Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information

Synergistic Catalysis of nano-Pd and nano rare-earth oxide/AC:Complex nanostructured catalysts fabricated by photochemical route for selective hydrogenation of phenol

Yanji Zhang, Jicheng Zhou*,Jiaqi Si,

* College of Chemical Engineering, Xiangtan University, Xiangtan 411105, China;

The conversion and selectivity are defined as follows:

$$Conversion\ of\ \ phenol\ (\%) = \frac{Moles\ of\ \ phenol\ converted}{Moles\ of\ \ phenol\ initially\ added} \times 100\%$$

$$Selectivity\ to\ cyclohexanone\ (\%) = \frac{Moles\ of\ \ cyclohexanone}{Moles\ of\ \ phenol\ converted} \times 100\%$$

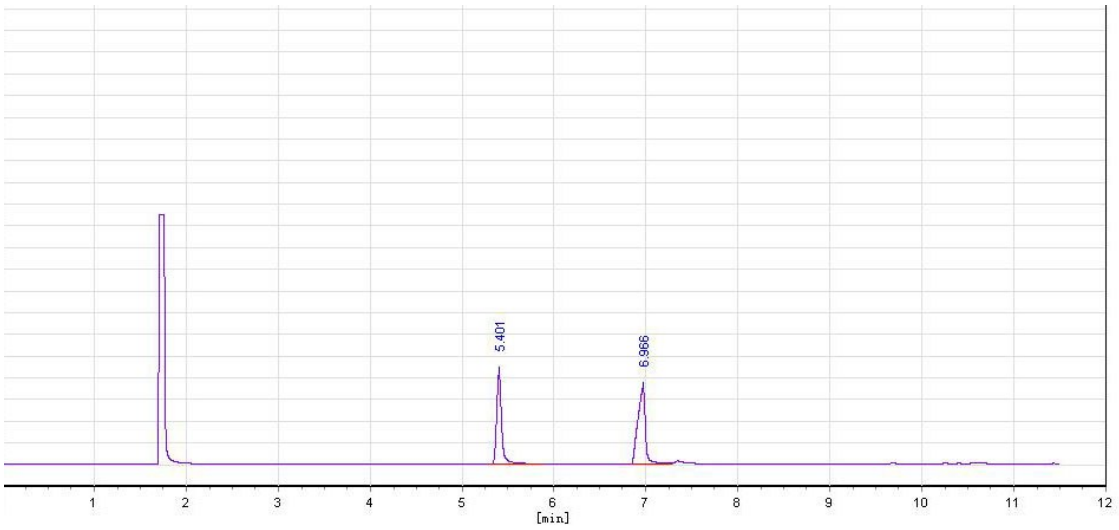
The products were analyzed using an Agilent 6890N GC

(a)

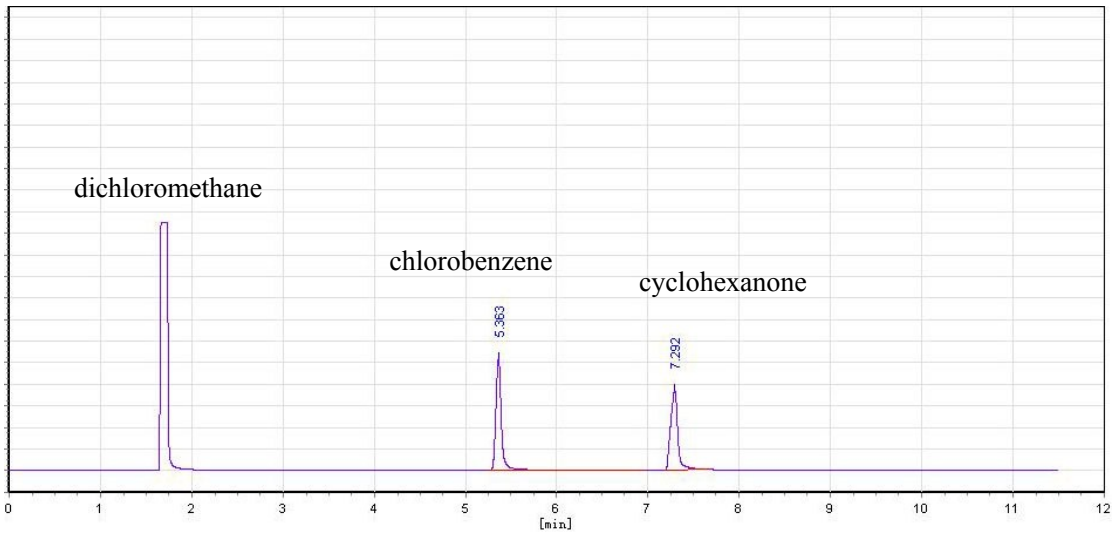
dichloromethane

chlorobenzene

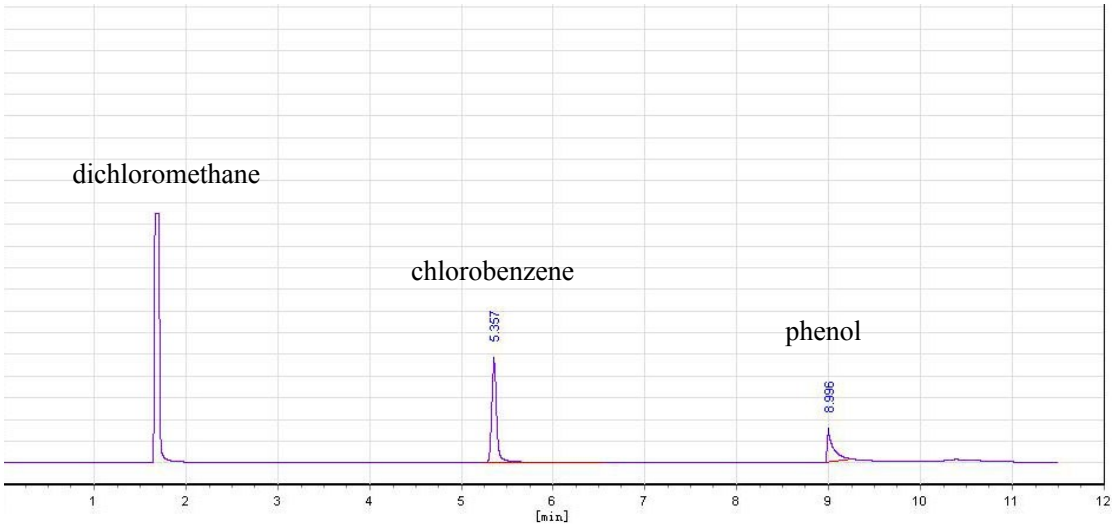
cyclohexanol


5.401
6.966
1
2
3
4
5
6
7
8
9
10
11
12
[min]

(b)


dichloromethane
chlorobenzene
cyclohexanone
5.363
7.292
0
1
2
3
4
5
6
7
8
9
10
11
12
[min]

(c)


dichloromethane
chlorobenzene
5.357
phenol
8.996
1
2
3
4
5
6
7
8
9
10
11
12
[min]

(d)

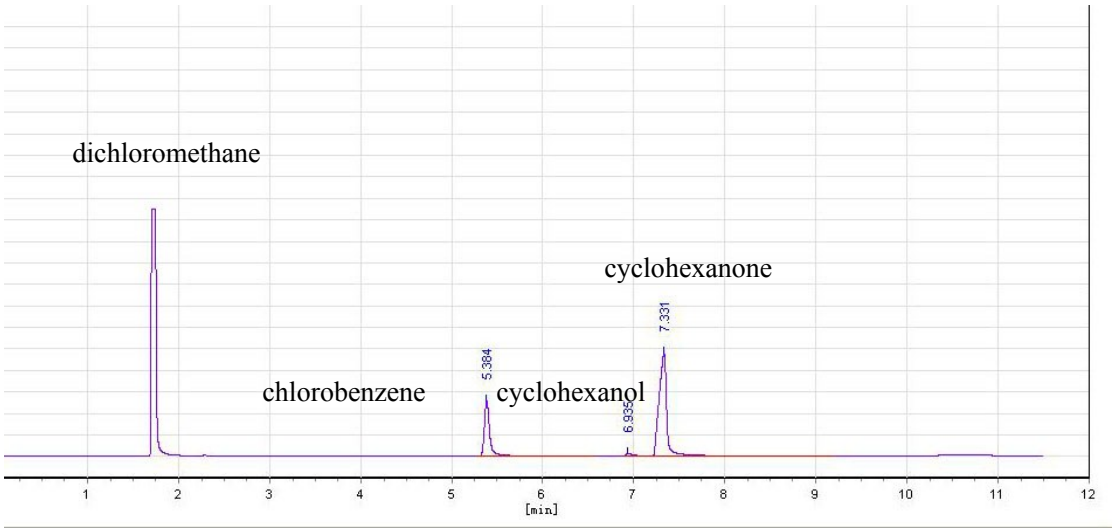


Figure S1. The GC traces of the samples: (a) cyclohexanol; (b) cyclohexanone; (c) phenol; (d) Table 2 entry 15.