**Benzyl and methyl fatty hydroxamic acids based on palm kernel oil as chelating agent for liquid-liquid iron (III) extraction.**


## ABSTRACT

Liquid-liquid iron(III) extraction was investigated using benzyl fatty hydroxamic acids (BFHAs) and methyl fatty hydroxamic acids (MFHAs) as chelating agents through the formation of iron(III) methyl fatty hydroxamate (Fe-MFHs) or iron(III) benzyl fatty hydroxamate (Fe-BFHs) in the organic phase. The results obtained under optimized conditions, showed that the chelating agents in hexane extract iron(III) at pH 1.9 were realized effectively with a high percentage of extraction (97.2% and 98.1% for MFHAs and BFHAs, respectively). The presence of a large amount of Mg(II), Ni(II), Al(III), Mn(II) and Co(II) ions did affect the iron(III) extraction. Finally stripping studies for recovering iron(III) from organic phase (Fe-MFHs or Fe-BFHs dissolved in hexane) were carried out at various concentrations of HCl, HNO3 and H2SO4. The results showed that the desired acid for recovery of iron(III) was 5 M HCl and quantitative recovery of iron(III) was achieved from Fe(III)-MFHs and Fe(III)-BFHs solutions in hexane containing 5 mg/L of Fe(III).



**Keyword:** Iron extraction; Methyl fatty hydroxamic acid; Benzyl fatty hydroxamic acid; Iron(III) methyl fatty hydroxamate; Iron (III) benzyl fatty hydroxamate; Palm kernel oil.