Chemical Transport in High Intensity Discharge Lamps

Sarah Fischer

Torsten Markus

Content

- The need of light
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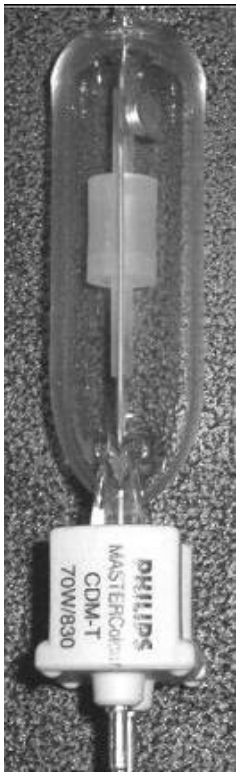
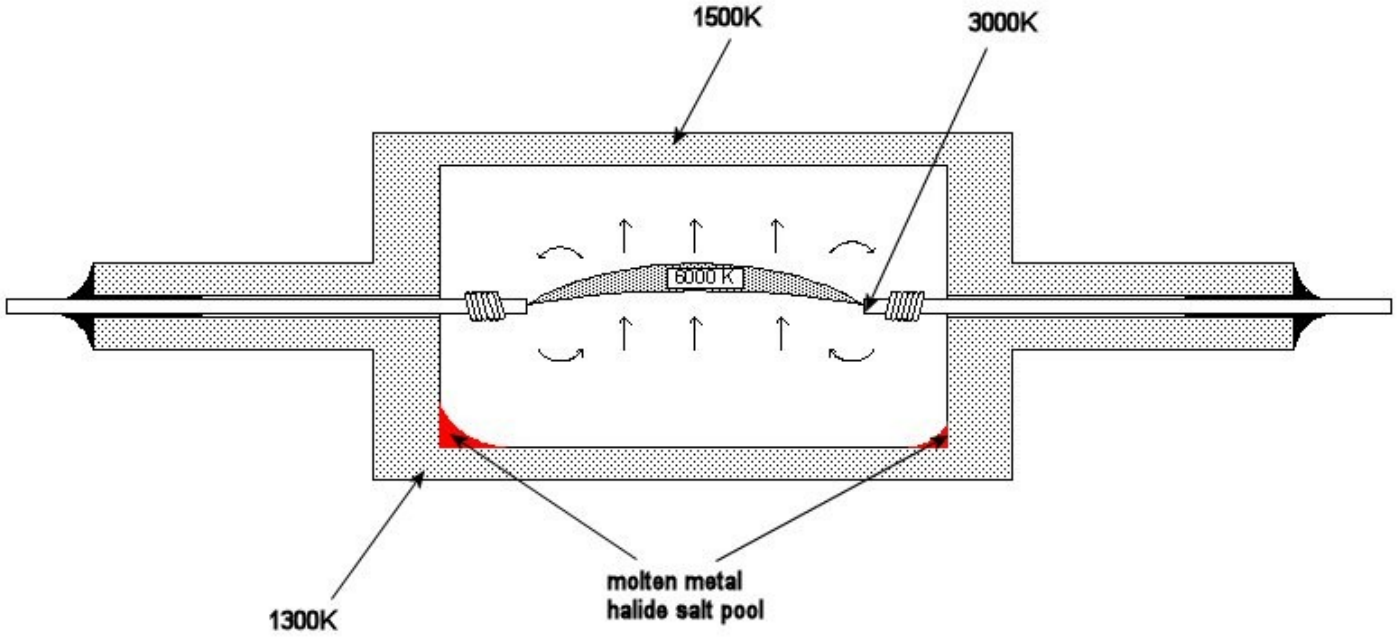
Lamps and Light



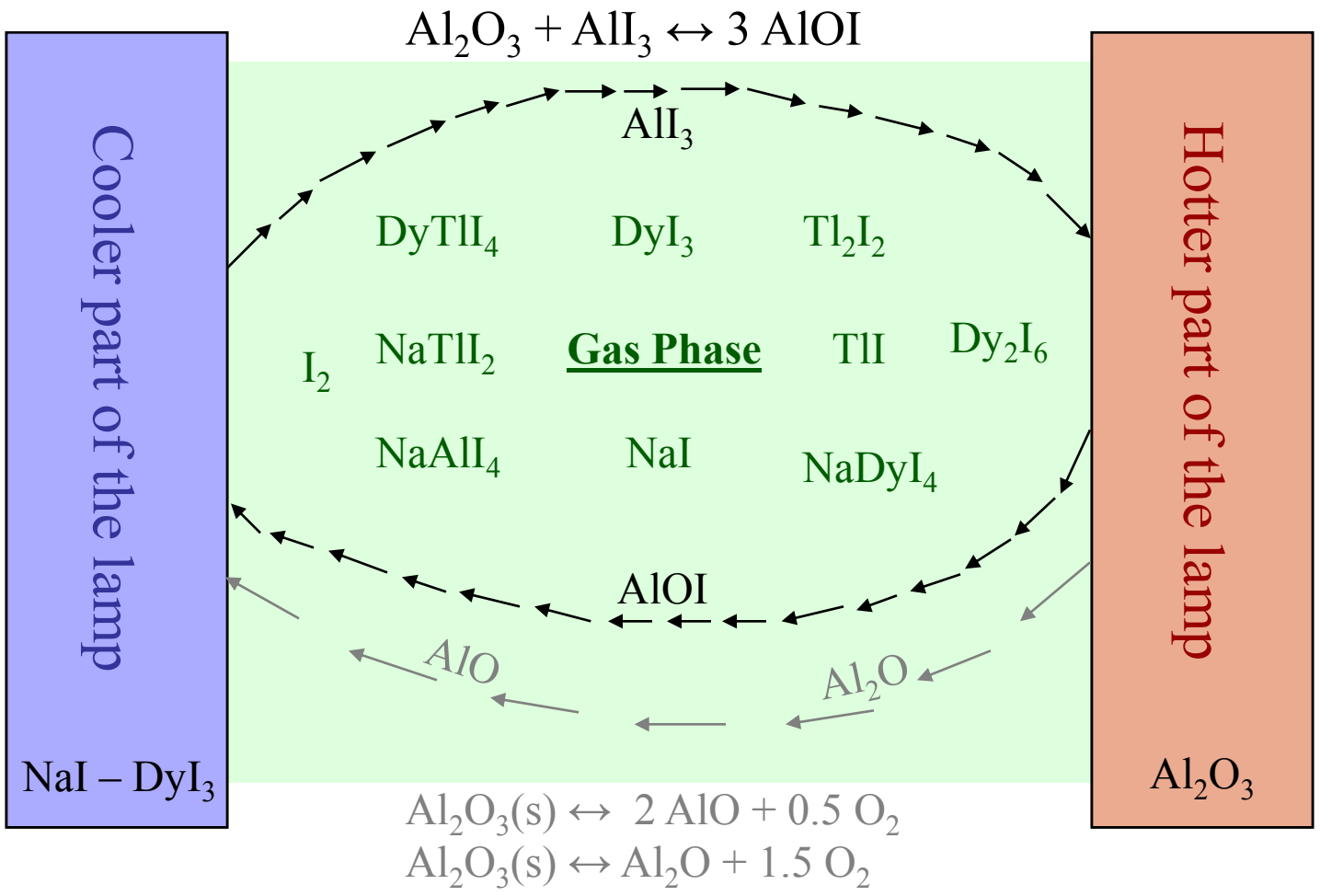
Inside a burner



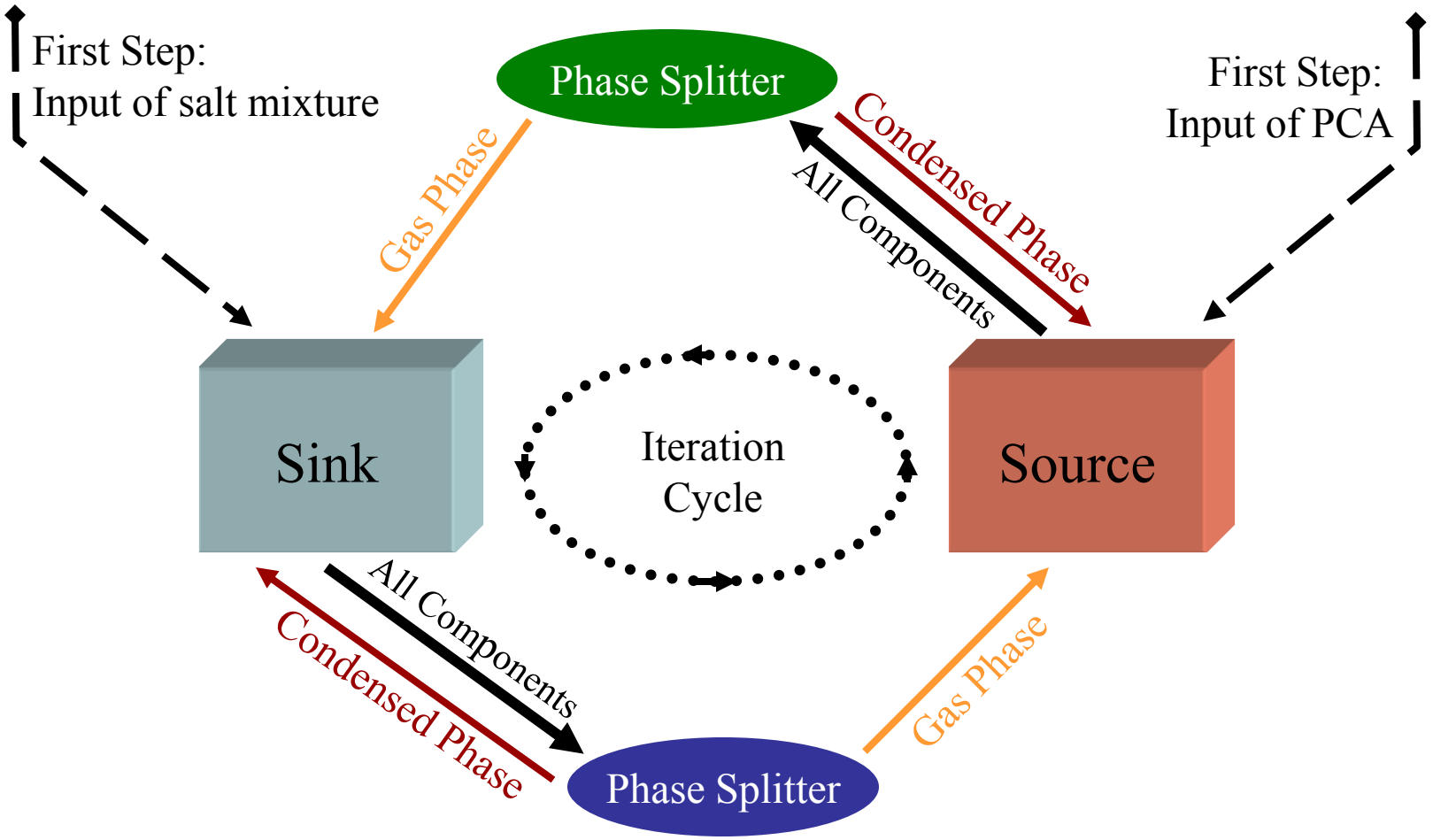
Corrosion and Destruction

- Corrosion limits the life time
- Corrosion can change the color in the end of lamp life
- A longer life time is more economical and ecological

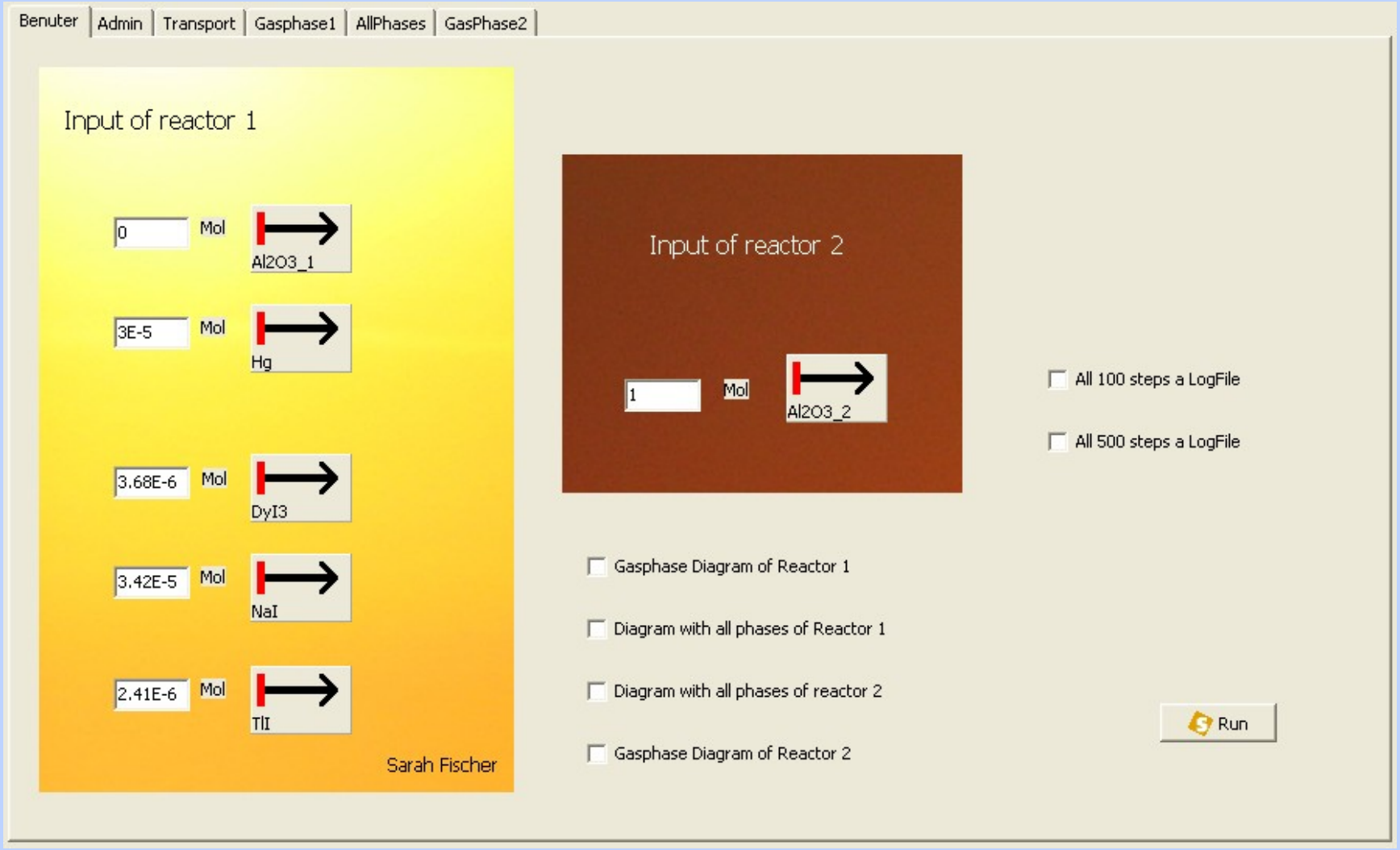
Simulated Chemical Cycle



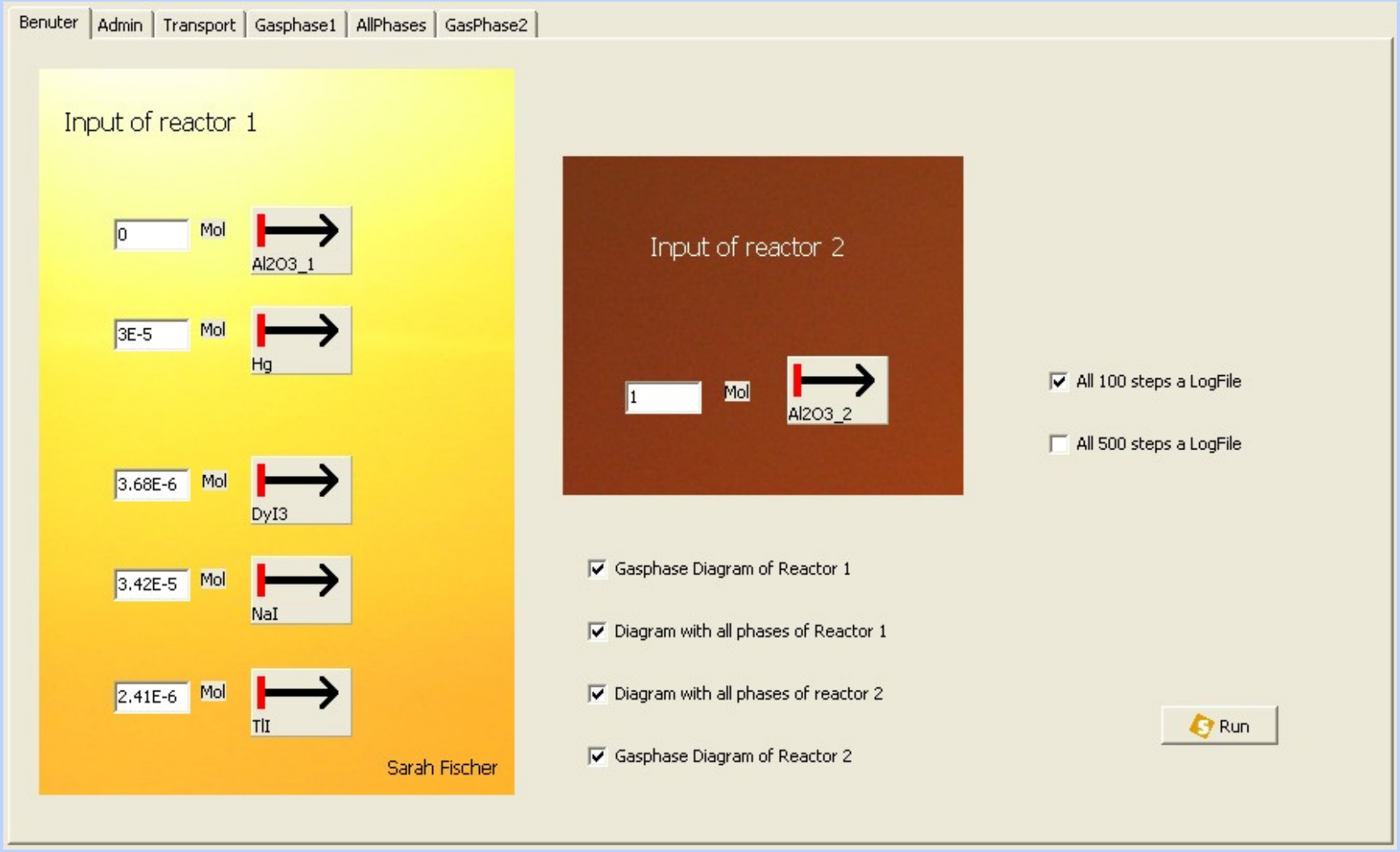
Scheme of the program



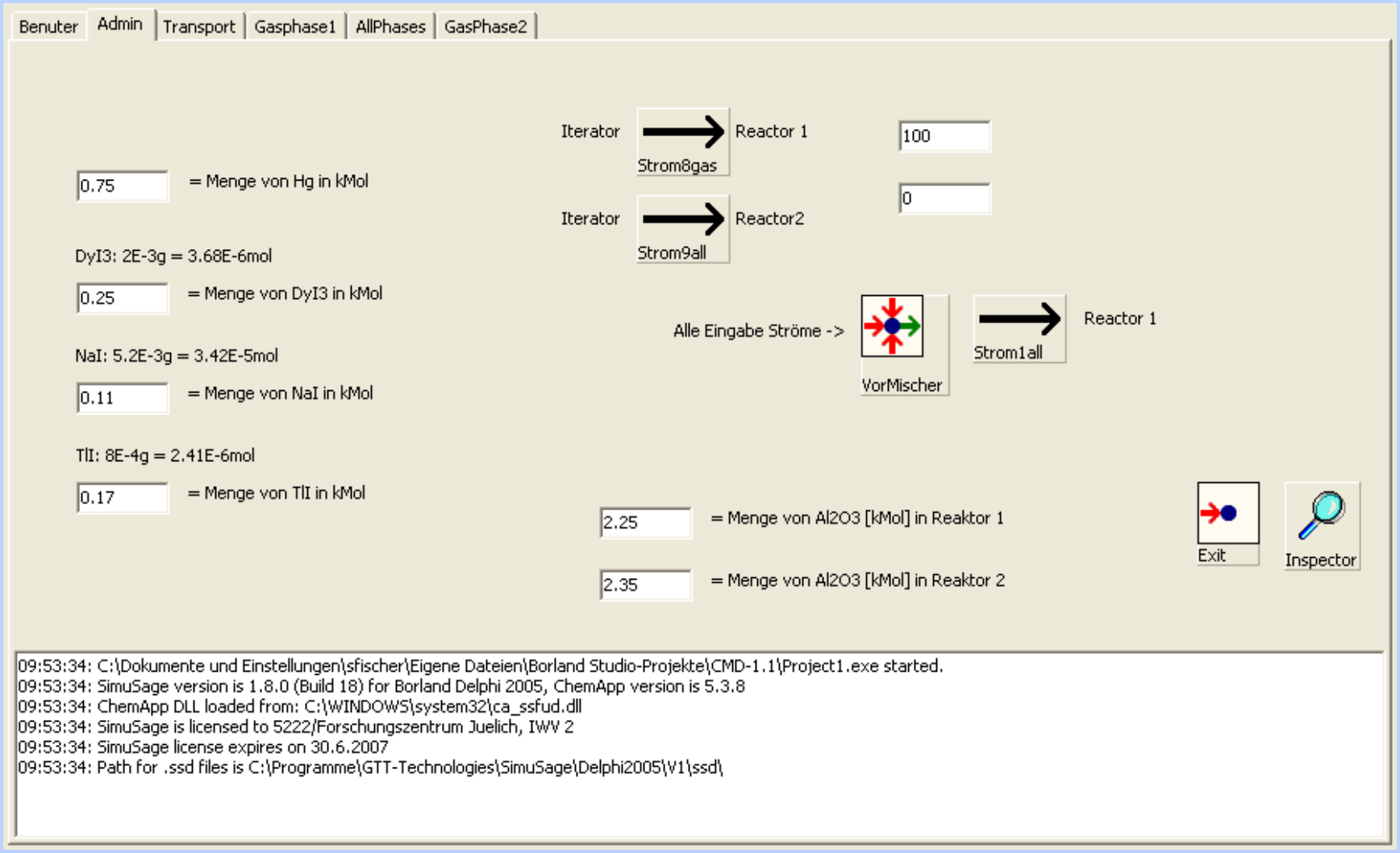
The Program


Benuter
Admin
Transport
Gasphase1
AllPhases
GasPhase2
Input of reactor 1
0
Mol
Al2O3_1
3E-5
Mol
Hg
3.68E-6
Mol
DyI3
3.42E-5
Mol
NaI
2.41E-6
Mol
TlI
Sarah Fischer
Input of reactor 2
1
Mol
Al2O3_2
All 100 steps a LogFile
All 500 steps a LogFile
Gasphase Diagram of Reactor 1
Diagram with all phases of Reactor 1
Diagram with all phases of reactor 2
Gasphase Diagram of Reactor 2
Run

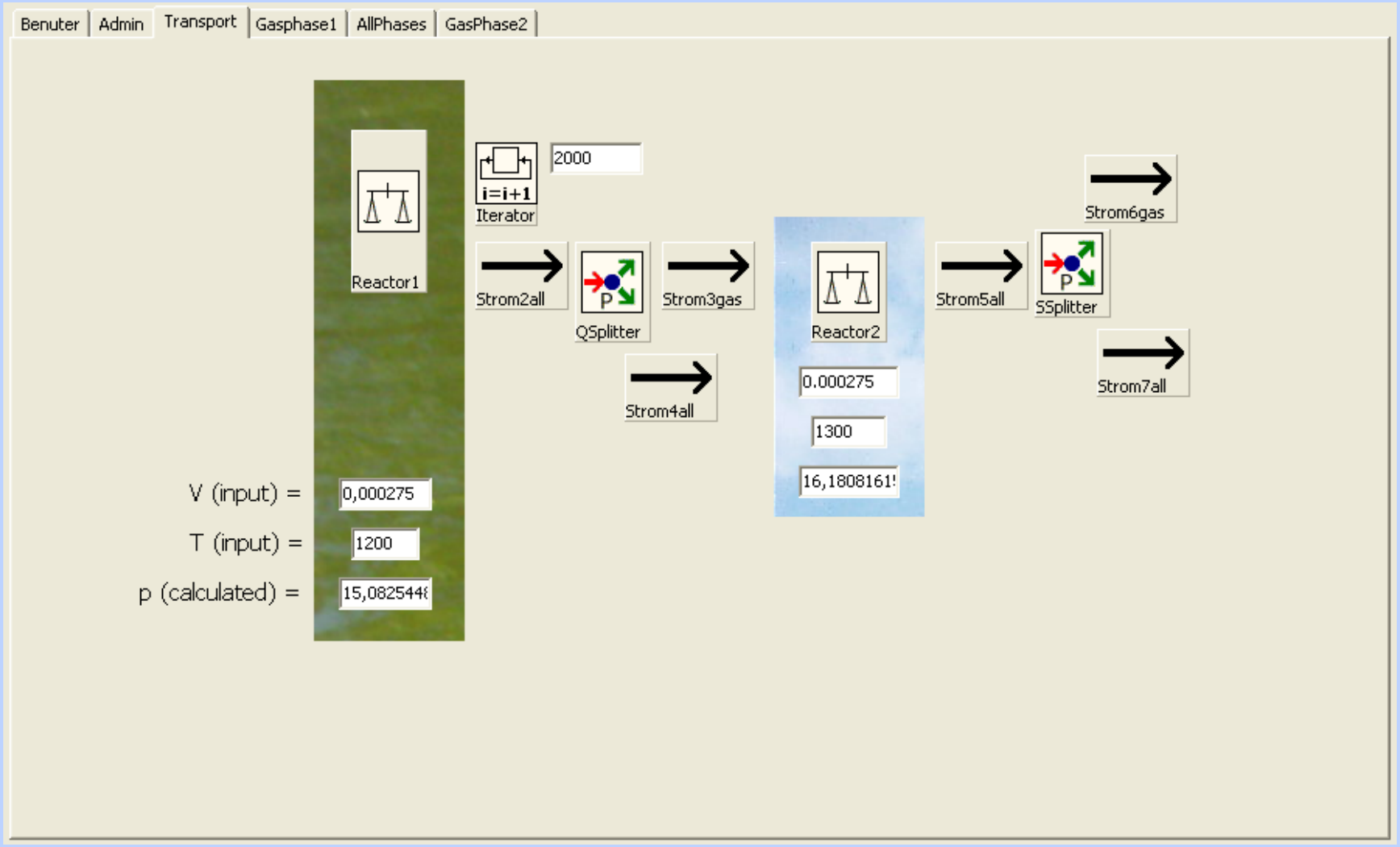
The LogFiles



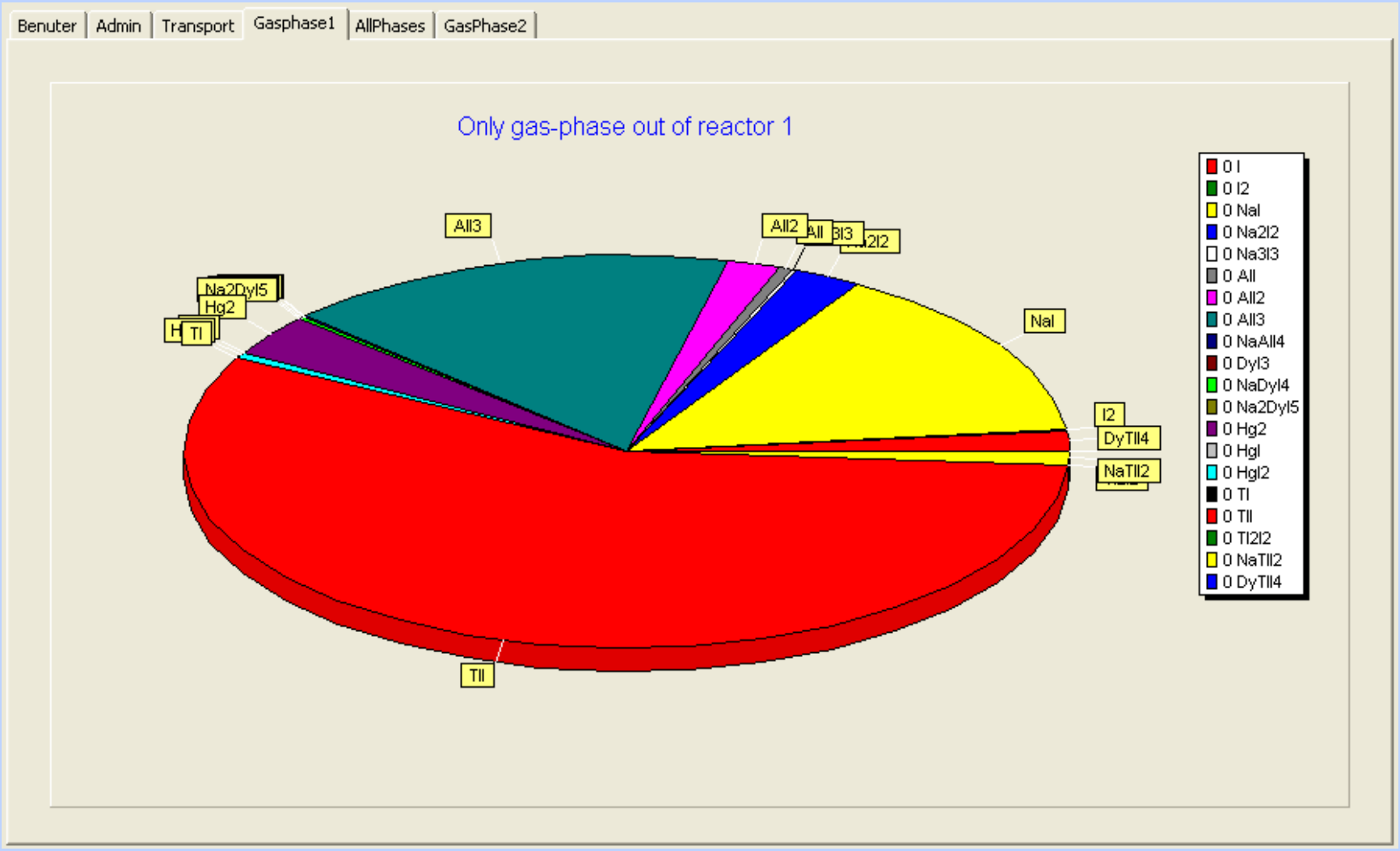
The hidden Tab



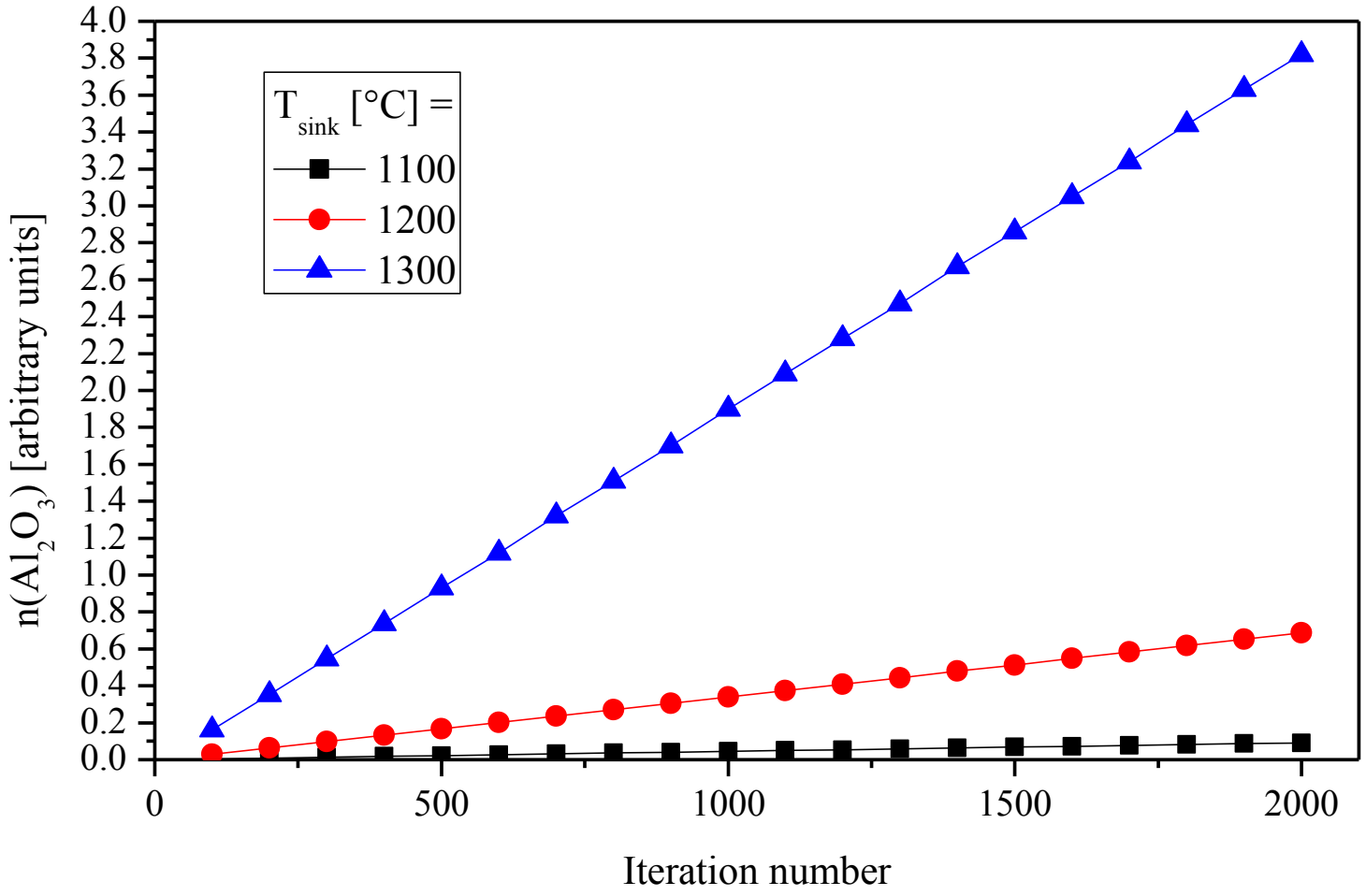
Chemical Cycle



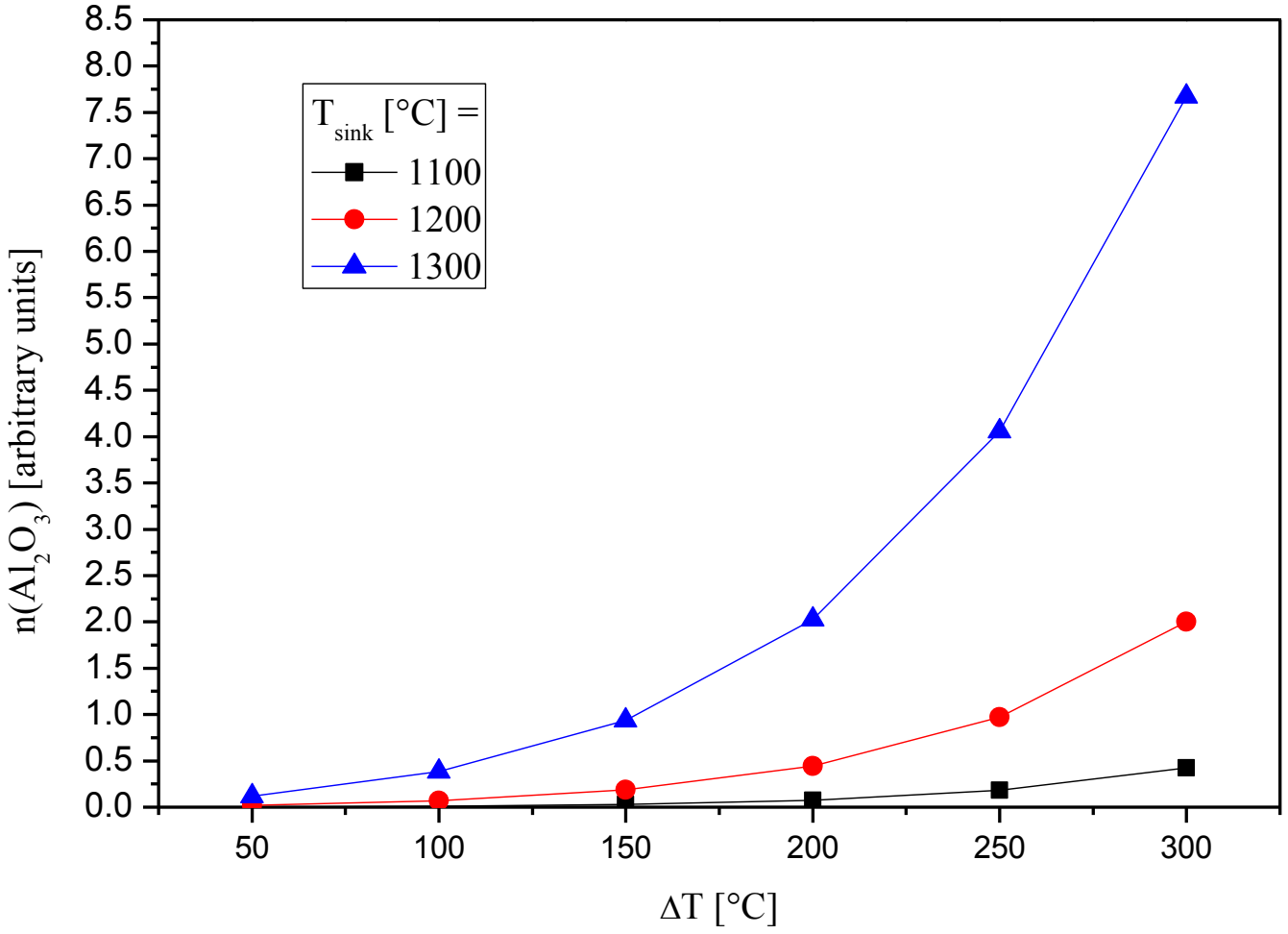
Gas-phase of the sink



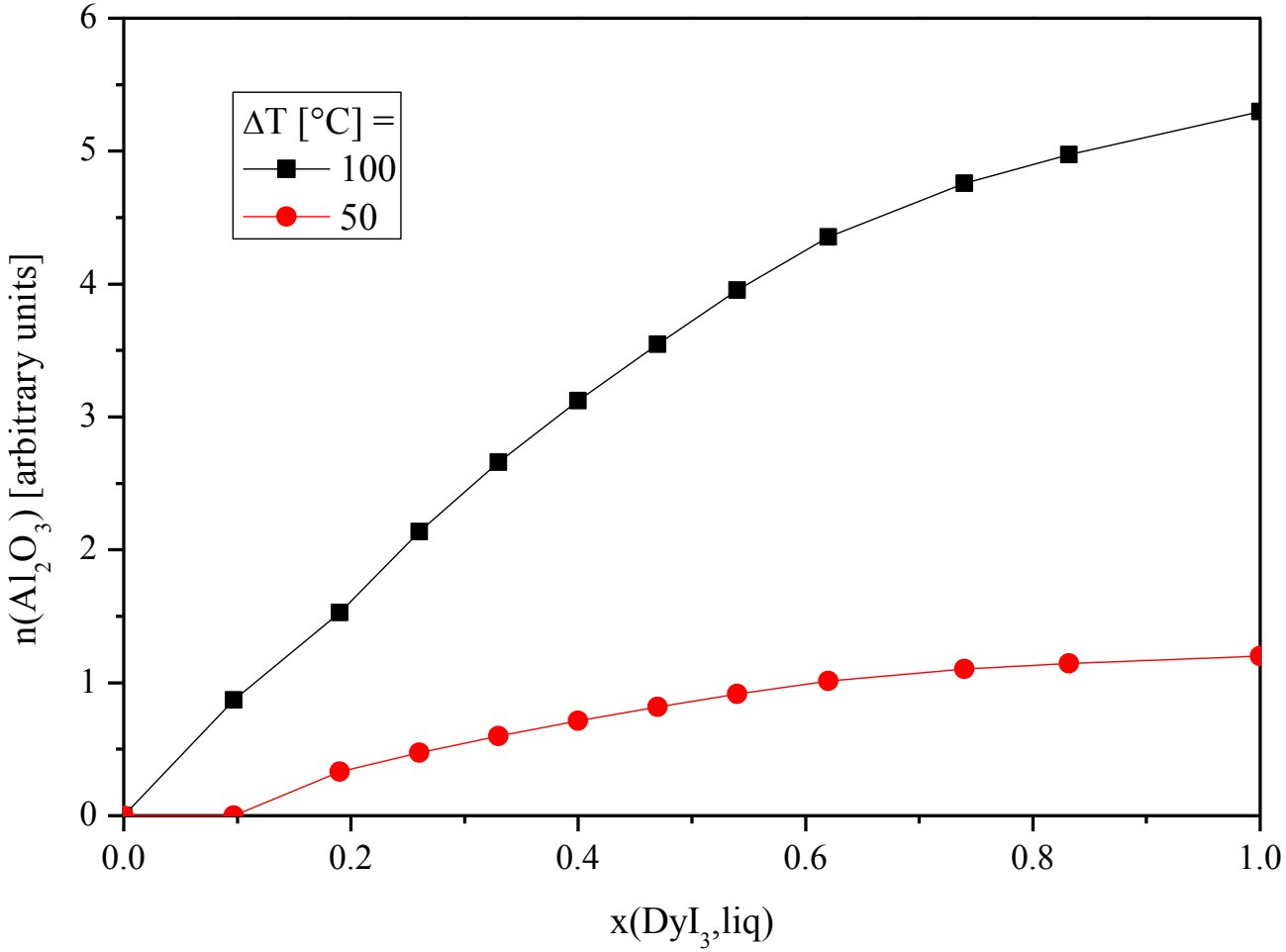
Temperature dependence



The temperature difference



The salt pool



Summary

- HID – lamps are mainly used in big buildings
- HID – lamps have a long life time
- Corrosion effects limit the life time
- Equilibriums can be calculated isochore
- Corrosion depend on the temperature
- Salt pool has a very sensitive influence

Thanks for your attention