

Choma, J., Jaroniec, M., Kloske, M., Zawiślak, A. Mesoporous Carbon Materials: Silica-templating Synthesis and Characterization of Adsorption Properties. *Ochrona Środowiska* 2008, Vol. 30, No. 2, pp. 3–15.

Abstract: This work presents a critical survey of accomplishments in the research on the synthesis and characterization of mesoporous carbon materials, especially ordered mesoporous carbons. An account is given of the major methods for the synthesis of ordered mesoporous carbons, using ordered mesoporous silicas, colloidal silica and colloidal silica crystals. Special attention was devoted to the method involving monoliths obtained from colloidal silica as templates, which after impregnation with oxalic acid (catalyst) were filled with phenol derivatives and formaldehyde; the latter were carbonized after polymerization. This method produced carbon materials with uniform mesopores, as well as carbons with nanoparticles such as silver, and after KOH activation, also carbons with micro- and mesopores. The aforementioned carbonaceous materials have interesting adsorption and structural properties (a relatively large surface area, uniform and often ordered mesopores, a large pore volume), which make them attractive for applications in adsorption, catalysis and energy storage, as well as for conversion-related uses.

Keywords: Ordered carbonaceous materials, mesoporous silicas, silica-templating, nanoparticles, sorption properties, environmental engineering.