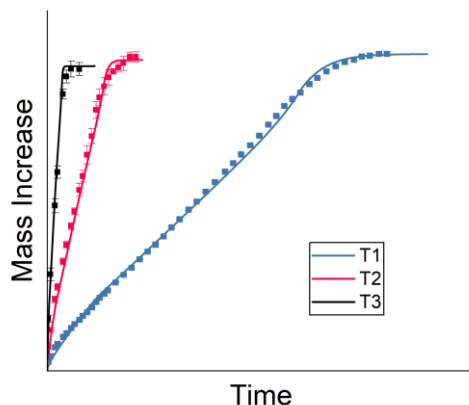


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| <input type="checkbox"/> Bachelor Thesis | <input checked="" type="checkbox"/> theoretical |
| <input type="checkbox"/> Plant Design Practice (KÜ) | <input checked="" type="checkbox"/> experimental |
| <input type="checkbox"/> Master Thesis | <input type="checkbox"/> constructive |
| <input checked="" type="checkbox"/> Paid Master Thesis | |

Topic: **ModKap - Thermodynamically consistent modelling of solvent absorption in polymer encapsulations**

ModKap intends to change the design of polymer encapsulated electronics. The goal is the model based choice of an appropriate polymer in a solvent environment, as e.g.



in medical or automotive applications. The method is developed on the basis of the PC-SAFT model to predict the solvent absorption in polymer-solvent pairs. In the case of a successful project, not only the design of polymer encapsulated polymers could be simplified, but the model could also be applied in polymer recycling or to model drug delivery systems for pharmaceuticals.

A topic for a master thesis could be experimental swelling analysis of the polymeric resins in different solvents. Another possible topic is the further development of existing models [1] and the simulation of the solvent uptake and the temperature profile, respectively.

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Literature: [1] P. Krenn, P. Zimmermann, M. Fischlschweiger, T. Zeiner, J. Chem. Eng. Data 65, 2020, 5677–5687.

