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Abstract: Mesoporous carbon materials were prepared through template method approach using porous clay heterostructures (PCHs) as matrix and furfuryl alcohol as carbon precursor. Three PCHs prepared using amines with 8, 10 and 12 carbon atoms were used. The effect of several impregnation-polymerization cycles of the carbon precursor, the carbonization temperature and the need of a previous surface alumination were evaluated. The presence of two porosity domains was identified in all the carbon materials. These two domains comprise pores resulting from the carbonization of the polymer film formed in the inner structure of the PCH (domain I) and larger pores created by the clay particles aggregation (domain II). The predominance of the porosity associated to domain I or II can be achieved by choosing a specific amine to prepare the PCH matrix. Carbonization at 700 C led to the highest development of pores of domain I. In general, the second impregnation-polymerization cycle of furfuryl alcohol resulted in a small decrease of both types of porosity domains. Furthermore the previous acidification of the surface to create acidic sites proved to be unnecessary. The results showed the potential of PCHs as matrices to tailor the textural properties of carbons prepared by template mediated synthesis. (C) 2010 Elsevier Ltd. All rights reserved.

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