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[\[PDF \(536K\)\]](#) [\[References\]](#)**Flame Atomic Absorption Spectrometry Determination of Trace Amounts of Nickel Ions in Water Samples after Ligandless Ultrasound-assisted Emulsification Microextraction**[Sayed Zia MOHAMMADI^{1\)}](#), [Daryoush AFZALI^{2\)}](#) and [Yar Mohammad BAGHELANI^{1\)}](#)*1) Department of Chemistry, Payame Noor University (PNU)**2) Environment and Nanochemistry Department, Institute Research of Environmental Sciences, International Center for Science, High Technology & Environmental Sciences***(Received January 11, 2010)****(Accepted June 11, 2010)**

In the present work, a new ligandless-ultrasound-assisted emulsification microextraction (LL-USAEME) method was developed for preconcentration trace amounts of nickel as a prior step to its determination by flame atomic absorption spectrometry. Some factors influencing the extraction efficiency of nickel and its subsequent determination were studied and optimized, such as type and volume of the extraction solvent, pH, extraction time, extraction temperature and ionic strength. Under the optimal conditions, the calibration curve was linear over the range of $1.0 \text{ ng mL}^{-1} - 1.0 \text{ } \mu\text{g mL}^{-1}$ for nickel with $R^2 = 0.9997$. The detection limit was 0.34 ng mL^{-1} in the original solution ($3S_b/m$) and the relative standard deviation for 8 replicate determination of $0.3 \text{ } \mu\text{g mL}^{-1}$ nickel was $\pm 1.6\%$. The proposed method was successfully applied in the analysis of four real environmental water samples and good spiked recoveries over the range of 97 – 103% were obtained.

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