Invited Lecture IL 10

DDBST and LTP – Your Source for Reliable Thermophysical Properties

Authors and affiliation

Bastian Schmid

DDBST GmbH, Marie-Curie-Str. 10, 26129 Oldenburg, Germany

Key Word (3 words)

Databanks, Software, Measurements

Abstract (less than 300 words)

The reliable knowledge about the real behavior of the pure compounds and their mixtures as a function of temperature, pressure and composition is of a great importance for the development and design of industrial processes. Since an experimental determination of all needed properties is nearly impossible, the process engineer depends on factual data banks or reliable predictive models.

With a view to the synthesis and design of separation processes, fitting and critical examination of model parameters used for process simulation and the development of group contribution methods, the compiling of a computerized data bank for phase equilibrium data was started 48 years ago by Gmehling and Onken at the University of Dortmund. Today, the Dortmund Data Bank is the worldwide largest factual data bank for thermophysical properties of pure components and their mixtures and contains nearly all worldwide available phase equilibrium data, excess- , transport- and pure component properties even for polymer and electrolyte systems. Besides the easily accessible thermophysical properties from scientific literature, DDB contains also a huge amount of data not available via the open literature. A powerful software package for the data handling, correlation, property estimation and process synthesis enables the user to get most out of the data.

If a certain property should still not be found, our affiliated Laboratory for Thermophysical Properties might be able to perform measurements for the requested systems. The LTP is very experienced in phase equilibrium measurements, also at high pressures over a broad temperature range. The laboratory works since many years on transport and caloric properties and PVT data at elevated pressures. With more than 40 set-ups for thermodynamic measurements LTP covers a broad temperature and pressure range.