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Application of the New Computational Method to the Analysis of Micro porous Structure of the Carbonaceous and Mineral Adsorbents

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The work presents the original results of a research into analyzing the micro porous structure of carbonaceous and mineral adsorbents. The calculations were carried out with the use of the new computational method with implemented original mathematical models of the adsorption on heterogeneous surfaces. The used method yield a broader range of highly reliable information on the analyzed structure and consequently constitute an alternative to the popular simple and most sophisticated method of the description of the porous structure. More specifically, reliable information is collected as to the shape and size of the analysed micropores, the type of the existing limitations on the growth clusters of adsorbate molecules, the degree of surface heterogeneity, and the distribution of adsorption energy on the surface of the analysed material. The presented research provided also reliable information on the usefulness of the employed method of porous structure description for practical technological applications and scientific research, as well as the possibilities to make practical use of the research results.

Biography:

Dr. Mirosław Kwiatkowski in 2004 obtained Ph.D. degree from the Faculty of Energy and Fuels at the AGH University of Science and Technology in Kraków (Poland), and in 2018 D.Sc. degree (habilitation) from the Faculty of Chemistry at the Wrocław University of Technology (Poland) in the discipline: chemical technology. His published work includes more than 45 papers in reputable international journals and 75 conference proceedings. He is the editor in chief of The International Journal of System Modeling and Simulation (United Arab Emirates), an associate editor of Micro & Nano Letters Journal (United Kingdom) and a member of the many editorial board of international journals as well as a member of the organizing and scientific committees international conferences in Europe, Asia and USA, and a regular reviewer in a reputable scientific journals.