

Bachelor's Thesis/ Research Internship/ Master's Thesis

(Experimental)

Measurement of Liquid-Liquid-Equilibrium (LLE) and Vapor-Liquid-Equilibrium (VLE) in Electrolytes and Biological Systems

Description

Formaldehyde serves as a key feedstock for various substances, including plastics and renewable fuels. Traditional production methods are highly energy-intensive due to the requirement for high-temperature conditions. Typically, formaldehyde is produced in an aqueous solution and concentrated through distillation, utilizing well-established and state-of-the-art technologies.

At the Laboratory of Chemical Process Engineering, we are studying the effects of salts and other biological compounds on the vapor-liquid equilibrium (VLE) and liquid-liquid equilibrium (LLE) of formaldehyde-water-alcohol solutions.

This position involves conducting VLE and LLE experimental measurements for various systems containing salts and biological compounds. The collected data will be used to develop a phase equilibrium model that accurately accounts for the presence of these substances. The successful candidate will play a crucial role in advancing this sustainable production method.

Requirements

- High interest and prior knowledge of laboratory analytical work desirable.
- Basic knowledge of thermodynamics and phase equilibrium.
- High degree of independence and personal responsibility.

Tasks

- Familiarization with the formaldehyde systems, and experimental set-up.
- Designing and conducting liquid-liquid equilibrium (LLE) and vapor-liquid equilibrium (VLE) measurements.
- Fitting experimental data to model phase equilibrium.

Possible start: As soon possible

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