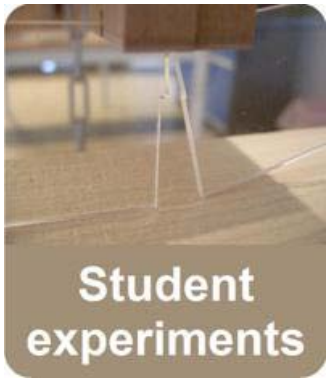
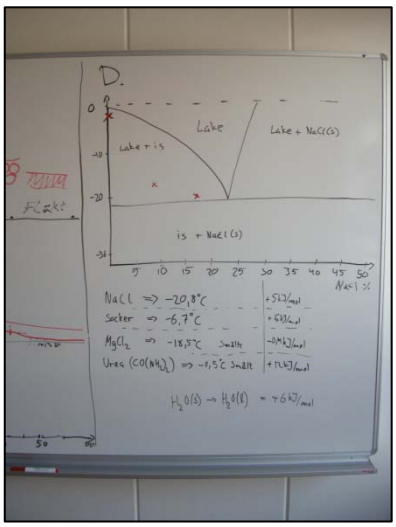
Laboratories at Building Materials, Lund University, Sweden



Student experiments

In most of our courses we have student experiments as an integrated and important part of our teaching. We believe that it is necessary to also do things by hand and not only read and listen to lectures. Our students do also encourage us to continue with this. We have therefore kept our student experiments even if it is an expensive way of teaching. Here are some examples of our student experiments:



For third year civil engineering student (Building Material Science)

How does a rechargeable hand-warmer work? (thermodynamics)
Deicers (thermodynamics)
The rate of dissolution of a spherical particle (kinetics)
The elastic modulus as a function of density for extruded polystyrene (composites)
The drying of a paint film (water transport)
The load bearing capacity of PVAC beams (fracture mechanics)
Determination of heat capacity (Wadsö, Smith et al. 2001)

For PhD-students (Introduction to Isothermal Calorimetry)

The first order hydrolysis of a parabene (Wadsö and Li 2008)
Isothermal titration calorimetry (Wadsö, Li et al. 2011)
Milk fermentation
Carrot juice spoilage
Discharge of a battery

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References

Wadsö, L. and X. Li (2008). "A simple rate law experiment using a custom-built isothermal heat conduction calorimeter." J. Chem. Educ. 85(1): 112-116.
Wadsö, L., Y. Li, et al. (2011). "Isothermal Titration Calorimetry in the Student Laboratory." J. Chem. Educ. 88(1): 101-105.
Wadsö, L., A. Smith, et al. (2001). "The isothermal heat conduction calorimeter: a versatile instrument for studying processes in physics, chemistry and biology." J. Chem. Educ. 78: 1080-1086.