

IONIC LIQUIDS AT BASF SE: INTRODUCTION AND TECHNICAL APPLICATIONS

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Abstract:

Ionic liquids are mostly organic salts with melting points below 100 °C. To obtain these low melting points one has to combine a relatively complex delocalized cation with any kind of anion. The chemical and physical properties cover a wide range and are determined by both of the constituents.

Ionic liquids exhibit a unique, thus far unprecedented set of properties such as non-volatility, non-flammability, electrical conductivity and very special, highly selective solubilising power. The systematic application of this property profile offers opportunities to overcome previously unsolvable problems in today's processes.

The lecture will give an introduction to this exciting class of substances. The unique combination of properties and the opportunity for fine-tuning have opened up a broad range of applications where ionic liquids bring significant improvements to products and processes. Some examples are cited from BASF's perspective, which are already being commercialized or are close to commercialization. Starting from the use of ionic liquids in chemical processes and as electrolytes, their applications have now been developed much further by utilizing them in separation processes, in the processing of metals, as engineering & functional fluids and last but not least in the processing of polymers and esp. biopolymers.

BASF is offering this exciting field as a system solution to the market. Tailor-made and standard ionic liquids are offered under the brand name BASIONIC™, processes involving ILs as BASIL™. We are ready to support our customers in optimizing their processes with ionic liquids and in the development of new products. That includes the technology as well as the products in bulk quantities and services concerning toxicity data, registration and recycling.