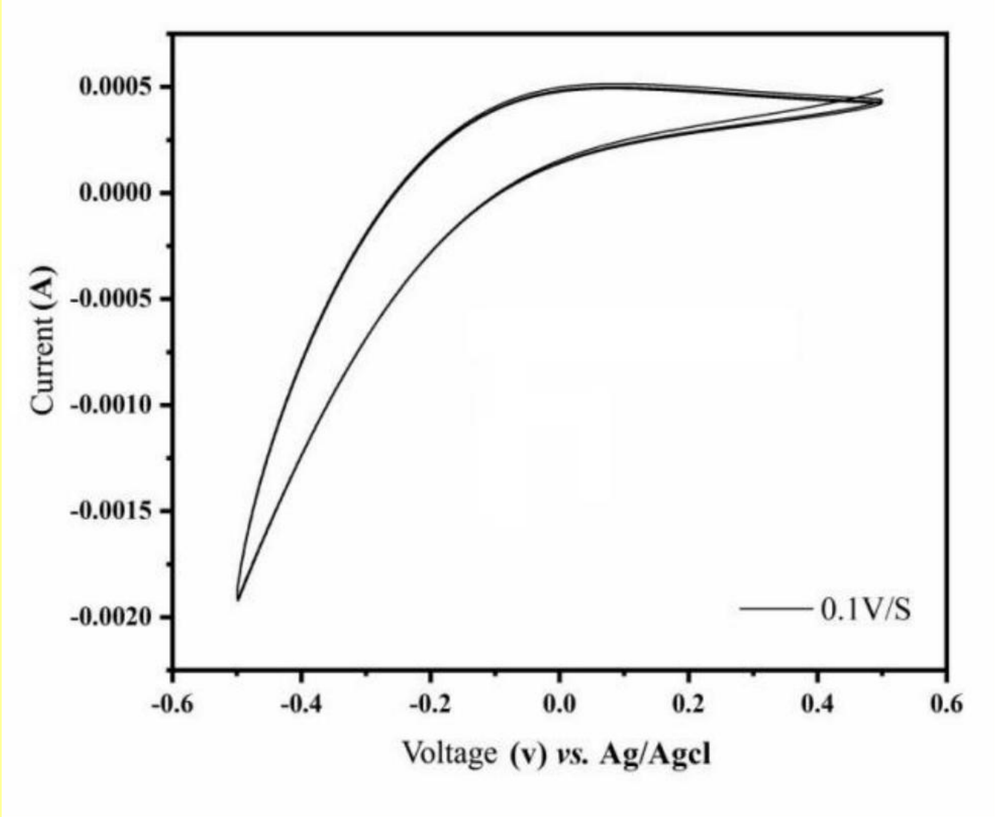
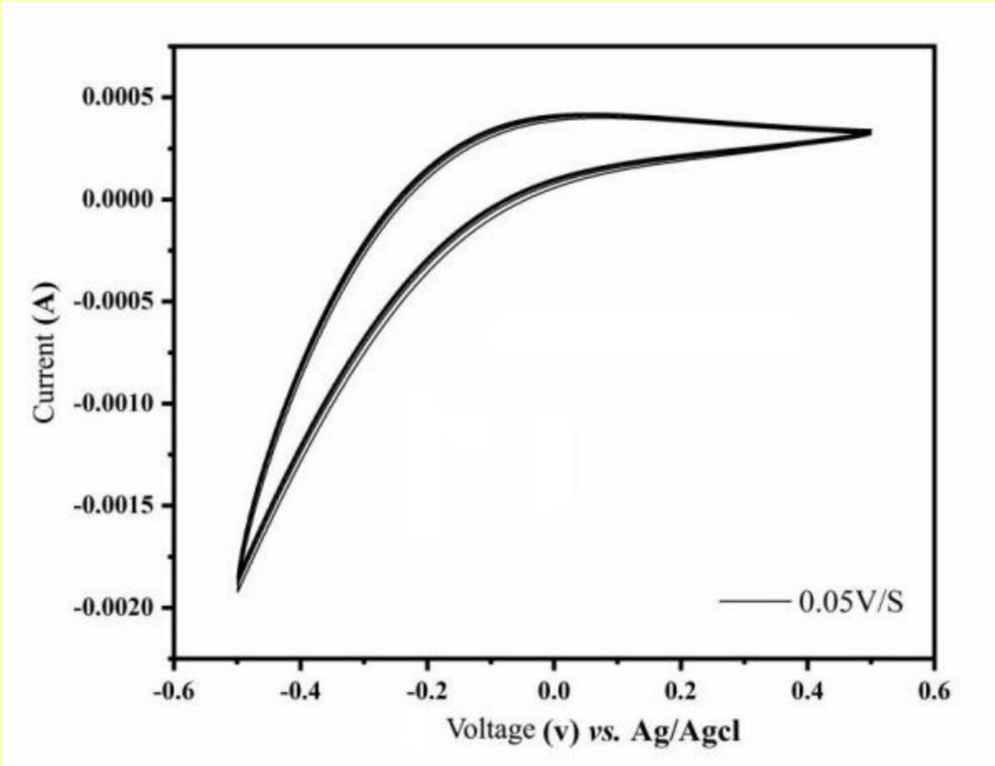


Fig.1N2 desorption isotherms of sample No .1

Fig.2 Distribution of pore size of graphene carbon aerogels



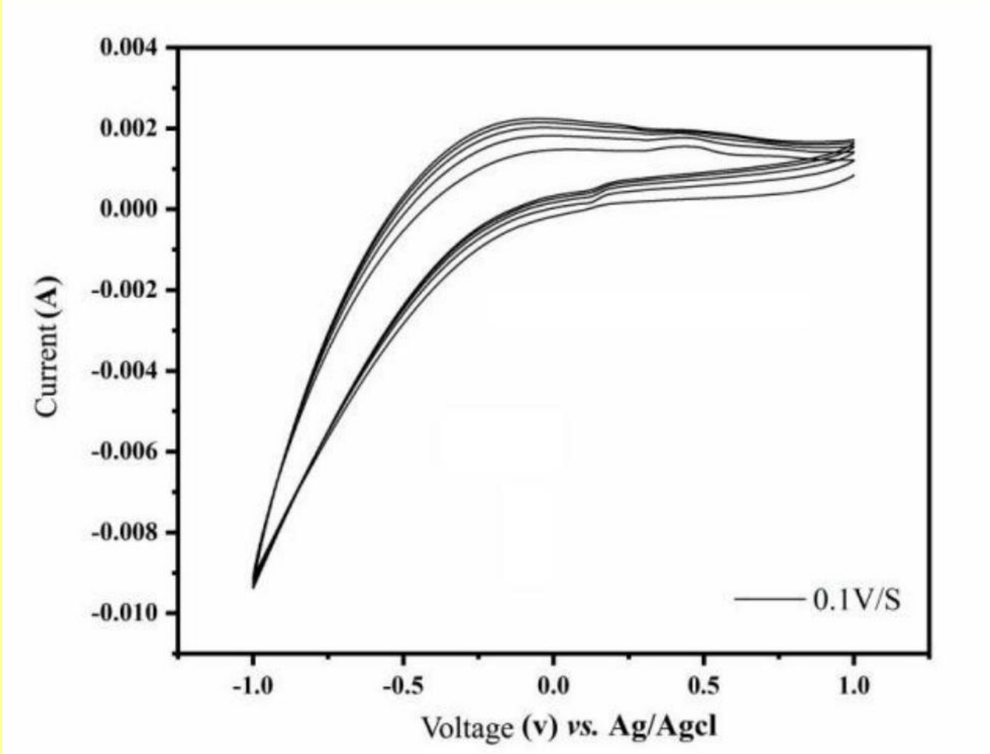


Fig.3 Cyclic voltammetry curves

Fig.4 Cyclic voltammetry curves

CONCLUSIONS

Graphene doped carbon aerogels were prepared by sol-gel, solvent replacement and atmospheric drying. The results were as follows: Graphene doped carbon aerogels are light in weight, smooth in surface, hard in appearance and fine pores in surface. It is proved that graphene carbon aerogel material is a porous network structure with large specific surface area, high porosity, outstanding conductivity and good stability. It is suitable for sewage treatment electrode material, catalyst carrier, capacitor material and so on.