

INFLUENCE OF ACID MODIFICATION OF NATURAL PHLOGOPITE ON CATALYTIC ACTIVITY OF SUPPORTED Pd(II)-Cu(II) COMPLEXES IN THE REACTION OF OXIDATION OF CARBON MONOXIDE BY ATMOSPHERIC OXYGEN

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Abstract. The paper presents original results on the effect of nitric acid concentrations on structure, morphology, protolytic properties and the activity of low-temperature carbon monoxide oxidation catalysts based on acid-modified phlogopite (\bar{X} H-Phl-1) and K_2PdCl_4 , $Cu(NO_3)_2$, KBr base components. Samples (supports and catalysts) were characterized by XRD, SEM, FT-IR spectroscopy and pH metric method. It was found that only at $\bar{X} \geq 3.0$ mol/L, the phlogopite samples undergo structural and morphological changes and the pH of the suspension decreases, contributing to the achievement of such a catalyst activity, which ensures stable air purification from CO to a concentration below the $MPC_{CO} = 20$ mg/m³ for the working area. The catalyst Pd(II)-Cu(II)/8H-Phl-1 can be recommended for use in respiratory devices.

Keywords: phlogopite, acid treatment, carbon monoxide, low temperature oxidation, Wacker-type catalyst.

Received: 14 March 2022/ Revised final: 09 June 2022/ Accepted: 12 June 2022
