

# Effect of MgFe-LDH with Reduction Pretreatment on the Catalytic Performance in Syngas to Light Olefins

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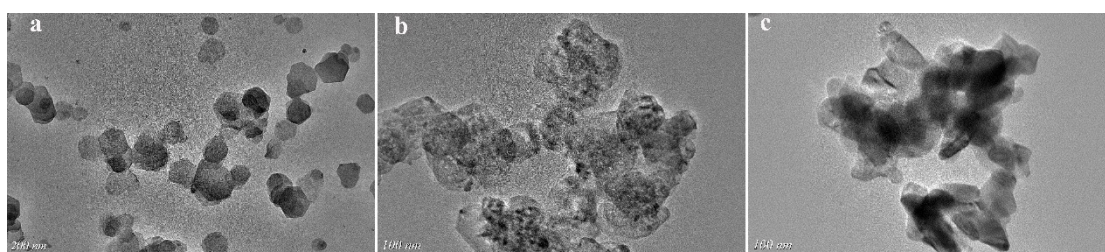


Figure S1. HRTEM images of the catalysts: a. MgFe-LDH, b. Fe-400, c. Fe-600.

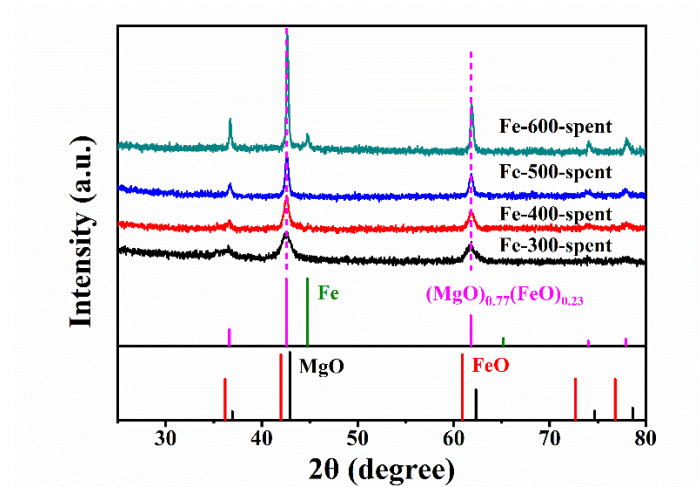


Figure S2. XRD patterns of the spent catalysts.

Table S1. Comparison of the catalytic performance with the previous works.

Catalyst	T (°C)	P (MPa)	GHSV (h <sup>-1</sup> )	CO conv. (%)	CO <sub>2</sub> sel. (%)	Olefins sel. <sup>c</sup> (%)	Ref.
Fe/α-Al <sub>2</sub> O <sub>3</sub>	340	2.0	1500	80	40	53 <sup>a</sup>	[8]
Fe-K/NCNTs	300	0.1	4200	16.5	23.6	54.6 <sup>a</sup>	[26]
Mn/Fe <sub>3</sub> O <sub>4</sub>	320	1.0	4480	41.5	37.8	60.1 <sup>a</sup>	[27]
Fe <sub>3</sub> O <sub>4</sub> @MnO <sub>2</sub>	280	2.0	3000	67.9	47.1	79.3 <sup>b</sup>	[13]
KFe@C	340	2.0	30000	~82	47.4	44.6 <sup>a</sup>	[14]
Fe/hNCNC	350	0.1	12000	3.5	39.4	54.1 <sup>a</sup>	[28]

FeMn@Si-c	320	3.0	4000	56.1	13.0	75 <sup>b</sup>	-[66]
ZnCrO <sub>x</sub> /SAPO	400	2.5	6828	17	~45	80 <sup>a</sup>	[17]
MnO <sub>x</sub> /SAPO	400	2.5	4800	8.5	41	79.2 <sup>a</sup>	-[67]
ZnZrO <sub>x</sub> /SAPO	400	1.0	3600	9.5	45	63 <sup>a</sup>	[18]
CoMn	250	0.1	2000	31.8	47.3	60.8 <sup>a</sup>	[12]
Fe-500	330	2.0	1000	47	48	51 <sup>a</sup>	This work

<sup>a</sup> Light olefins; <sup>b</sup> Total olefins; <sup>c</sup> Olefins selectivity in hydrocarbons.

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