Forschungs-Gesellschaft
Verfahrens-Technik e.V.

Fundamentals of Selection, Synthesis and Design of thermal Separation Processes

14. - 17. April 2015

Oldenburg

ATTENTION: revised course date

Hochschul-Kurse

Program and registration form

Fundamentals of Selection, Synthesis and Design of Thermal Separation Processes

Oldenburg, 14-16 (17) April 2015

Senior Lecturer: Prof. h.c. Dr. J. Rarey

Contents and aims of the course

With the ever increasing application of of process simulation software tools like Aspen Plus®, Hysis®CHEMCAD®, Pro/II®, UNISIM® etc., engineers are confronted with the vast complexity of the underlying models and thermodynamic relationships. A sound knowledge and intuitive understanding of process engineering fundamentals is vital for the development (synthesis), design and optimization of chemical processes. It is generally accepted, that any flaw in the underlying models and parameters usually leads to unrealistic simulation results.

Within this popular course (approx. 1000 participants in the last 15 years) professionals from industry and academics will become familiar with the possibilities and limitations of currently used methods and models. The course will focus on those aspects, which we consider to be of primary importance for the successful modeling of single separation units or whole chemical plants.

Besides the thermodynamic properties of pure components, especially the behavior of multicomponent mixtures will be covered with special attention to phase equilibria, also those of electrolyte systems.

The course will be distributed in 4 parts:

- Basic pure components and mixture behaviors are presented together with the models that are typically used in process simulation. This includes discussion of VLE and miscility gaps, gas solubility, solid solubility, and covers the different ways to obtain especially the binary interaction parameters.
- Estimation methods for pure component properties and mixture behavior are vital in cases no experimental data are available. Their basis and range of applicability will be discussed in details.
- Following the basics of thermodynamics, models and property estimation, various approaches to process engineering problems using modern thermodynamic methods will be presented. These include for example hybride or pressure swing processes, the selection of suitable entrainers for special separation processes like azeotropic and extractive distillation and extraction. In this part participants should gain an improved understanding of the various graphical representations of the real behavior of mixtures such as plots on solvent-free basis, contour lines, residual curves incl. boundary lines or surfaces, azeotropic points.
- Following the first 3 days an optional fourth day offers a workshop on thermophysical properties as well as parameter verification for use in process simulation. As software, mainly the Dortmund Data Bank (DDB) together with the integrated software package DDBSP is used. On the last day specialists from DDBST are available and small group workshops specifically focus on the interests of the participants.

Practical tutorials are included to deepen the understanding of the various topics. The course will be held in English.

zur Übersicht

Für weitere Informationen und Rückfragen kontaktieren Sie bitte

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