

19/4/2016

Course topics and schedule

8:30-10:30	Introduction to solvent extraction and principles of solubility and solutions. Complexation of metal ions. Solvent extraction equilibria. Development of industrial solvent extraction processes. Principles of industrial solvent extraction.
10:30-11:00	Break
11:00-13:00	Engineering design and calculations of extractors for liquid-liquid systems. Extraction of organic compounds. Solvent extraction hydrometallurgy. Solvent extraction in nuclear science and technology.
13:00-14:30	Lunch
14:30 - 16:30	Analytical applications of solvent extraction. The use of solvent extraction in the recovery of waste. Recent advances in the solvent extraction processes. Computational chemistry in modelling solvent extraction of metal ions. The sample preparation problem. Solid phase extraction: what it is and what it does.



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Coordinator contact:

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ERA-MIN
NETWORK ON THE INDUSTRIAL HANDLING
OF RAW MATERIALS FOR EUROPEAN INDUSTRIES

Introductory course on REE-bearing metals solvent extraction techniques

Adalbert Hotel, Prague, Czech Republic

April 19, 2016

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environmentally friendly and efficient methods for extraction
of rare earth elements from secondary sources

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Introduction

The ENVIREE project is aimed at completing the picture of effective REE supply within Europe by addressing exploitation of specific secondary sources. Therefore, the development of selective, efficient, economical and environmentally friendly separation process for the REEs and other valuable metals ions from secondary sources is a fundamental objective of the project.

Learning outcomes

Following separation and concentration by mineral processing, metallic minerals are subjected to extractive metallurgy, in which their metallic elements are extracted from chemical compound form and refined of impurities. This course aims to introduce and explain fundamental aspects of theoretical solvent extraction as well as practical applications at industrial level. The course will deliver a complete state-of-the-art of the solvent extraction technique.



Who should attend

This course is part of ENVIREE' WP5 (Training, education, dissemination and market uptake). Its main target are chemical engineers, chemists, mining and process engineers, environmental engineers and hydrometallurgists, as well as young researchers wanting to get familiar with solvent extraction techniques for separation of metals and other valuable ions and recovery of REEs from secondary sources. Members of the ENVIREE Consortium, PROMETIA Project, researchers and students, are welcome to attend.

Registration and local info

The number of attendees is limited. Enrolment applications will be accepted in the order of reception. A participation Diploma will be given to registrations until April 1st 2016. Venue:

Adalbert Hotel, Marketska 1/28, Brevnov Monastery, Prague, 169 00 Czech Republic.
www.hoteladalbert.cz

No registration or participation fee. Registrants are responsible for making their own lodging and travel arrangements.



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Instructor

Prof. Christian Ekberg is a full professor in Industrial Materials Recycling and in Nuclear Chemistry at Chalmers University of Technology, Göteborg, Sweden. He is the holder of Stena's Chair in Industrial Materials Recycling and an elected member of the Royal Swedish Academy for Engineering Sciences. The main research focus during the last 25 years has been on solution chemistry of the lightest to the heaviest elements in the periodic table (thermodynamics, solvent extraction etc) as well as statistical uncertainty analysis. In later years the focus has started to include recycling processes from various sources as well as the new Gen IV nuclear reactor systems. He has published more than 120 reviewed scientific papers.

Course coordinator

Dr. Isabel Paiva, IST-ID, Lisbon

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