**Elaboration of polymer matrix nanocomposites for electrochemical and dielectric applications**

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**Abstract**

An in-depth study focuses on the synthesis of materials based on chitosan and chitosan Schiff base in order to produce nanocomposite films (biopolymer-SrTiO3). The aim is to use them as protective coatings against corrosion while evaluating their dielectric properties for potential application in the field of electronics. This research involves several stages, such as chitosan cross-linking, synthesis of chitosan Schiff base, its cross-linking, as well as the preparation and analysis of nanocomposite coatings and films.

The structure and composition of the prepared materials have been analyzed using various techniques, including Fourier transform infrared spectroscopy (FTIR), X-ray diffraction (XRD), scanning electron microscopy (SEM), and transmission electron microscopy (TEM). Additionally, electrochemical and dielectric measurements have been conducted to assess the inhibitory efficacy of chitosan nanocomposite coatings and the dielectric properties of the prepared materials.

**Keywords:** Chitosan, Nanocomposites, Dielectric properties, Coatings, Corrosion, EIS.

**Biography**

MOHAMED EL MAHAMDI, (M. EL MAHAMDI), Ph.D. student inspired and motivated for the development of new polymeric matrix nanocomposites in particular chitosan and chitosan derivative for anti-corrosive and electronic applications, affiliated with Laboratory of Applied Chemistry and Environment (LCAE), Department of Chemistry, Faculty of Sciences, University Mohamed I, Po. Box 717, 60000 Oujda, Morocco and Laboratory of Molecular Chemistry, Materials and Environment (LCM2E), Department of chemistry, Multidisciplinary Faculty of Nador, University Mohamed I, 60700 Nador, Morocco.