Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

1,2,3-Triazole Framework: A Strategic Structure for C-H•••X Hydrogen Bonding and Practical Design of an Effective Pd-Catalyst for Carbonylation and Carbon-Carbon Bond Formation

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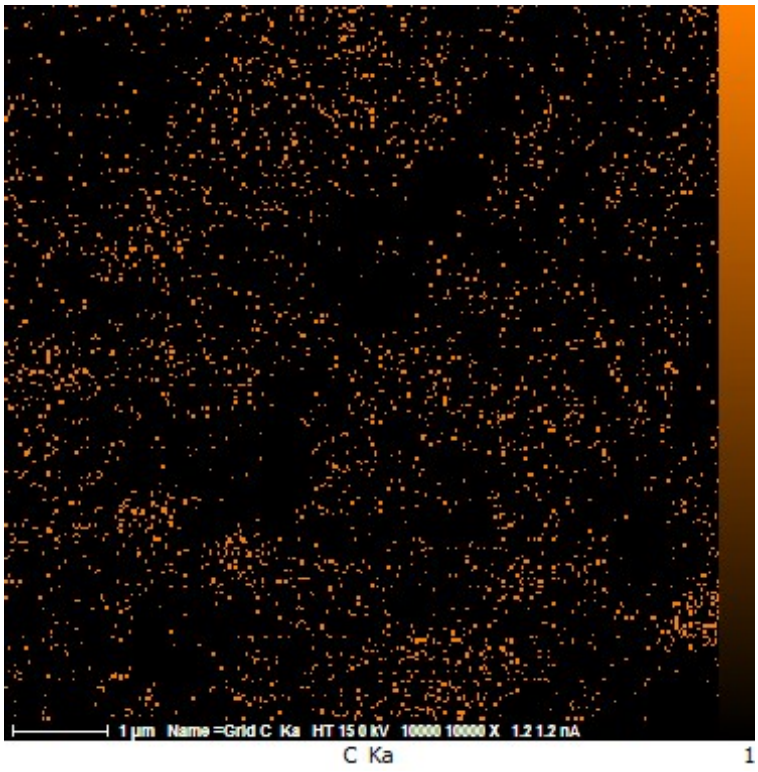
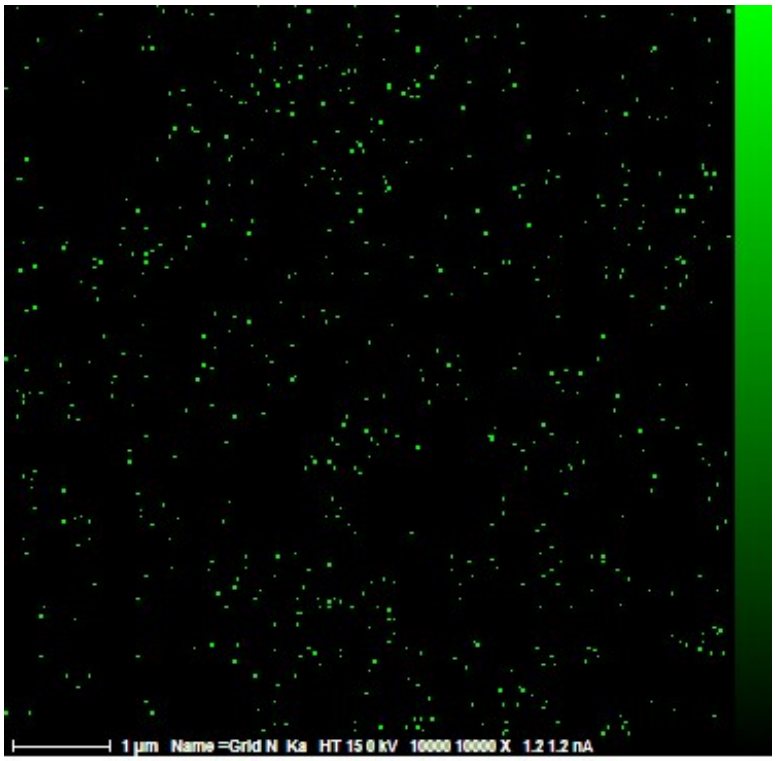
1) General Remarks

All reagents were purchased from commercial suppliers (Merck and Aldrich) and used without further purification. The FT-IR spectra of products were measured as KBr disc by Jasco-680 FTIR spectrophotometer. The X-ray diffraction (XRD) patterns were recorded by using a Philips Xpert MPD diffractometer with Cu Ka radiation (l = 0.15418 nm). Transmission Electron Microscopy (TEM) was carried out on Philips CM120 microscope 100 KV. Scanning electron microscopy (FE-SEM) images were obtained using a Hitachi S-4160 instrument. Analysis of Pd content was measured by inductively coupled plasma spectroscopy (ICP) using Perkin Elmer Optima 7300 DV .Melting points were determined by a Gallenkamp melting apparatus. Gas chromatography (GC) analyses were performed on a BEIFIN 3420 gas chromatograph equipped with a Varian CP SIL 5CB column: 30 m, 0.32 mm, 0.25 mm for consideration of reactions conversions and yields. The ^{1}H and ^{13}C NMR spectra were recorded on a Bruker AVANCE spectrometer at 400, 300 and 100 MHz using TMS as an internal standard in $CDCl_3$ and DMSO at RT.

2) Elemental EDX mapping of the catalyst Pd@click-MNPs/CS (Figure 1S.)

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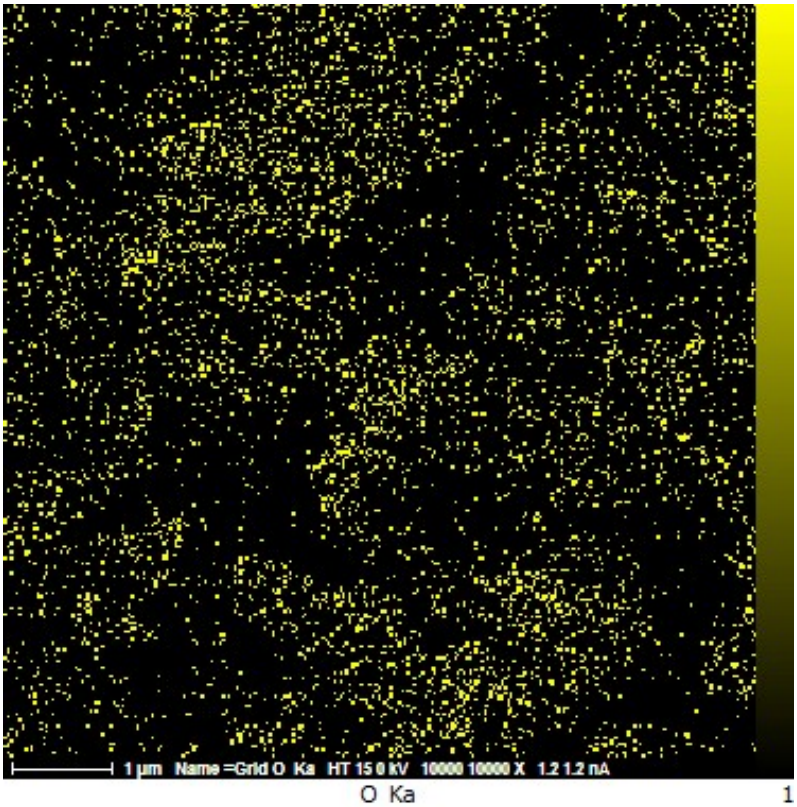
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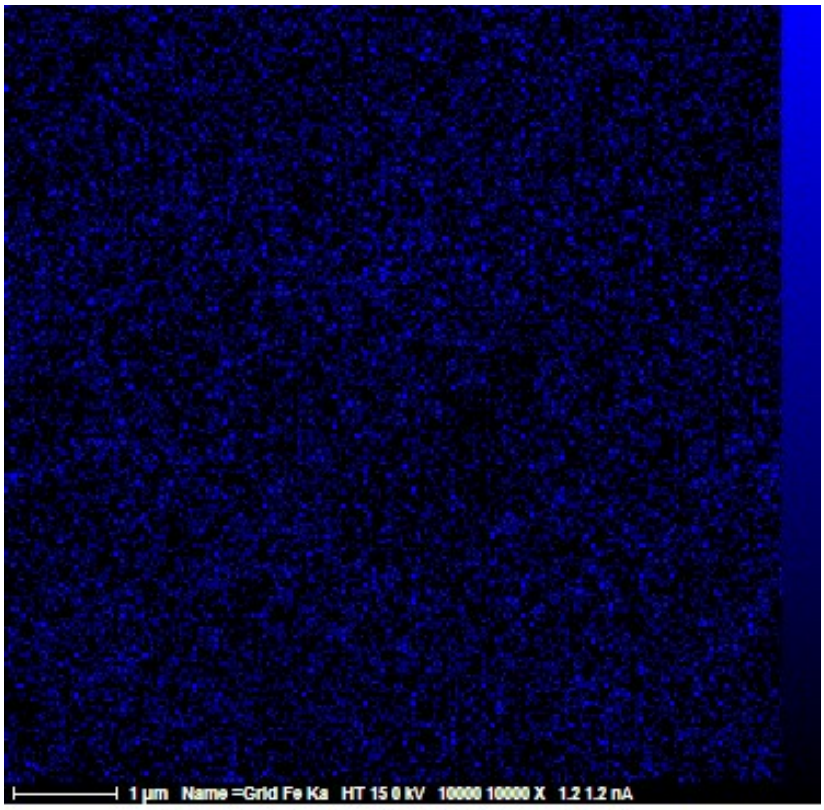
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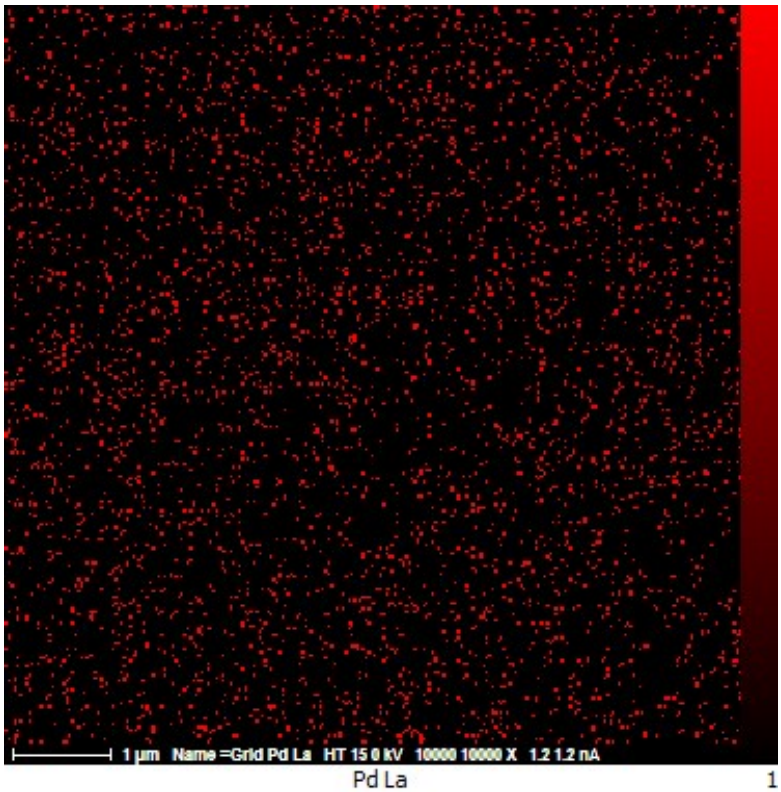
Fe Ka 2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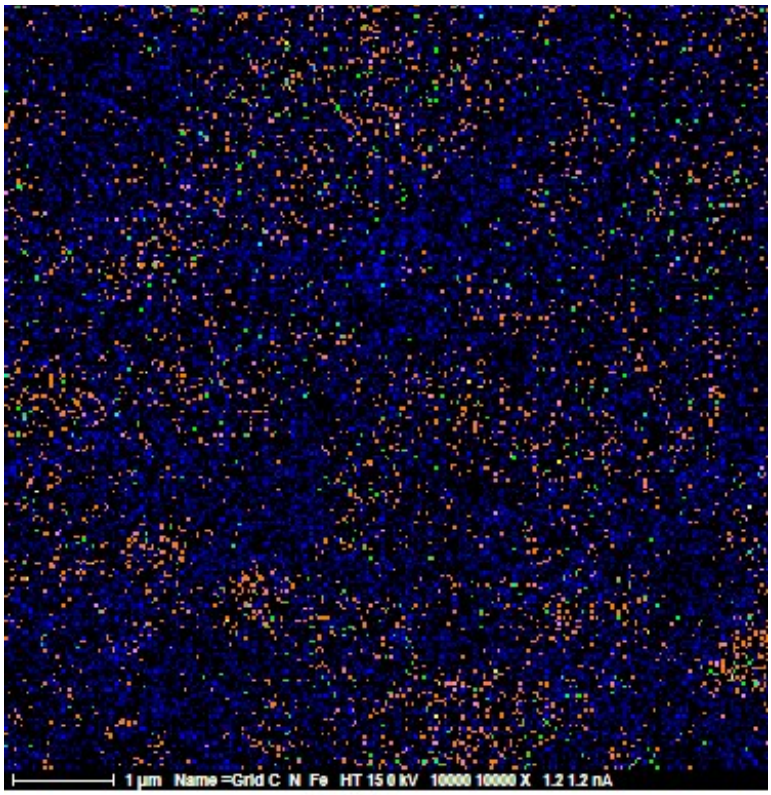
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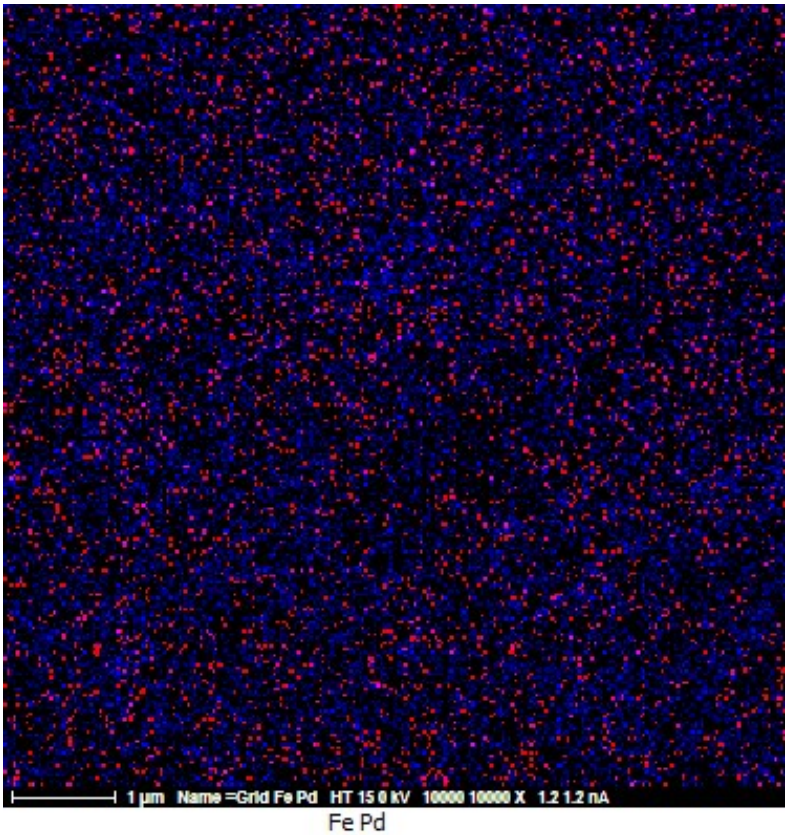
C N Fe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Fe Pd

3) Characteristic spectra of the products

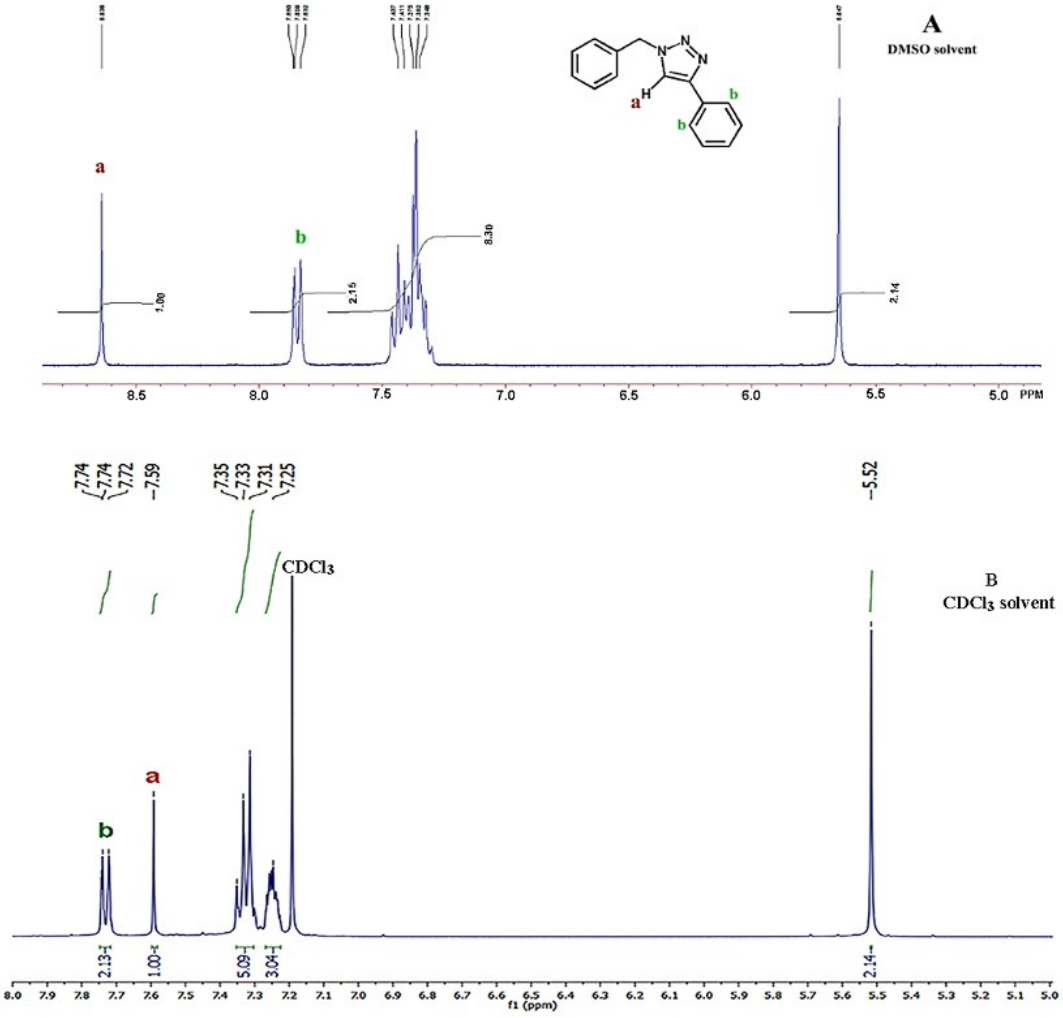
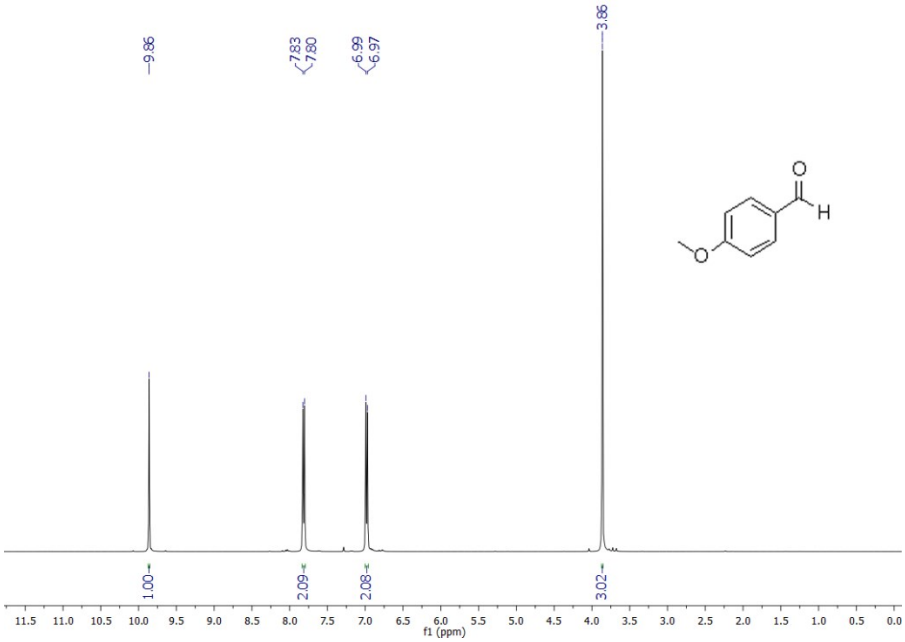


Figure 2S. [1]HNMR spectra of 1-benzyl-4-phenyl-1-*H*-1,2,3-triazole in DMSO and $CDCl_3$ solvent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6.97
3.86
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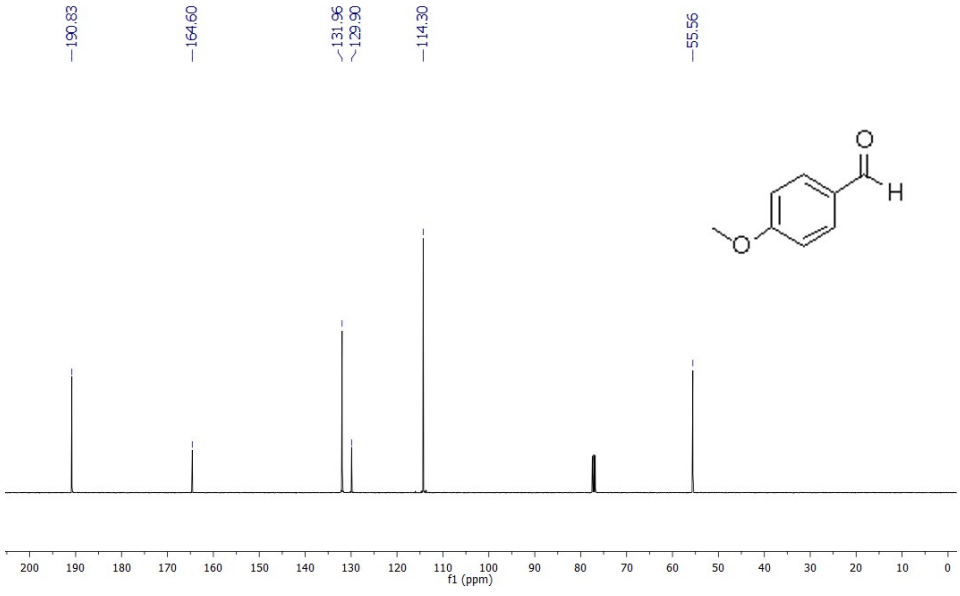
2.08
3.02
f1 (ppm)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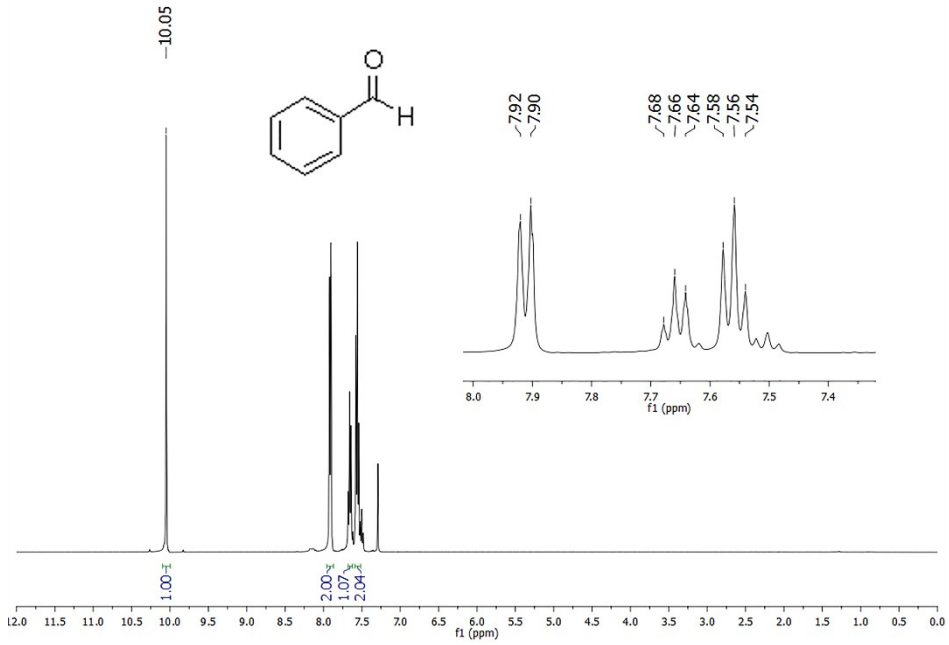
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2.00
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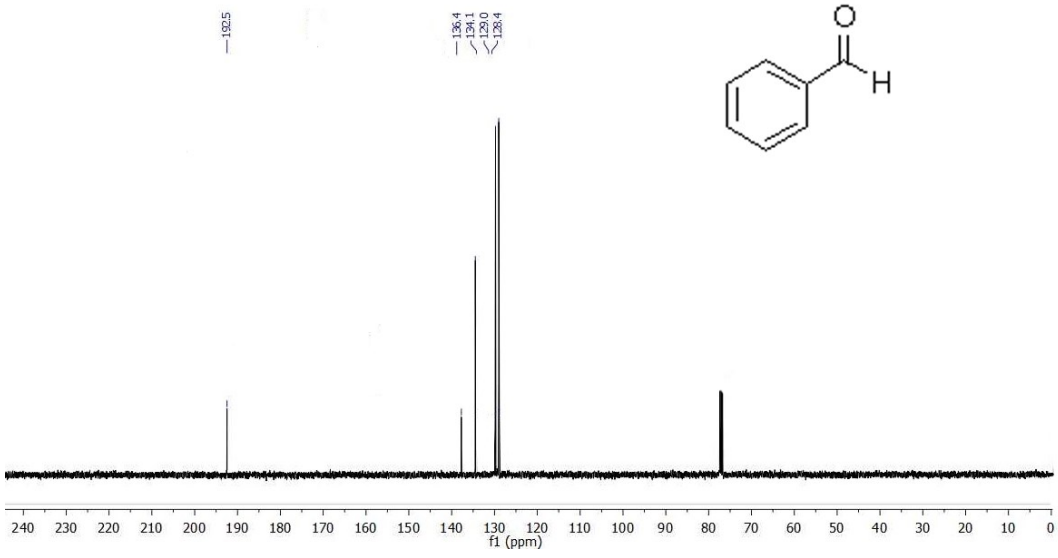
f1 (ppm)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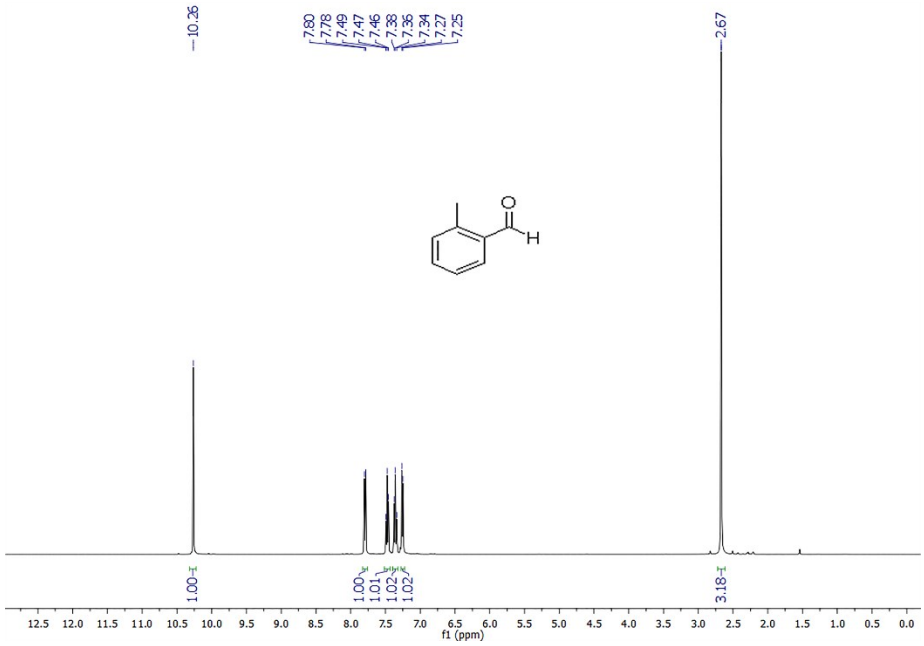
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7.47
7.46
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7.27
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H
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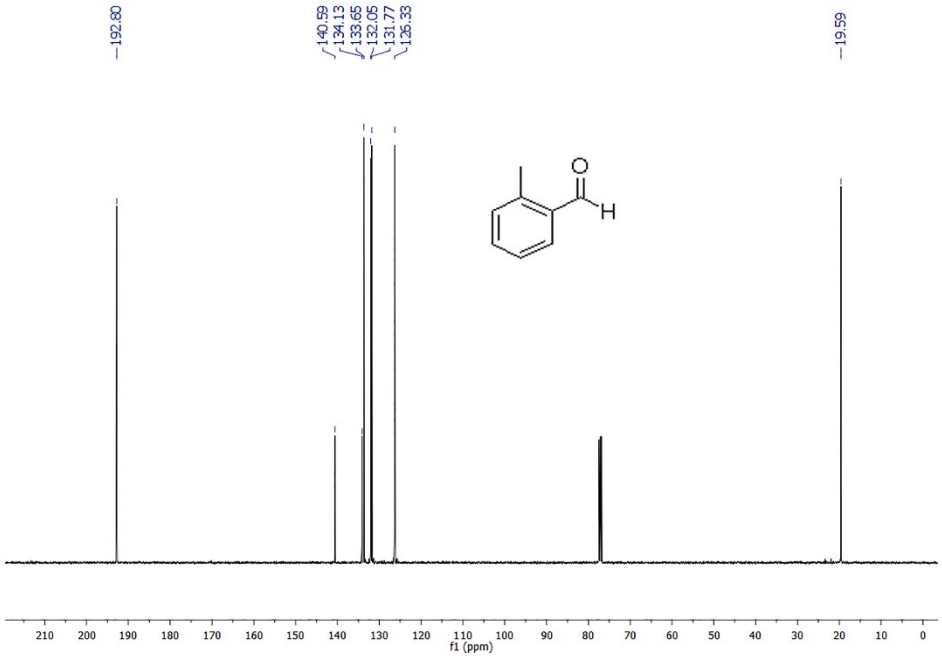
1.00
1.01
1.02
1.02
3.18
f1 (ppm)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H
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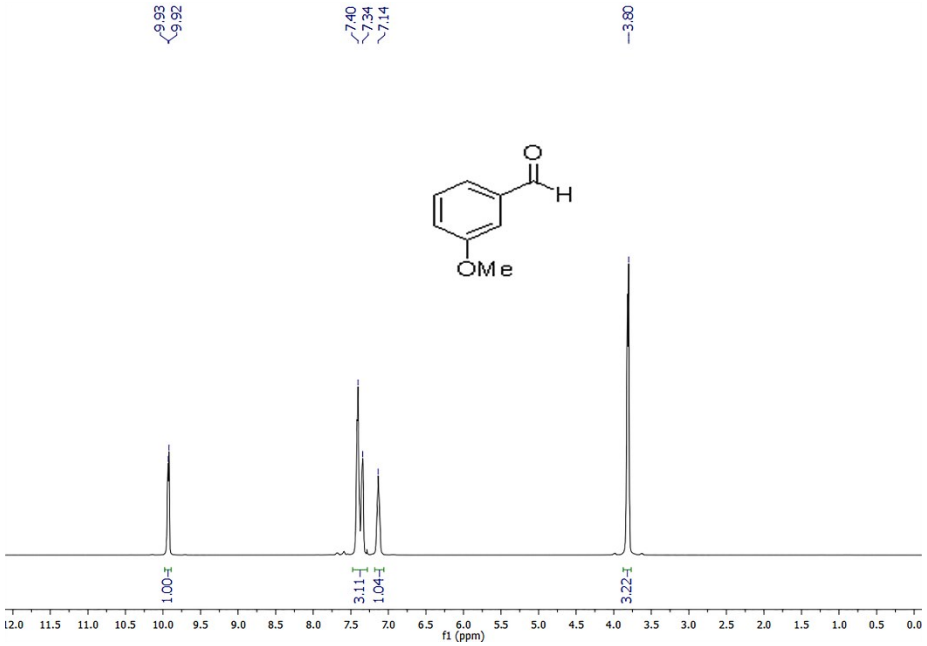
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OMe
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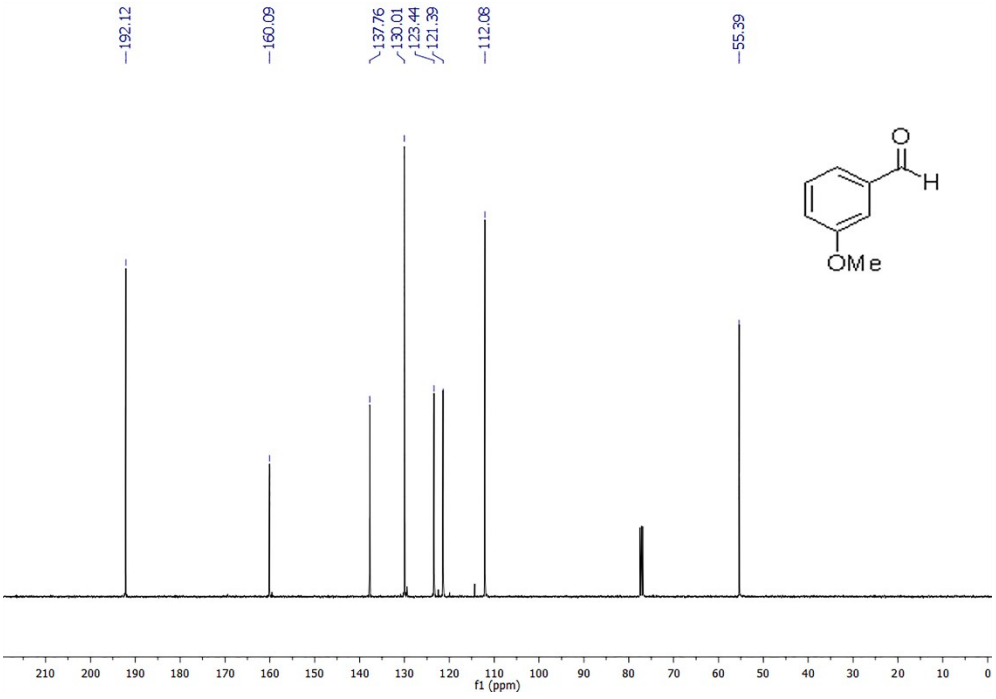
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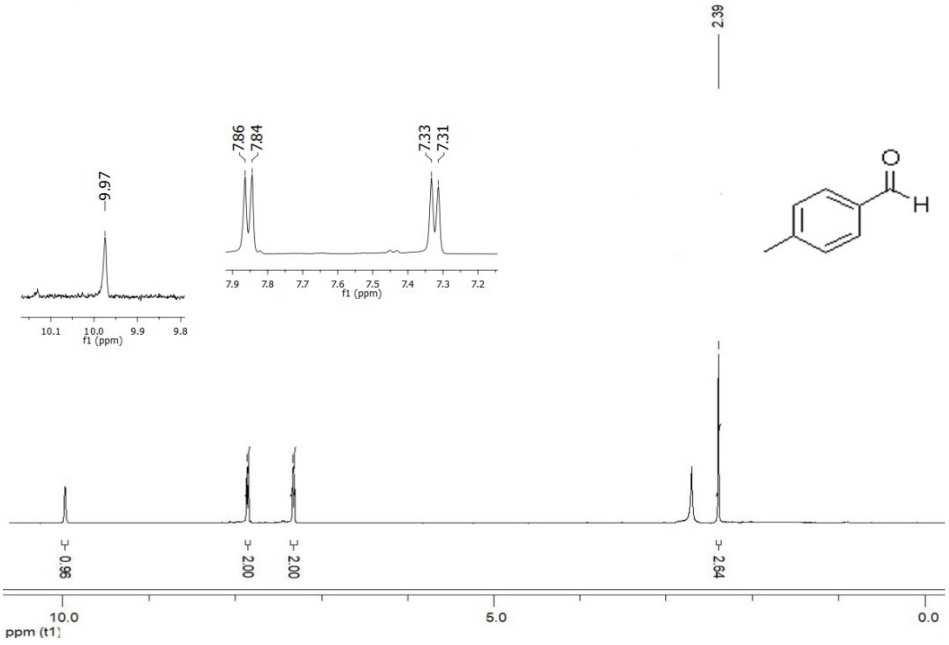
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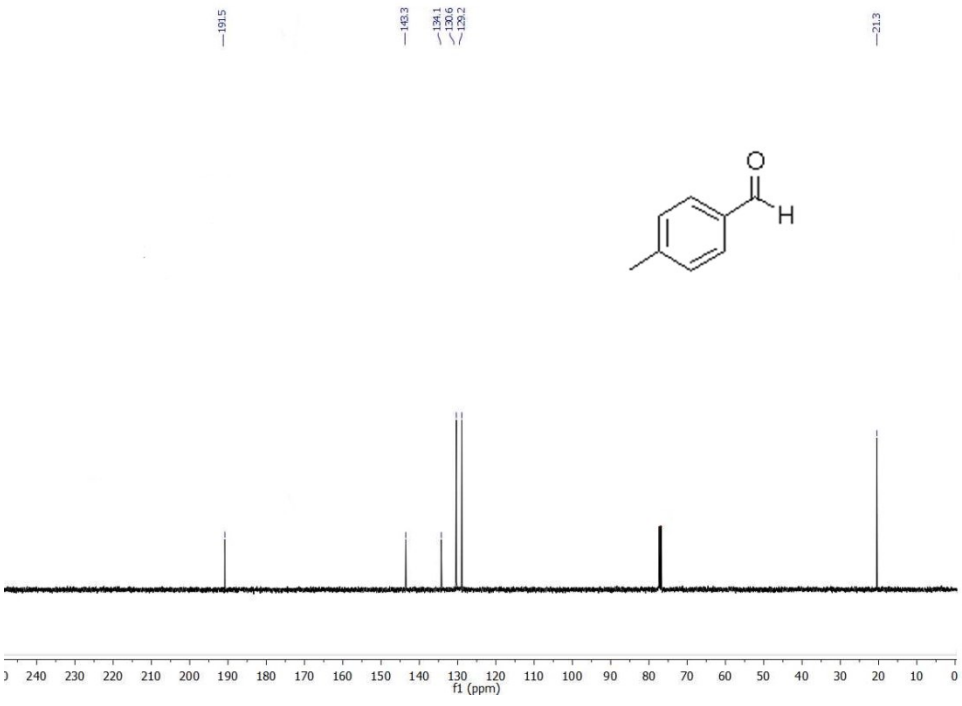
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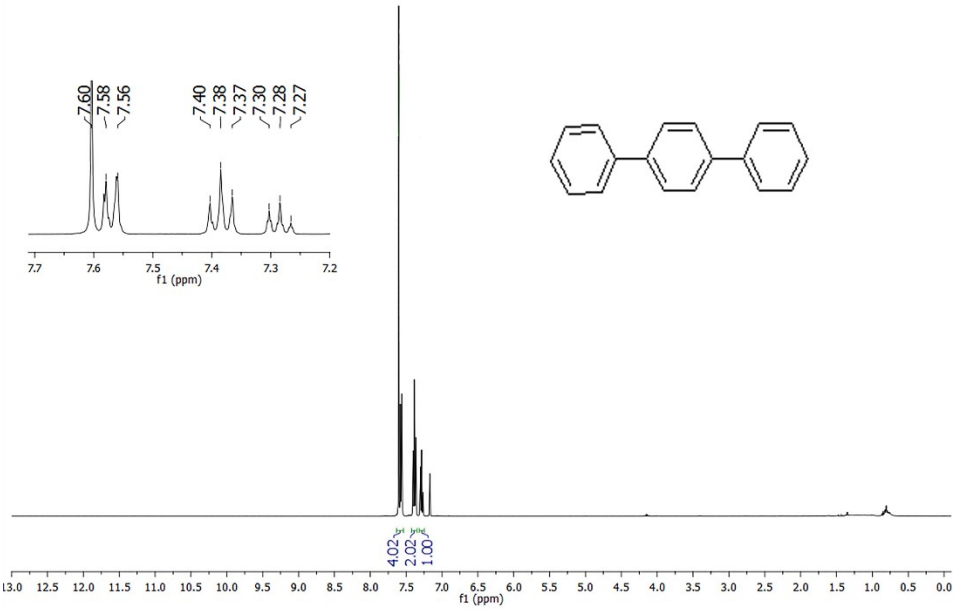
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7.37
7.30
7.28
7.27
7.7 7.6 7.5 7.4 7.3 7.2
f1 (ppm)
4.02
2.02
1.00
13.0 12.5 12.0 11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0
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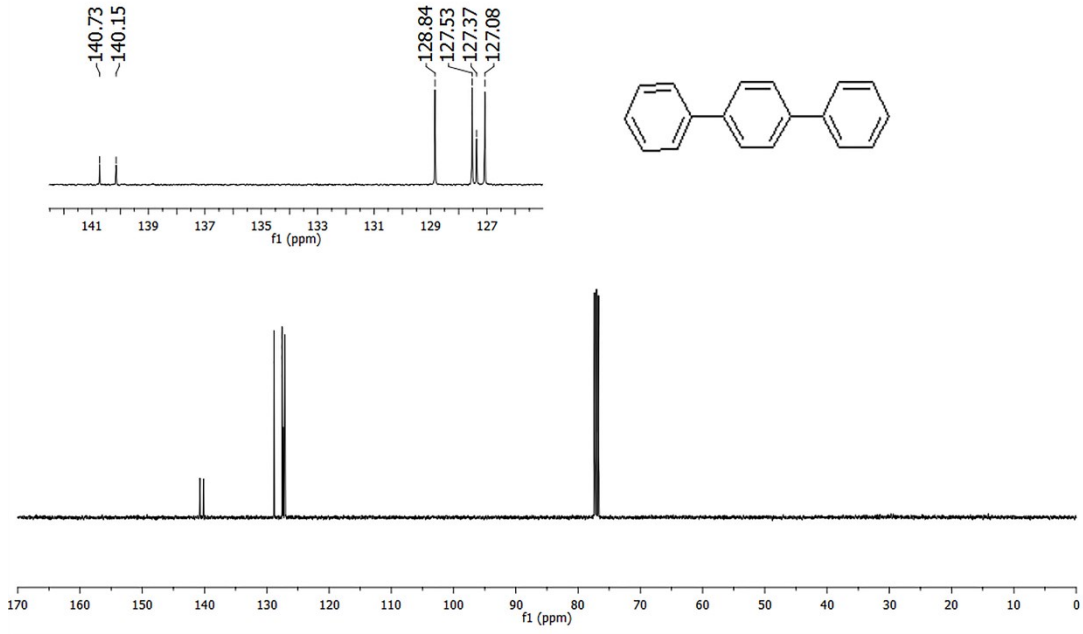
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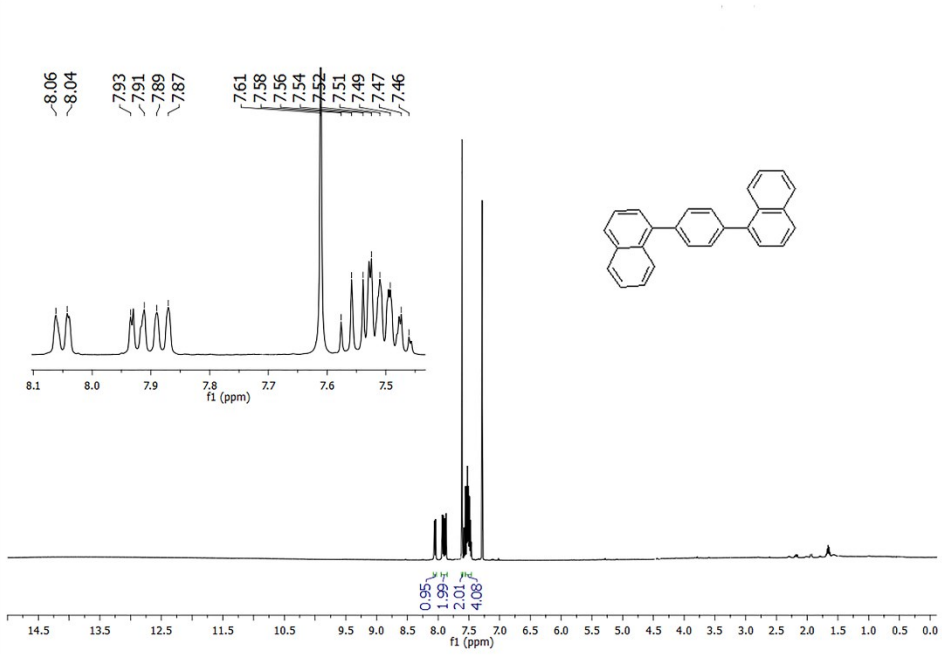
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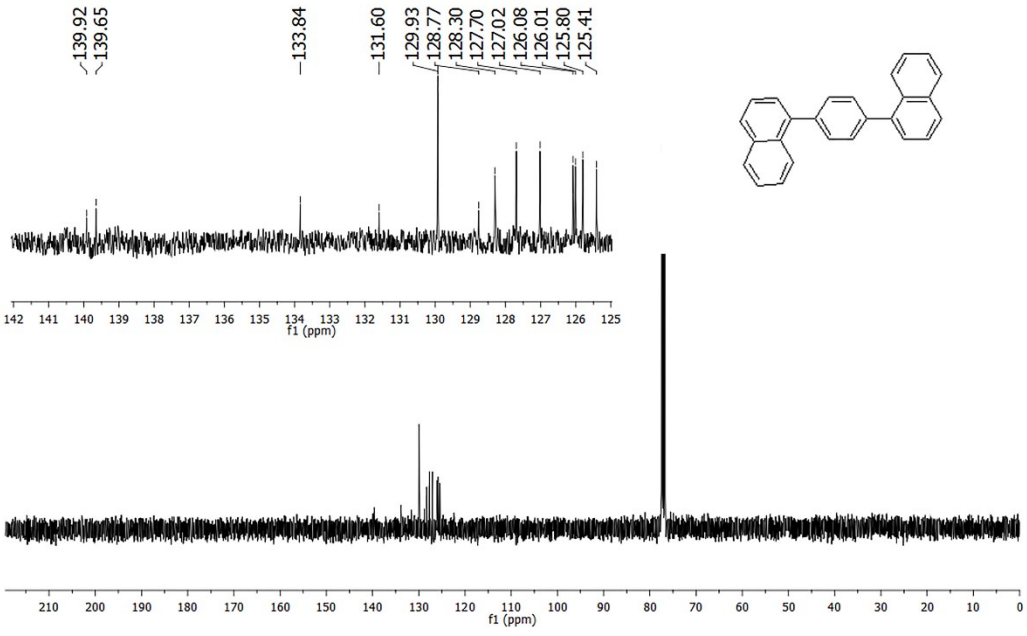
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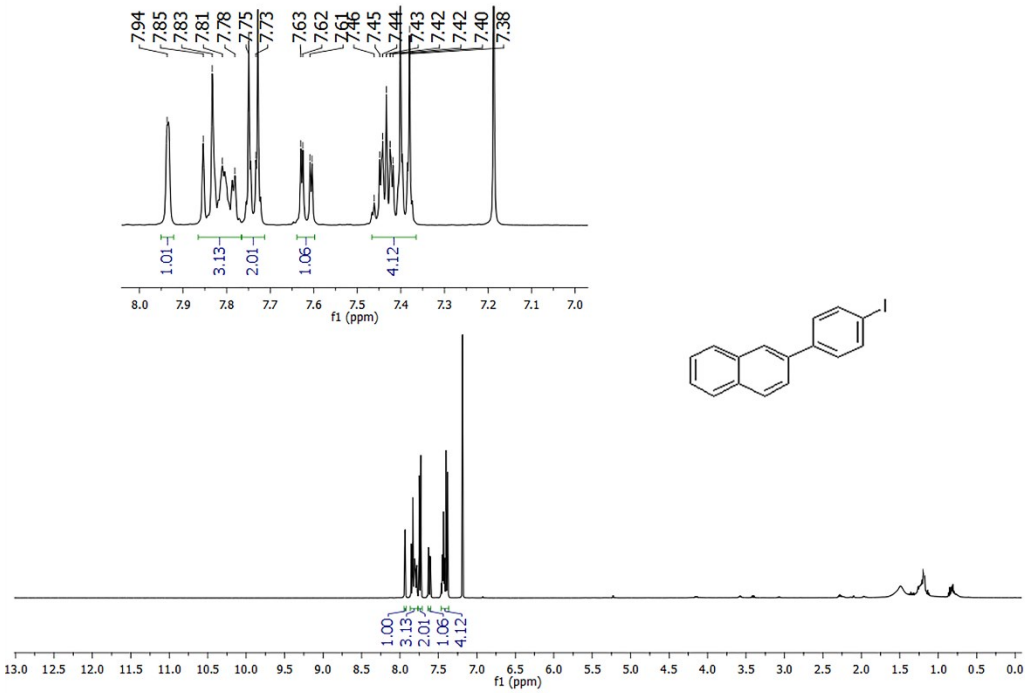
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7.42
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1.01
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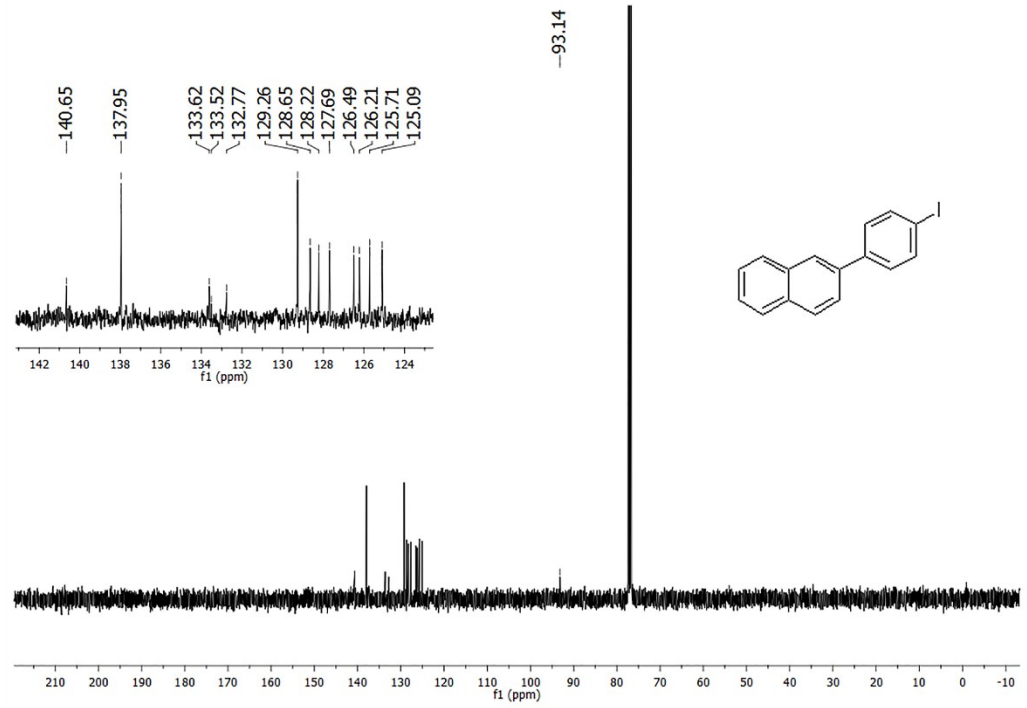
4.12
f1 (ppm)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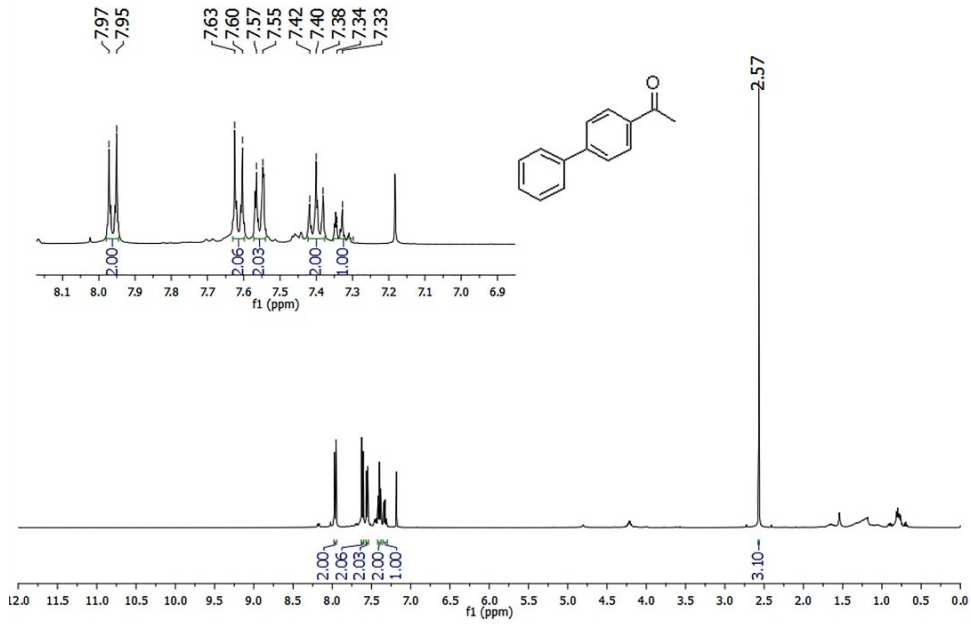
I
f1 (ppm)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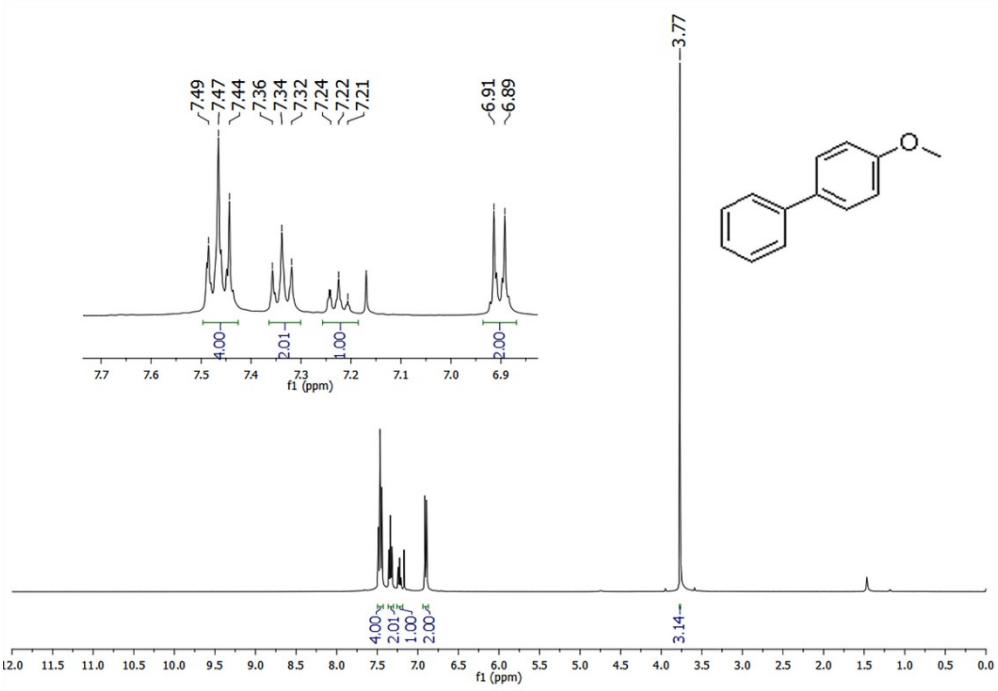
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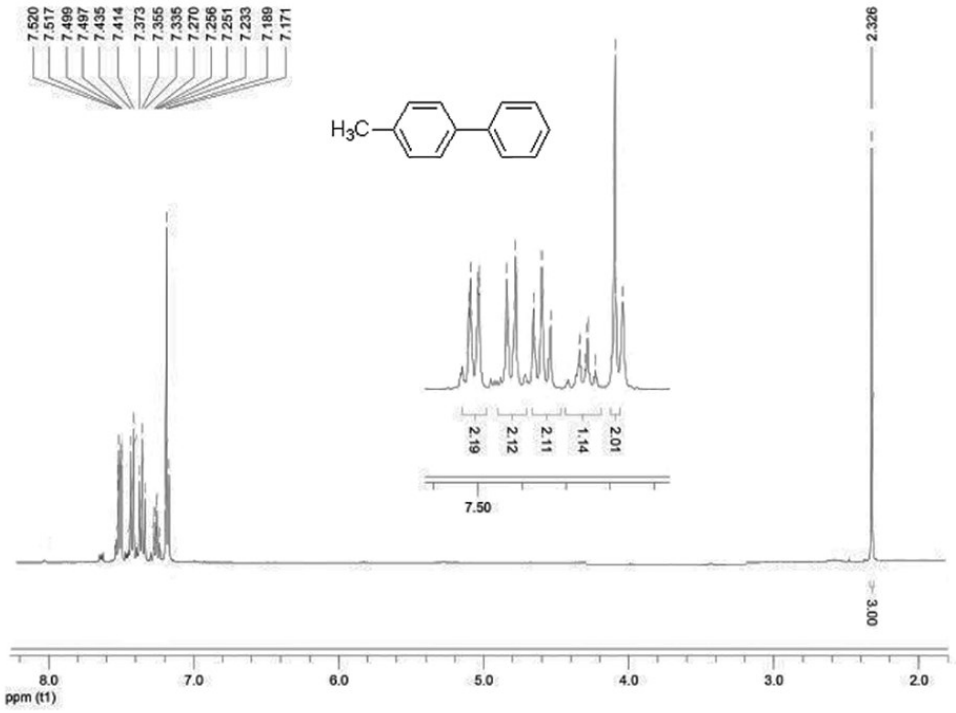
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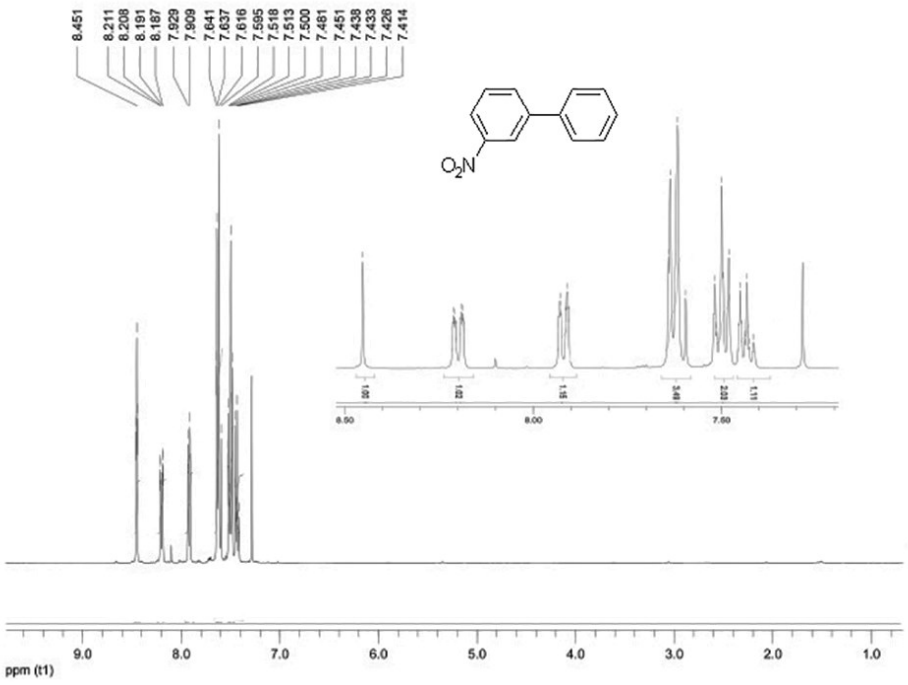
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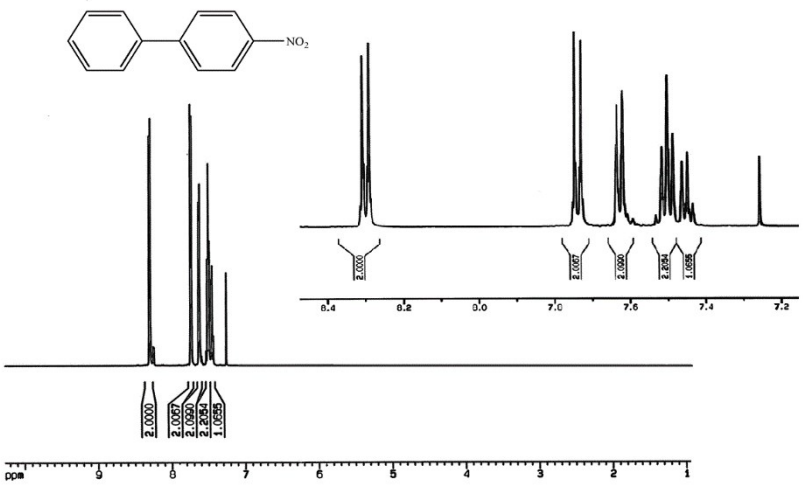
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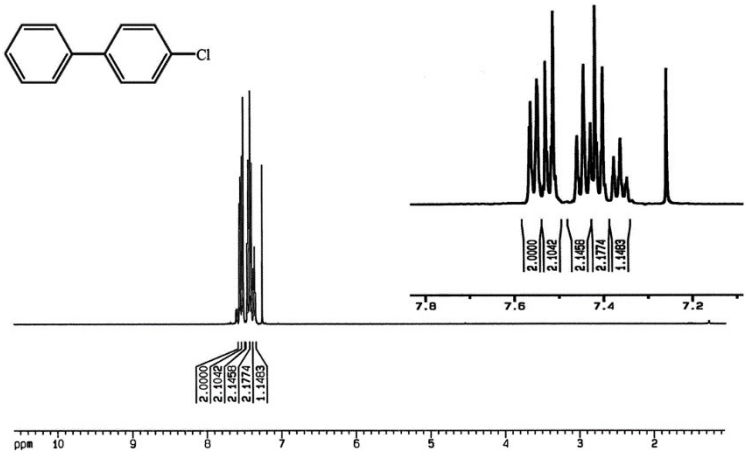
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