Combining Carbon Fibers with Ni/γ-Al_2O_3 Used for Syngas Production: Part A: Preparation and Evaluation of Complex Carrier Catalysts

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Supplementary Materials

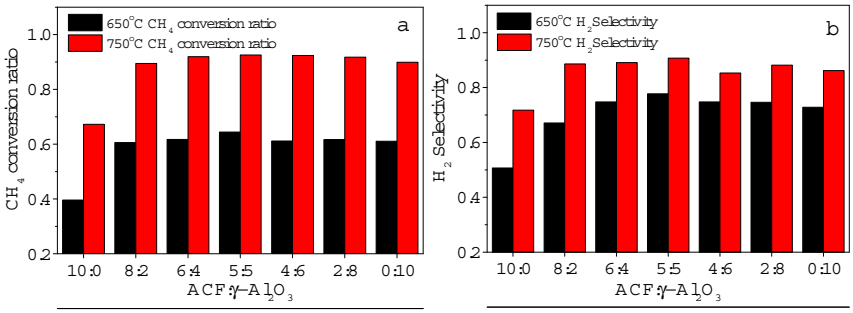
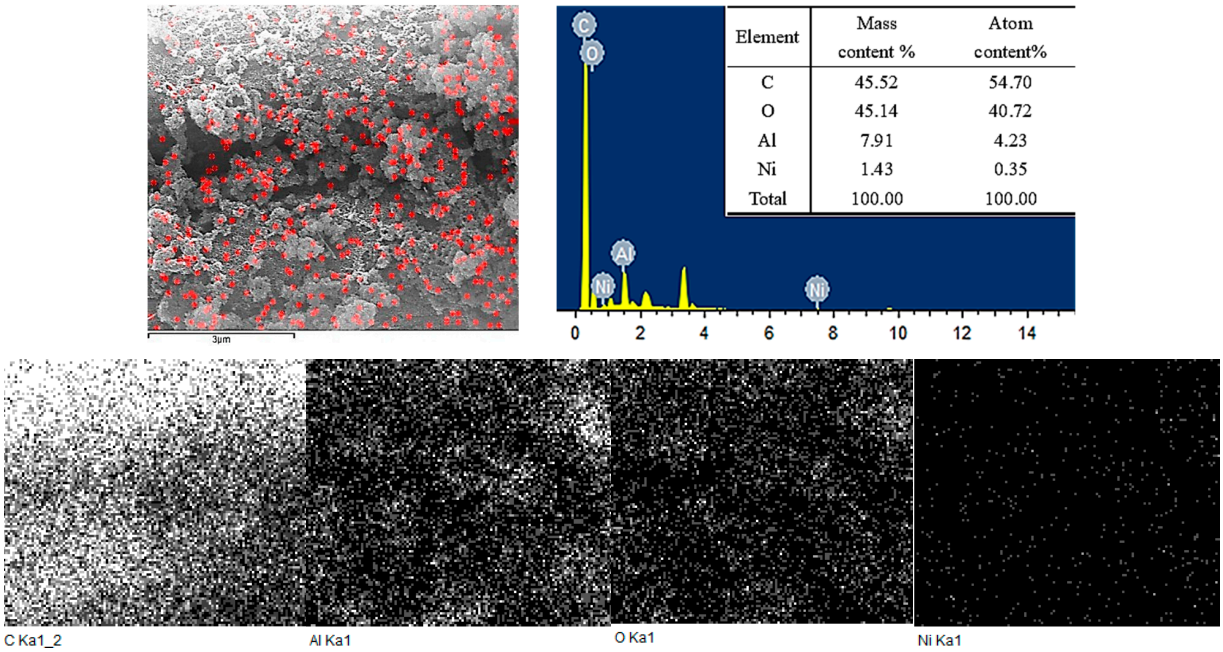


Figure S1. Catalytic performance with different ratio of ACF to γ-Al_2O_3. (Reaction conditions: CH_4: 50 mL/min; CO_2: 50mL/min; N_2: 100mL/min; Catalyst dosage: 0.5 g).



Element	Mass content %	Atom content%
C	45.52	54.70
O	45.14	40.72
Al	7.91	4.23
Ni	1.43	0.35
Total	100.00	100.00

Figure S2. EDS of the catalysts Ni-γ-Al_2O_3/ACF.

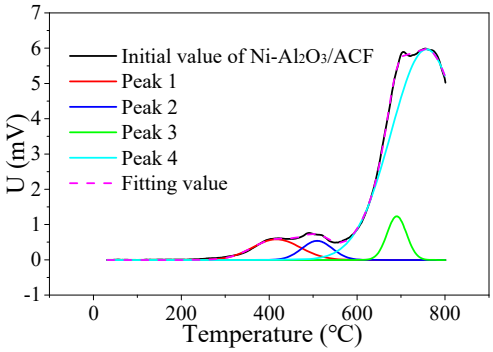


Figure S3. Peak analysis of H_2-TPR result of the catalyst Ni-γ-Al_2O_3/ACF.

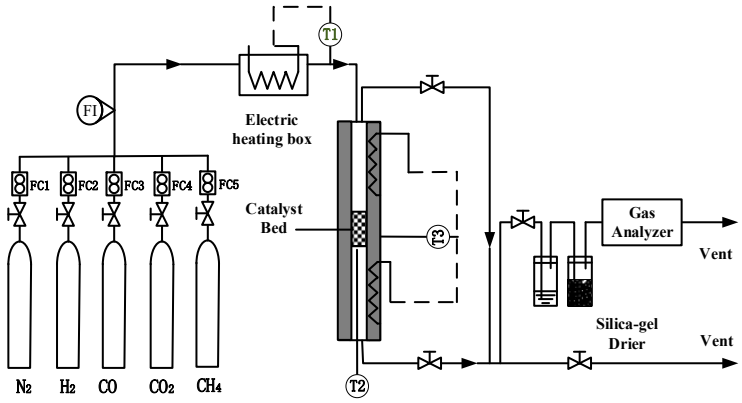


Figure S4. Schematic diagram of experimental apparatus for DRM.

Table S1. specific surface area and pore structure parameters of two catalysts (Ni-γ-Al_2O_3, Ni-Al_2O_3/ACF).

Samples	S_{BET}(m^2/g)	V_{Total}(cm^3/g)	D_{BJH}(nm)
Ni-Al_2O_3	157.325405	0.590662	15.025345
Ni-Al_2O_3/ACF	173.711689	0.626679	15.046799

Table S2. Fitting results.

Number	Peak Type	Peak Area	FWHM	Max Height
Peak 1	Gaussian	79.85188	128.17436	0.58526
Peak 2	Gaussian	46.86051	81.20018	0.54215
Peak 3	Gaussian	68.53934	51.97111	1.23893
Peak 4	Gaussian	847.76905	189.42605	5.97323