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Catalyst study of gasoline reforming

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INTRODUCTION

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infrastructure

^{1),2)}

(steam reforming), (reformer), (partial oxidation), (autothermal reforming) 가 가)

³⁾

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infrastructure가

가

density가 500 800

target

⁴⁾ 가

(conversion) (selectivity)

가

EXPERIMENTAL

figure 1

iso-octane(Junsei,99.9%), air, 2cm quartz tube

H₂O

K-type thermocouple furnace

furnace

electric

500 700

0.4g

H₂O/C=3/1, O/C=1/1

65cc/min

saturation

MFC

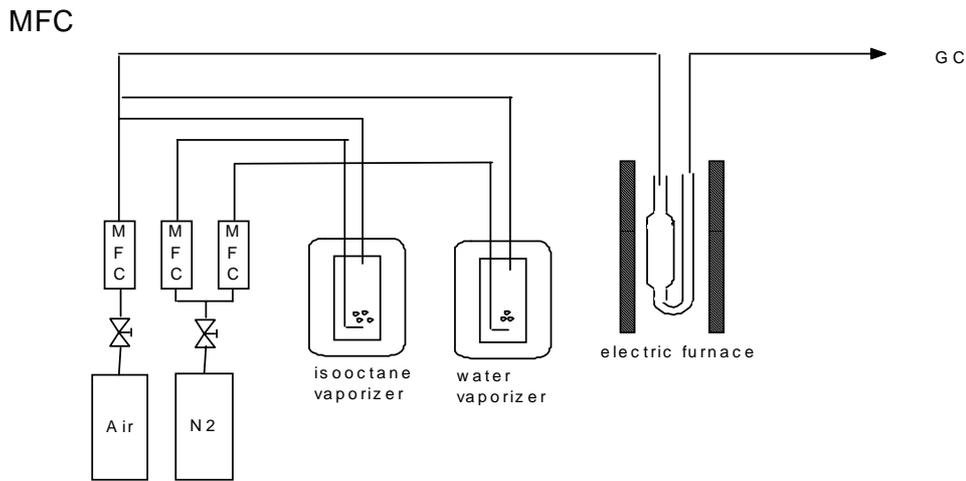


Fig. 1 Schematic flow diagram of a fixed-bed reactor system

line	110	heating band
TCD가	Carbosphere 80/100 SS column	molecular sieve column
FID가	gas chromatograph(HP 5890 series)	HP-1 capillary column
	gas chromatograph(HP 5890 series)	on-line
		size가 180
250µm	Pd Ni	
Al ₂ O ₃	Titanium-modified alumina(x%TiO ₂ -Al ₂ O ₃)	
incipient wetness impregnation		110
12	pore	
	3	
	pore volume	
		110 12
	650 5	
Titanium-modified alumina	titanium (titanium butoxide)	
2-propanol	pore volume	
impregnation	alumina	110
12	650 5	
	AA, BET, XRD, XPS	

RESULTS AND DISCUSSION

Titanium-modified alumina Ni-Pd iso-octane
 Titanium AA
 Figure 1 iso-octane
 가 가 가 titanium 6% 가
 titanium 8.37%

(5%Ni - 3%Pd/ x%TiO ₂ -Al ₂ O ₃)	0% TiO ₂	0.94% TiO ₂	2.84% TiO ₂	4.38% TiO ₂	5.84% TiO ₂	8.37% TiO ₂
Surface area(m ² /g)	173	160	161	159	155	156

Table 1 Surface area of various catalyst

BET titanium surface area Table 1
 titanium 가 surface area가
 titanium 가 surface area
 가 . XRD titanium 가 metal
 titanium 가 metal
 dispersion . titanium 가
 metal 가 metal
 5)
 , titanium-modified alumina gasoline
 titanium 가 metal titanium
 H₂ 가 가 .

References

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