

## SisClever Process

# Simultaneous recovery of metals from ore or waste to high purity and high concentration via solvent extraction - experimental validation

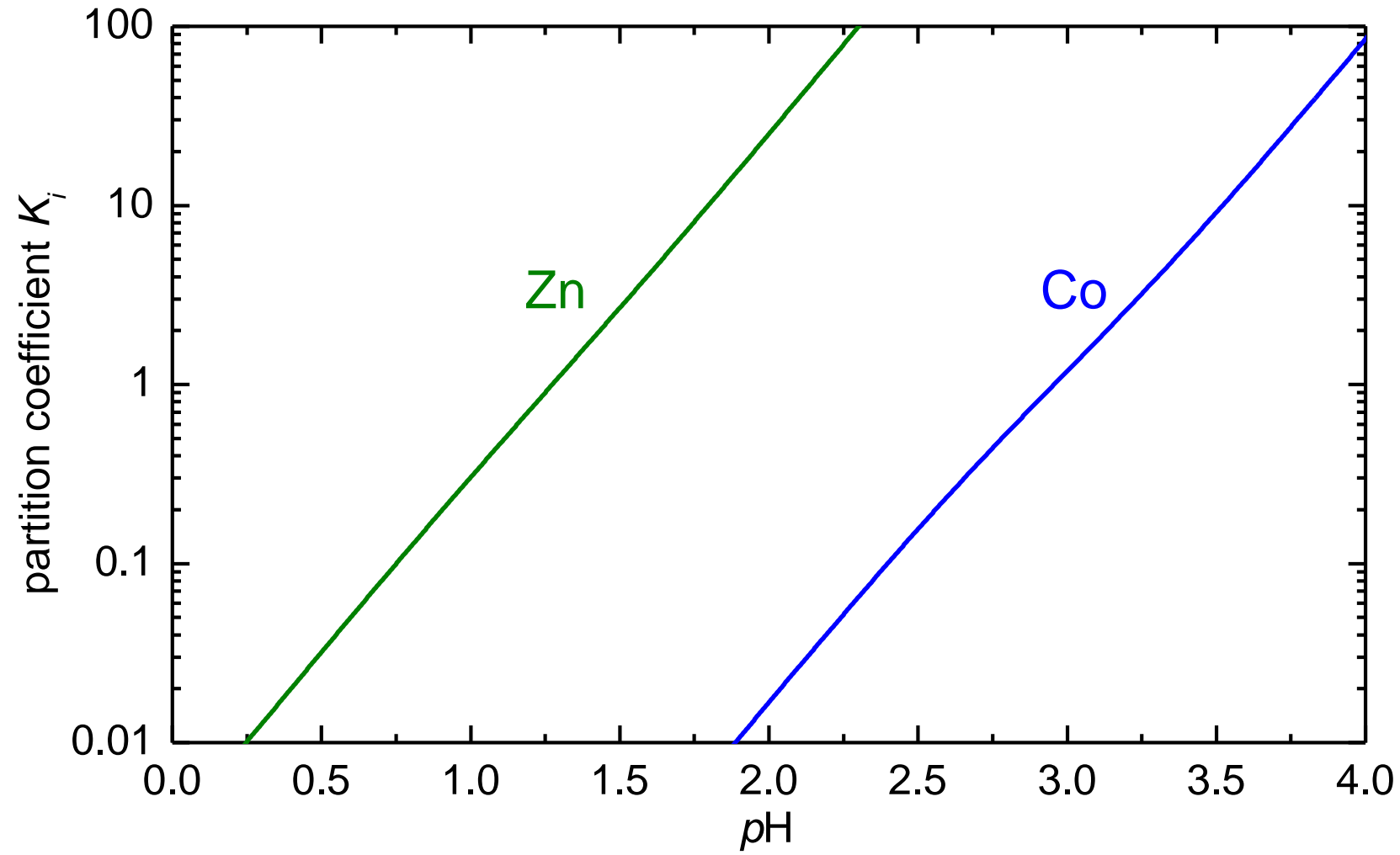
Ezgi Uslu, Marc Philippart de Foy, Andreas Pfennig  
Products, Environment, and Processes (PEPs)  
Department of Chemical Engineering  
Université de Liège  
[www.chemeng.uliege.be/pfennig](http://www.chemeng.uliege.be/pfennig)  
[ezgi.uslu@uliege.be](mailto:ezgi.uslu@uliege.be)



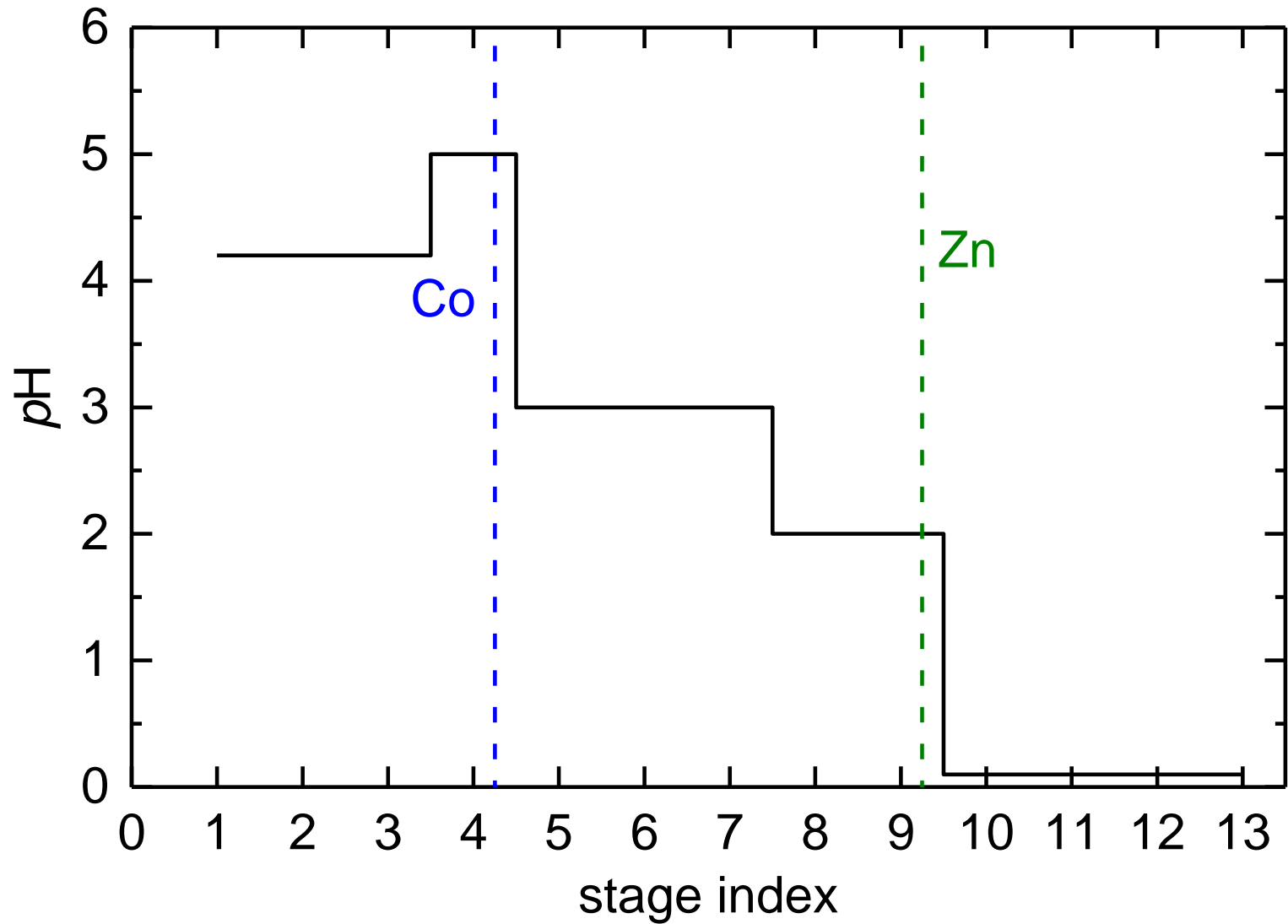
# separation of 2 metals

extractant: D2EHPA

T = 25°C



# optimal pH-profile



# experimental set-up



# experimental set-up

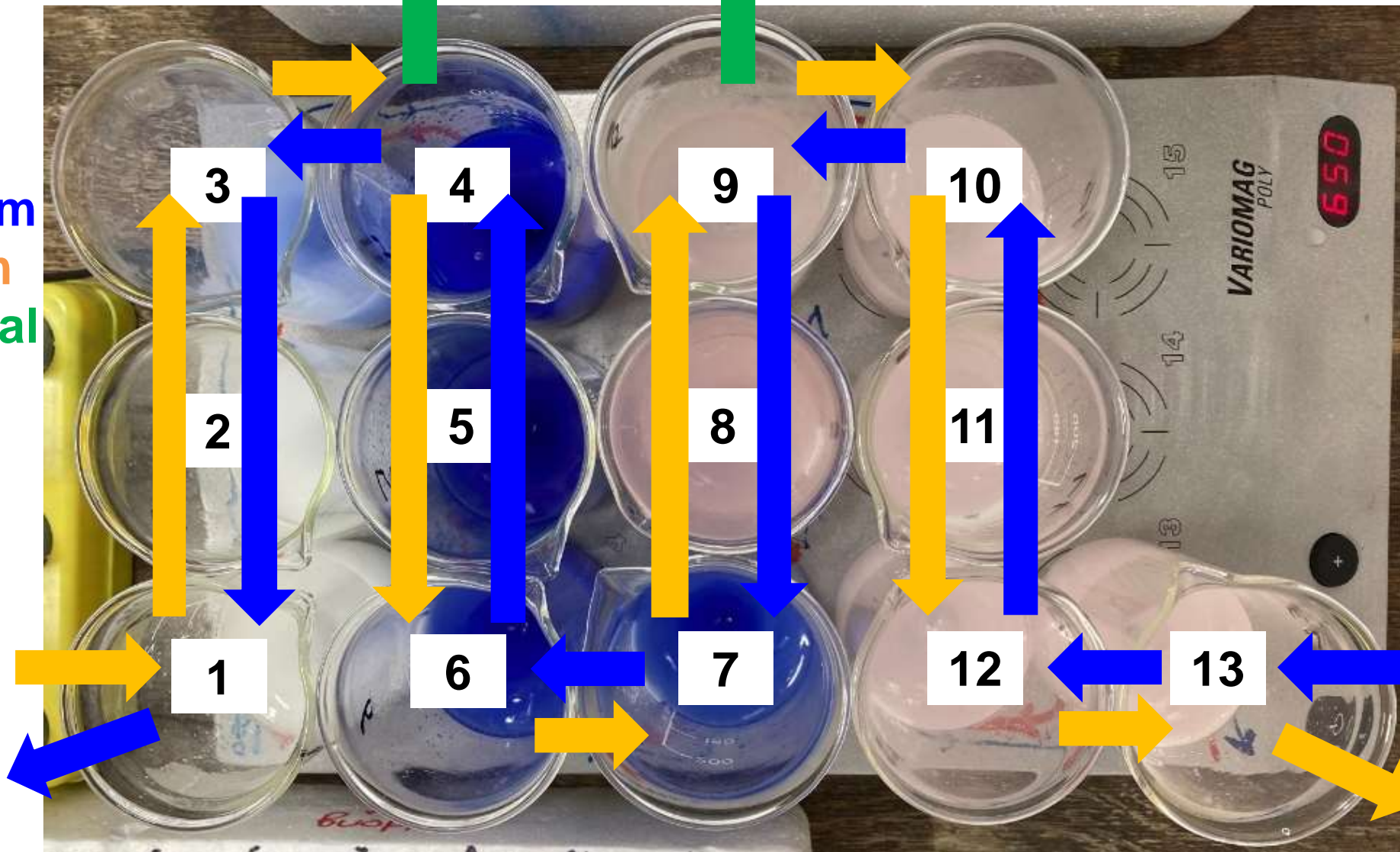
Co removal

Zn removal

aqueous stream  
organic stream  
organic removal

organic inlet

aqueous inlet



# experimental results

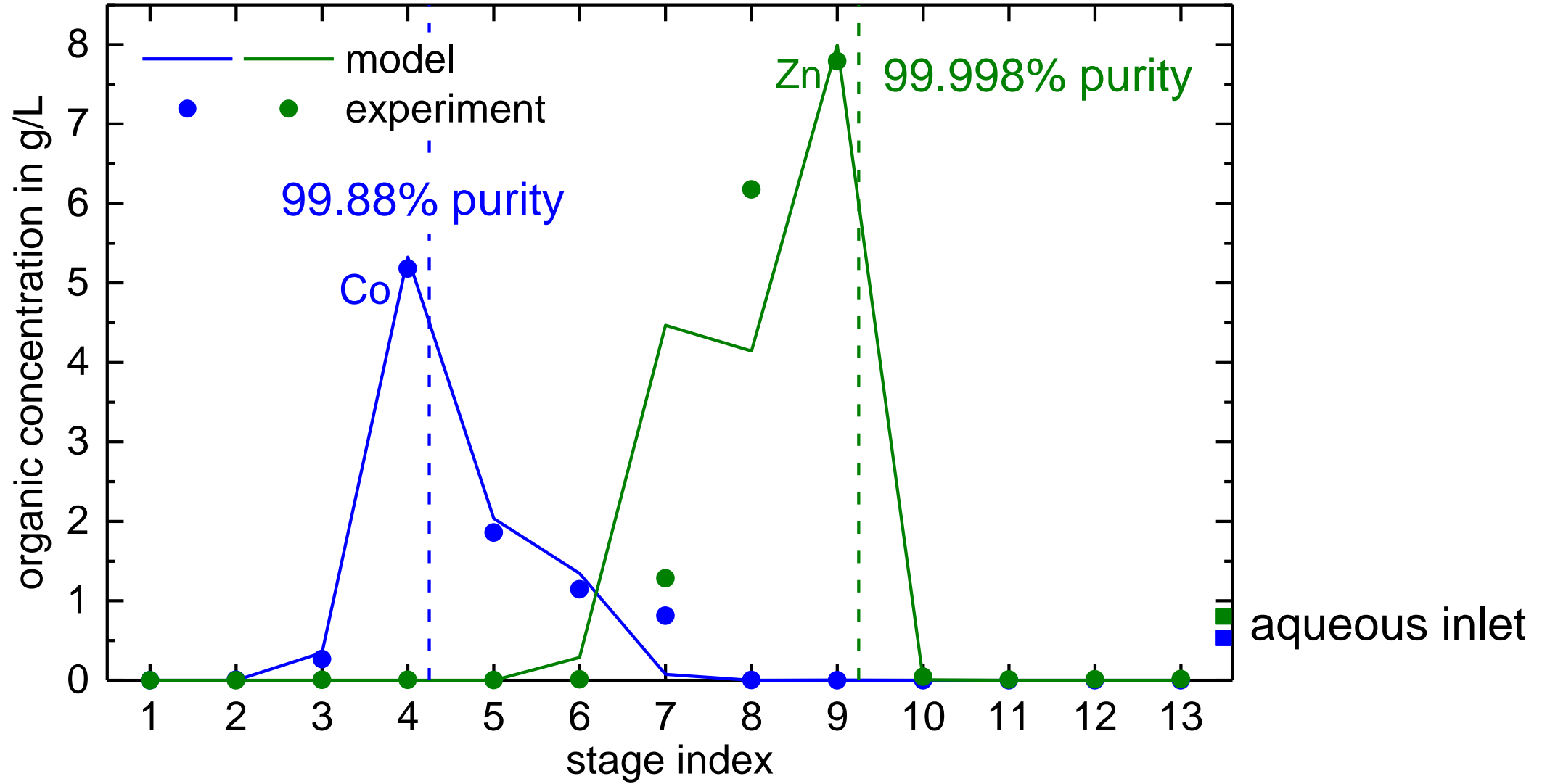
- before start



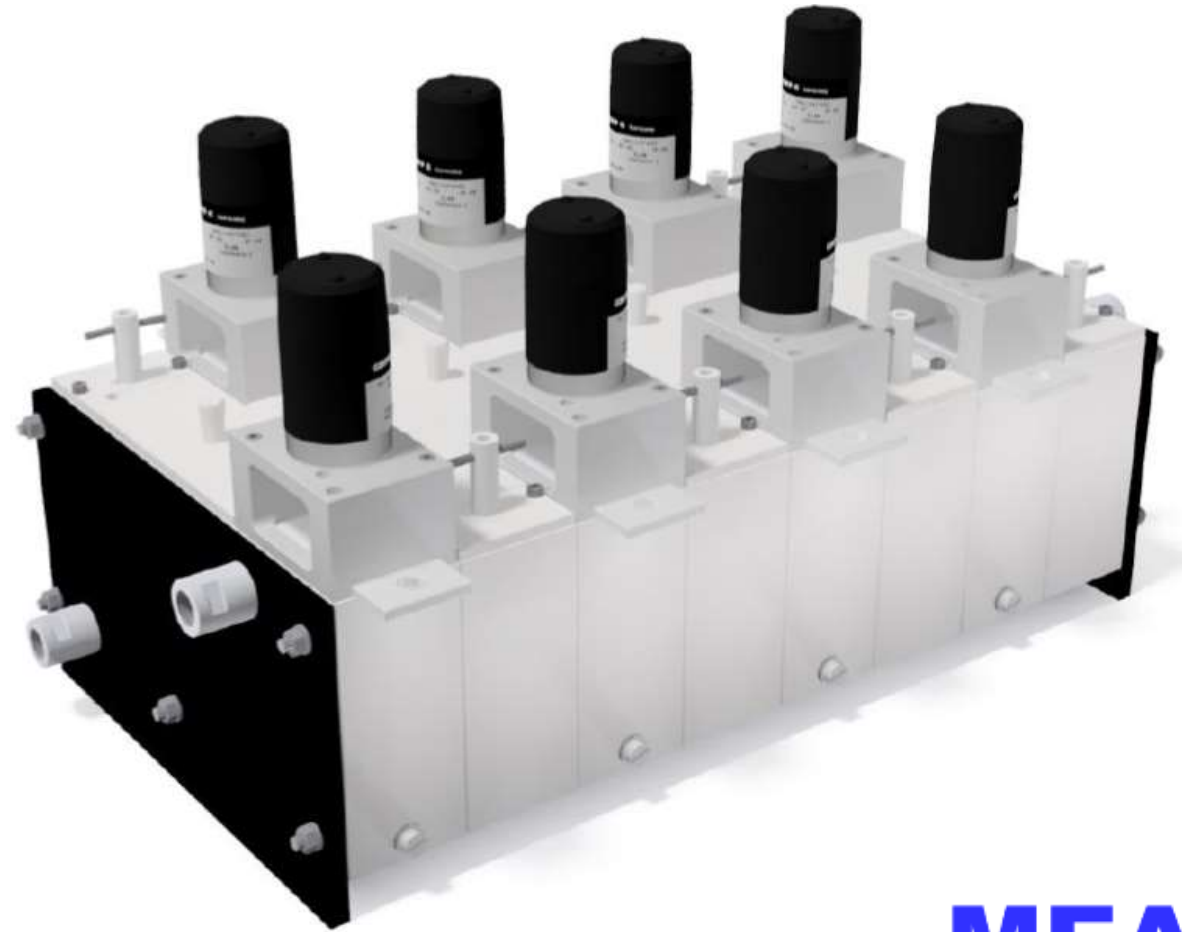
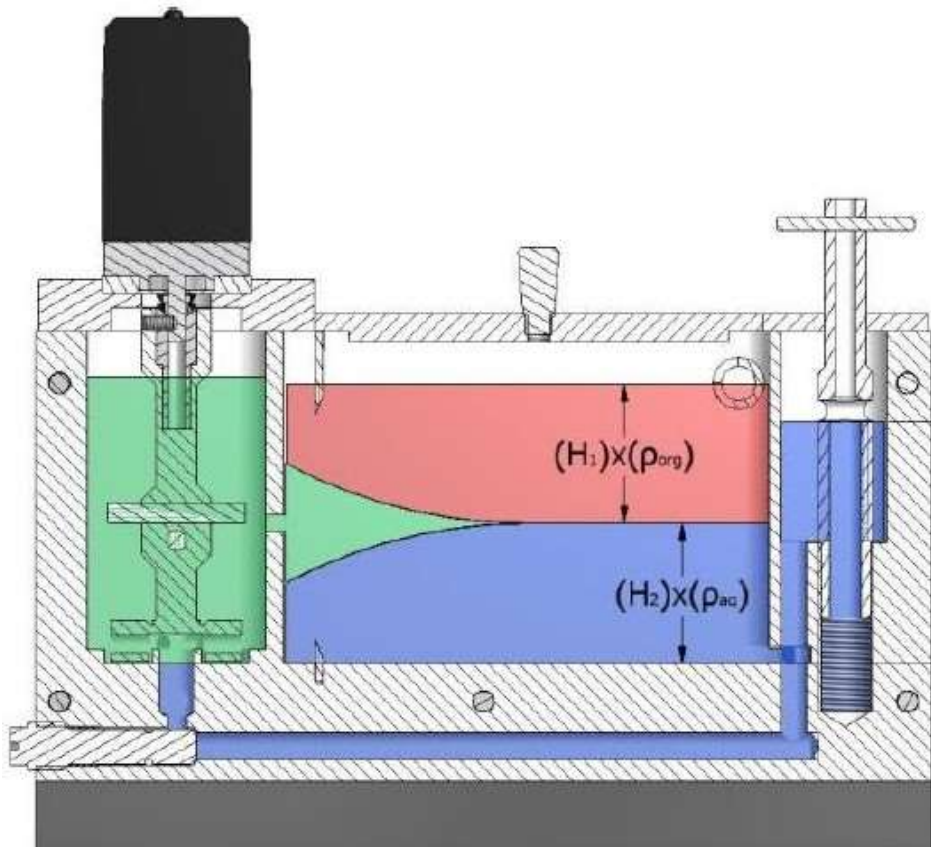
- after 5 residence times



# experimental validation



# continuous experiments



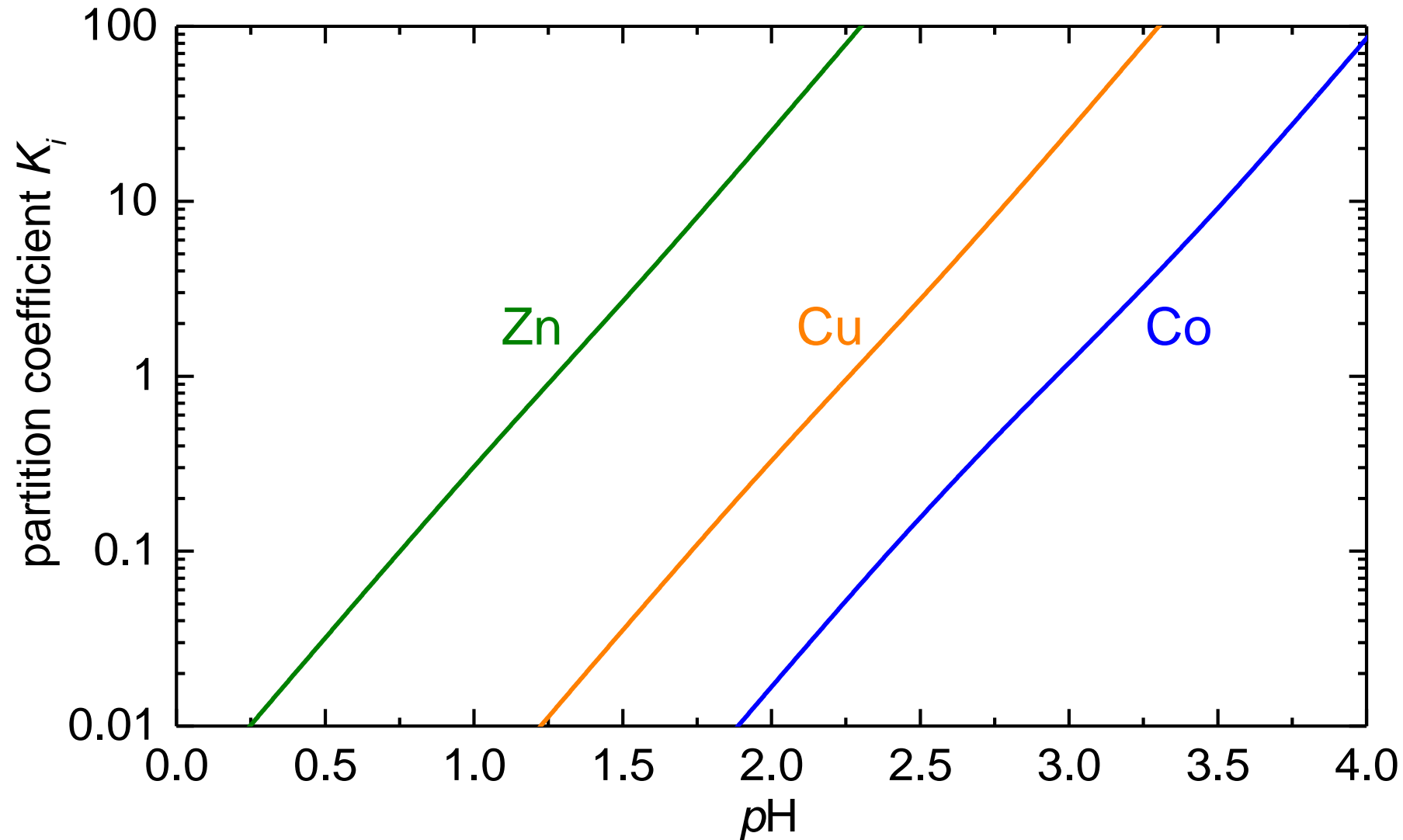
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université

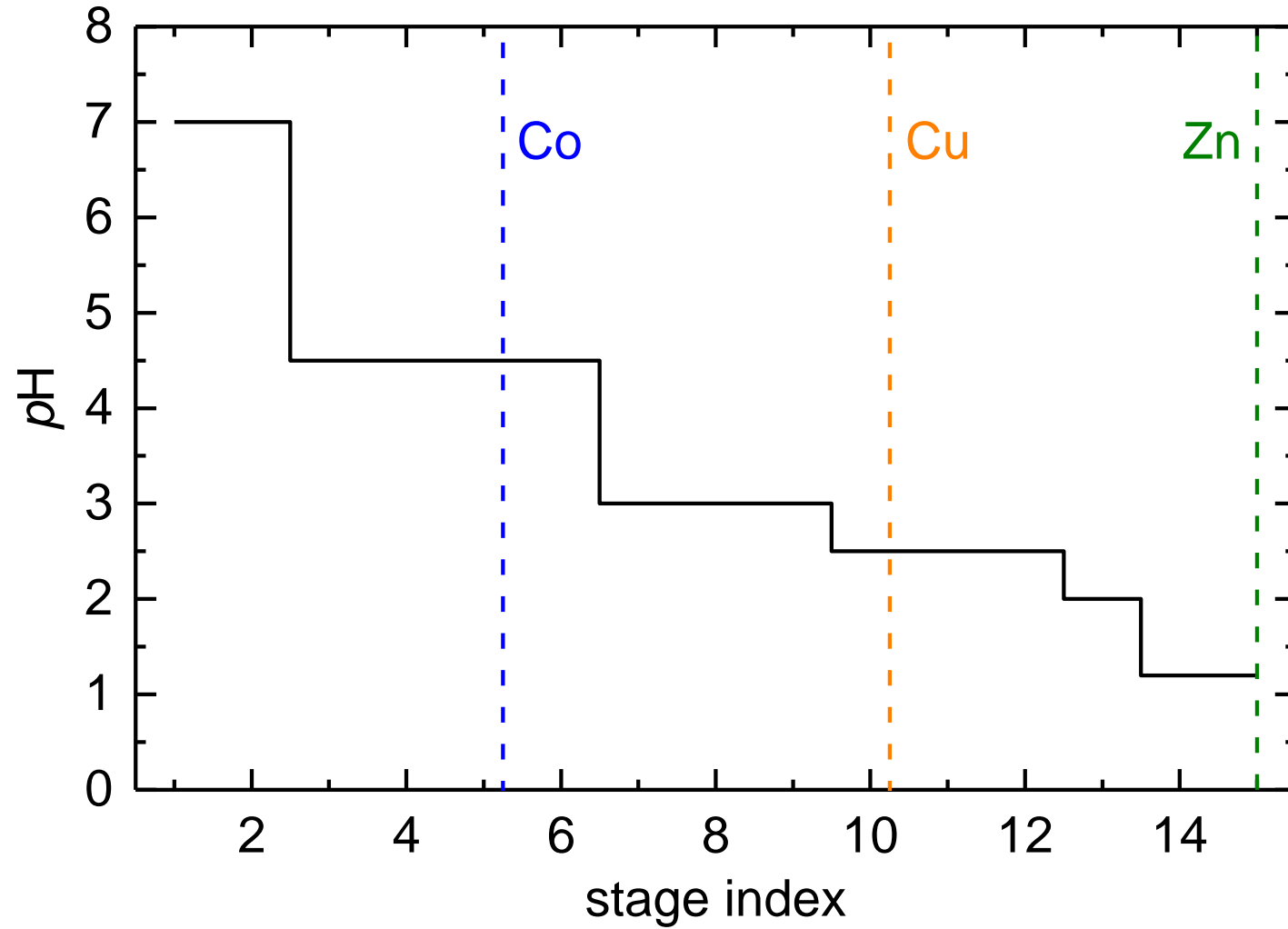
# continuous process operation

extractant: D2EHPA

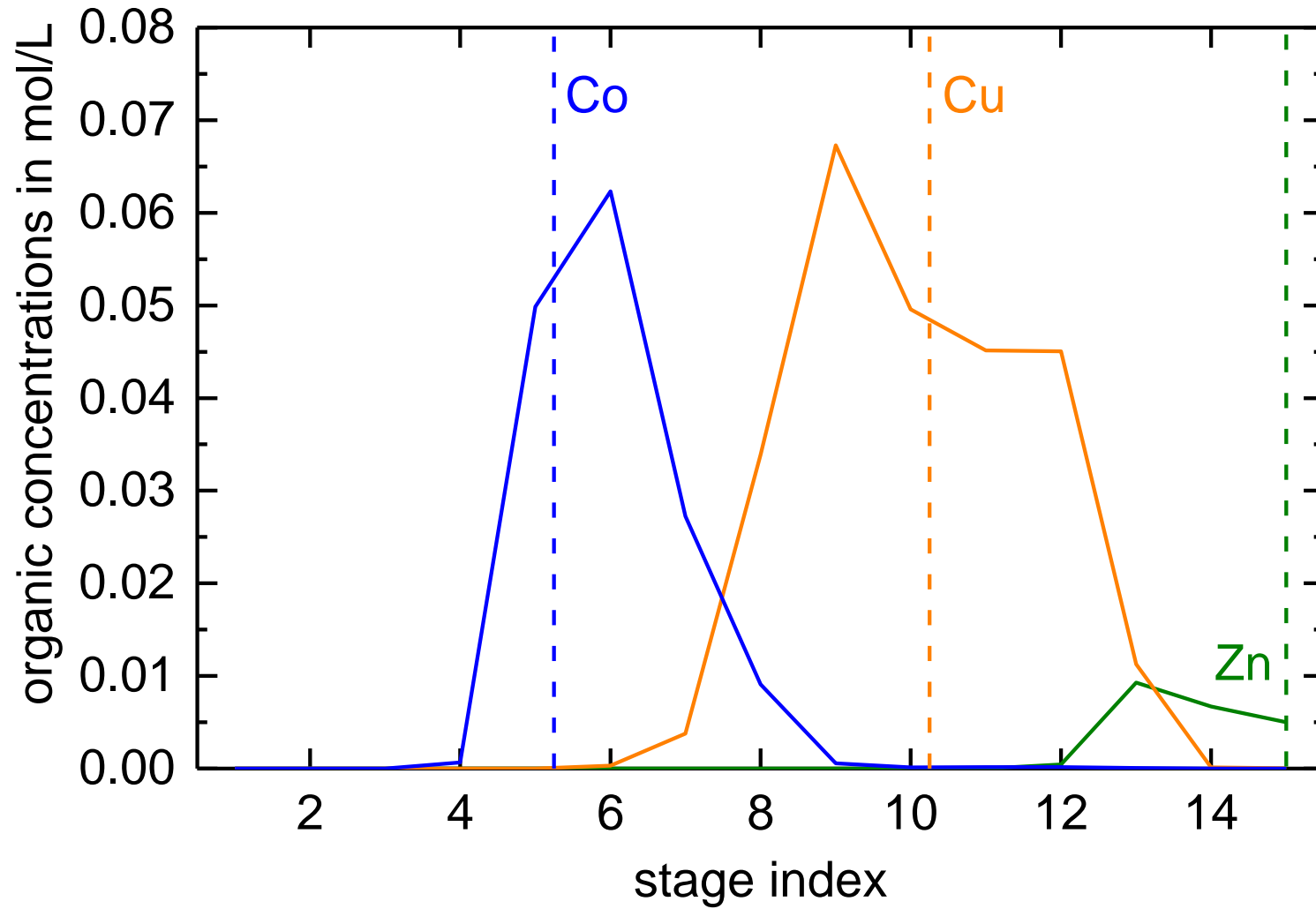
T = 25°C



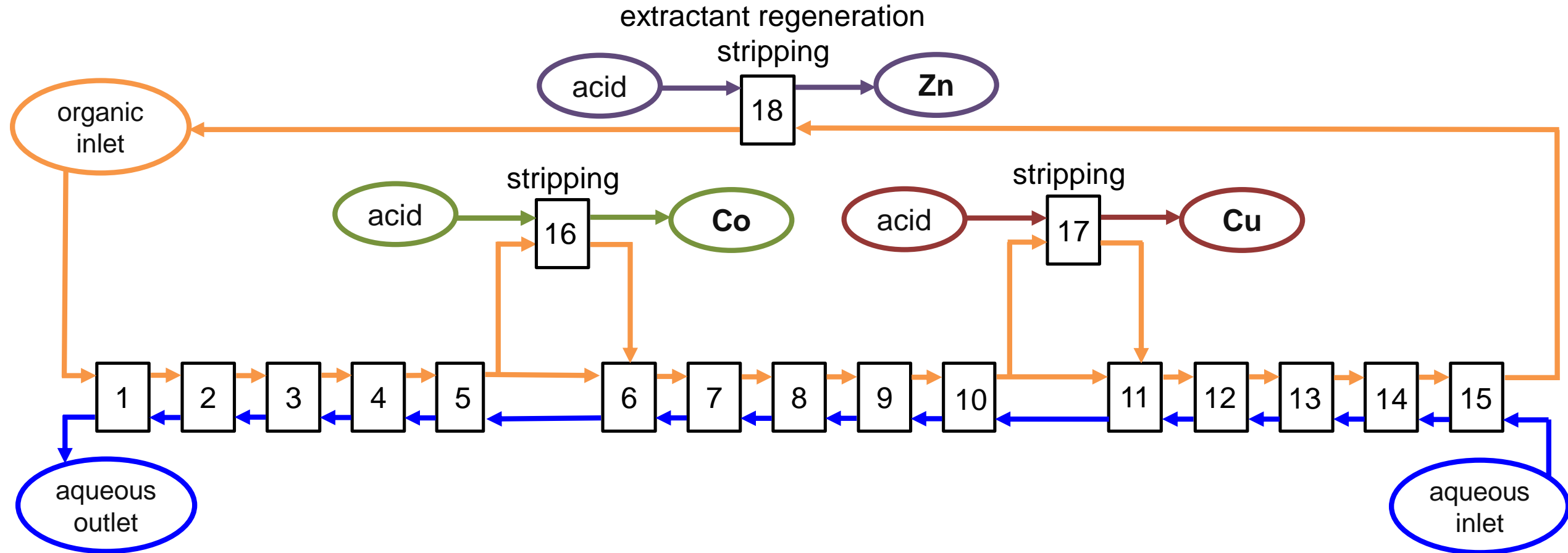
# simulated pH-profile



# simulated profiles



# experimental set-up



# conclusions

- **SisClever process**: simultaneous separation of multiple components to a high level of recovery, in a **single process**
- **accumulation zones**, one per component, by controlling the **partition coefficients**
- patent WO 2025/016946 A1
- process **simulation** tool
- **validated experimentally** with pseudo-continuous experiment
- next objectives
  - continuous operation for up to 4 metals
  - application to real cases from industry
- explore collaboration opportunities with SisClever – let's innovate together!

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[ezgi.uslu@uliege.be](mailto:ezgi.uslu@uliege.be)

