

Ionic Liquids as Environmentally Benign Solvents for Enhancing the Sorption and Extraction Processes

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Abstract

Novel class of molten salts referred to as ionic liquids possess unique combination of particular properties, unlike molecular liquids, namely negligible vapour pressure ($\sim 10^{-11}$ to 10^{-10} bar at room temperature), wide thermal window (~ -50 °C to $+250$ °C), wide electrochemical window ($\sim \pm 3$ Volt vs. NHE), non-flammability, high ionic conductivity and a highly solvating capacity for organic, inorganic and organometallic compounds. This unique combination of particular properties leads them to be exploited as “alternatives to organic solvents” and giving them increasing attention in academic and industrial research. The research areas on ionic liquids are growing very rapidly and the potential application are numerous, mainly due to the fact that simple changes in the cation and anion combinations or the nature of the moieties attached to each ion allow the physical properties of ionic liquids such as hydrophobicity, viscosity, density, coordinating ability, ion selectivity, and chemical and electrochemical stability to be tailored for specific applications. Proposed talk will include the brief introduction of ionic liquids and understanding unique thermophysical properties of novel ionic liquids for metal ion extraction, CO₂ capture, desulphurization of fuels and aqueous biphasic systems for the extraction of value added products. Further, the effects of thermophysical properties of ionic liquids on these applications and current research trends on ionic liquids as solvents for the chemical industry will be discussed.

Department of Chemistry & RSC- LSD

Webinar on “Ionic Liquids as Environmentally Benign Solvents for Enhancing the Sorption and Extraction Processes”



Speaker: Prof. Ramesh L. Gardas,
IIT Madras

On 04th September, 2021 at 04:30 pm

Link to join the lecture: meet.google.com/zts-tbnp-kge

All are cordially invited to attend the webinar