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Numerical evaluation of the effect of the used activator on the development of the microporous structure of the carbonaceous materials

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The porous structure and functional properties of carbonaceous materials are dependent on the structure of the original raw material. As a consequence, the choice of suitable material is no less important than the selection of adequate production method and the determination of optimum process conditions. Therefore, a search for new raw materials that would be useful in the production of carbonaceous materials has been under way, and particular attention has been paid in this regard to biomass waste from food and timber industries and agriculture. The work presents numerical evaluation of the effect of the used activator and the raw material on the development of the microporous structure

of the carbonaceous materials. On the basis of the research and analyses, a significant effect of the type of the activating agent used as well as the raw material on the formation of the porous structure and, consequently, on the adsorptive properties of the produced activated carbons were observed. The new proposed method provides a wider spectrum of information on the analyzed porous structure of the activated carbons and the processes occurring on their surface, what provides a unique tool enabling a precise characterization of the structure of the carbonaceous microporous materials, and this in turn makes it possible to optimize the processes of their manufacture.

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