Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting information

for

Click-based Porous Organic Framework Containing Chelating Terdentate Units and Application in Hydrogenation of Olefins

Hong Zhong, Yaqiong Gong, Fengsen Zhang, Liuyi Li, and Ruihu Wang*

Content

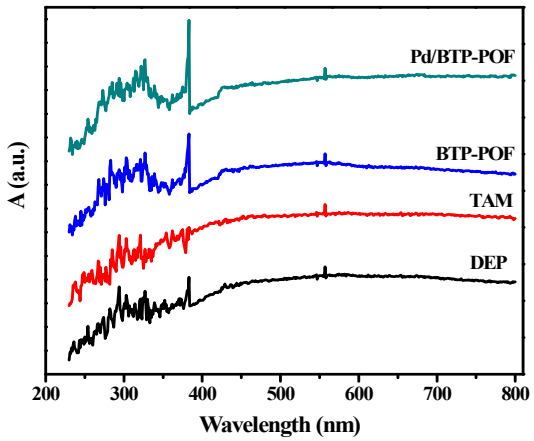


Fig. S1 Solid-state UV-vis spectra of DEP, TAM, BTP-POF and Pd/BTP-POF

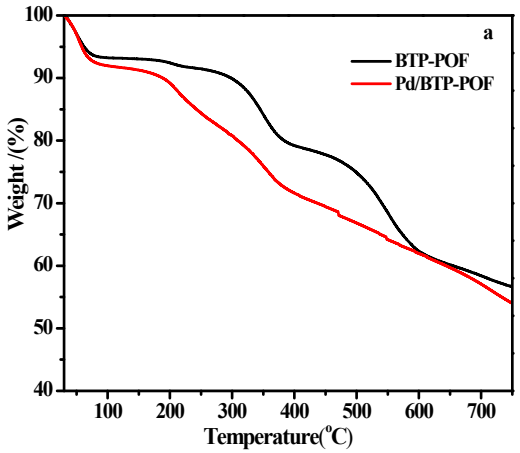


Fig. S2 TGA curves for BTP-POF and Pd/BTP-POF.

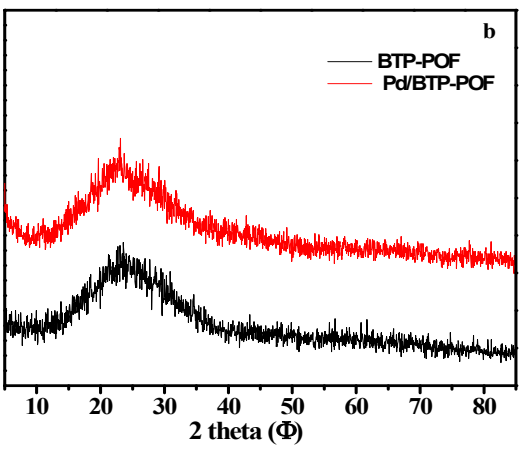


Fig. S3 XRD patterns for BTP-POF and Pd/BTP-POF.

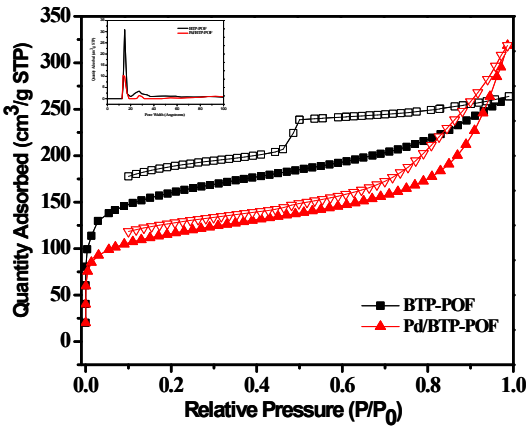


Fig. S4 N_2 isotherms of BTP-POF and Pd/BTP-POF at 77 K, (Inset) Pore size distributions of BTP-POF and Pd/BTP-POF.

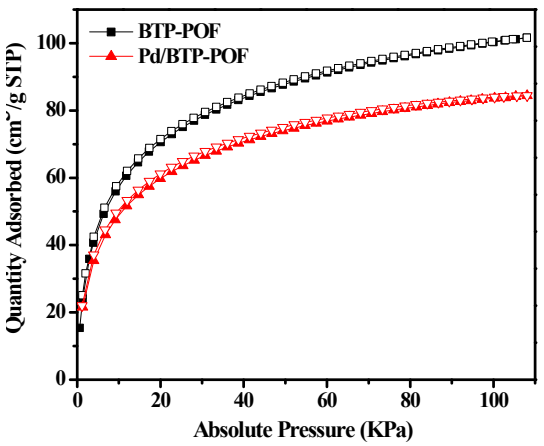


Fig. S5. H_2 isotherms of BTP-POF and Pd/BTP-POF at 77 K.

NMR data of starting materials and hydrogenation products

2,6-Diethynylpyridine[1]**:** ^{1}H NMR: δ 7.67 (t, J = 7.6Hz, 1H), 7.47 (d, J = 7.6Hz, 1H), 3.18 (s, 2H); ^{13}C NMR: δ 142.8, 136.5, 127.1, 82.1 ppm.

Tetrakis(4-azidophenyl)methane[2]**:** ^{1}H NMR: δ 7.15 (d, J = 8.7 Hz, 8H), 6.96 (d, J = 8.7 Hz, 8H); ^{13}C NMR: δ 142.9, 138.2, 132.1, 118.4, 63.2.

Hexane: ^{1}H NMR: δ 1.30-1.35 (m, 8H), 0.92 (t, J = 7.0, 6H); ^{13}C NMR: δ 31.6, 22.6, 14.0.

Octane: ^{1}H NMR: δ 1.31-1.36 (m, 12H), 0.92 (t, J = 7.0, 6H); ^{13}C NMR: δ 31.9, 29.3, 22.7, 14.0.

Cyclohexane: ^{1}H NMR: δ 1.46 (s, 12H); ^{13}C NMR: δ 26.9.

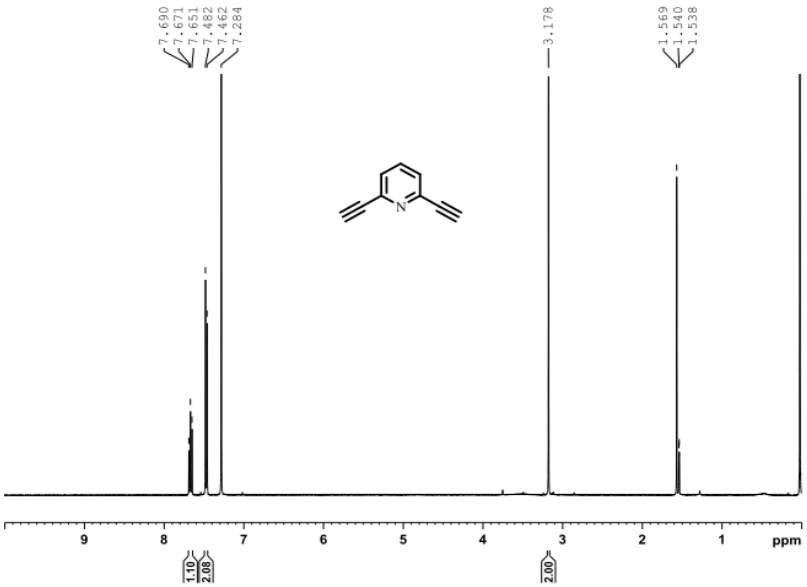
Ethylbenzene: ^{1}H NMR: δ 7.38-7.42 (m, 2H), 7.27-7.33 (m, 3H), 2.27 (q, J = 7.6, 2H), 1.37 (t, J = 7.6, 3H); ^{13}C NMR: δ 144.3, 128.4, 127.9, 125.7, 29.0, 15.7.

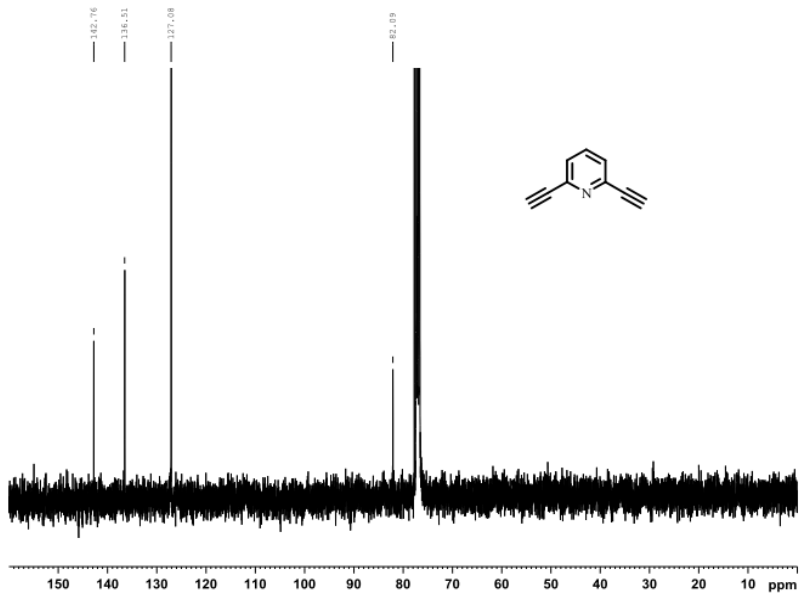
References

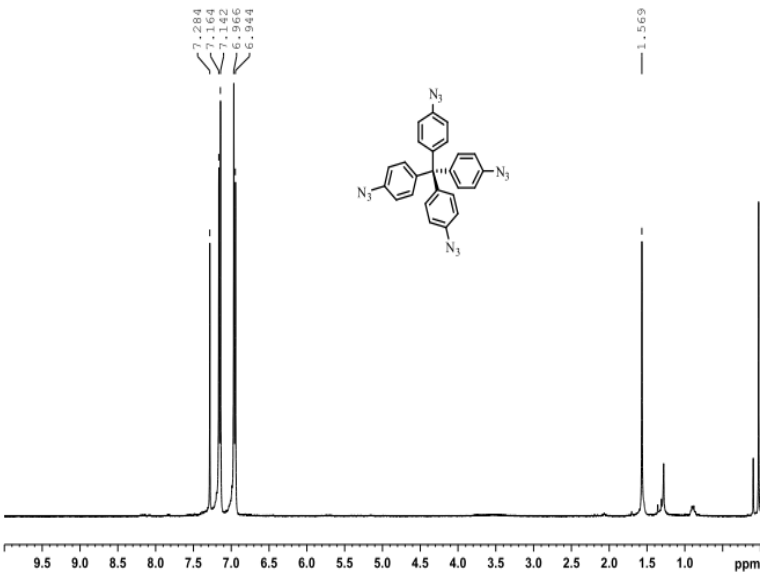
(1) S. Leininger, M. Schmitz and P. J. Stang. *Org. Lett*., 1999, **1**, 1921-1923.

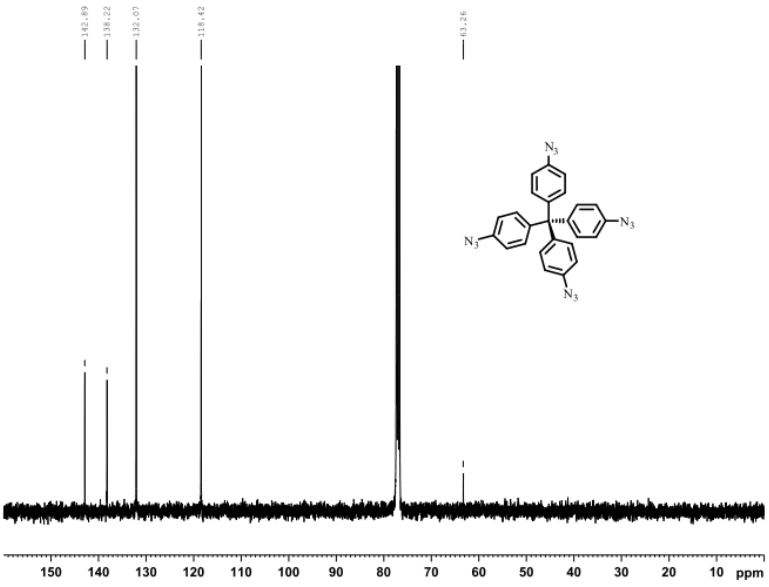
(2) O.Plietzsch, C. I. Schilling, M. Tolev, M. Nieger, C. Richert, T. Muller and S. Bräse. *Org. Biomol. Chem.*, 2009, **7**, 4734-4743.

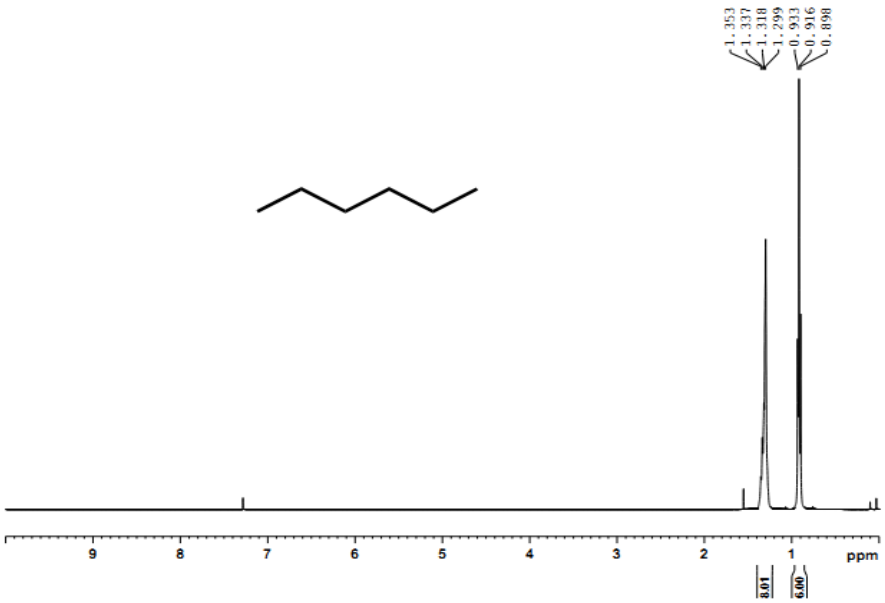
NMR spectra of starting materials and hydrogenation products

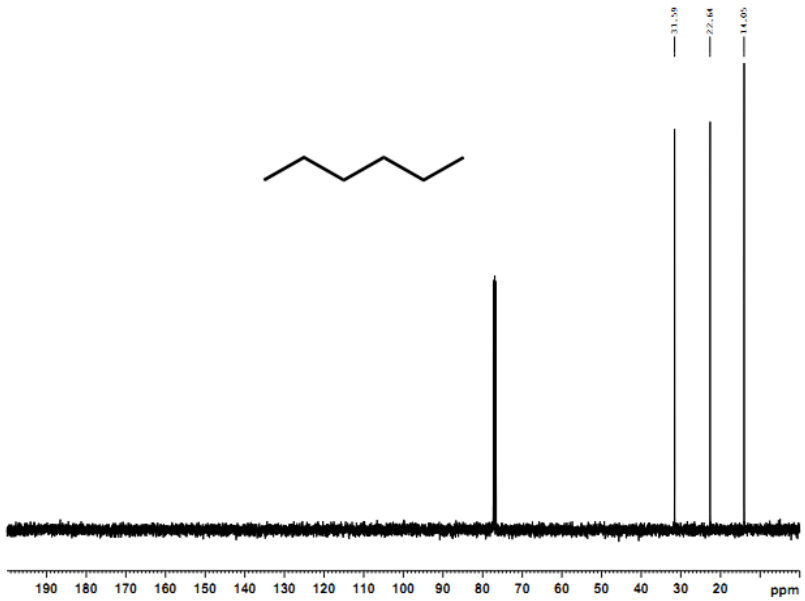


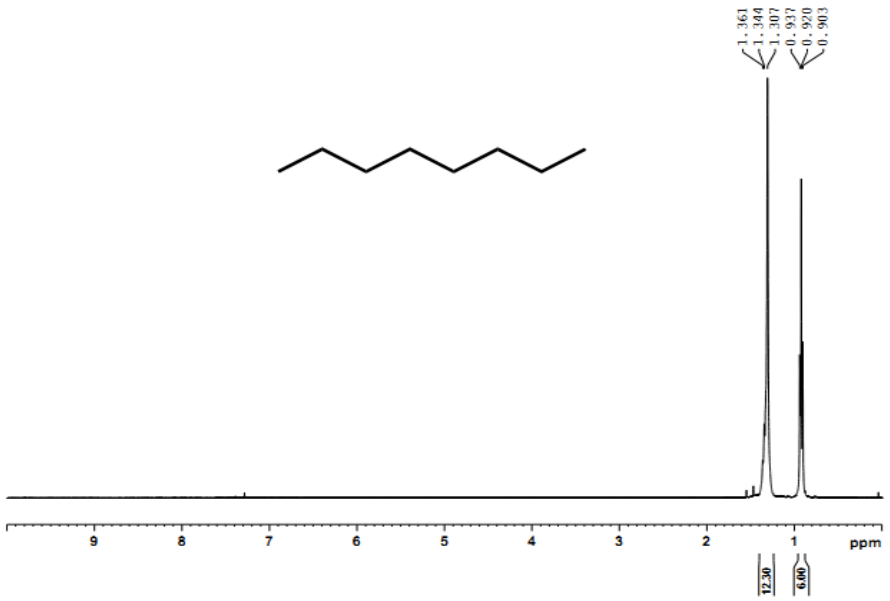


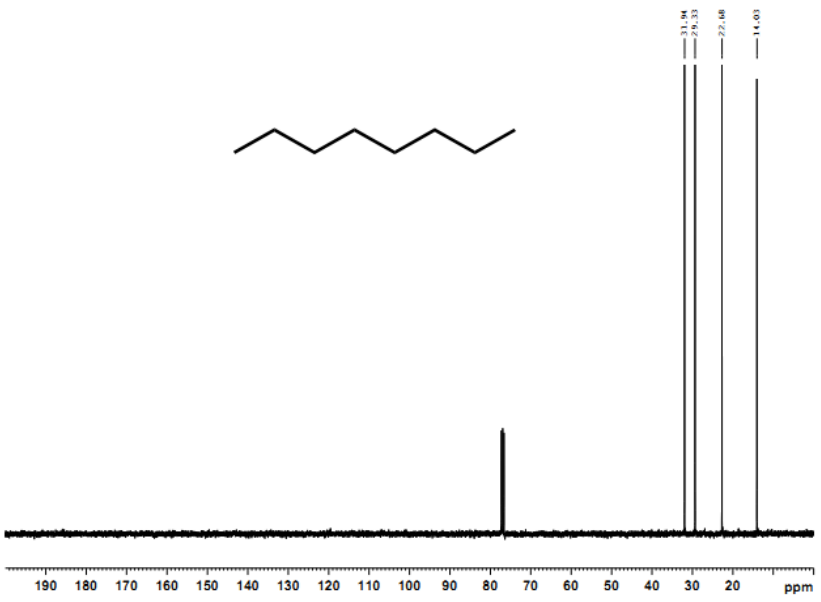

7.284
7.164
7.142
6.966
6.944
1.569
N3
N3
N3
N3
9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 ppm


142.89
138.22
132.07
118.42
63.26
N3
N3
N3
N3
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm


1.353
1.337
1.318
1.299
0.933
0.916
0.890
9
8
7
6
5
4
3
2
1
ppm
8.01
6.00


31.59
22.64
14.05
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm


1.361
1.344
1.307
0.937
0.920
0.903
9
8
7
6
5
4
3
2
1
ppm
12.30
6.00


31.84
29.33
22.68
14.03
190
180
170
160
150
140
130
120
110
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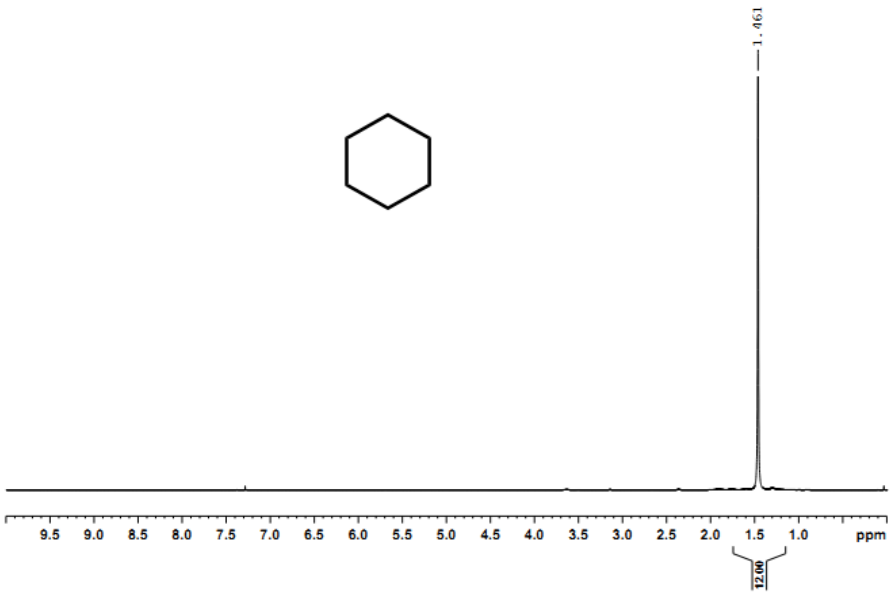
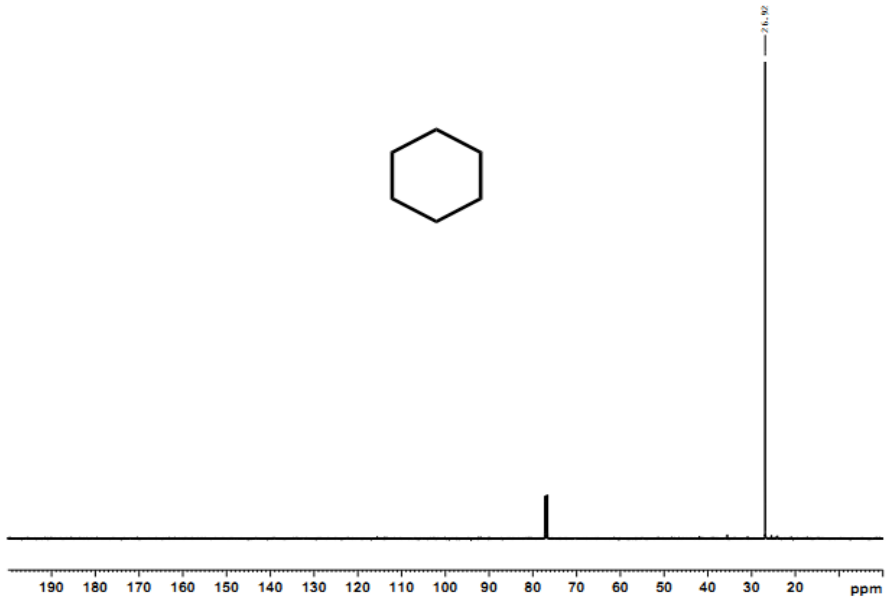
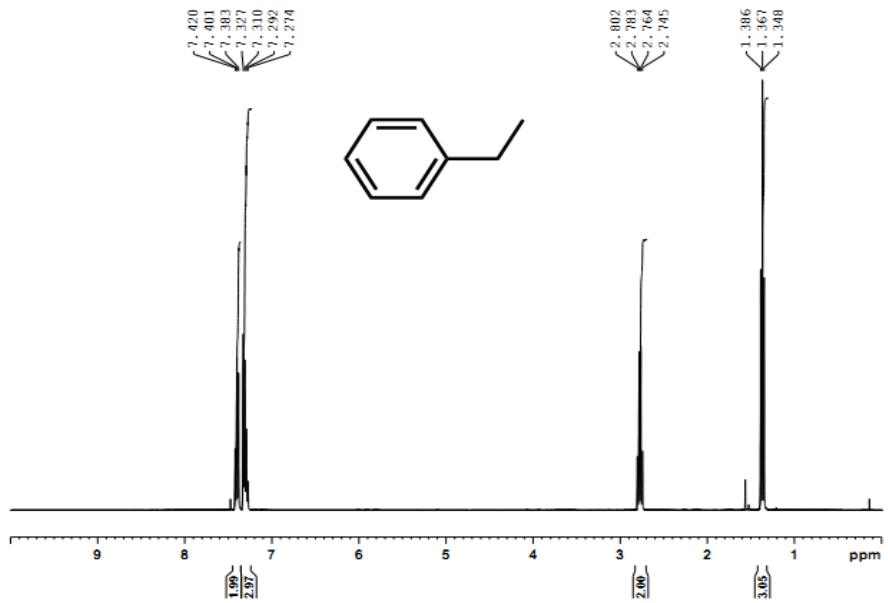
90
80
70
60
50
40
30
20
ppm


1.461
9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 ppm
12.00


26.92
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 ppm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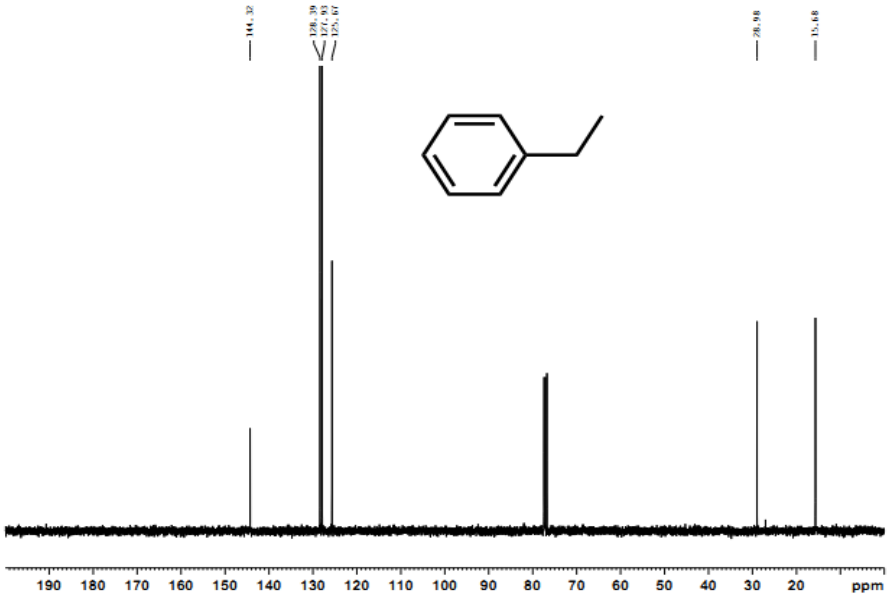
7.401
7.383
7.327
7.310
7.292
7.274
2.802
2.783
2.764
2.745
1.386
1.367
1.348
9
8
7
6
5
4
3
2
1
ppm
1.99
2.97
2.00
3.05


144.32
128.39
127.93
125.67
28.98
15.68
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm