

## **BENZOYL PEROXIDE DECOMPOSITION BY NITROGEN-CONTAINING CARBON NANOMATERIALS**

Daryna Haliarnik<sup>a</sup>, Oleg Petuhov<sup>b</sup>, Olga Bakalinska<sup>a\*</sup>, Tudor Lupascu<sup>b</sup>, Mykola Kartel<sup>a</sup>

<sup>a</sup>*Chuiko Institute of Surface Chemistry, National Academy of Sciences of Ukraine, 17, General Naumov Str., Kyiv 03164, Ukraine*

<sup>b</sup>*Institute of Chemistry of Academy of Sciences of Moldova, 3, Academiei str., Chisinau MD-2028, Republic of Moldova*

*\*e-mail: bakalin2008@ukr.net; phone: (+38 044) 422 96 02; fax: (+38 044) 424 94 64*

**Abstract.** In this paper the determination of catalytic activities of nanoporous KAU and SKN carbon materials, as well as catalytic activities of their modified (oxygen- and nitrogen-containing) forms and of enzyme catalase by calculating the Michaelis constants according to the kinetics of substrate decomposition has been reported. It has been shown that nitrogen-containing materials provide the highest catalytic activity in non-aqueous media, while the activity of catalase in non-aqueous media is small. It has been established that the catalytic activity of the samples does not correlate with structural parameters but depends on the change of their surface chemistry. The catalytic activity is decreased by the addition of oxygen atoms and, vice-versa, is increased by addition of nitrogen atoms. It has been found that the catalytic activity of studied samples correlates with surface basicity as well as the presence of quaternary nitrogen in the chemical structure.

**Keywords:** carbon nanomaterials, activated carbon, benzoyl peroxide, catalytic activity, Michaelis constant.

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