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## Formation of recognition sites in an acrylic polymer by the molecular printing technique

The technique of molecular Imprinting has undergone remarkable development over the last decades, this technology has increased tremendously in last years. The recognition capabilities of molecularly imprinted polymers (MIPs) are being successfully exploited in many application areas such as sensors, separations and extraction of chemical compounds, drug development, and drug delivery [1-3]. The work presented here focuses on the elaboration and the characterisation of MIPs by non-covalent approach in presence of a target molecule. The MIP materials were prepared by radical photo-polymerisation of mixture containing the n-butylacrylate (BuA) as monomer, 1,6-hexanedioldiacrylate (HDDA) as cross-linking agent and 2-hydroxy-2-methyl-1-phenyl-propane-1-one as photo-initiator. The printed molecule chosen is 2-phenoxy-propionic acid (APP) analogous to (2,4-D) herbicide. Non- imprinted materials (NIPs) and imprinted materials (MIPs) were characterized by infrared spectroscopy (FTIR), and differential scanning calorimetry (DSC). The Infra-Red (IR) analysis confirmed the presence of non-covalent hydrogen bond between the target molecule and the monomer in pre-polymerisation mixture. The extraction of the target by several washes was confirmed by UV spectroscopy. The recognition properties of the NIP and MIP materials obtained toward APP were evaluated by gas chromatography analysis. The obtained results showed a specificity of printed materials.

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2. K. Puzio, R. Delépée, R. Vidal, L.A. Agrofoglio, *Anal. Chim. Acta.* 790 (2013), 47-55.
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### Preferred topic

Polymers and environment

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