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Separation Science and Technology > Volume 40, 2005 - Issue 1-3

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Articles

Examination of the Potential of Ionic Liquids for Gas Separations

Ruth E. Baltus ✓, Robert M. Counce, Benjamin H. Culbertson, Huimin Luo, David W. DePaoli, Sheng Dai & ...show all

Pages 525-541 | Published online: 09 Nov 2011

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Abstract:

Ionic liquids have received increasing interest in recent years for "green" synthesis and separations because they have essentially no vapor pressure. We have begun an

investigation of carbo report re

supporte

saturate

 $CO_2: \mathbb{N}$

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I Accept is paper, we dioxide in Essential Onlymembrane de yielded a solubility in reliminary membranes sed onventional ment, an e with amine

economic has been separational amine so

ionic liqu

scrubbing. A preliminary cost estimate for an ionic liquid scrubber indicates that an

ionic liquid absorption process shows less favorable economics than a supported ionic liquid membrane or an amine scrubber. However, results indicate that a more comprehensive technical and economic assessment is warranted.

Related Research Data

CO2 Capture by a Task-Specific Ionic Liquid

Source: American Chemical Society (ACS)

Sulfonated polyimide/ionic liquid composite membranes for carbon dioxide separation

Source: Springer Science and Business Media LLC

Density and viscosity of several pure and water-saturated ionic liquids

Source: HAL CCSD

CO2 separation applying ionic liquid mixtures: the effect of mixing different anions on

gas permeation through supported ionic liquid membranes

Source: ROYAL SOC CHEMISTRY

Supported Ionic Liquid Membranes and Facilitated Ionic Liquid Membranes

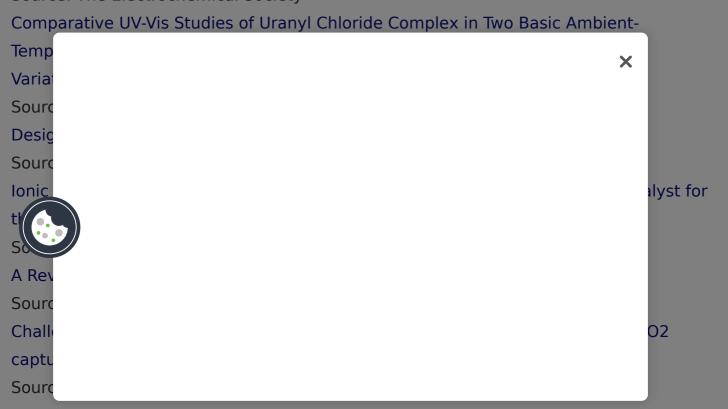
Source: AMERICAN CHEMICAL SOCIETY

A short history of ionic liquids—from molten salts to neoteric solvents

Source: Royal Society of Chemistry (RSC)

Electrochemical Separation and Concentration of <1% Carbon Dioxide from Nitrogen

Source: The Electrochemical Society



Highly Selective Transport of Organic Compounds by Using Supported Liquid Membranes Based on Ionic Liquids Source: Wiley Ionic liquids: Innovative fluids for chemical processing Source: Wiley Acidic Gases Separation from Gas Mixtures on the Supported Ionic Liquid Membranes Providing the Facilitated and Solution-Diffusion Transport Mechanisms Source: Multidisciplinary Digital Publishing Institute Solvent extraction of strontium nitrate by a crown ether using room-temperature ionic liquids† Source: Royal Society of Chemistry (RSC) Click Reactions as a Key Step for an Efficient and Selective Synthesis of D-Xylose-Based ILs Source: Multidisciplinary Digital Publishing Institute From curiosities to commodities: ionic liquids begin the transition Source: Royal Society of Chemistry (RSC) Reaction kinetics of CO2 absorption in to phosphonium based anion-functionalized ionic liquids Source: Royal Society of Chemistry (RSC) Solubilities and Thermodynamic Properties of Gases in the Ionic Liquid 1-n-Butyl-3methylimidazolium Hexafluorophosphate Source: American Chemical Society (ACS) Low-Pressure Solubility of Carbon Dioxide in Room-Temperature Ionic Liquids Measured with a Quartz Crystal Microbalance Source: American Chemical Society (ACS) Synthesis of Water Soluble, Non-volatile and Photo-Responsive Flexible Dimeric Pyridi X Sourc Influe ionic liquid Sourc New ature Synth ion Sourc Review Room Sourc How testing as important elements for sustainability evaluation

Source: Royal Society of Chemistry (RSC)

Nanostructured polyaniline decorated graphene sheets for reversible CO2 capture

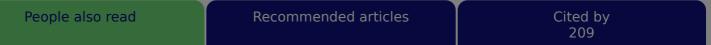
Source: Royal Society of Chemistry (RSC)

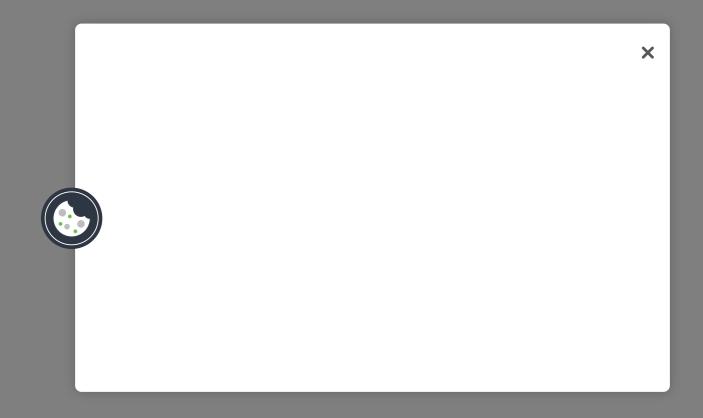
Hydrophobic, Highly Conductive Ambient-Temperature Molten Salts

Source: American Chemical Society (ACS)

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