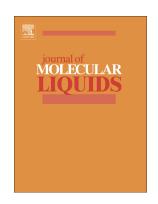
## Accepted Manuscript

Synthesis and characterization of 4-methyl-1-(3-sulfopropyl)pyridinium hydrogen sulfate as a new ionic liquid immobilized on silica nanoparticles: A recyclable nanocomposite ionic liquid for the production of various substituted phthalazine-ones



Akram Khalili, Mahboobeh Nasr-Esfahani, Iraj Mohammadpoor-Baltork, Shahram Tangestaninejad, Valiallah Mirkhani, Majid Moghadam

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## CCEPTED MANUSCRIPT

Synthesis and characterization of 4-methyl-1-(3-sulfopropyl)pyridinium hydrogen

sulfate as a new ionic liquid immobilized on silica nanoparticles: A recyclable

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Akram Khalili, Mahboobeh Nasr-Esfahani, Iraj Mohammadpoor-Baltork,\* Shahram

Tangestaninejad, Valiallah Mirkhani and Majid Moghadam

Department of Chemistry, Catalysis Division, University of Isfahan, Isfahan 81746-73441,

Iran. Fax: +98-031-36689732; Tel: +98-031-37932705.

\*Corresponding author

Iraj Mohammadpoor-Baltork, E-mail: imbaltork@sci.ui.ac.ir

Abstract

4-Methyl-1-(3-sulfopropyl)pyridinium hydrogen sulfate ([MSPP][HSO<sub>4</sub>]) as a new acidic

ionic liquid was prepared in a quick and easy process, and characterized by some techniques

such as <sup>1</sup>H NMR, <sup>13</sup>C NMR and FT-IR analysis. Then, [MSPP][HSO<sub>4</sub>] was immobilized on

silica nanoparticles by impregnation method to afforded heterogeneous acidic ionic liquid

([MSPP]HSO<sub>4</sub>@nSiO<sub>2</sub>) and characterized by elemental analysis (CHNS), FT-IR, and SEM.

The worthiness of [MSPP]HSO<sub>4</sub>@nSiO<sub>2</sub> has been investigated for the synthesis of various

substituted phthalazine-ones as well as selective synthesis of mono- and bis-phthalazine-ones

as imperative biologically active compounds. The reaction has been carried out under

solvent-free conditions, simple work-up procedure and the products were obtained in

excellent to good yields. Moreover, the catalyst was reused five times without decay in

catalytic activity performance.

**Keywords**: 4-methyl-1-(3-sulfopropyl)pyridinium hydrogen sulfate; heterogeneous acidic

ionic liquid; impregnation; phthalazine-one derivatives; solvent-free

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