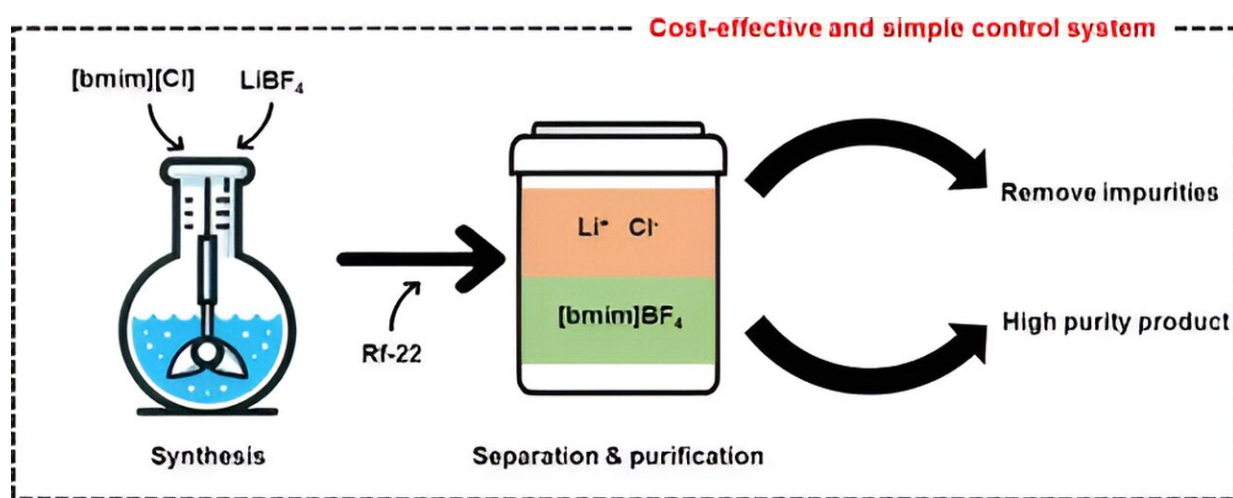


Researchers demonstrate economical process for the synthesis and purification of ionic liquids

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Schematic of ionic liquid synthesis and purification process. Credit: *Industrial & Engineering Chemistry Research* (2024). DOI: 10.1021/acs.iecr.4c01218

Recently, a team of researchers from Pohang University of Science and Technology (POSTECH), the Korea Research Institute of Chemical Technology, and Chonnam National University has developed a technique to separate well-mixed mixtures.

The research team led by Professor Jee-hoon Han from the Department of Chemical Engineering at POSTECH created a [technology](#) for the

efficient synthesis and purification of ionic liquids. Their [research](#) was recently featured as the cover paper in the online edition of *Industrial & Engineering Chemistry Research*.

Professor Jee-hoon Han collaborated on the research with Director Ji Hoon Park, Principal Researcher Soo Min Kim, and Researcher Myungho Choi from CO₂ & Energy Research Center at the Korea Research Institute of Chemical Technology, and Chonnam National University Professor Jaewon Byun.

Ionic liquids are salts that remain in a liquid state at [room temperature](#) or even at relatively low temperatures due to strong electrical interactions between their ions. Unlike common salts, they possess [unique properties](#) such as nonflammability, low volatility, and thermal and chemical stability, making them valuable for various industrial applications including catalysts and electrolytes.

One of the most studied ionic liquids is [bmim][BF₄], known for its high stability and low toxicity. However, the complex and expensive process of removing impurities such as lithium chloride (LiCl) during synthesis has been a significant barrier to the technology's commercialization.

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