

Supporting Information

**Recent Advances in Solar-driven Carbon Dioxide Conversion:
Expectations vs. Reality**

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Table S1. Products distribution data of PS/PC CO₂ conversion studies within different formation rate ranges. (n = 121)

Products	Normalized formation rate (mmol e ⁻ g ⁻¹ h ⁻¹)							
	< 0.1	0.1–0.5	0.5–1	1–2	2–5	5–10	10–20	20–80
CO	22	5	5	7	6	4	--	3
CH ₄	9	20	2	3	3	2	3	1
HCOOH	1	3	2	--	--	1	--	--
CH ₃ OH	3	3	2	--	1	--	2	--
CH ₃ CH ₂ OH	--	--	1	--	--	--	--	--
CH ₃ COOH	1	1	--	--	1	--	--	--
C ₂ H ₆	--	2	--	--	--	--	1	--
C ₃ H ₈	--	--	1	--	--	--	--	--

Table S2. Products distribution data of PEC CO₂ conversion studies within different Faradaic efficiency ranges. (n = 60)

Products	Faradaic efficiency (%)				
	0–20	20–40	40–60	60–80	80–100
CO	4	2	4	5	7
HCOOH	4	2	3	5	9
CH ₃ OH	2	--	3	--	2
CH ₄	1	--	1	1	--
CH ₃ CH ₂ OH	1	1	--	--	1
CH ₃ COOH	--	--	--	2	--

Table S3. Products distribution of PV + EC CO₂ conversion studies within different SFE ranges. (n = 19)

Products	Solar-to-fuel conversion efficiency (%)			
	0–1	1–2	2–5	5–25
CO	2	1	4	7
HCOOH	2	--	1	--
C ₂ H ₄	--	1	--	--
others	--	--	--	1