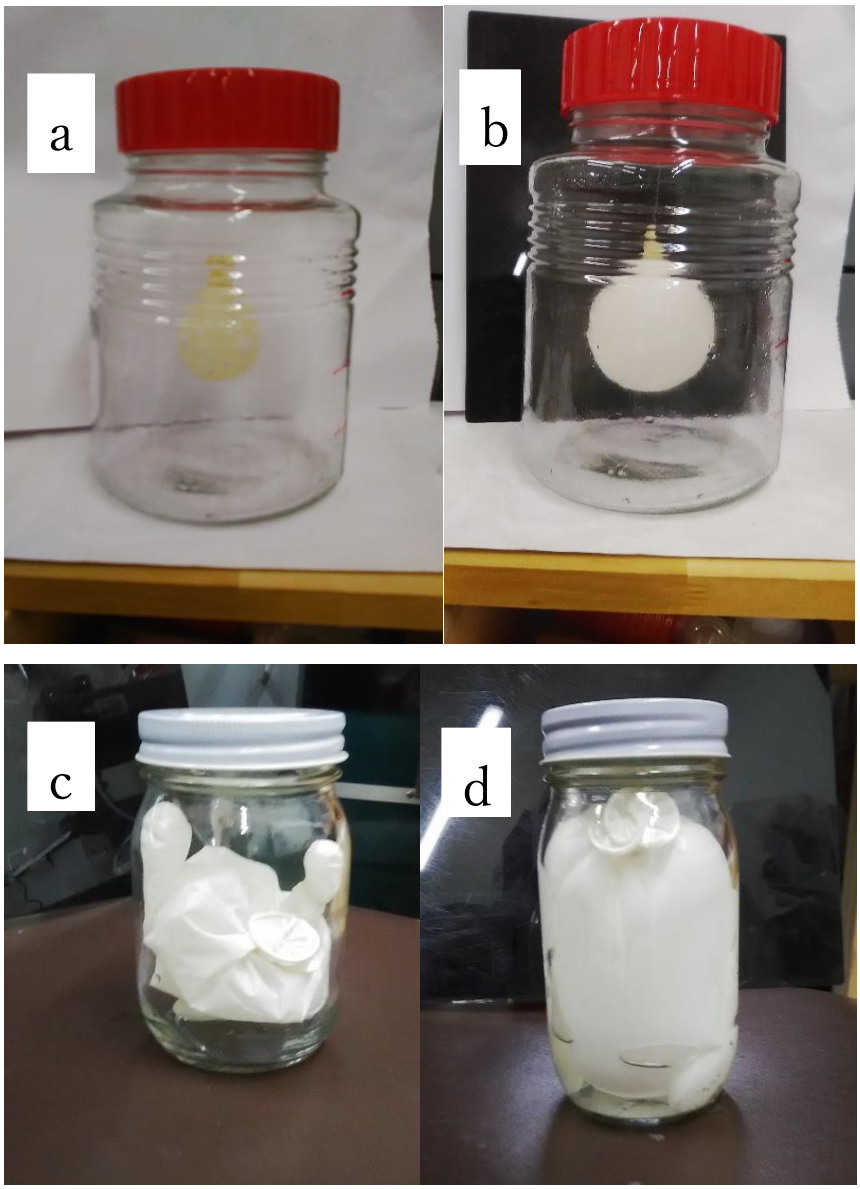
Supplementary Fig, 1, Table 1 and Fig. 2

Supplementary Figure 1.

“Pseudo-Osmosis” in the gas phase.



(a) The initial state of latex balloon, (b) the ballon treated with 80% CO2 in 4 L glass bottle for 4h, (c) the initial state of a latex glove, and (d) the glove treated with 100% CO2 in 450 mL glass bottle for 4 h.

Supplementary　Table I.

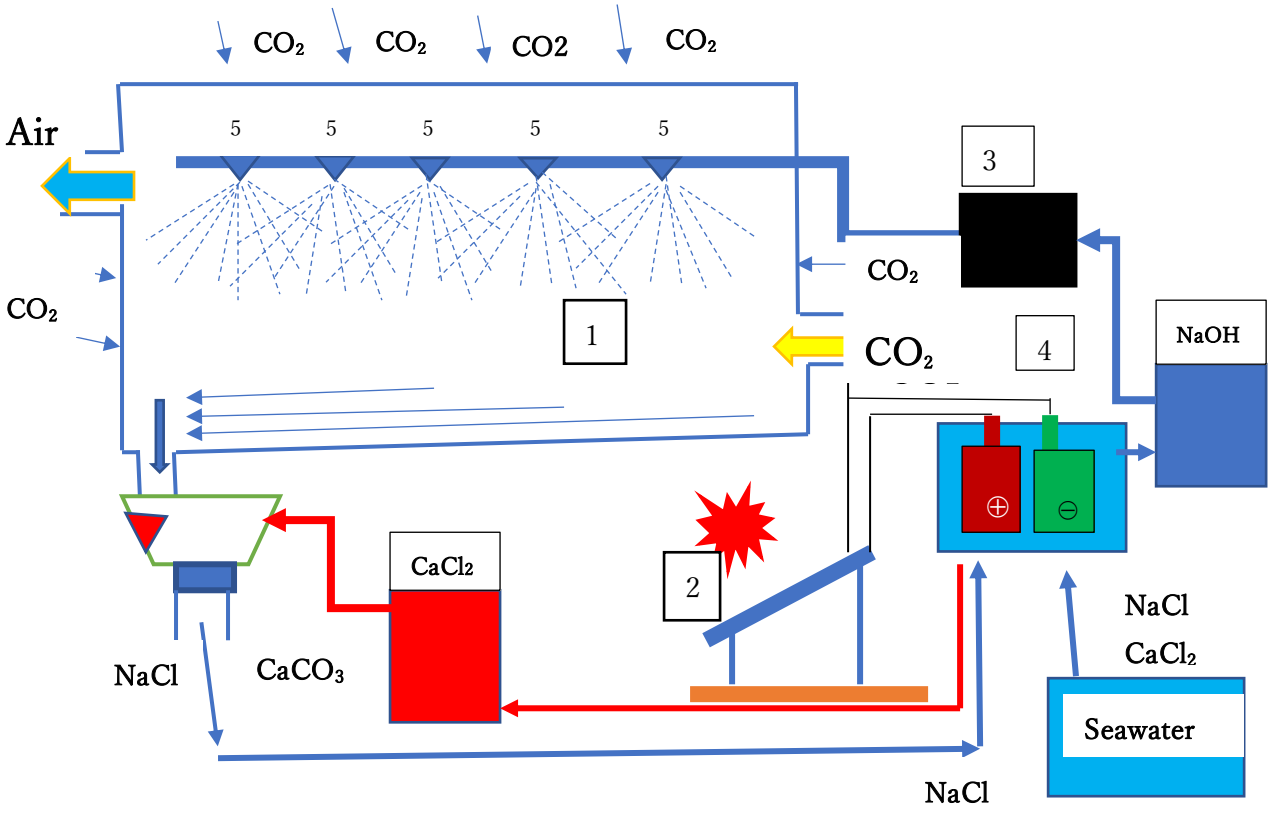
Solubility of gas into the water.

Gas	0°C	20°C	40°C	60°C	80°C	100°C
CO2	1.71	0.88	0.53	0.36		
	1.71	0.869				
O2	0.049	0.031	0.023	0.019	0.018	
	0.049	0.0312				
N2	0.024	0.016	0.012	0.01	0.0096	0.0095
	0.0238	0.0159				
Air	0.029	0.019	0.014	0.012	0.011	0.011
H2	0.0219	0.0181				
CH4		0.0347				

The value means the volume of the gas which absorbs into 1 mL water at 1 atm. The black value is a citation from the Chronological Scientific Table, Maruzen Publication Company. The red value is a citation from the Handbook of Chemistry, 3.5 edition.

Supplementary Figure 2

An “Artificial Forest” Model.



1): CO2 fixing space, 2): solar panel, 3) pump, 4): buttery.

Using a polytunnel made of polymer sheets, which allows CO2 penetration, instead of hard chamber, steel, or plastic could be cost effective.