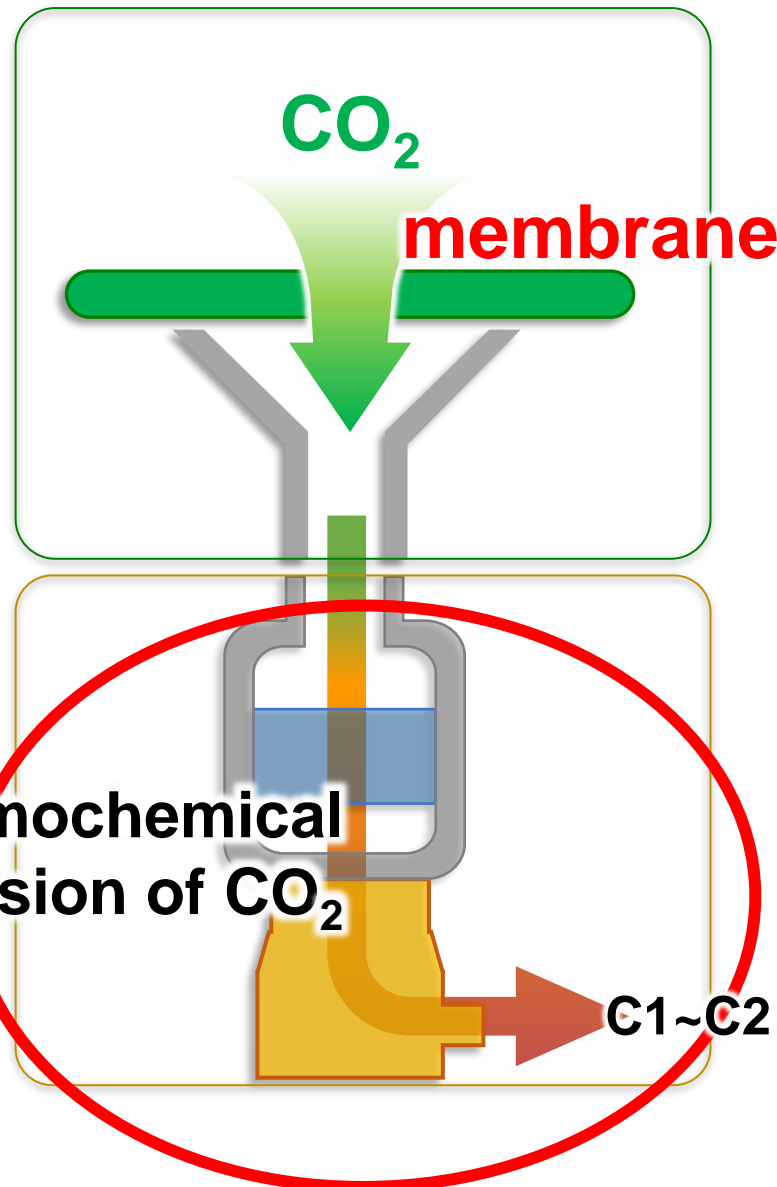


Development of Global CO₂ Recycling Technology Towards “Beyond-Zero” Emissions

[CO₂ conversion research unit]

DAC-U



Development of a thermal conversion unit for production of C1 chemicals from CO₂ mixed gas obtained from DAC

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PJ Institutes:

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Osaka Inst. Tech., Univ. Illinois at Urbana Champaign, NanoMembrane Tech. Inc.

Q1: How to convert CO₂ to fuel without electricity?

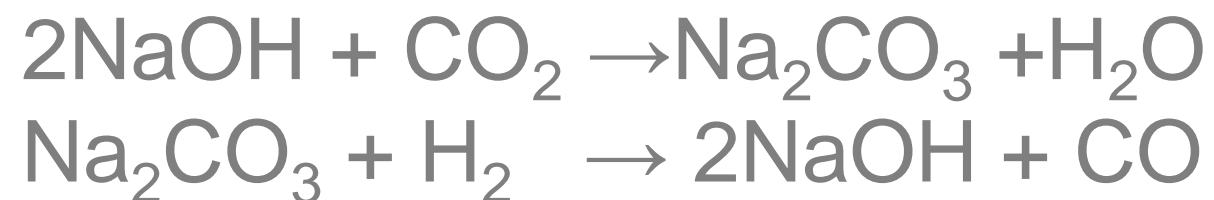
Q2: The molecule X can be converted into any fuels. What is X?

Q3: Is it possible to hydrogenate CO₂ in the presence of O₂?



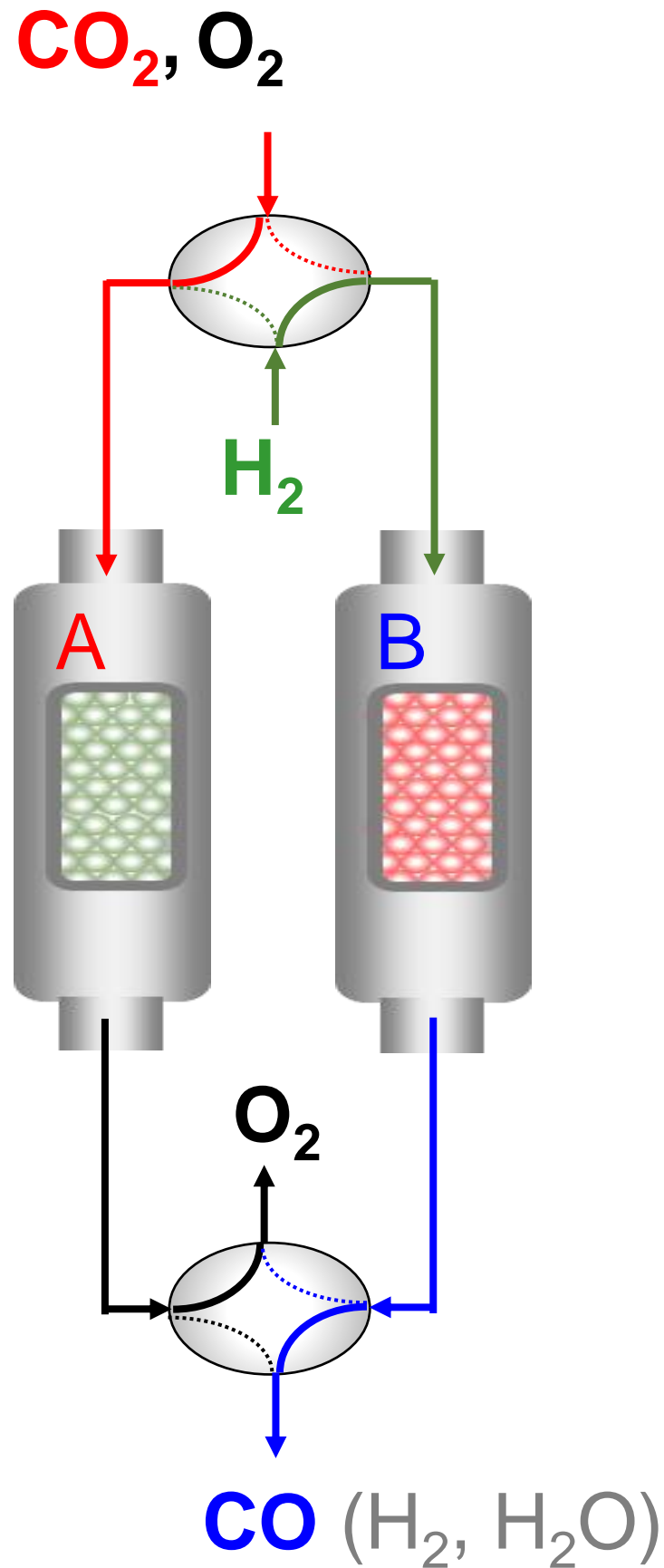
Q4: Which is more reactive with H₂, O₂ or CO₂?

Q5: How to convert CO₂/H₂ to fuels without H₂+O₂ reaction?

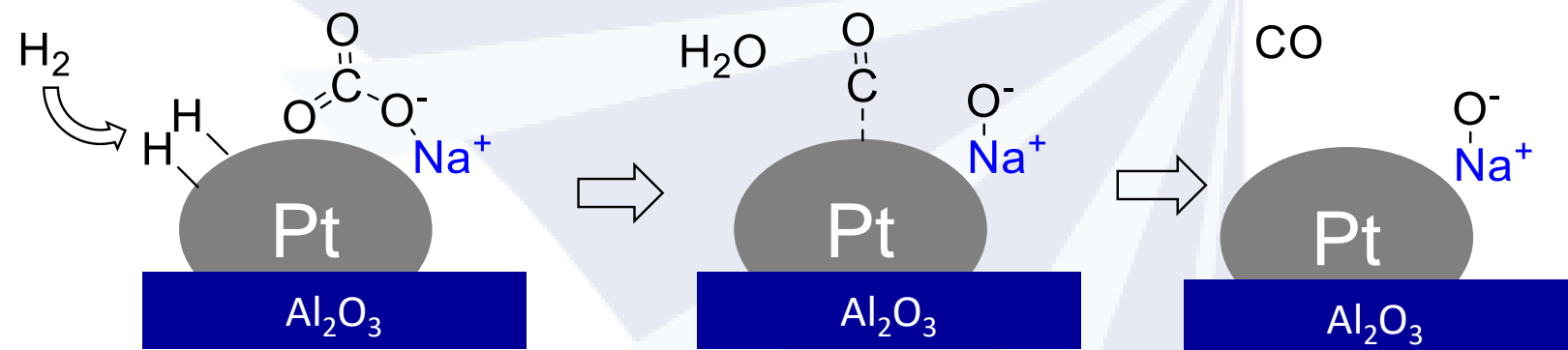
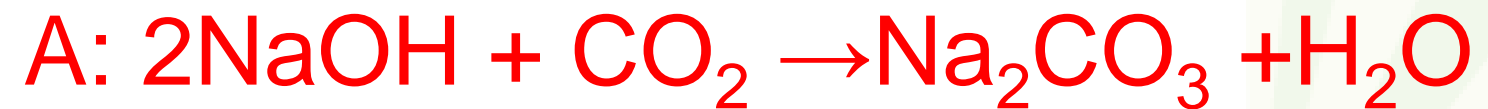


Continuous CO₂ adsorption-hydrogenation system

[3]

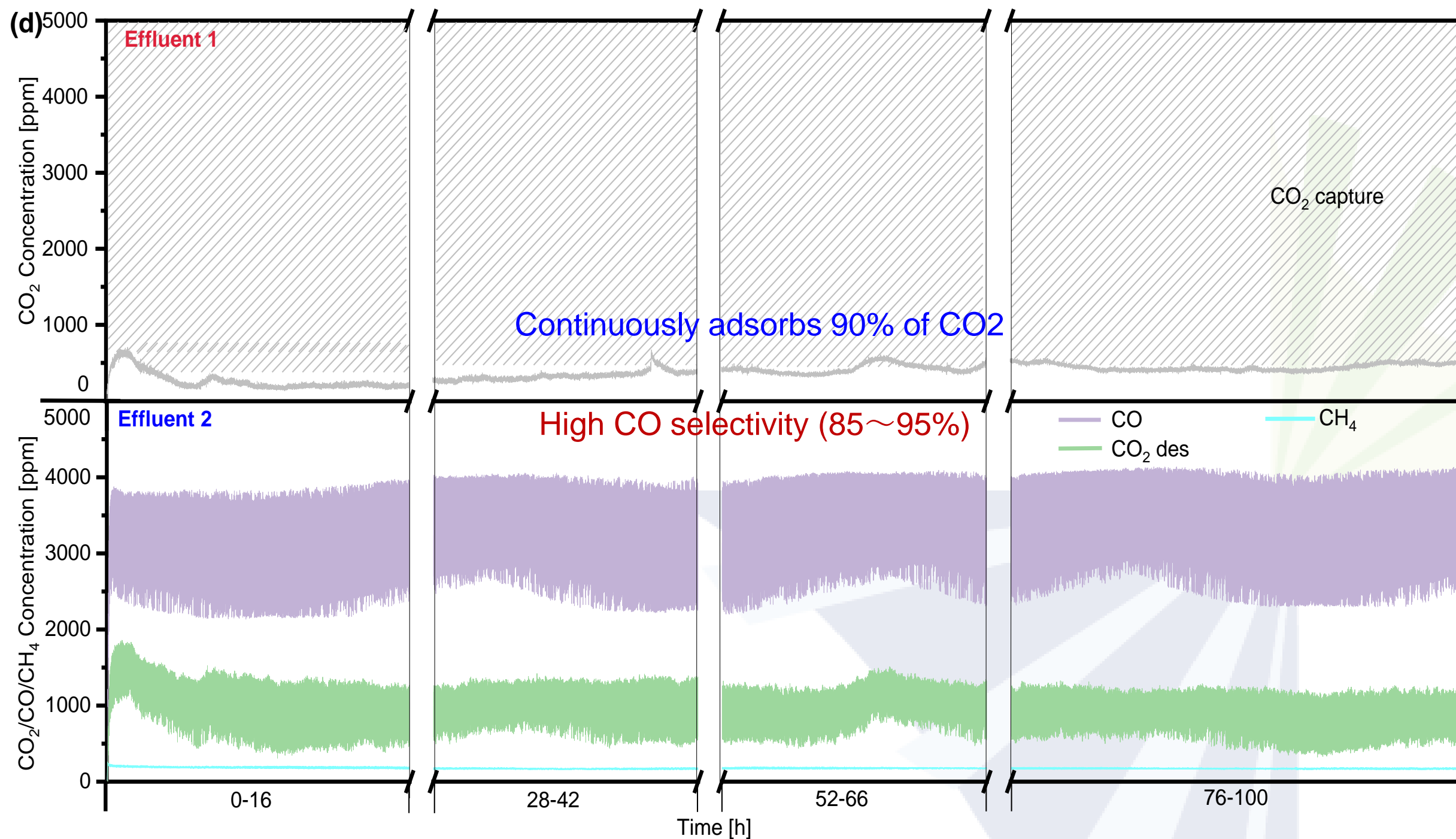


Cat. : 300 mg
T : 350°C
F : 100 mL/min
gas1 : 0.5%CO₂/10%O₂/N₂
gas2 : H₂/100%
period : 30 s



Durability test of thermochemical CO₂ conversion unit

[4]



A new process to convert low-concentration CO₂ in the air to CO

Developed a DAC-U catalytic process that converts $\text{CO}_2/\text{O}_2/\text{N}_2$ generated by DAC into CH_4 and CO "directly" and "in one-stage"

