

MODIFIED CARBONACEOUS AND MINERAL ADSORBENTS

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The objectives of this paper were to modify carbonaceous and mineral adsorbents, and testing their abilities to eliminate/oxidize the species of hydrogen sulfide from solutions. A broad spectrum of chemical and physical-chemical methods has been applied to modify mineral adsorbents (montmorillonite and diatomite), including pillaring of montmorillonite with polymer of aluminium species, impregnation of adsorbents with manganese ions. Surface chemistry of carbonaceous adsorbents (synthesized from peach stones by the physical-chemical activation method) has been modified by oxidation following impregnation with heavy metals. Structural parameters of adsorbents have been determined from nitrogen sorption isotherms. Surface chemistry has been investigated using electrometric titration techniques, in order to establish the acid-basic properties of adsorbents, and spectral methods using UV-VIS spectra and the Fourier transform infrared spectra (FTIR) to detail the chemistry of functional groups. Testing of mineral and carbonaceous adsorbents for the elimination of hydrogen sulfide from model solutions was performed in static and dynamic conditions.

Acknowledgements. *This work is supported by the project 09.832.08.12A within the framework of the State Program “Scientific researches concerning water quality management”.*