

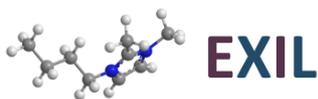
NEWSLETTER – EXIL Working Group 4, June 2015

1. Overview of the Workshop (April 20-22, 2015 Prague, Czech Republic)

On the 21st of April 2015 the Work Group devoted to Long-Term Prospects & Scale-Up Challenges in Ionic liquids (WG4) hosted an exciting set of speakers, whom have been challenged to revise and analyse this theme. The session chair (Cristina Silva Pereira, ITQB-UNL) invited both academics - Mara Freire (University of Aveiro), Stefan Stolte (University of Bremen), Mark Muldoon (Queen's University Belfast) and Peter Lobotka (Slovak Academy of Sciences), as well as industrialists Henry J. Wilson (Merck Group) and Eva Diaz-Gonzalez (Arcelor Mittal).

Mara Freire covered **unexpected applications of ionic liquids in life sciences** focussing on the purification of biomarkers as well as antibodies – some of which might find application for early-disease diagnostic. Her ideas have been distinguished with a prestigious ERC starting grant in 2013. Stefan Stolte made a stimulating speech on the **ecotoxicity of ionic liquids**. He emphasised that the extant knowledge is largely sufficient to guide their conscious design. However, most findings were proactively collected by academics and to solve **important knowledge gaps** on their chronic (eco)toxicity, industrialists need to step forward. Mark Muldoon revised comprehensively the potential of **solid / ionic liquid systems in catalysis**, emphasising the state-of-the-art with meaningful examples and also discussing the **major challenges and opportunities** in this research topic. Peter has been **pioneering the fabrication of metal-nanoparticles** by sputtering of materials **on the surface of an ionic liquid in vacuum**, followed by their deposition on conducting substrates using electrophoresis.

Henry defied the audience to answer why, though centennial, ionic liquids have found only limited industrial application. To build a picture of **what the future for ionic liquids could be**, he has reviewed historical developments of other industries and how disruptive, incremental or efficiency innovations find a route into market. Eva speech on a possible **future for deep eutectic solvents** was **inspiring**. They are, at a semi-industrial pilot scale, showing that these solvents (Cr(III) based) constitute a valid industrial alternative for the deposition of dense



and homogeneous hard chrome coatings. Hard chrome electrodeposition still largely relies on the use of chromium trioxide that is upcoming its banning date (REACH).

List of speakers:

Mara G. Freire, University of Aveiro
Extraction, Purification and Concentration of Value-added Proteins using Ionic-Liquid-based Aqueous Biphasic Systems
Henry J. Wilson, Merck Group
Ionic liquids; an Industrial Perspective and Retrospective

Mark Muldoon, Queen's University Belfast
Solid / Ionic Liquid Systems and Their Potential in Catalysis

Eva Diaz-Gonzalez, Arcelor Mittal
Hard Chrome Electrodeposition from Deep Eutectic Solvents: Process Up-scaling

Stefan Stolte, University Bremen
Design of Ionic Liquids with Reduced Environmental Impact - Progress Report, Perspectives and Future challenges

Peter Lobotka,
Nanocolloids prepared by vacuum sputtering of a metal on the surface of an ionic liquid

2. Key facts

Our WG counts with 24 members, distributed by nine EU countries. To reinforce the Exchange among members of different WG, Cristina Silva Pereira and Marcin Smiglak accepted the challenge to organize a joint workshop. This will be hold in Poland during the first week of May, 2016. Reserve the time in your agenda! We wish to design a workshop that truly promotes scientific networking. It is important that we analyse what research is worth doing? How to influence trends in our field? How to promote interdisciplinary research and build trust? How to support the development of young-leaders in the field? We count to have fresh news on this soon.