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Determination of trace amounts of copper in the wastewater samples of Sarcheshmeh Copper Mine using dispersive liquid-liquid micro extraction based on the solidification of floating organic droplets prior to FAAS**Farzaneh Arabpour**

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In this article, Dispersive Liquid-Liquid Micro Extraction based on the Solidification of Floating Organic drop (DLLME-SFO) was successfully used as a sample preparation method prior to flame atomic absorption determination of trace amount of copper in standard and wastewater samples. Several factors that may be affected on the extraction process, such as extraction and disperser solvent, the volume of extraction and disperser solvent, effect of salt, pH of the aqueous solution and extraction time were optimized. Under the best experimental conditions, the calibration curve was linear in the range of 0.8 ng mL^{-1} - $0.5 \text{ } \mu\text{g mL}^{-1}$ of copper and detection limit was 0.2 ng mL^{-1} in the original solution (3 Sb/m). The relative standard deviation seven replicate determination of $0.1 \text{ } \mu\text{g mL}^{-1}$ copper was $\pm 1.9\%$. The high efficiency of DLLME-SFO to carry out the determination of copper in complex matrices was demonstrated. Finally, the proposed method has been applied for determination of trace amount of copper in standard and wastewater samples with satisfactory results.

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