

## Direct CO<sub>2</sub> capture for solar fuels production

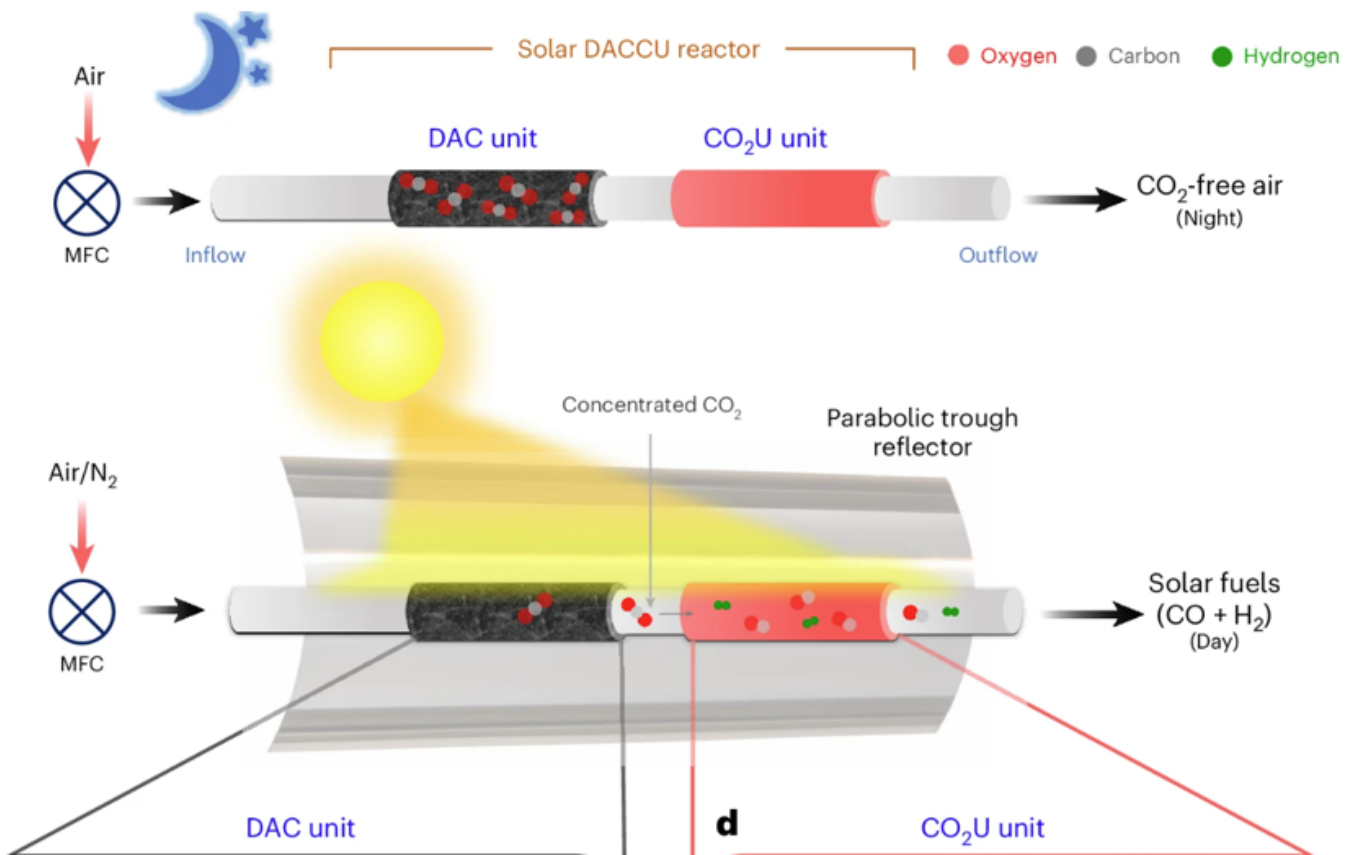
A single, sunlight powered process for converting CO<sub>2</sub> from air into fuels and chemicals

### Technology

- This technology enables direct capture of CO<sub>2</sub> from ambient air and its immediate conversion into valuable syngas (CO + H<sub>2</sub>) using sunlight as the sole energy input.
- Integrated flow reactor captures CO<sub>2</sub> at night and releases it as a concentrated stream during daytime operation, where it is photochemically converted via a low cost, earth abundant catalyst system.

### Benefits

- Energy efficient CO<sub>2</sub> utilisation from air: Combines direct air capture and conversion in one system, avoiding the energy intensive CO<sub>2</sub> compression, transport and storage steps that constrain most direct air capture (DAC) technologies.
- Fully solar powered, low cost materials: Operates using sunlight and inexpensive catalysts, reducing operating costs and reliance on critical raw materials.
- Direct production of industrial syngas: Produces CO/H<sub>2</sub> mixtures directly from air captured CO<sub>2</sub>, supplying a versatile, drop in feedstock for existing fuel and chemical value chains.



## Commercial applications

- Carbon utilisation and climate technologies.
- Renewable energy and hydrogen ecosystems.
- Chemical manufacturing and sustainable fuels.

## Opportunity

We are now looking for commercial partners interested in helping us develop this technology.