

Preparation of surfactant modified porous carbon using spray method

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In this investigation, porous carbon spheres have been prepared using spray method with templating process. It has been numerously reported that silica is one of the popular inorganic templates for this process. This is due to the ease of preparation, etching and controlling size of silica sol. In the spray method, silica sol must be dispersed in feed solution like colloid. In order to modify the physical properties of the carbon spheres obtained from the above method, we employed different types of surfactants into the feed solutions. However, it was found that the positively charged surfactants inhibit the formation of homogeneous colloidal solution of silica sol due to the loss of the surface charge. On the other hand, when the negatively charged surfactants were employed, they bring irregular shapes of carbons as a result of the strong charge-charge repulsion. To solve these problems, we employed a reverse micelle for reducing the charge-charge repulsion.