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***Research into the photoconversion of CO and NO gases on ZnO surface***

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The most active applied researches of ZnO are connected with photoactivated organic substances destruction on its surface, because of wide zone of absorbance. Since nitrogen oxide and carbon oxide atmosphere emissions influence environment and people’s health, photocatalytic reaction mechanism is being intensively investigated. Two harmful gases transform into neutral ones during this reaction. Present study for the first time demonstrates above-mentioned reaction for zinc oxide. The spectral sensibility area of photocatalytic reaction *NO + CO + h → CO2 +1/2 N2* was significantly shifted from the UV border (the case of TiO2) to the visible light area up to 578 nm. The reaction is highly notable in case of using sun light, which almost excludes ultraviolet. Thus, it was proved that irradiating by full light or by exact wave length light accelerates NO and CO photo-adsorption. Kinetics details of photocatalytic reaction *NO + CO + h → CO2 + 1/2 N2* on ZnO basically remind those obtained earlier for titanium dioxide Degussa. Initial rate of NO and CO photo-adsorption was shown to be linearly dependent on radiation intensity. Since spectral dependence forms for initial rates of C2H6 and NO photo-adsorption were concurrent, the conclusion about NO absorption on photoactivated hole centers with NO2- conglomeration on the surface can be made.

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