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# Catalytic decomposition of hydrogen peroxide aerosols using granular activated carbon coated with manganese oxides

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## Abstract

Granular activated carbon (GAC) was coated by a uniform nanosized MnO<sub>2</sub> layer with a thickness of 0.5 μm using a redox process in order to enhance its ability to decompose the H<sub>2</sub>O<sub>2</sub> aerosols formed from decontamination applications. The surface characteristics of the resulting MnO<sub>2</sub>/GAC indicated that it possessed an amorphous structure with manganese of the oxidation state +4, as confirming by SEM, EDS, XPS, SAED and BET analyses. The H<sub>2</sub>O<sub>2</sub> aerosols decomposition activity of the new catalyst was found to be more than 20 - 30% higher than that of bare GAC.

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