Synthesis and evaluation of a molecularly imprinted polymer for Pb(II) ion uptake

Abstract

A molecularly imprinted polymer (MIP), with the ability to bind Pb(II) ion, was prepared using the non-covalent molecular imprinting methods and evaluated as a sorbent for the Pb(II) ion uptake. 4-vinylbenzoic acid was chosen as the complexing monomer. The imprinted polymer was synthesized by radical polymerization. The template (Pb(II) ions)was removed using 0.1 M HCl. As a result, the efficient adsorption was found to occur at pH 7. The result also showed the applicability of the Langmuir model for the sorption, with the maximum sorption capacity of 204.08 μg/mg.

Keyword: Ion imprinting; Molecular recognition; Pb(II) removal; Metal extraction