Electronic Supplementary Material (ESI) for RSC Advances.


# Uniformly Anchored Zirconocene Complex on Magnetic Reduced Graphene Oxide, ($rGO@Fe_3O_4/ZrCp_2Cl_{x\ (x = 0, 1, 2)}$) as a Novel and Reusable Nanocatalyst for Synthesis of *N*-Arylacetamides and Reductive-Acetylation of Nitroarenes

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**Figure S2.** SEM image of rGO

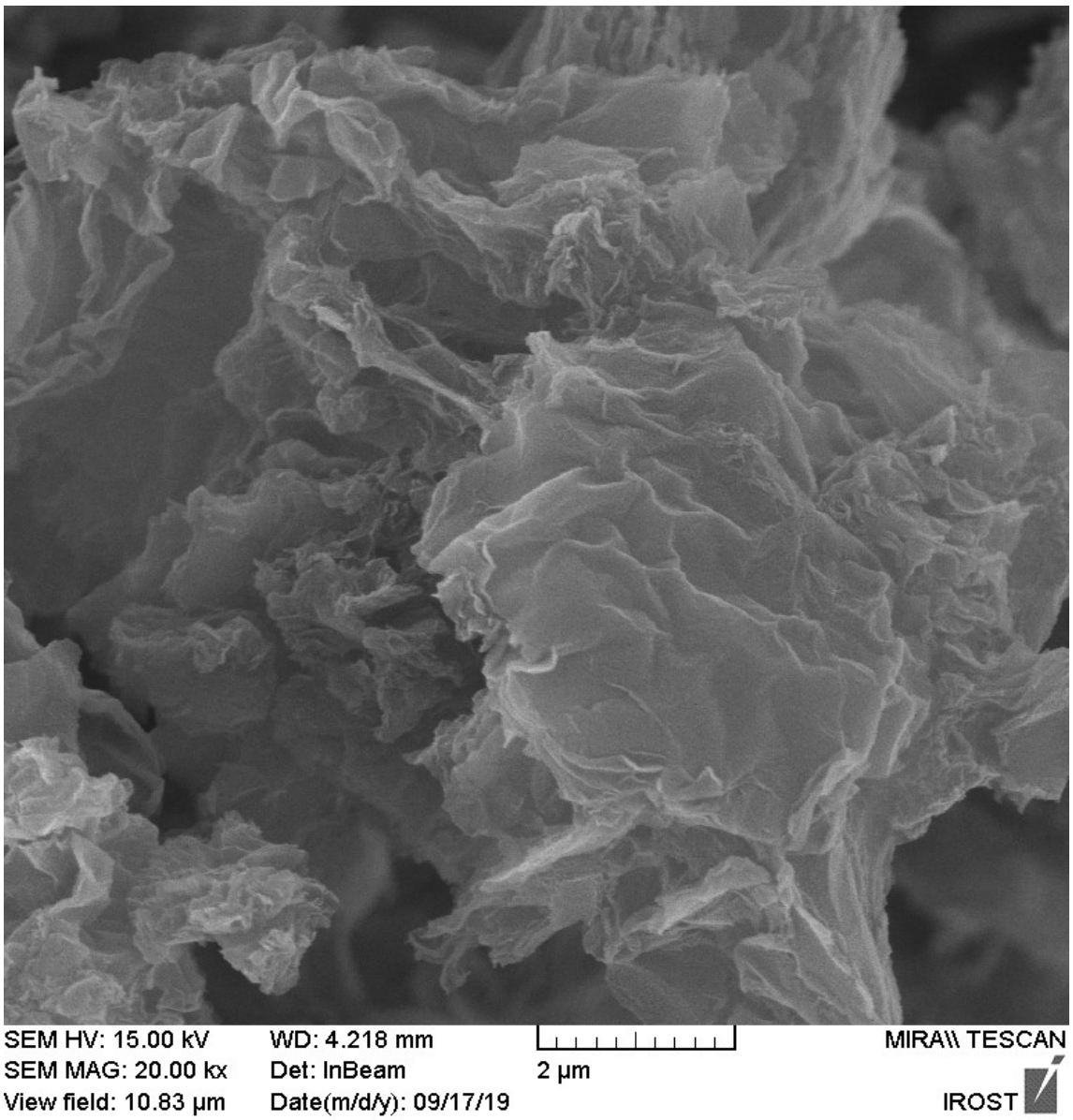


**Figure S3.** SEM image of rGO

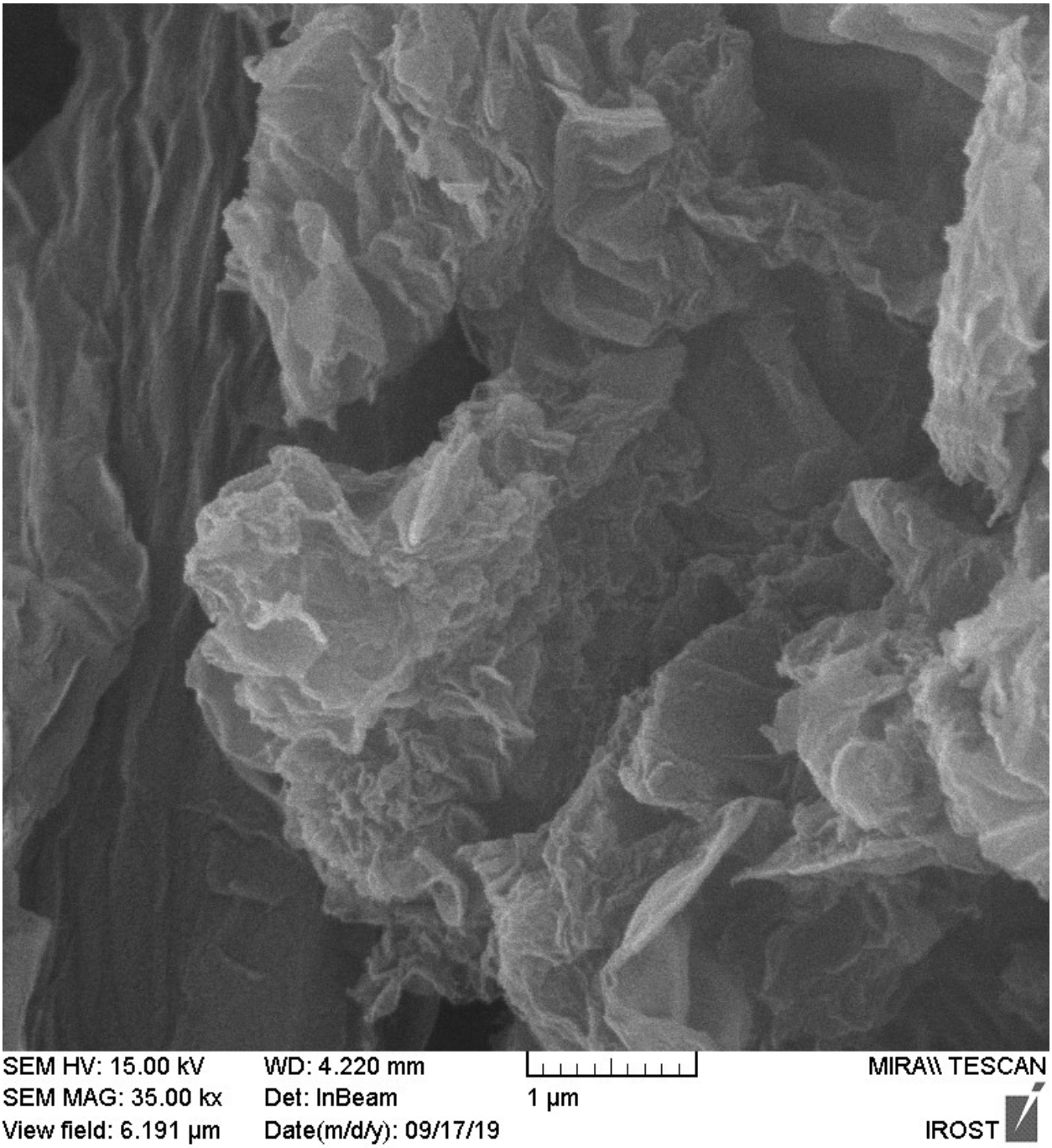


**Figure S4.** SEM image of rGO@$Fe_3O_4$

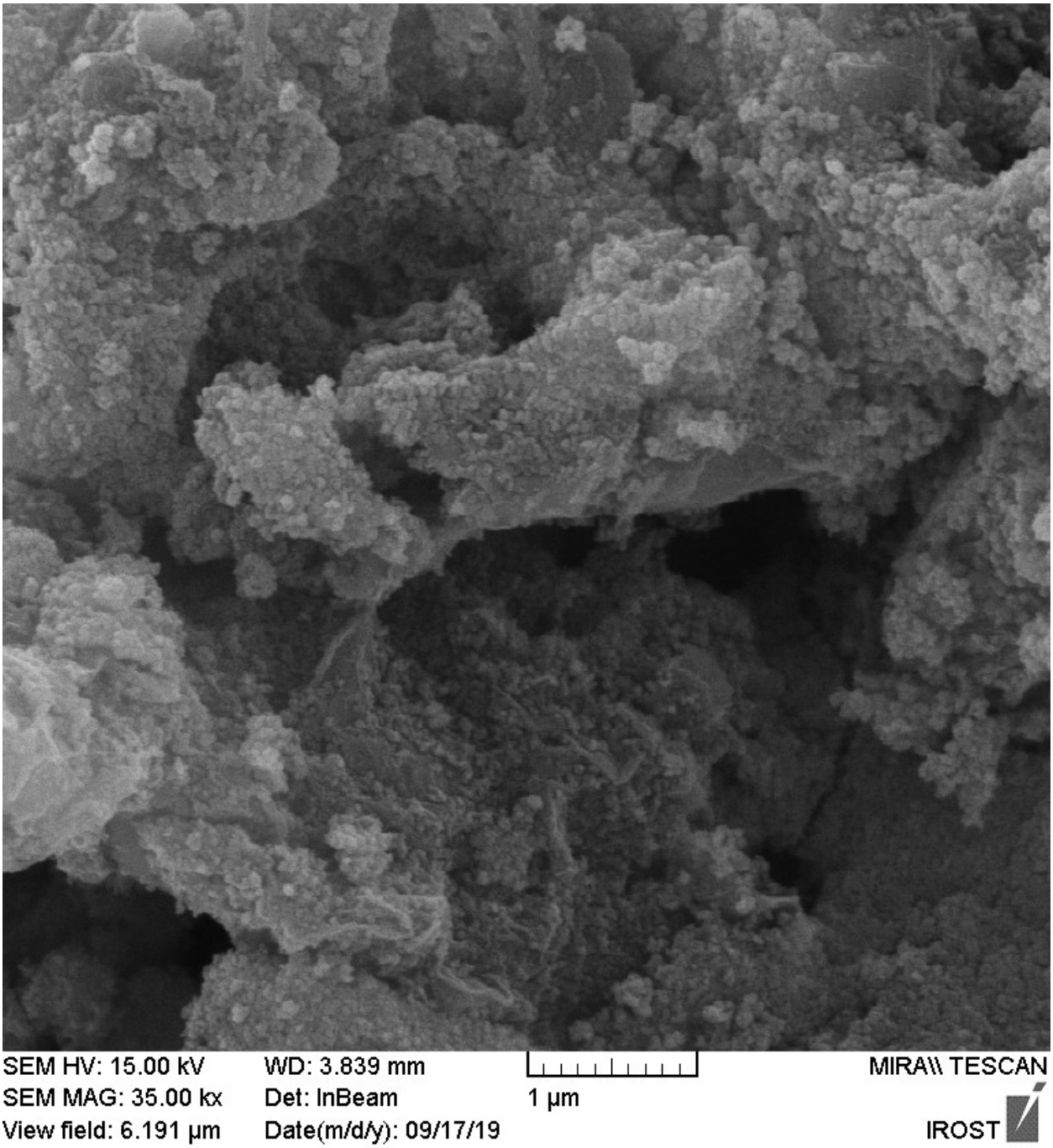


**Figure S5.** SEM image of rGO@$Fe_3O_4$/$ZrCp_2Cl_x$ (x= 0, 1, 2)

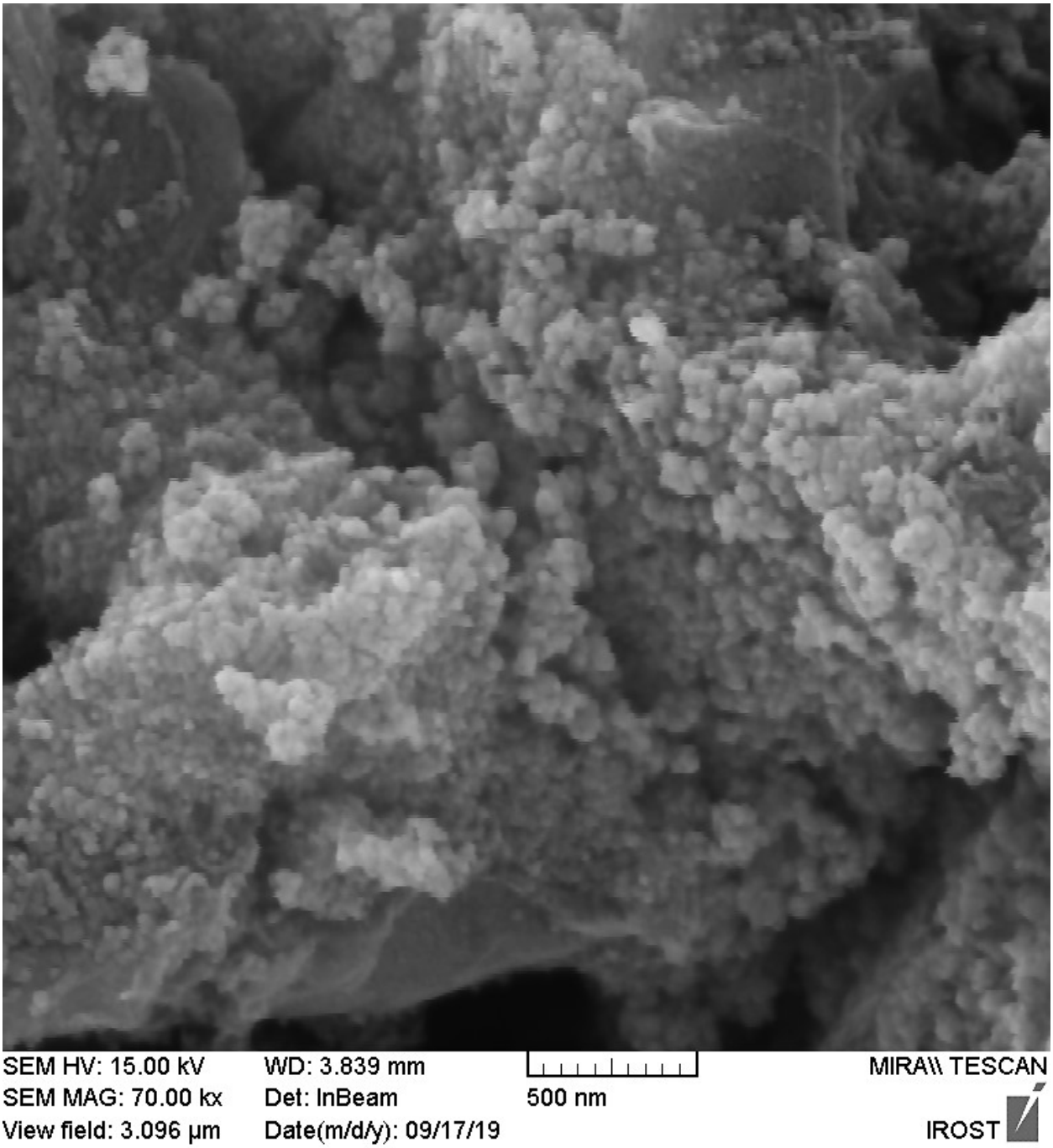


**Figure S6.** SEM image of the recycled rGO@$Fe_3O_4$/$ZrCp_2Cl_x$ (x= 0, 1, 2)

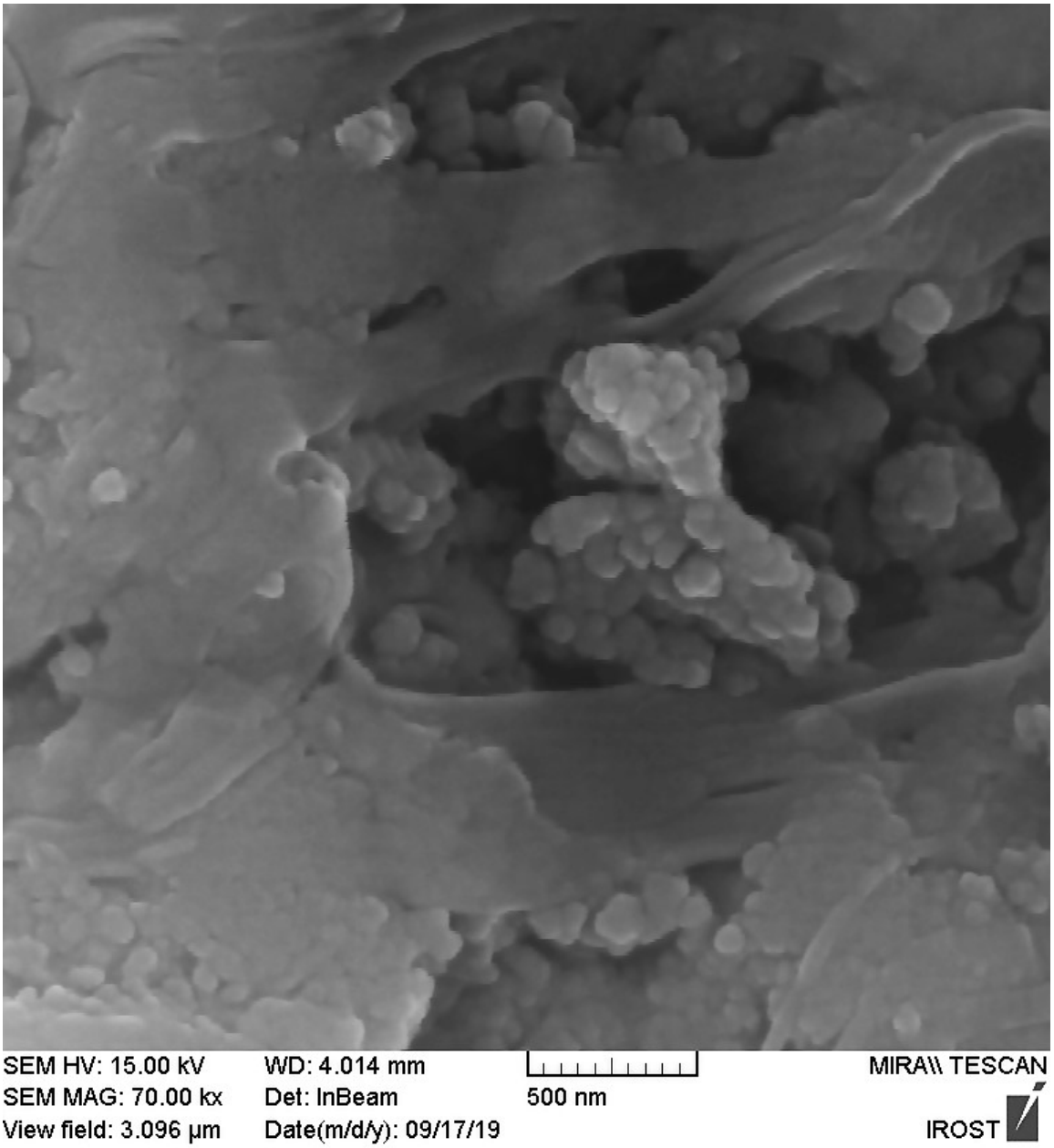
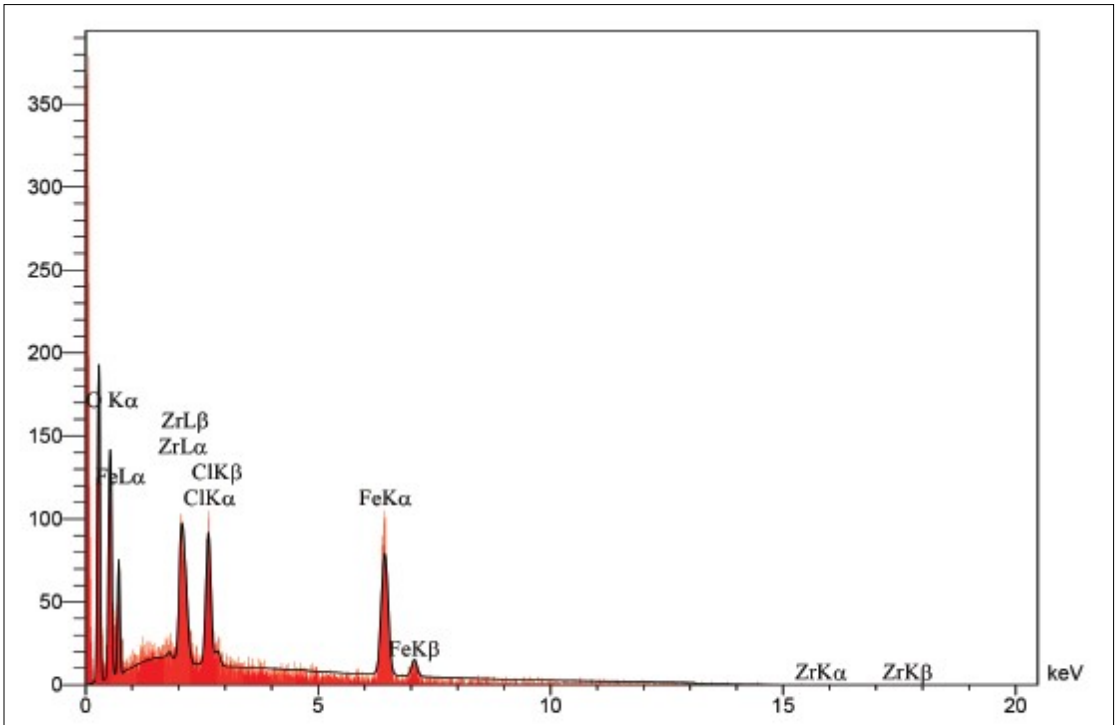


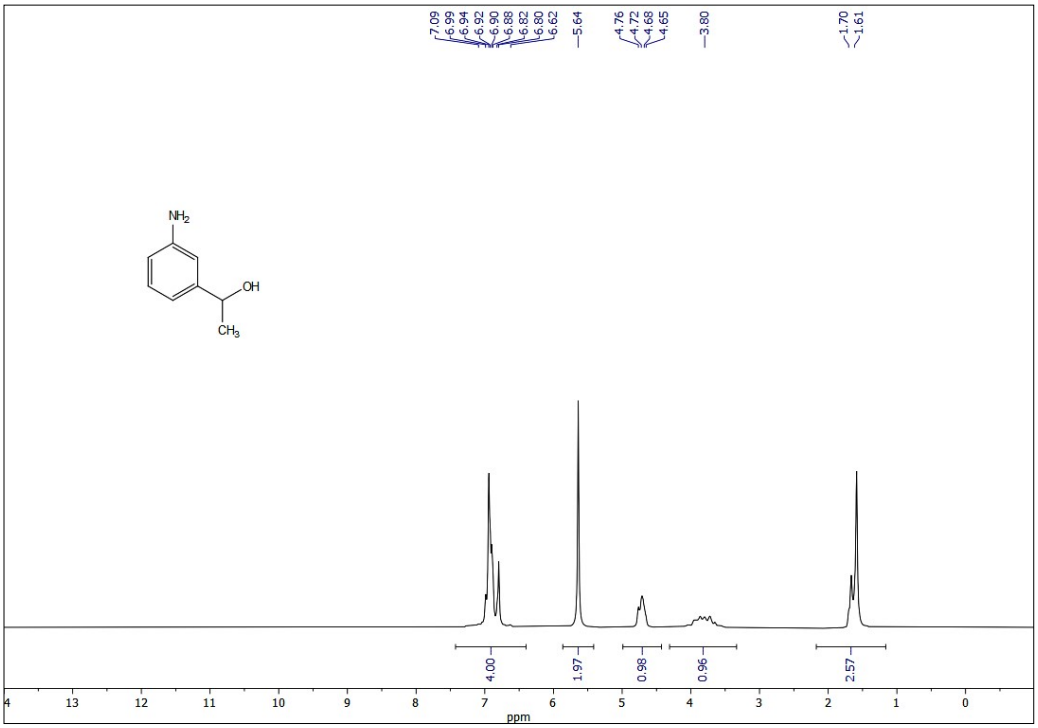
**Figure S7.** EDX analysis of rGO@$Fe_3O_4$/$ZrCp_2Cl_x$ (x= 0, 1, 2)




**Quantitative Results**

| Elt | Line | Int | Error | K | Kr | W% | A% | ZAF | Formula | Ox% | Cat# |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C | Ka | 82.7 | 10.7015 | 0.3649 | 0.1595 | 47.10 | 64.86 | 0.3387 | | 0.00 | 0.00 |
| O | Ka | 66.7 | 10.7015 | 0.1465 | 0.0640 | 26.18 | 27.07 | 0.2446 | | 0.00 | 0.00 |
| Cl | Ka | 67.4 | 1.1645 | 0.0771 | 0.0337 | 4.06 | 1.89 | 0.8310 | | 0.00 | 0.00 |
| Fe | Ka | 86.6 | 0.8748 | 0.3308 | 0.1446 | 18.00 | 5.33 | 0.8033 | | 0.00 | 0.00 |
| Zr | La | 52.8 | 1.1645 | 0.0808 | 0.0353 | 4.66 | 0.85 | 0.7577 | | 0.00 | 0.00 |
| | | | | 1.0000 | 0.4372 | 100.00 | 100.00 | | | 0.00 | 0.00 |

**Figure S8.** 1-(3-aminophenyl)ethanol (Table 2, Entry 9)



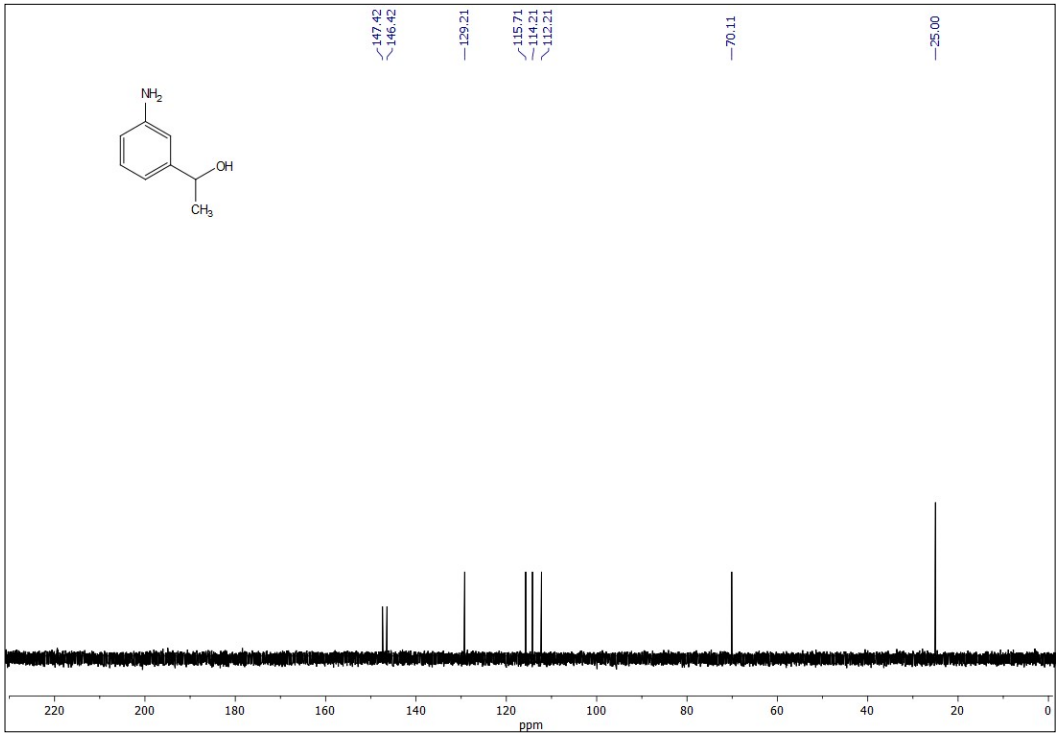
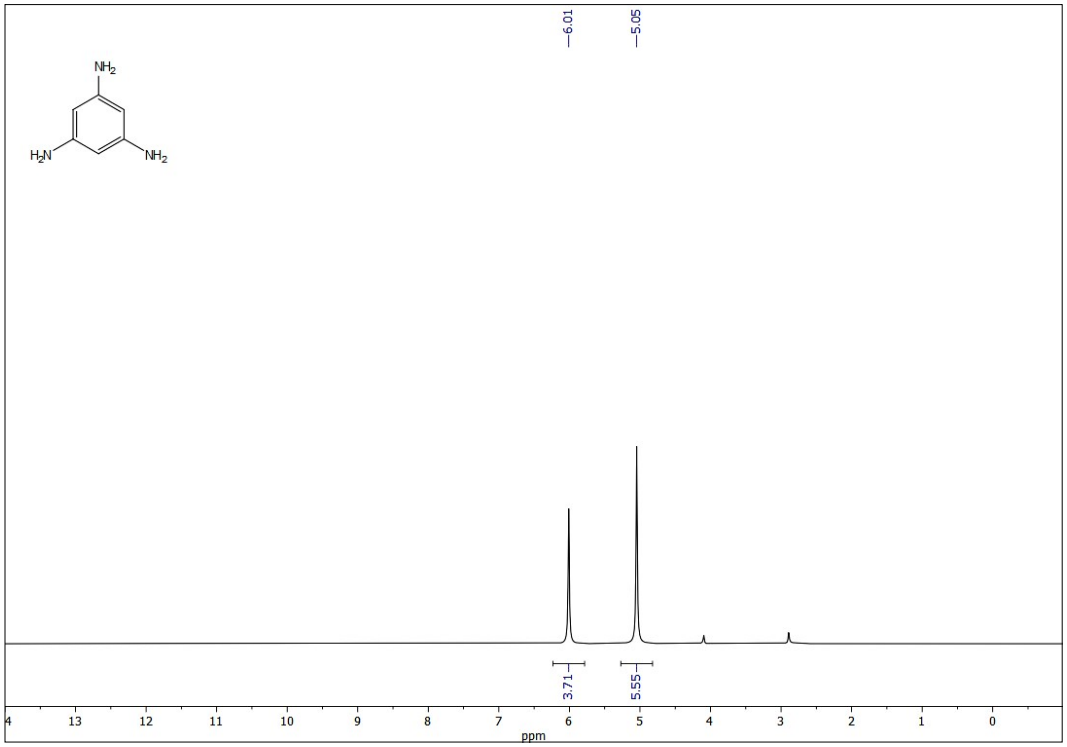



**Figure S9.** 1,3,5-triaminobenzene (Table 2, Entry 12)



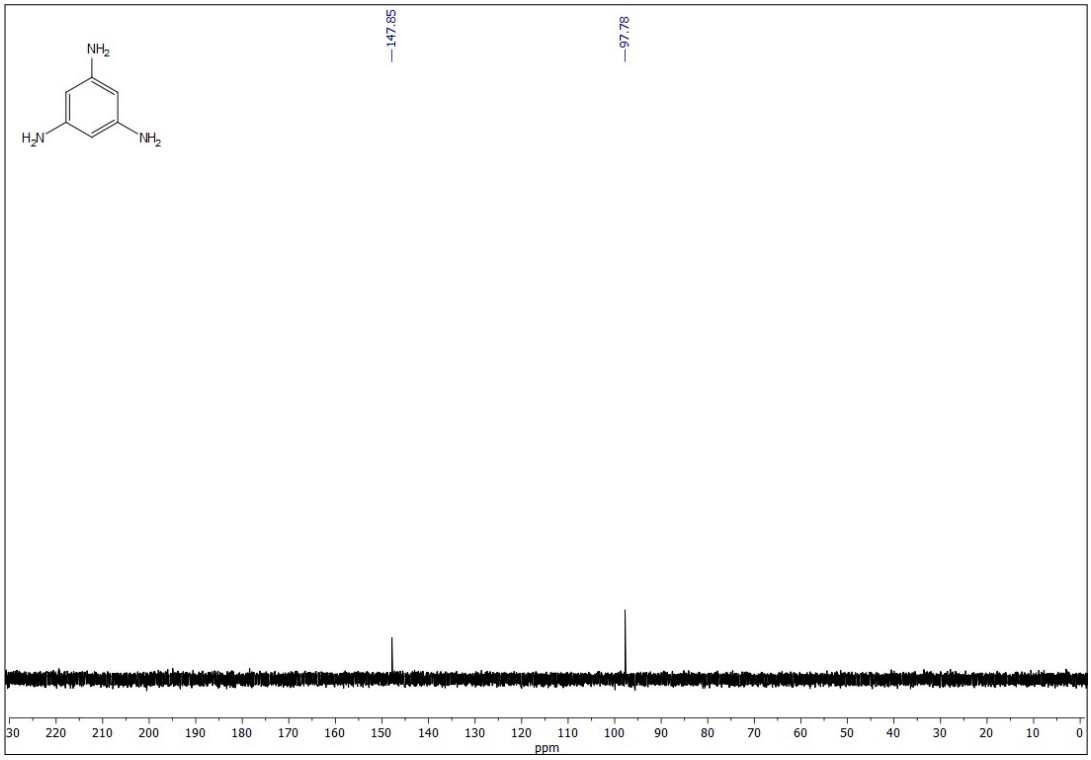
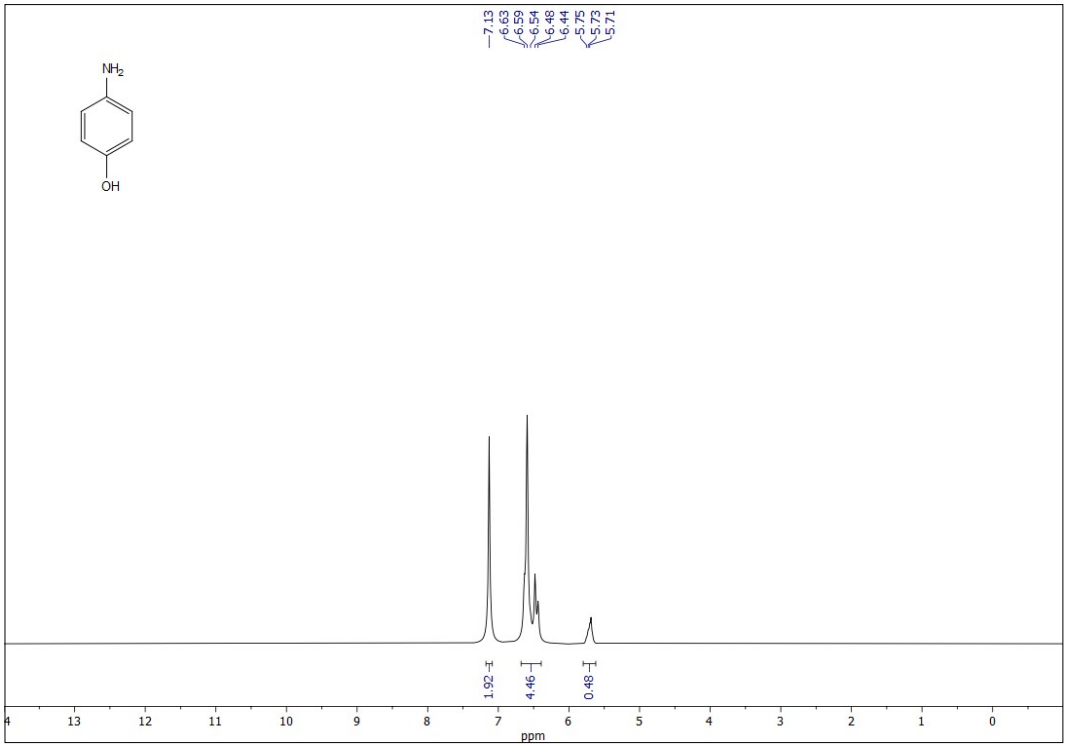



**Figure S10.** 4-Amino phenol (Table 3, Entry 2)



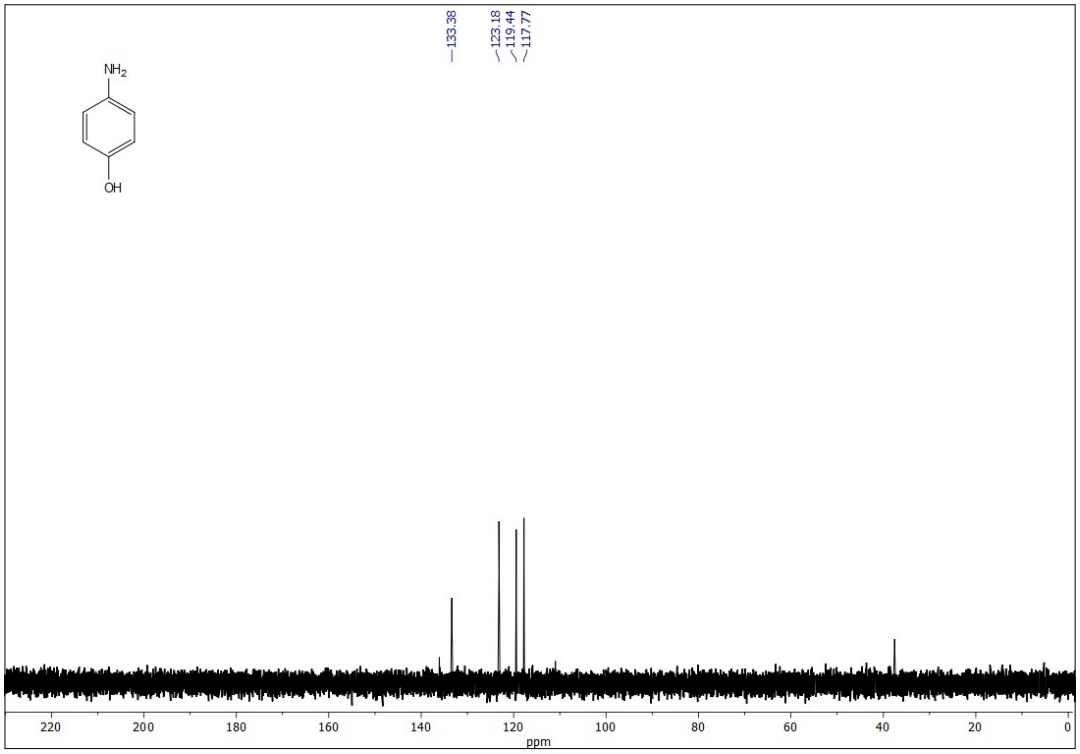
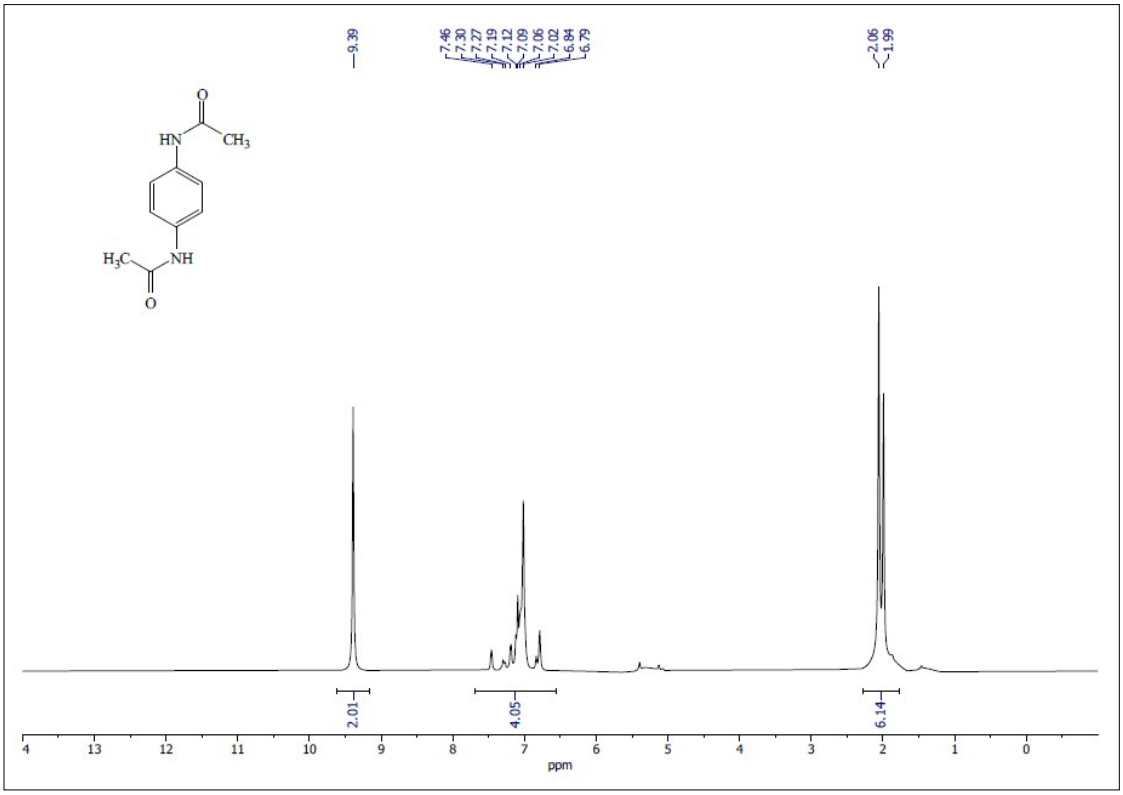



**Figure S11.** *N,N'*-(1,4-phenylene)diacetamide (Table 3, Entry 3)



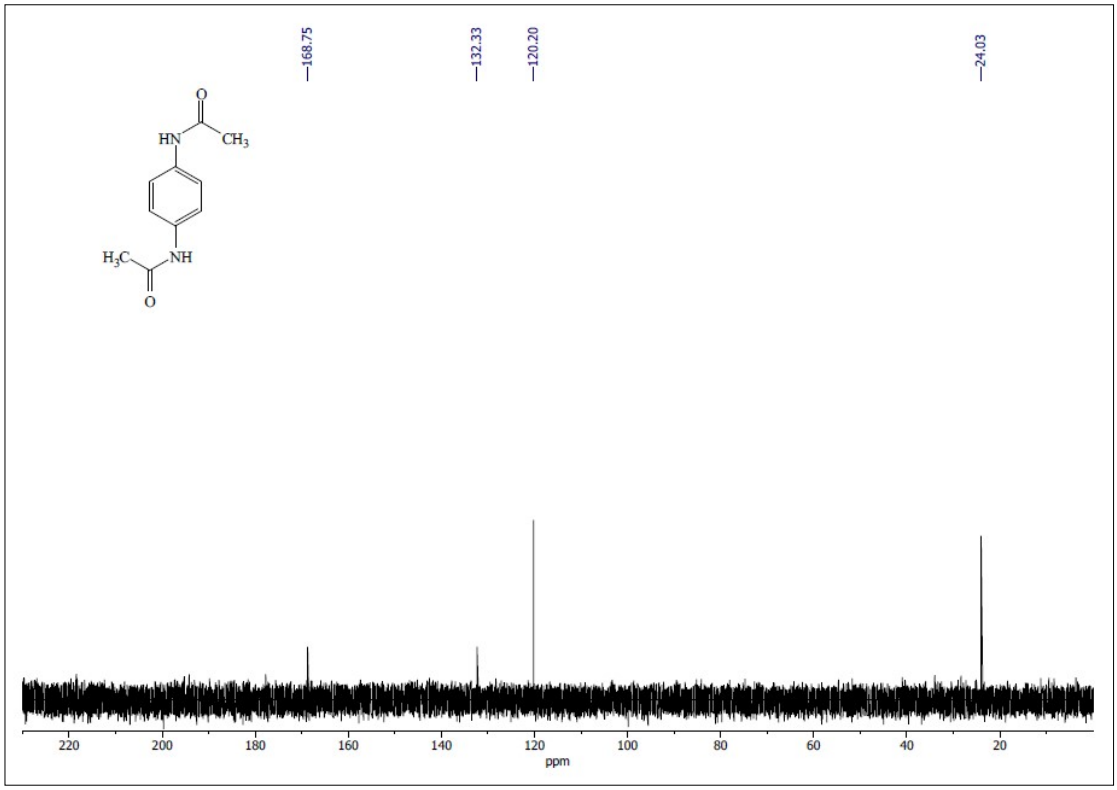
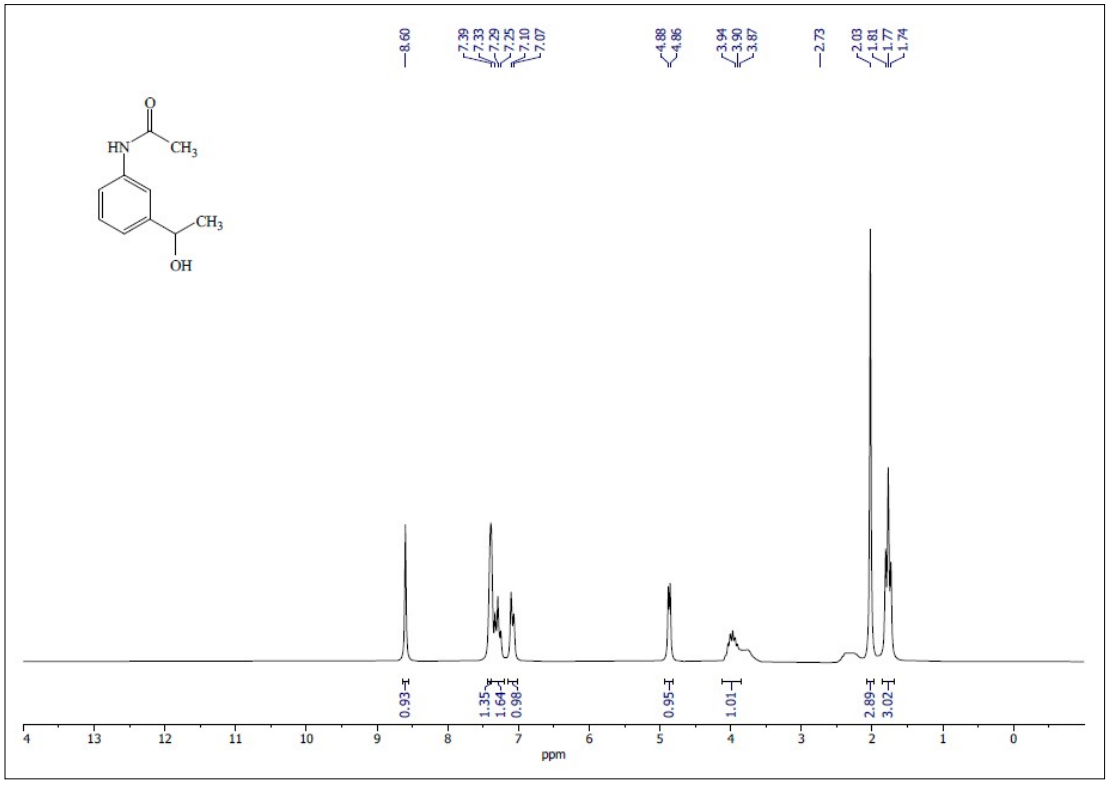



**Figure S12.** *N*-(3-(1-hydroxyethyl)phenyl)acetamide (Table 3, Entry 9)



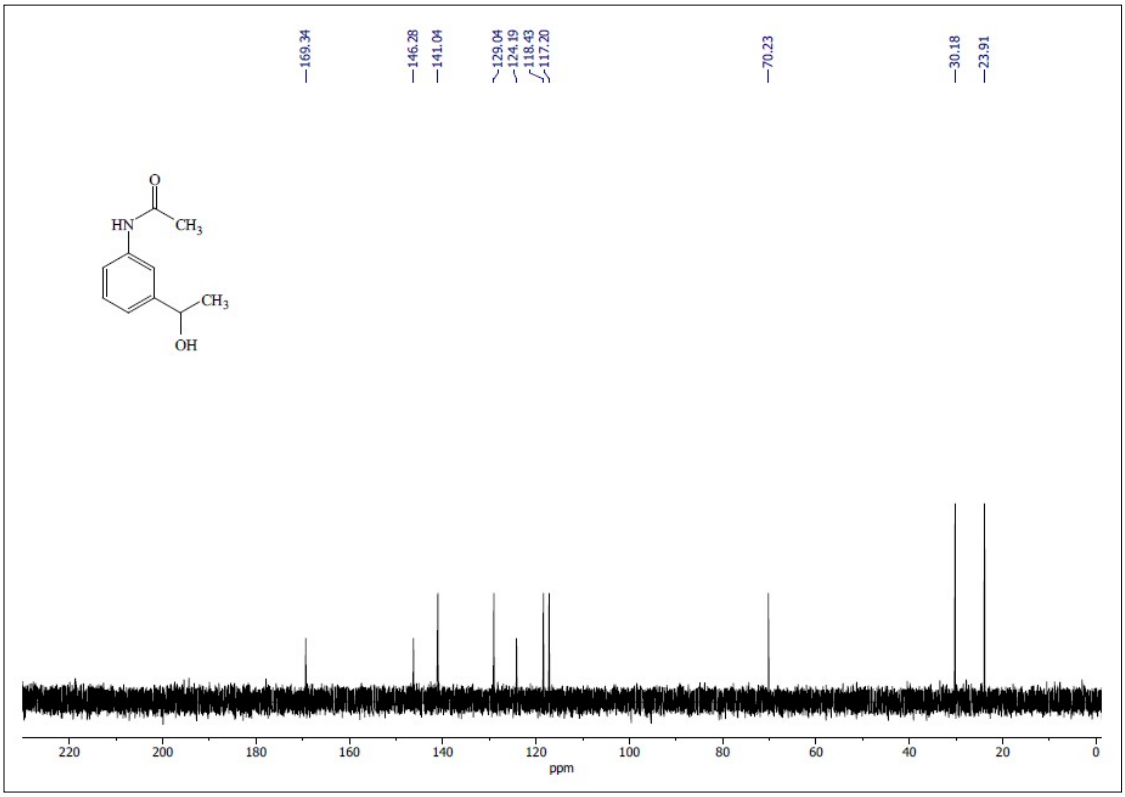
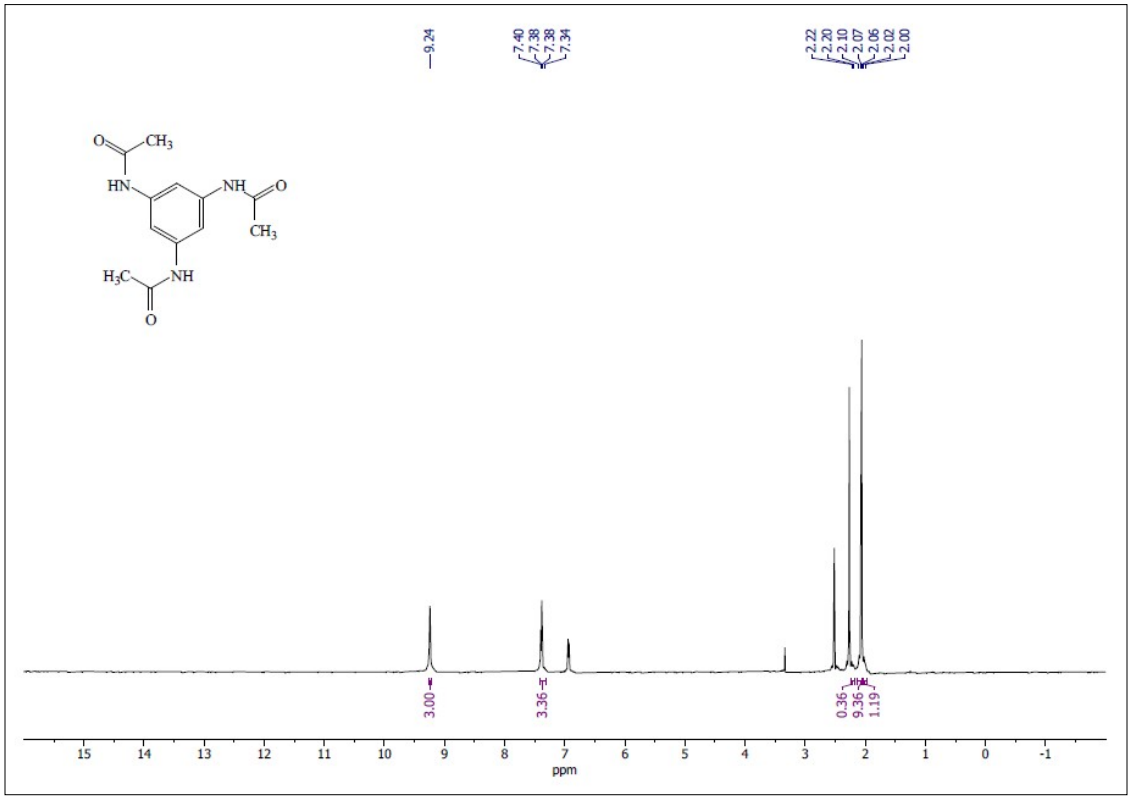



**Figure S13.** *N,N',N''*-(benzene-1,3,5-triyl)triacetamide (Table 3, Entry 12)



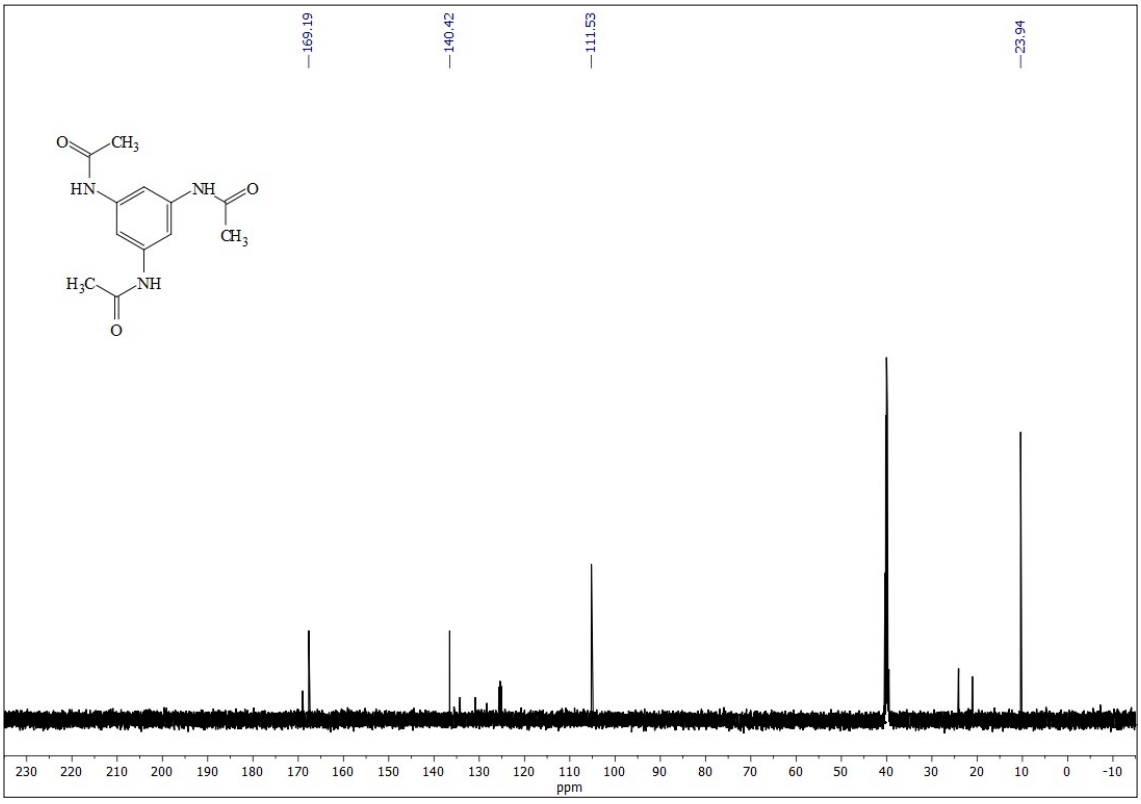
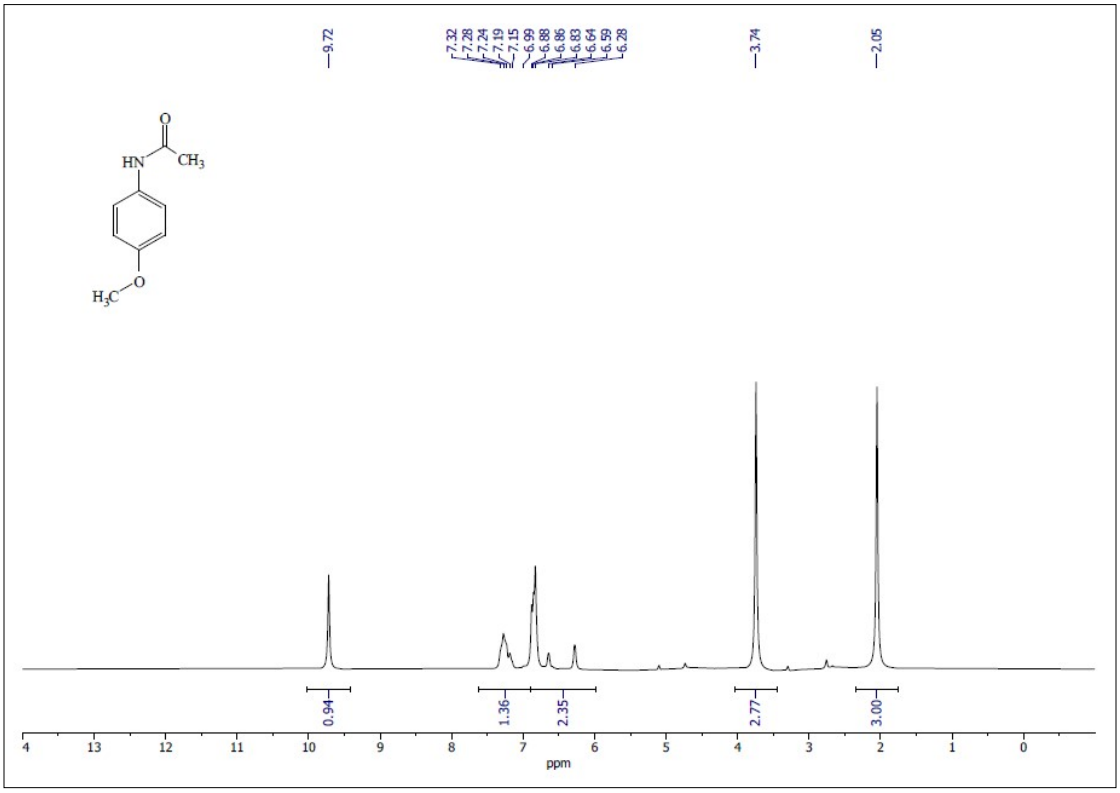



**Figure S14.** *N*-(4-methoxyphenyl)acetamide (Table 4, Entry 2)



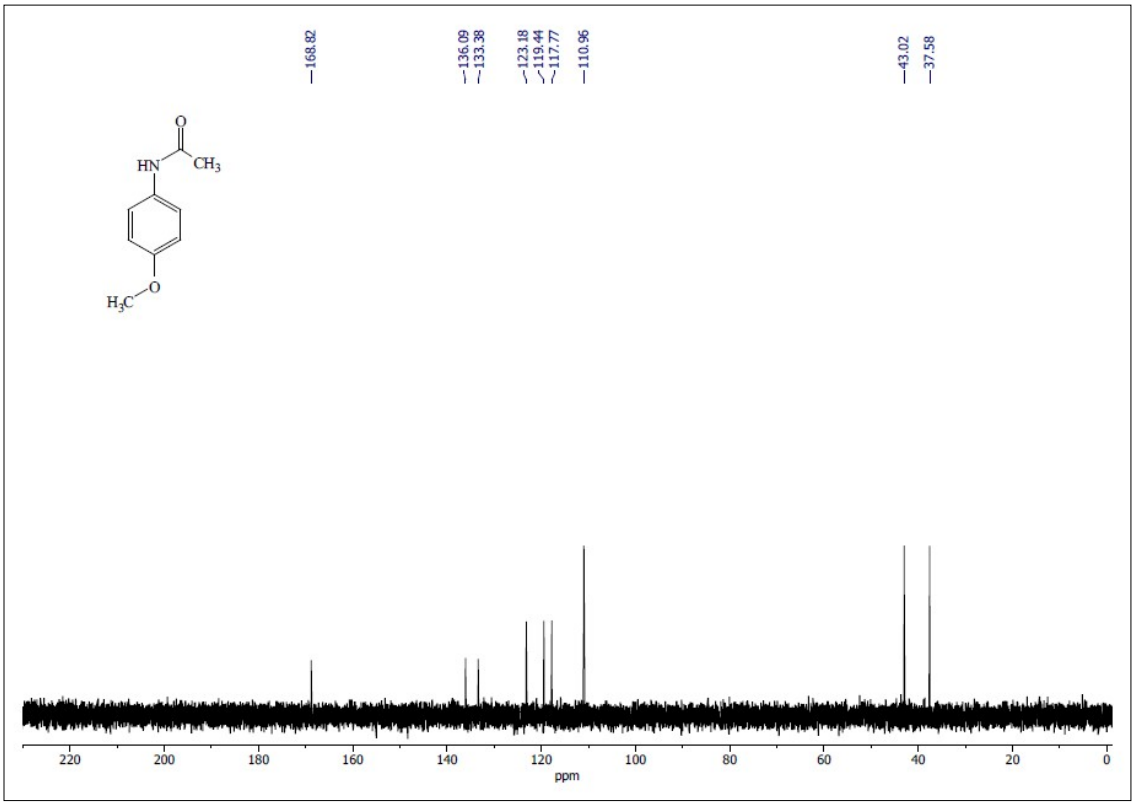
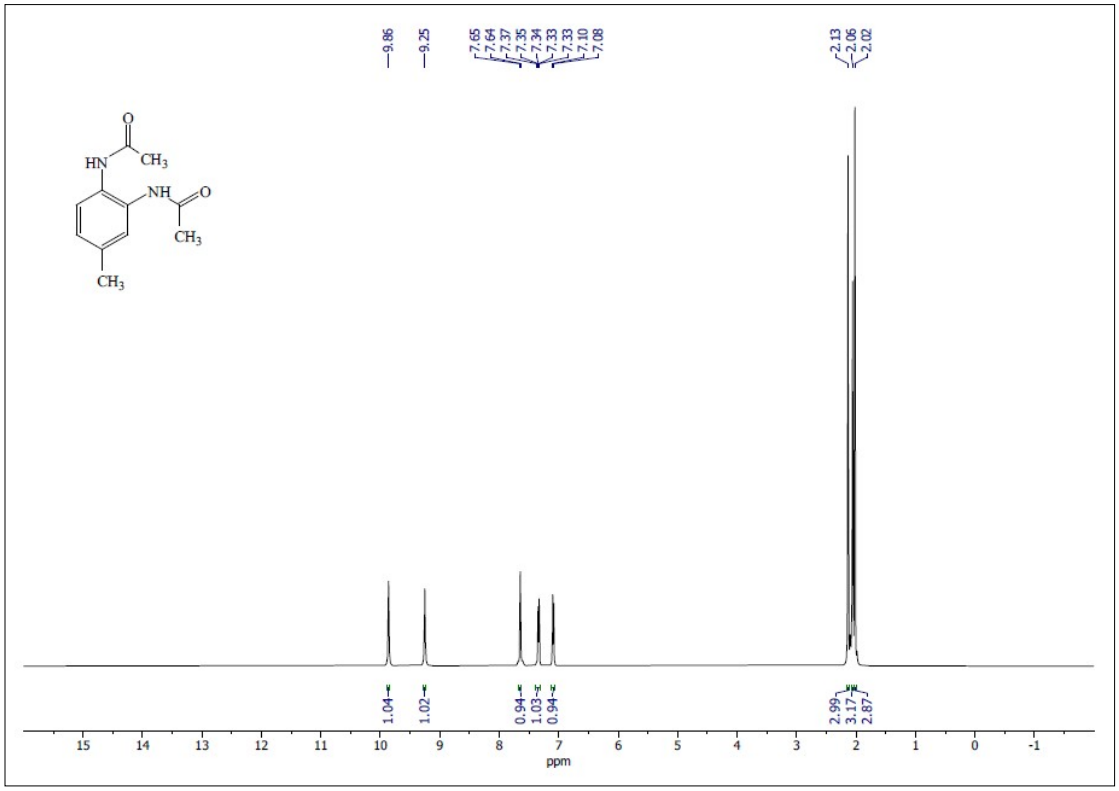



**Figure S15.** *N,N'*-(4-methyl-1,2-phenylene)diacetamide (Table 4, Entry 7)



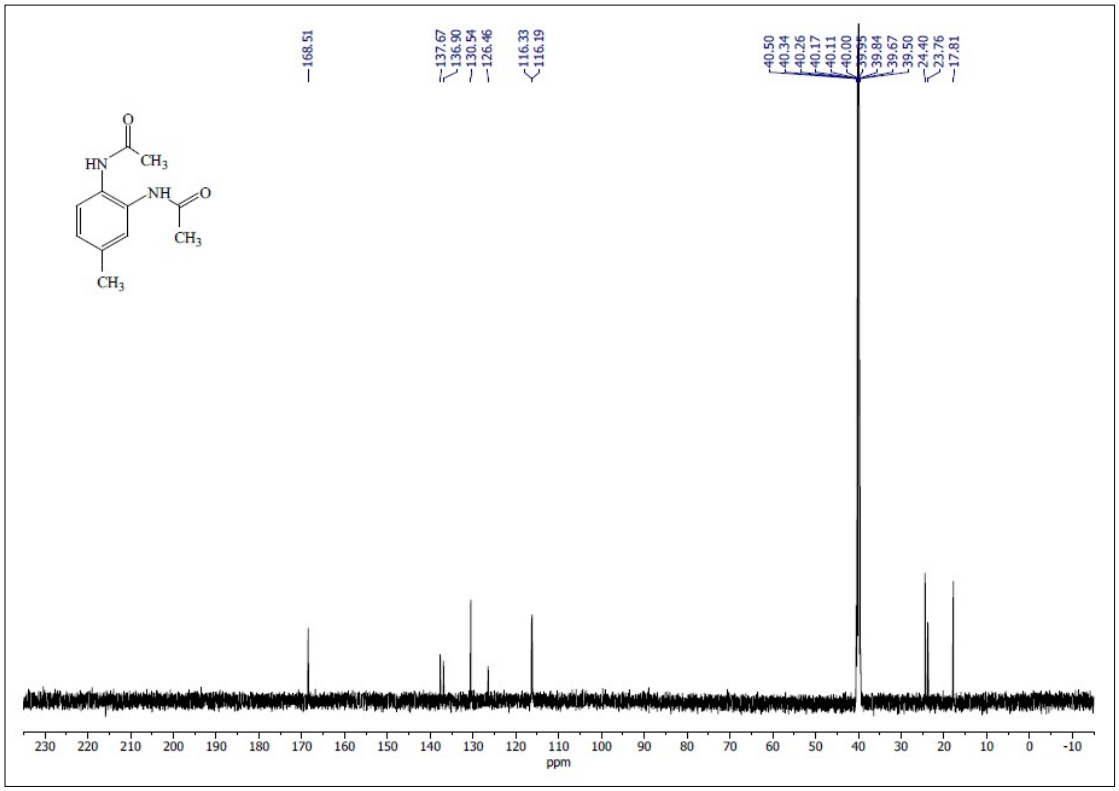



**Figure S16.** *N*-(3-acetylphenyl)acetamide (Table 4, Entry 10)