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Fabrication of Polyaniline Supported Nanocomposites and Their Sensing Application for Detection of Environmental Pollutants

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Abstract

Nanoscale composite materials have played a significant role in sensing of gases, owing to their high surface area, higher mechanical strength with efficient chemical activity as well as cost effective nature. The present chapter deals with synthesis and characterization of Polyaniline (PANI) based nanocomposites ion-exchanger and nanomaterials in addition to their sensing applications in various fields. These nanomaterials have been explored on the basis of advanced techniques of characterizations. Besides the sensing materials, on the basis of ion uptake capacity, these nanocomposite ion-exchange materials can also be used for the treatment of meal ions from industrial wastewaters. This chapter mainly focuses on the synthesis of PANI based nanocomposites and their applications as gas sensors and biosensors. The PANI nanomaterials demonstrated impressive results and outstanding sensing behaviour. It has been found that PANI based nanocomposite materials are not only used for the

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