

Total evaporation with low pulsation

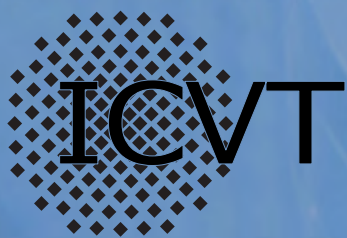
Easy to dismantle

Minimum hold-up

Rapid response to load changes

Broad spectrum of fluids

Compact design



## Total evaporation with low pulsation – The solution for precise vapor dosage

*„What is the most constant dosage of liquid good for,  
if the evaporation pulsates?“*

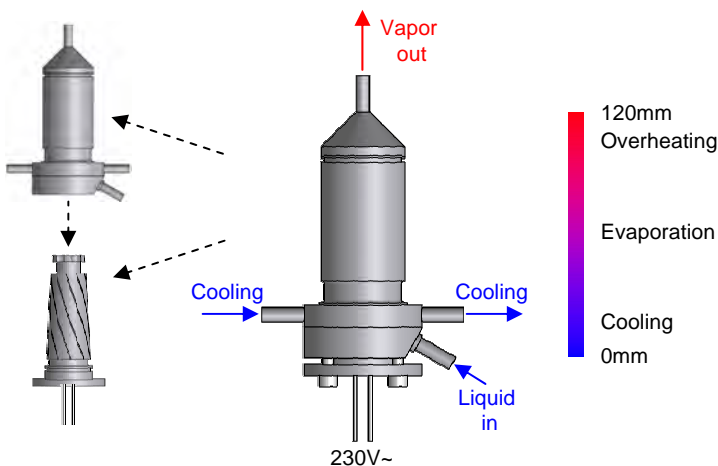
An evaporation system has been developed at the Institute for Chemical Processes Engineering (ICVT), University of Stuttgart, to stabilize the dynamics of flow boiling for continuous evaporation.

Even at low duty this solution enables the transfer of low pulsation from the liquid dosage to the vapor stream generated.

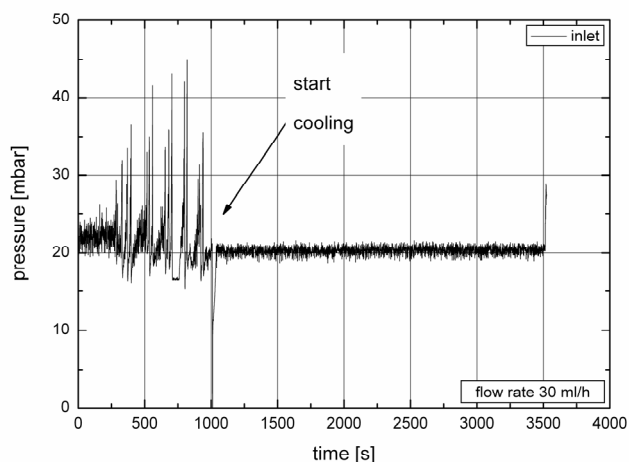
## Total evaporator with low pulsation

Dosing vapor at a constant rate without fluctuations and with a fast response upon load changes is essential for a broad range of applications.

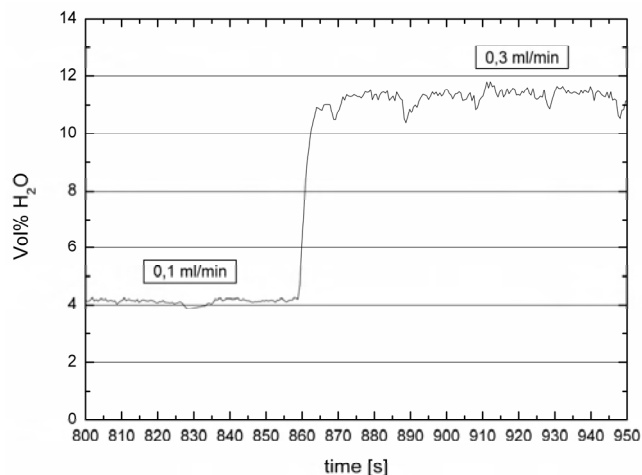
This evaporator has been developed at the Institute for Chemical Processes Engineering (ICVT), University of Stuttgart. It enables a total evaporation with low pulsation and very fast dynamics. Key features are the evaporation in narrow channels, a stringent subdivision of the apparatus into a cooled inlet section and hot evaporation and overheating sections, as well as an easy-to-dismantle construction for cleaning.



An undesired premature evaporation of the feed stream is prevented by a cooled inlet section. That way the phase transition takes place almost instantaneously in a defined section with low pulsation, and thus, additional volume for attenuation can be omitted.



Defined evaporation within narrow channels and a low hold-up volume of liquid and vapor result in a controlled evaporation process with rapid response upon load changes.



## Literature

Friedrich et al., *DE 197 23 680 A1*, 1998

Friedrich et al., *WO 2006/125417 A3*, 2006

Freund et al., *Chem. Ing. Tech.* 78 (5), 2006, 577-580.

## Technical Data

Range of operation	2 - 120 g/h
Pressure	up to 10 bar
Temperature	up to 400°C
Heating	replaceable electrical heating cartridge
Fluids	Water, Methanol, Isooctane, SiCl <sub>4</sub> , etc.
Material	1.4301, 1.4571 (other available on request)

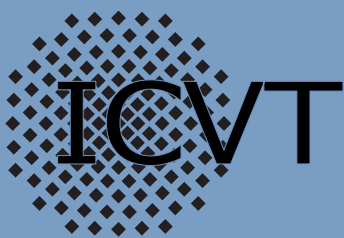
## Typical Fields of Application

Precise evaporation of liquid feed streams in laboratory and miniplant scale operation (reaction engineering, fuel cell systems, etc.)

## Reference

University and industry research partner

All technical data without obligation, status 06/2008  
Technical data may be subject to change due to continuous development.



## Low-pulsating total evaporation – The solution for precise vapor dosage

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