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Computer analysis of the adsorption process on metal-organic frameworks

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In recent years, with the increasing use of adsorption processes, both in technology, environmental protection and everyday life, better new adsorbents have been sought, and one of the most promising materials that can be used in these processes are MOF organometallic materials. The work presents original results of MOF Basosiv M050 metal-organic frameworks material structure and adsorption processes occurring on its surface. The studies were conducted based on adsorption isotherms of N_2 , CO_2 , and CH_4 analysed separately as well as on the basis of analysis of two and three isotherms simultaneously, using a unique

LBET method. The results presented in this article confirmed the high usability of LBET method in the study of adsorption processes occurring on the surface of Basosiv M050 material, as well as in the analysis of its structure. As it has been shown, the application of the LBET method enables precise determination of the structure of the studied material and mechanisms of adsorption processes taking place in its structure, which in turn ensures the possibility of optimal selection of its preparation and effective use in a given adsorption process.

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