Polystyrene Film with Gold Nanoparticles for Glyphosate Detection

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Abstract:
This study investigates the interactions between polystyrene (PS) films, gold nanoparticles (AuNPs), and glyphosate for potential sensing applications. Characterization using ultraviolet-visible spectroscopy allowed to find the refractive index and thickness of produced thin films. The results also reveal distinct interference patterns in the spectra of PS films with and without glyphosate and AuNPs, making possible the optical detection of the herbicide.

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I. Introduction

Due to unique properties and versatility, thin films play a crucial role in various fields, including electronics,