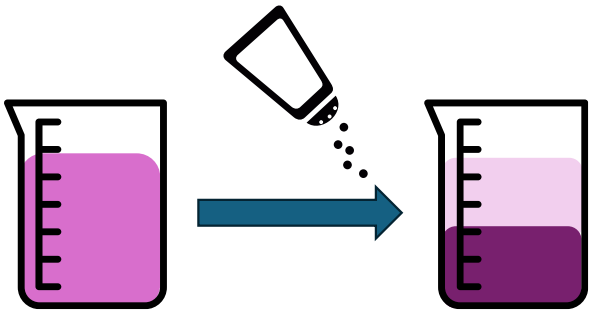
Salting out behavior of the GVL/Water binary mixture

Topic for *bachelor's thesis*



Replacing hazardous solvents is essential to reduce human and environmental impact. A promising green solvent is γ-valerolactone (GVL). GVL is made from biomass and is non-toxic. However, due to its comparatively high vapor pressure it is energy intensive to separate it from water using distillation. Therefore, alternative methods for the separation of water and GVL need to be investigated.

Certain molecules become less soluble in a solution of high ionic strength. This phenomenon, also called "salting out", can be used to separate otherwise miscible substances. The newly formed phases can be separated energy efficiently using decantation.

The goal of this project is to investigate the salting out behavior of the GVL/water binary mixture. Differences in the phase separation between salts and salt concentration will be quantified. The experiments will be performed at the institute's laboratory.

Scope:

- Preliminary literature research
- Conducting laboratory experiments and necessary chemical analysis
- Documentation of results in a final thesis

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