

Title : The development of manganese dioxide material as a catalyst for the ozone

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ABSTRACT

This study presents the development of a manganese dioxide (MnO_2) catalyst designed for ozone decomposition. MnO_2 was synthesized on activated carbon filter sheets via a precipitation process. The crystal structure and morphology of the synthesized MnO_2 were characterized using X-ray diffraction (XRD) and scanning electron microscopy (SEM). The results revealed that the synthesized MnO_2 exhibited a well-defined crystalline structure with a needle-like morphology. The catalytic performance of the material was evaluated through the decomposition of ozone generated by an electrostatic precipitator (ESP), a common source of ozone emissions in industrial processes. Experimental results demonstrated that the catalyst effectively reduced ozone concentrations, highlighting its potential for application in air pollution control.

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