

## Chemical synthesis and characterization of polyaniline: Water depollution efficiency and effectiveness

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Received 21 December 2016; Accepted 9 July 2017

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### ABSTRACT

This study focuses on the chemical synthesis of polyaniline (PANi) in the presence of sodium persulfate in a hydrochloric acid medium. The characterization of synthesized PANi was carried out using scanning electron microscopy (SEM), infrared spectroscopy (IR), X-ray diffraction (XRD), X-ray photoelectrons spectroscopy (XPS) and thermal analysis. Adsorption experiments of organic and inorganic water pollutants (pharmaceutical products, dyes, derivatives of humic acids and heavy metals) were carried out in a batch reactor. The obtained results indicate that the synthesized PANi led to an almost complete removal (~100%) of these compounds from aqueous solution.

*Keywords:* Adsorption; Chemical synthesis; Polyaniline; Polymerization; Water treatment.

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*Presented at the First International Symposium on Materials, Electrochemistry and Environment (CIMEE 2016), 22–24 September 2016, Tripoli, Lebanon*