Electronic Supplementary Information (ESI)

Tandem Catalytic Synthesis of Benzene from CO_2 and H_2

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Table S1 The reaction results of the first reactor for CO_2 methanation

Reaction temp (°C)	CO2 conv. (C-mol%)	Selectivity (C-mol%)	
		CH_4	CO
400	92	98.1	1.9

Reaction conditions: Ni/SiO_2, 0.4 g; H_2/CO_2=6; reaction temperature, 400°C; atmosphere pressure; GHSV, 4500 ml/g/h; reaction time, 2h.

Table S2 The reaction results of the second reactor for CH_4 dehydroaromatization

Reaction temp (°C)	CH_4 conv. (C-mol%)	Benzene	
		Selectivity (C-mol%)	Formation rate (μmol/g/min)
680	5.5	30.6	1.0
700	6.3	64.3	1.9
750	7.2	71.2	2.3

Reaction reaction: Mo/HZSM-5, 0.5 g; reaction temperature, 680, 700 and 750°C; atmosphere pressure; GHSV, 1500 ml/g/h; reaction time, 2h.