

FLC

One flow cell, one geometry, for every electrode you want to compare.

Metallic, porous and transparent electrodes at the same distance, position and electrolyte flow: differences in your data come from the material, not the setup.



0 to 150

3 setups

2 bodies

standard and zero-gap

3.2 kg

100 × 70 × 100 mm

01 · FLC-Standard

Catalysts on metal

Interchangeable Cu substrates (99.99 %) for deposited or electrodeposited active materials.

02 · FLC-Gas

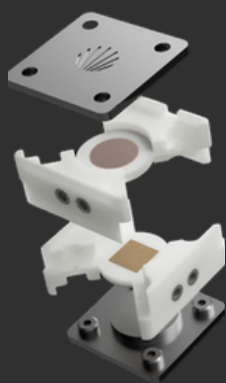
Gas-fed reactions

A gas diffusion electrode takes gas straight through the porous layer while the electrolyte stays in contact.

03 · FLC-Light

Photoelectrochemistry

ITO/FTO glass and an external light source, through a 6 mm light window onto the sample.



built for clean flow data

Bottom-to-top flow

Inlets at the bottom, outlets at the top: gas bubbles leave with the electrolyte.

Dual reference electrode

A reference connection in each compartment.

Zero-gap and MEA ready

Zero-gap cell body for MEA tests.

studied with the FLC

CO₂ reduction formate, methane, hydrocarbons

CO reduction ethylene, propanol, C₂, alcohols

Nitrate reduction ammonia

Solar-driven CO₂ photoelectrodes

Reactions reported in 7 peer-reviewed studies with the FLC, 2019 to 2025. Full references on page 2.

connects to your lab

Pump simple tube connection

Potentiostat reference in each compartment

Analysis coupled experiments via the outlets

in the box

Standard and zero-gap cell bodies, cell holder

Plates for metallic, carbon felt and ITO/FTO samples

Cu substrates and pseudo-reference electrodes

Tubes, connectors, gaskets, tools and spares

Describe your reaction, electrolyte and electrode.
Our engineers will recommend the matching configuration.

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proven in the lab

Published with the FLC

Seven peer-reviewed studies, 2019 to 2025, in Nature Materials, Nature Chemistry, PNAS, Angewandte Chemie and ACS Catalysis.

3

CO reduction

ethylene, propanol and
multicarbon alcohols

2

CO₂ reduction

methane and formate

1

Nitrate reduction

ammonia

1

Solar-driven CO₂

hydrocarbons

references

- 01 Incorporation of isolated Ag atoms and Au nanoparticles in copper nitride for selective CO electroreduction to multicarbon alcohols.
Phong Duong, H., Rivera de la Cruz, J. G., Portehault, D., Zitolo, A., Louis, J., Zanna, S., ... & Fontecave, M. (2025). *Nature Materials*, 1–7.
- 02 Hydrophobic assembly of molecular catalysts at the gas–liquid–solid interface drives highly selective CO₂ electromethanation.
McKee, M., Kutter, M., Wu, Y., Williams, H., Vaudreuil, M. A., Carta, M., ... & Kornienko, N. (2025). *Nature Chemistry*, 17(1), 92–100.
- 03 Facial synthesis of high-performance Ni doped-tin oxide mesoporous for CO₂ electroreduction to formate.
Amer, M. S., AlOraij, H. A., & Al-Mayouf, A. M. (2024). *Journal of CO₂ Utilization*, 82, 102742.
- 04 Silver and copper nitride cooperate for CO electroreduction to propanol.
Phong Duong, H., Rivera de la Cruz, J. G., Tran, N. H., Louis, J., Zanna, S., Portehault, D., ... & Fontecave, M. (2023). *Angewandte Chemie*, 135(49), e202310788.
- 05 Reversible transition of an amorphous Cu–Al oxyfluoride into a highly active electrocatalyst for NO₃[−] reduction to NH₃.
Guet, A., Simonin, A., Bemana, H., Al-Mahayni, H., Li, J., Kuruvinashetti, K., ... & Kornienko, N. (2023). *Chem Catalysis*, 3(5).
- 06 Highly selective copper-based catalysts for electrochemical conversion of carbon monoxide to ethylene using a gas-fed flow electrolyzer.
Duong, H. P., Tran, N. H., Rousse, G., Zanna, S., Schreiber, M. W., & Fontecave, M. (2022). *ACS Catalysis*, 12(16), 10285–10293.
- 07 Low-cost high-efficiency system for solar-driven conversion of CO₂ to hydrocarbons.
Huan, T. N., Dalla Corte, D. A., Lamaison, S., Karapinar, D., Lutz, L., Menguy, N., ... & Mougél, V. (2019). *Proceedings of the National Academy of Sciences*, 116(20), 9735–9740.

Let's build your next result

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