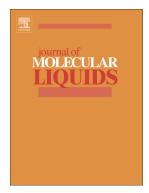
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Ligandless switchable solvent based liquid phase microextraction of nickel from food and cigarette samples prior to its micro-sampling flame atomic absorption spectrometric determination

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Abstract

Switchable solvents represent a new solvent the use of which is in line of consideration of Green chemistry. In this work, a novel, green, ligandless switchable solvent based liquid phase microextraction method (LL-SHS-LPME) for preconcentration and determination of nickel was developed. The reversible change of hydrophilicity of 1-ethylpiperidine after exposing to CO_2 was the key property allowed simple and effective extraction process. The factors influencing the extraction procedure, including pH, type and volume of switchable solvent volume, way for removing of CO_2 , vortexing time, sample volume and matrix effect were studied. The accuracy of the developed method was evaluated by the analysis of the certified reference materials and addition-recovery test. The developed extraction method was successfully applied for determination of nickel in food and cigarette samples.

- *Keywords*: Switchable solvent, liquid phase microextraction, 1-ethylpiperidine, nickel, flame atomic absorption spectrometry, food, cigarette.
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