

Science becomes
reality

Electrocatalytic CO₂ Reduction Reaction (eCO₂RR)

scale up of Zero-Gap Cells

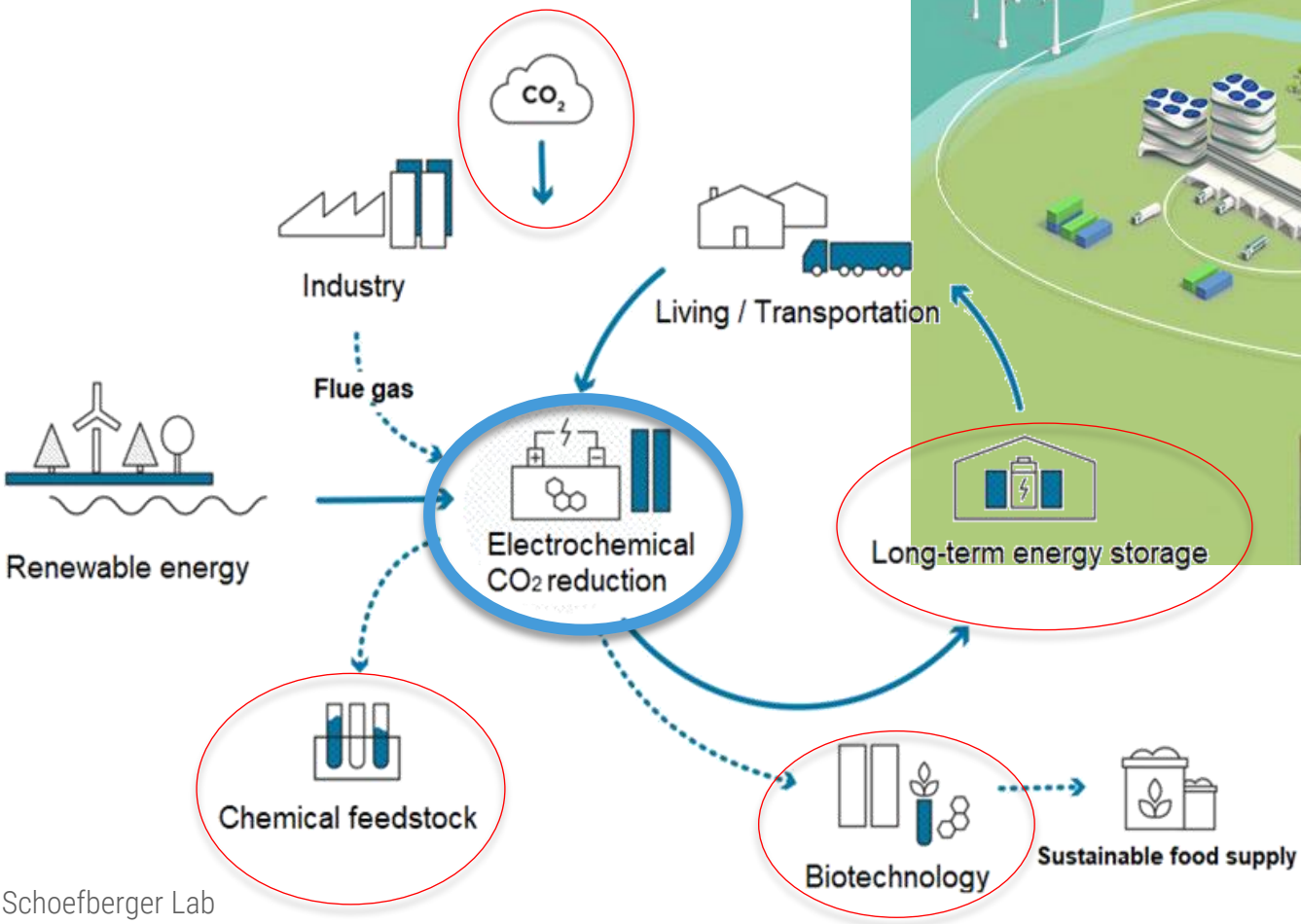
Wer...

- Institut für Organische Chemie, Prof. Schöfberger an der JKU
- LCM als ‚Technological Enabler‘
 - breites Branchen-Know-How (keinen Branchenfokus, Fokus auf Technologien)
 - Hocheffiziente (Gesamt-) Systeme müssen Synergien, auch über technologische Schnittstellen hinweg nutzen
- **Sie...?**

eCO₂RR im Hydrogen Valley



www.wiva.at

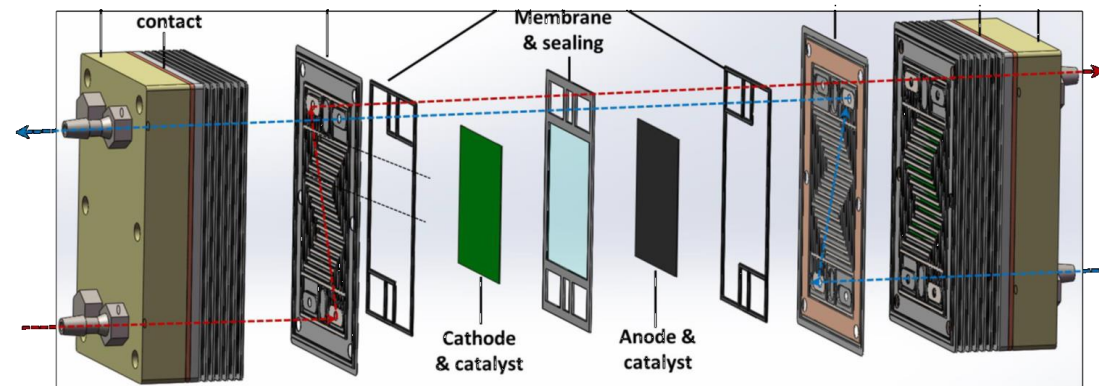
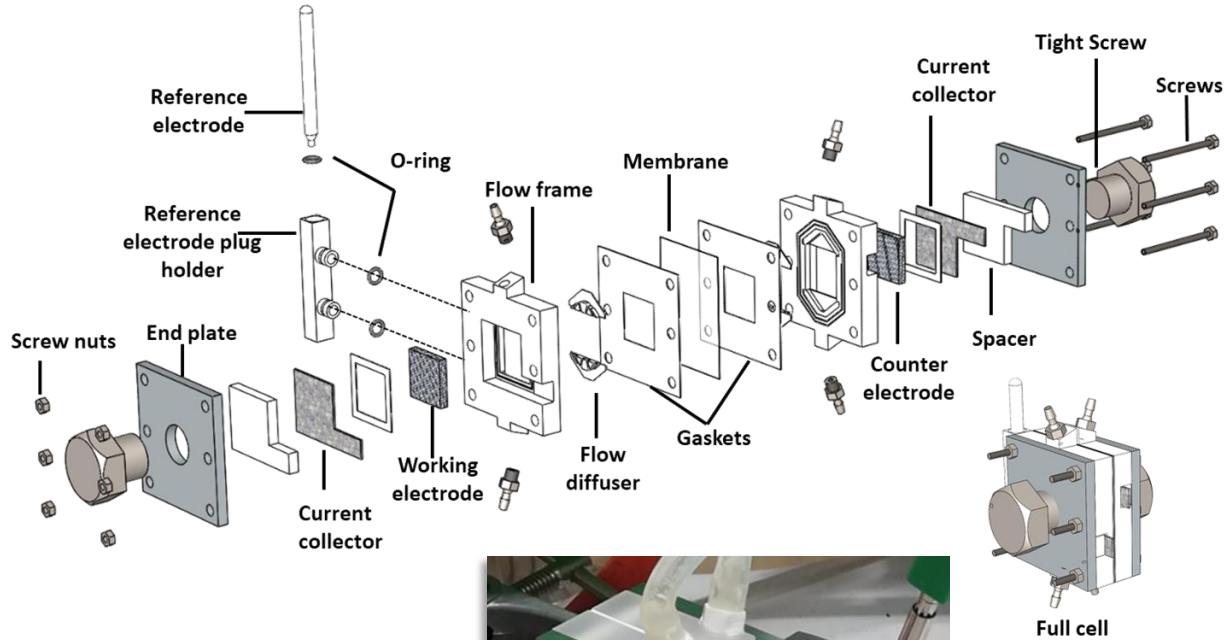


? Sie? JYU

LEM LINZ CENTER OF MECHATRONICS

Stand der Technik

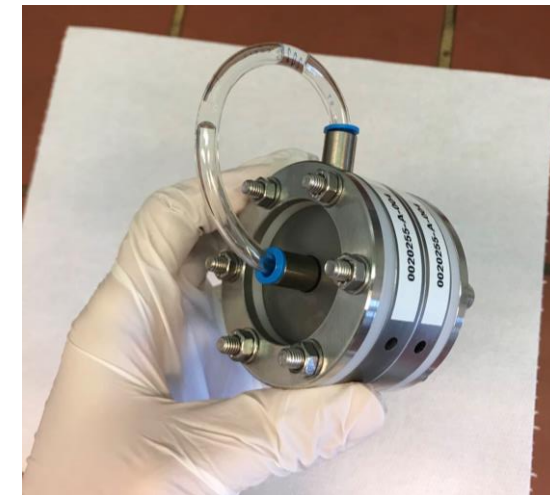
Flow Cells & Cell Stacks



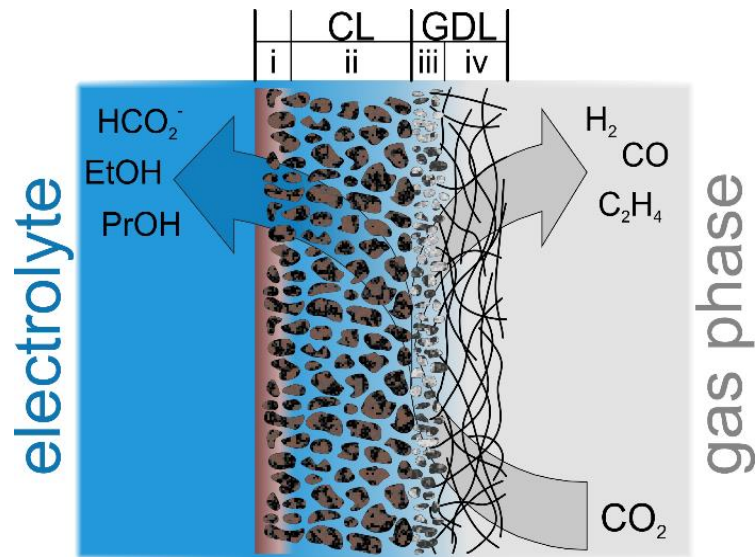
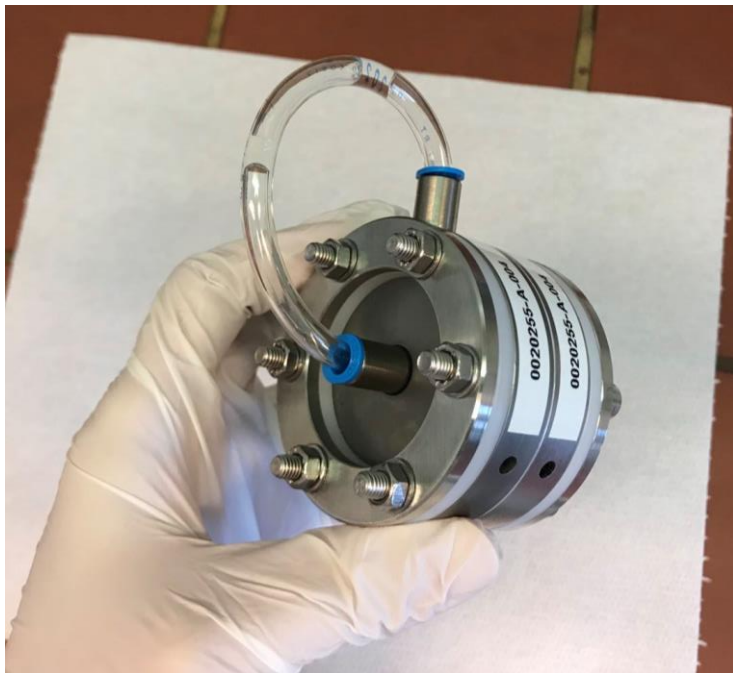
Derzeitiger Stand

Ausgangsbasis

- Für industriellen Maßstab → inc. J & FE, Langzeitstabilität, effizientes Design & Betrieb
- eCO₂RR im Labormaßstab, insbesondere in den letzten Jahren, stark beforscht
- 200 mA/cm², FE >90 %
- Membran Electrode Assembly (MEA) – ‚Zero Gap Cell‘
- **>900 mA/cm², FE bis 99%**

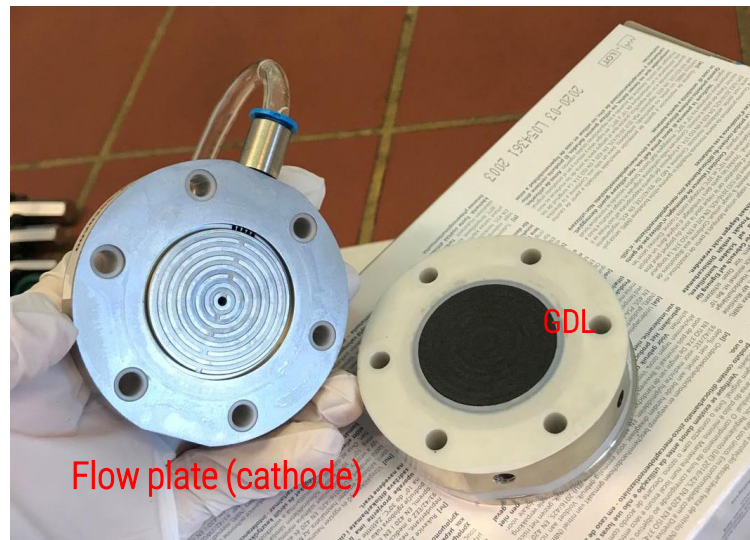
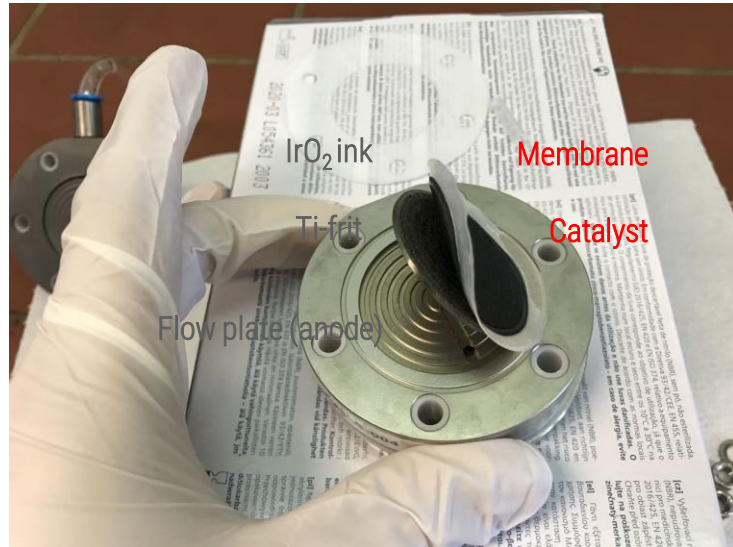
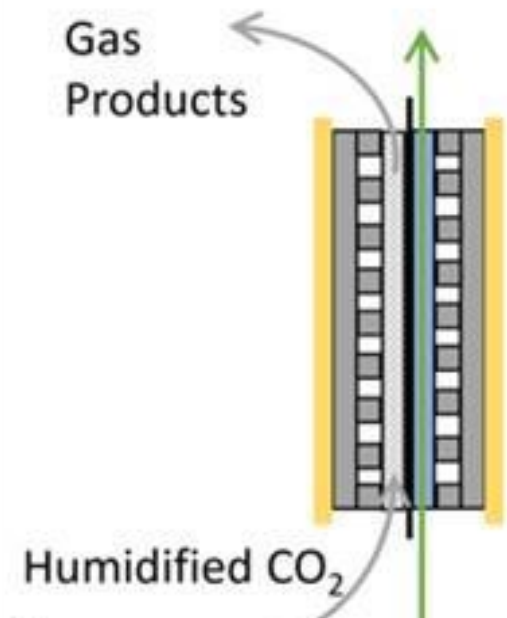


Schoefberger Lab



Schematic illustration of a gas diffusion electrode used in this work. The electrodes consist of i) an optional ionomer coating, ii) a PTFE bound catalyst layer, iii) a microporous layer and iv) a gas diffusion layer

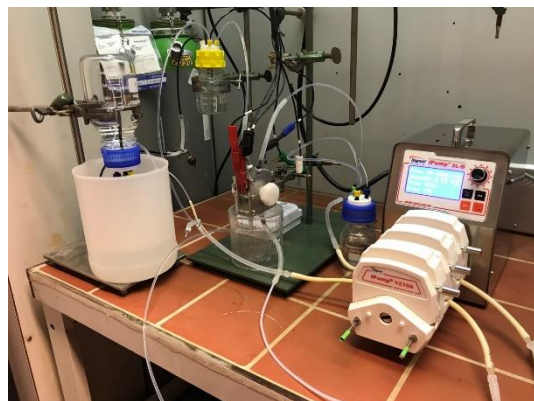
Two components cell with MEA (membrane electrode assembly):



Vision & Ziele

scale up of Zero-Gap Cells

- Show-Case
- Real world demonstrator



Schoefberger Lab



Schoefberger Lab



www.humbaur.com



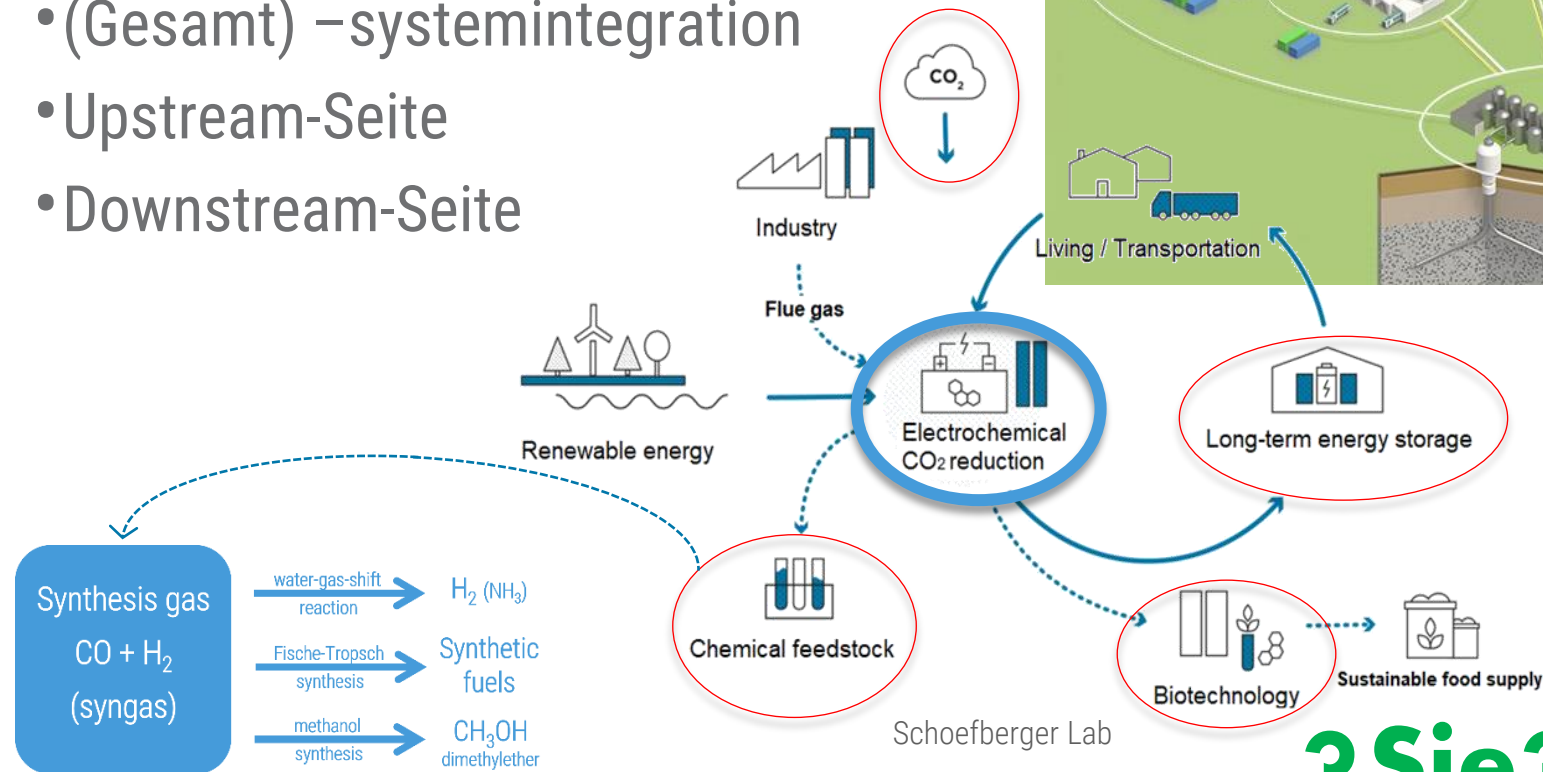
eCO₂RR im Hydrogen Valley

Needs for scale up of Zero-Gap Cells

- Grundlagen Know-How
- Umsetzungs Know-How
- (Gesamt) –systemintegration
- Upstream-Seite
- Downstream-Seite



www.wiva.at



? Sie? JYU

LEM LINZ CENTER OF MECHATRONICS



Dankeschön !