**Use of Molecular Imprinting in Solid Phase Extraction of Some Bioanalytically Important Molecules**

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Molecular imprinting technology is inspired by natural receptors found in the body. These receptors can recognize a single substance among a crowd inside a solution. Molecular imprinting polymers (MIPs) can be thought of as artificial receptors. They can be synthesized for specific/selective recognition of a molecule or a group of molecules. The syntheses of these special polymers are achieved by the polymerization of the monomer(s) and the crosslinking agent in the presence of the template molecule. Unlike conventional polymer synthesis, a monomer is only used to supply a covalent or a non-covalent attraction between template molecules, and the polymerization of a crosslinking agent is achieved around this bond. This special knitting by crosslinking agent around template-monomer complex supply high stability, activity during a wide range of conditions, and robustness. Specific/selective binding sites are obtained after removal of the template molecule from the resulting polymer. These properties presumably make the MIPs potential candidates for recognition of the analyte(s) even in harsh conditions, and also make them applicable in different analytical techniques like solid phase extraction, solid phase micro-extraction, and thin film micro-extraction. In this talk, recent studies in the authors’ laboratory on the use of MIPs and MIP-composite materials for specific analytical applications will be discussed.