

Achievement Potential

The use of Ionic Liquid solvents offers great opportunities for novel and economic production routes to new materials and the creation of new markets. IONMET will establish examples of best practice by implementing the research strategies of Ionic Liquids. The new technology will provide the tools to enhance significantly the innovative capability of the manufacturing SMEs involved in surface finishing and printed circuit boards.

The SMEs will

- gain access to emerging and future research
- build their capacity and capability for greater involvement in research of Ionic Liquids
- enhance medium and long-term competitiveness through increasing knowledge of high-tech methods and the possibilities of utilizing them.



Contact

Coordinator

Genacys Ltd, London, N3 2UA, UK
Dr. Khalid Shukri
khalid@genacys.co.uk

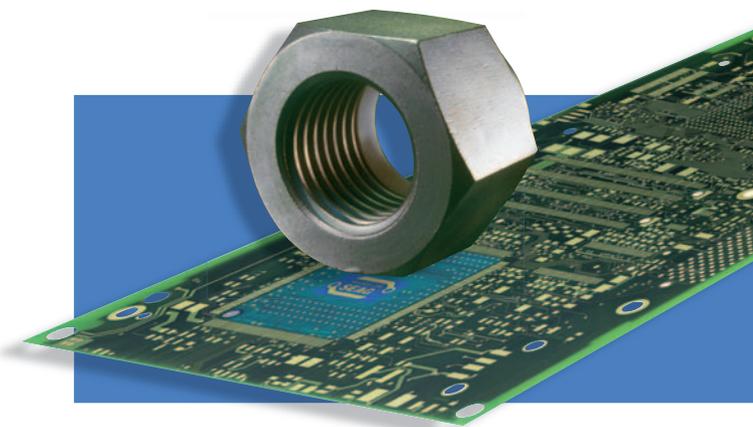
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New Ionic Liquid Solvent Technology To Transform Metal Finishing

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An Integrated Project within the
6th Framework Programme of Research of the EU



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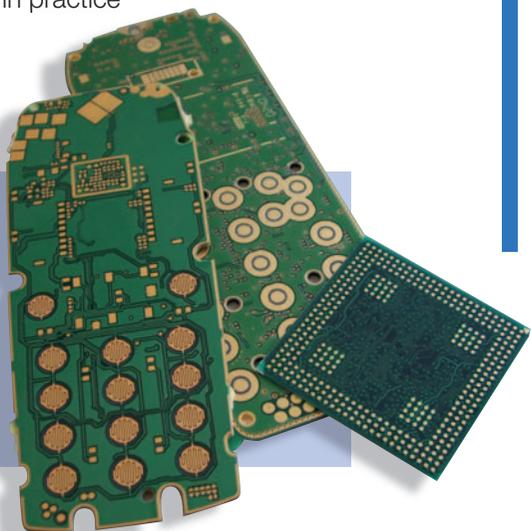


Objectives

The main objective of IONMET is to improve the prospects of introducing the advanced technologies of Ionic Liquids into industrial application. It is necessary for target sector SME companies to access sufficient information about relevant technological developments to be able to implement them into their own research activities.

IONMET promotes technical application of non-aqueous electrolytes in the field of Ionic Liquids to

- improve the potentials of electropolishing, plating and surface structuring
- increase the range of metals available for deposition
- enhance environmental sustainability
- extend surface functionalization
- realize new types of combined layers as well as alloyed layers
- develop new applications of surface finishing
- develop standard operating procedures of use of Ionic Liquids in practice



Target Sectors

Target sectors are Printed Circuit Board and Electroplating. In these industries new applications are under development or have been found.

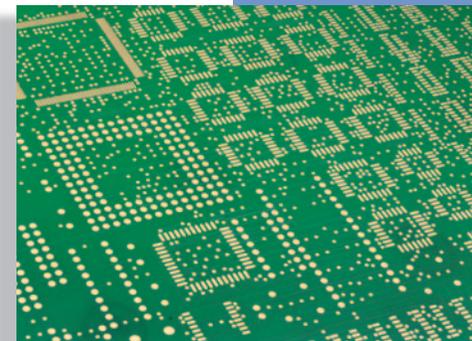
Current techniques for metal electroplating and other metal finishing processes use water-based electrolyte solutions and have been established for a very long time, with only relatively minor modifications and improvements.

Existing technology limits the range and quality of possible coatings and other products available. Also, SMEs are forced to use solutions containing toxic and corrosive chemicals.



Approach

Ionic Liquids are a new class of electrolytes with highly promising properties. The most important features are the electrodeposition of those metals, which cannot be deposited from aqueous electrolytes, like aluminium, titanium or tantalum, and eco-friendly electrolytes.



Coatings that are already industrially available will be improved. Better mechanical and corrosive properties with thinner coatings are important issues.

The diversity of industrial needs and the wide scope of scientific results require the qualification of the innovative potential of current research results and the requirements of the industrial branches.

The new generic technology will enable the introduction of a large number of totally new products and processes, which cannot be produced using existing technology.