

## **Guanidinylated activated carbon fiber for detoxification**

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### **ABSTRACT**

Activated carbon fiber (ACF) has been used widely due to excellent adsorption properties and toxic gas adsorption, such as SO<sub>x</sub> and NO<sub>x</sub>, is one of the important use of ACF. Moreover, ACF can adsorb chemical warfare agents (CWAs) and be used for protective clothes to CWAs. However, the protection from ACF can be obtained only by the adsorption, not decontamination and this brings the relatively low decontamination efficiency. In this regard, it is desirable that ACF has decontamination property to the CWAs to achieve the relatively high decontamination efficiency. Guanidine functional group is reported to have detoxification function of diisopropyl fluorophosphates (DFP), an organophosphate mimic of nerve agents. Therefore, this study aims to introduce guanidine functional group onto the surface of ACF and investigate detoxification of the guanidylated ACF.