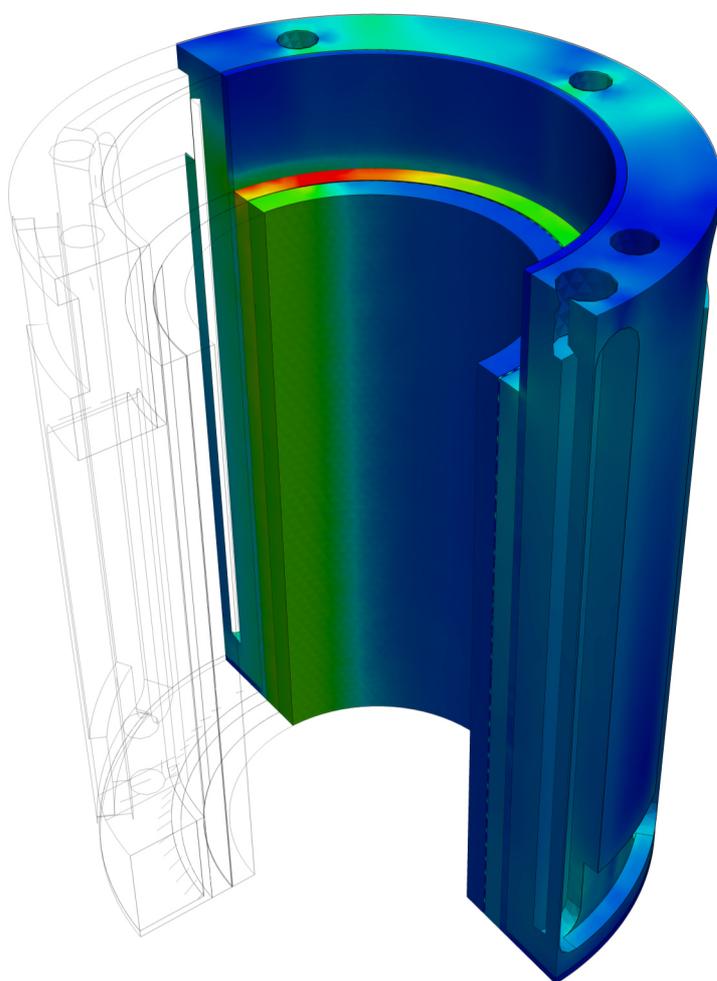


# CaloX

**Read out the heat flux from your reaction  
 at any time with CaloX**



**CaloX– State of the art technology facilitates efficient process development**

- Do you need to read out the heat flux of your reaction online without extra calibration?
- Do you need to investigate the heat of reaction a posteriori, any time after completion of your experimental procedure?

- Do you consider control of the dosing rate based on heat build-up to simulate production-like conditions in your scaled down lab reactor?
- Are you looking for real time decision making to modify the course of your experimental procedure based on the heat flux measurement?

- You don't have enough time or the possibility to calibrate unstable reaction mixtures before and after the reaction, nevertheless you need reliable measurements?

Conventional calorimeters rely on the temperature difference between the reactor and the jacket to compute the heat flux.

Conventional methods requires calibrations to reach the desired accuracy. Therefore, the process deviates from the standard reaction procedure which does not include the calibration phases.

Furthermore, you need to decide before the experiment whether you need to perform a calibration. Once the reaction is completed a post analysis to investigate the reaction enthalpy is not possible. Additionally, conventional measuring techniques narrow the scope of application where, unstable reaction mixtures cannot be calibrated, or not enough starting material is available to fill the reactor flask for a reliable calibration.

CaloX does not require any in situ calibration, provides a fast response time and delivers accurate measurements independently from the fill level.

**CaloX – A success story made in Switzerland based on collaboration between academic research and industry.**

The close collaboration between SYSTAG and ETH Zürich, resulted in a new technique to measure reaction enthalpy without calibration step. Industrial implementation of academic best knowledge has resulted in high customer benefit – typically SYSTAG.

Unlike conventional heat flux calorimetry, CaloX makes direct heat flux measurement a reality. Thanks to a very responsive and sensitive sensor, the reaction power can be measured in real time providing information about the reaction kinetic – typically SYSTAG.

**FlexyCUBE with CaloX, more possibilities for write success stories.**

Already existing FlexyCUBE can be upgraded with the CaloX option at any time. CaloX is a cost-effective investment which enables real time acquisition of the reaction enthalpy in a remarkably simple way. The CaloX upgrade consists of a sensor embedded in a sensor carrier which fits into the heating and cooling jacket of the FlexyCUBE as well as a scaled reactor glass. CaloX is compatible with your current reactor design – you do not need to buy everything new.

Get in contact with SYSTAG and get convinced of the numerous advantages.

## CaloX - Functions and Features

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- Online heat flux calorimeter
- Easy handling and upgrade for already in use FlexyCUBE guaranteed
- No modification of the present experimental procedure necessary
- Full integration into our FlexySys software suite
- Key figures for process optimization in consideration of thermal quantities
- Thank online availability of the heat flux, it is possible, for example to adjust the dosing rate to the maximal tolerable reaction power
- Retrospective analysis of any experiment is possible at any time
- High accuracy and reliable results
- Economical and cost-effective for fast ROI
- Data transfer to central archiving systems enabled, thank our universal interface CollectX



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