Organisation

Date
Begin: Wednesday, 2nd Sept. 2015, 8:30 am
End: Friday, 4th Sept. 2015, 5:30 pm

Venue
Building 44, Room 44-380
TU Kaiserslautern
Lehrstuhl für Thermische Verfahrenstechnik
Postfach 3049
67653 Kaiserslautern, Germany
www.uni-kl.de /LS-Bart

Participation fee & accommodation
Costs includes lunches, beverages, dinners, software (for non-commercial use) and course materials. GVT/VDI and DECHEMA members are eligible for reduced early bird registration. Students being member of VDI or DECHEMA can apply for a reduction of Euro 200,- (Please contact Mrs. Weis). The number of participants is limited. Participation fees are:

Student: 850,-€ (early bird 600,-€)

Industry: 1.500,-€ (early bird 1.300,-€)

Accommodation is not included in the participation fee. A contingent of (1-, 2-, 3-bed) rooms is reserved at Seehotel Gelterswoog http://www.seehotel-gelterswoog.de/ under EXTRACTION. A transfer to the hotel is included in the fee. For alternative accommodation see e.g. http://www.trivago.de/

Registration

Please register for this course no later than 31th July 2015 (early bird: May 15th) and note if a special meal (vegetarian, food allergy) is required):

Forschungs-Gesellschaft Verfahrens-Technik e.V. (GVT)

www.gvt.org/SeparationProcesses

Mrs. Anna Maria Hipp

Theodor-Heuss-Allee 25

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EMail: gvt-hochschulkurse@gvt.org

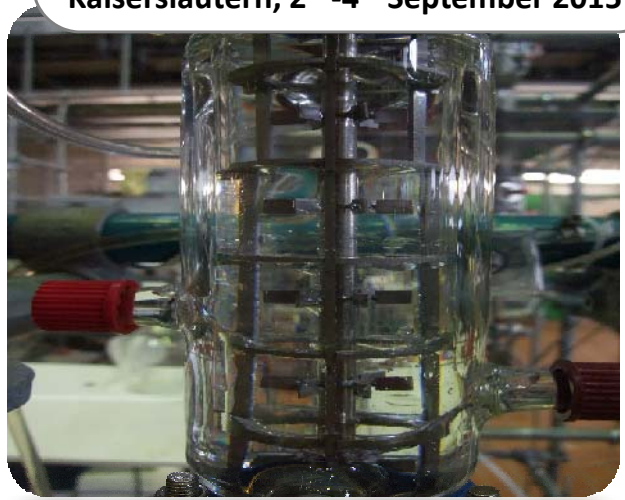
Internet: www.gvt.org

For more information concerning the organisation, please contact:
Mrs. Hipp, GVT
Tel., Fax and E-Mail see above.

For technical quesitions please contact :
Mrs. Weis, TU Kaiserslautern
E-Mail: tvtsek@mv.uni-kl.de
Tel: +49 631/2052117
Fax: +49 631/2052119

Separation Processes – Liquid Extraction: Practice & Theory

Kaiserslautern, 2nd-4th September 2015



Scientific Organisation
Prof. Dipl.-Ing. Dr. techn. Hans-Jörg Bart
TU Kaiserslautern
Lehrstuhl für Thermische Verfahrenstechnik
Postfach 3049
67653 Kaiserslautern, Germany

Organisation
Forschungs-Gesellschaft Verfahrens-Technik e.V. (GVT), Frankfurt/Main

SEPARATION PROCESSES - LIQUID EXTRACTION: PRACTICE & THEORY

GVT Hochschulkurs

Separation Processes

- Guaranteed access to metals is a major issue when it comes to boosting European industry. However, long term trends clearly indicate that the resources we can extract on (be they primary or secondary) show decreasing yields and increasing complexity (poly-metalism). In this context extractive metallurgy has to resort to more and more complex processes in order to get the best value out of these resources. Hydrometallurgy with its diverse approaches can contribute to this collective effort.
- The purpose of this summer school, which is aimed at PhD students or young professionals, is to exemplify different hydrometallurgical techniques (extraction, precipitation and solvent recovery) and to obtain a fundamental understanding on economically effective process steps.
- The course starts with fundamentals and experimental studies concerning the topics liquid-liquid extraction, distillation and chemical precipitation. Computer exercises will be performed using CHEMSEP© and PPBLab software, which can be used later for non-commercial purposes. For practical sessions, the participants will be divided into groups (of 4 to 6 members). Each group will perform the lab experiments and computer exercise (2 persons at one computer), results to be given as a short summary. Each participant will be responsible for an individual task (setup, calibrating, analyzing, control, etc.) during the experiment. The results will be discussed at the end of the day. Finally, a numerical study of a liquid-liquid extraction column will introduce the students to efficient extraction column design accounting for changes in droplet size along the column height. Additionally, a numerical study about the divided wall column will introduce the participants to an energy efficient column design for separating more than two components.

Course Programme

1st day: Plenary Lectures

- Principles of separation processes
- Basic principles of reactive extraction
- Thermodynamics of extraction

1st-3rd day: Lab Experiments (split in 4 groups)

- Lab experiments extraction (LEE – Pulsed column)
- Lab experiments extraction (LEE – Mixer-settler) campus hall 64
- Chemical precipitation (CHP) campus hall 64
- Computer exercise extraction (CEE) GB44-room 310-312

3rd day: Lectures and Final Computer Exercise

- Column design using a population balance tool
- COCO divided wall column

TECHNISCHE UNIVERSITÄT KAISERSLAUTERN

Lecturers

Prof. DI Dr. Hans-Jörg Bart,
studied Chemical Engineering at the TU Graz, Austria, and received his PhD in 1982 in the field of metal salt extraction. Since 1994 he is professor at the the Chair Separation Science and Technology of the TU Kaiserslautern. He is head of the ProcessNet working party “Extraction” and chairs the International Committee of Solvent Extraction.

Dr.-Ing. Mark Hlawitschka,
studied Mechanical and Process Engineering at TU Kaiserslautern and received a PhD in the field of liquid-liquid extraction. Since 2013 he is post-doc at the Chair of Separation Science and Technology.

Prof. Dr. Thomas Zemb,
is founding Director of the Institut de Chimie Séparative de Marcoule (UMR 5257 CEA /CNRS /UM2 /ENSCM) since March 2007 and is full professor at the Institut des Sciences et Techniques Nucléaires since 1994.

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european hydrometallurgical institute
institut européen d'hydrométallurgie