

Fabrication of Ordered Mesoporous Carbons with Hetero Atoms by Microwave Irradiation

김진희, 이지은, 김지만*

성균관대학교 화학과

(jimankim@skku.edu*)

New types of porous carbon materials have been synthesized via various methods. Among them, OMCs are very attractive materials due to high surface area, electronic and mechanical properties. These brilliant properties are expected to be used in application such as catalyst supports, adsorbents, and capacitors. However, the materials synthesis procedure is energy consumption process and they have little hetero atoms with the exception of carbon, hydrogen, and oxygen element. Functionalization of porous carbons or CNTs has been studied in the past to enhance the catalytic activity, solubility, adsorption property and electronic property. There are two methods for synthesis of carbons with hetero elementals which are post treatment and direct synthesis. Post treatment method need more time and step, and direct synthesis method is limited the contents of hetero atoms due to the heat treatment. According to previous research, we make the OMC for only a brief time. The ultrafast synthesis of ordered carbons suggests a solution of the conventional thermal process, which is highly time and energy consuming one. In this study, we try to shorten the synthesis time and keep up the heteroatom contents by carbonization with microwave irradiation.