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Synthesis and Characterization of Molecularly Imprinted Polymer as a New Adsorbent for the Removal of Pyridine from Organic Medium

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Abstract : Molecularly imprinted polymers (MIP) for the adsorption of pyridine (PYD) was obtained from PYD (the template), styrene (the functional monomer), divinyl benzene (the crosslinker), benzoyl peroxide (the initiator), and water (the porogen). When the template was removed by solvent extraction, imprinted binding sites were left in the polymer material that are capable of selectively rebinding the target molecule. The material was characterized by Fourier transform infrared spectroscopy and differential scanning calorimetry. Batch adsorption experiments were performed to study the adsorption of the material in terms of adsorption kinetics, isotherms, and thermodynamic parameters. The results showed that the imprinted polymer exhibited higher affinity for PYD compared to non-imprinted polymer (NIP).

Keywords : molecularly imprinted polymer, bulk polymerization, environmental pollutant, adsorption
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