

IONIC LIQUID TECHNOLOGY

IONIC LIQUIDS* can replace traditional industrial processes such as electrodeposition, pyro and hydrometallurgy (solid-liquid extraction, liquid-liquid extraction, precipitation) for new **eco-friendly, no volatile organic solvents containing, no energy-intensive, and cost effective processes.**

*Room temperature ionic liquids (RTILs), being salts of low temperature melting points, have negligible vapor pressure at room temperature, wide thermal and electrochemical window, environmentally benign and no-corrosive.



CAPABILITIES

Designing, synthesizing and physico-chemical characterizing of "Ionic Liquids" and "Deep Eutectic Solvents" (DESs) into different applications. Characterization of IL properties and performance for electrochemical applications.

INFRASTRUCTURE

Facilities for 10L scale synthesis of ionic liquids including characterization techniques, pilot scale reactors for extraction, pilot scale cells for electrodeposition.



Laboratories for a broad physico-chemical characterization of ionic liquids.



Reactor (10L) for synthesis of ionic liquids.



Reactor (100L) for extraction of metals from wastes using ionic liquids.

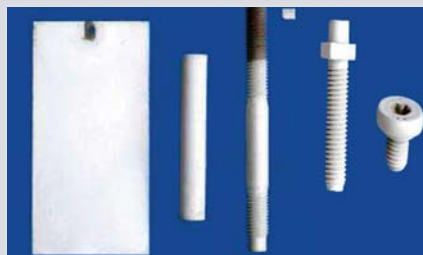


Pilot (15 tanks of 20L) for electrodeposition of metals

ACHIEVEMENTS WITH IONIC LIQUIDS



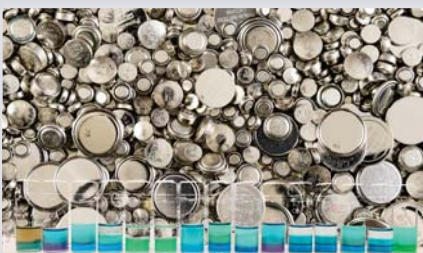
Electrodeposition of Zn, Cr and Zn alloys in DES (FP6 European Project IONMET).



Electrodeposition of Al.



Recycling of Neodymium and Dysprosium from permanent magnets (H2020 European Project REE4EU).



Cobalt and Lanthanide recovery from batteries using novel ionic liquids (FP6 European Project COLABATS).



Redox flow battery by using ionic liquids.



Recycling of Rare Earths and Phosphorus from apatite mineral ore.

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