

## Supporting Information

### **Single-step synthesis of ternary metal chalcogenides (sf-CuInS<sub>2</sub> and sf-CuInSe<sub>2</sub>) stripped off the organic cover and their use as a catalyst for symmetric Glaser–Hay coupling reactions.**

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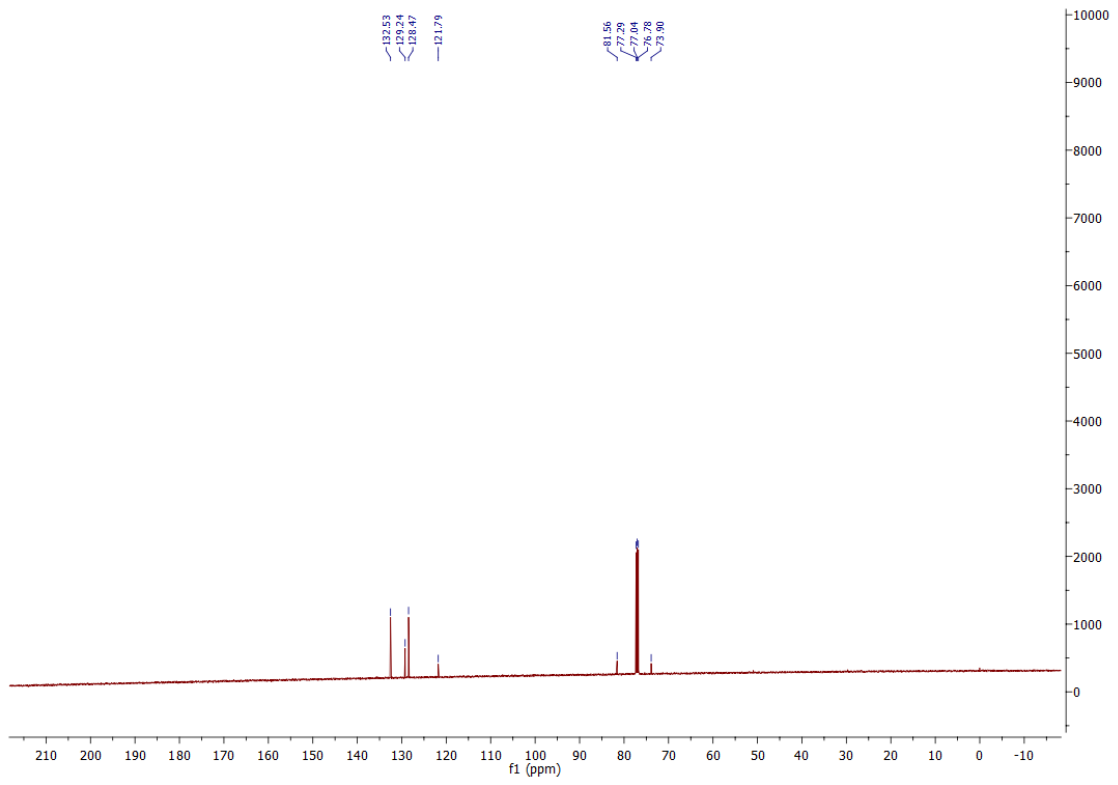
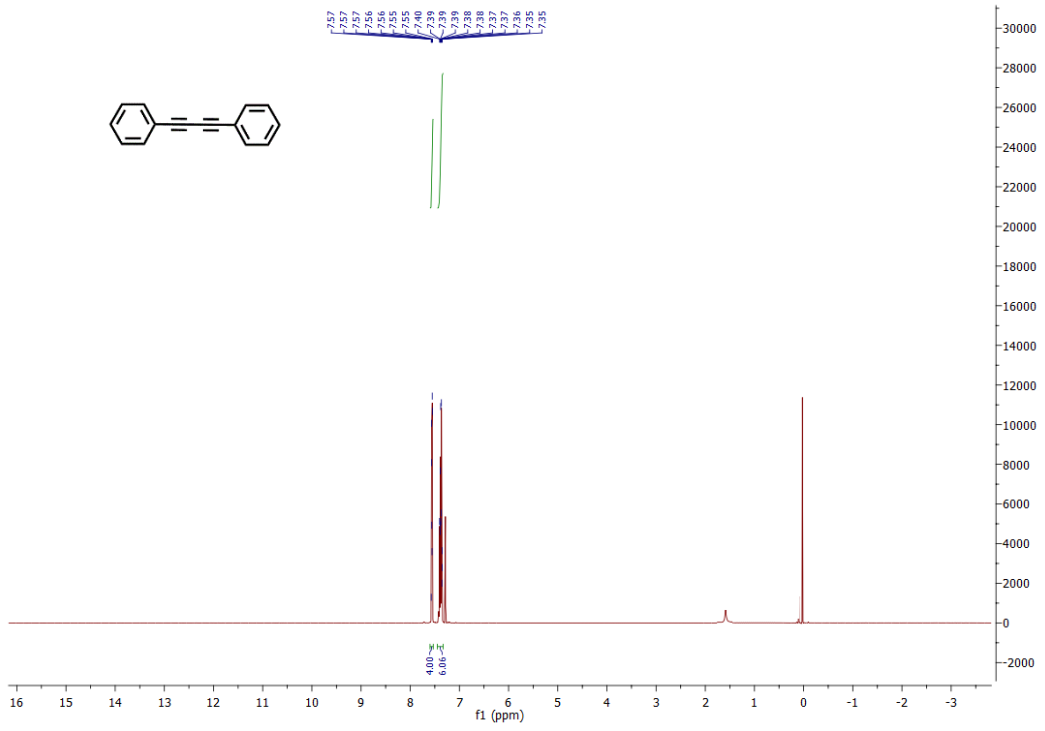


Figure S1: <sup>1</sup>H NMR and <sup>13</sup>C NMR data of the compound 1

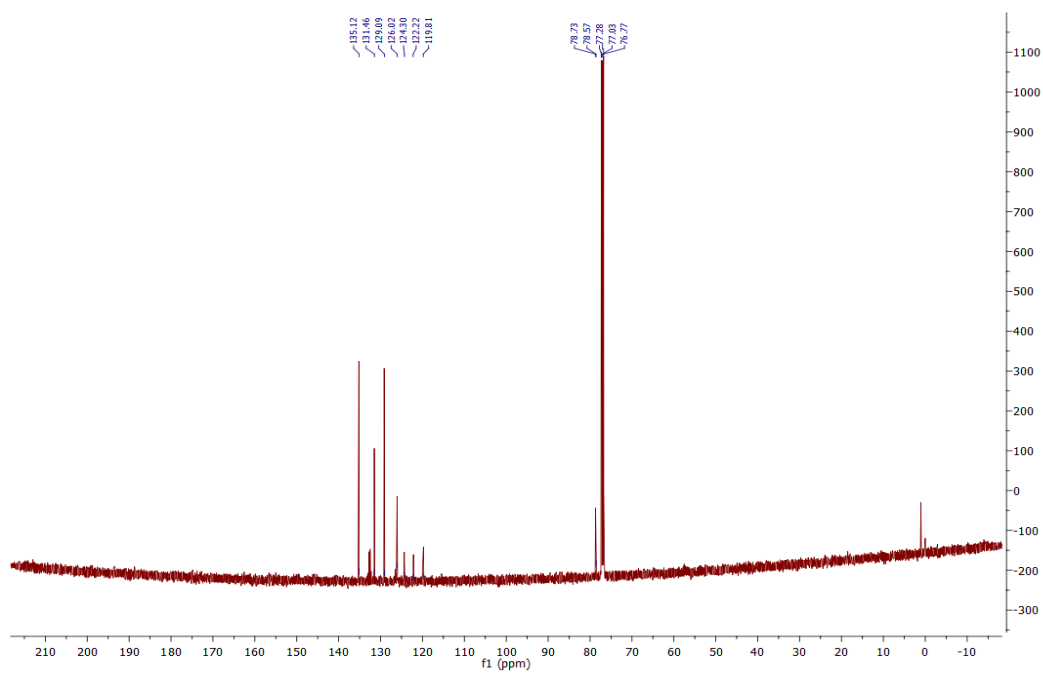
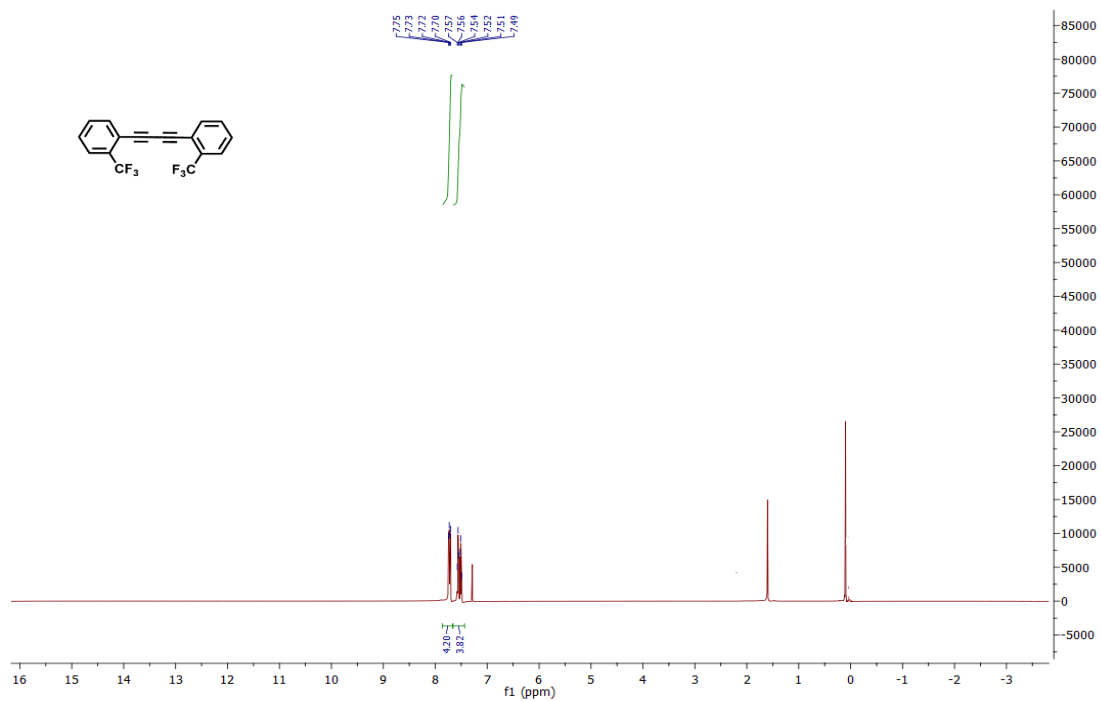


Figure S2:  $^1\text{H}$  NMR and  $^{13}\text{C}$  NMR data of the compound 2

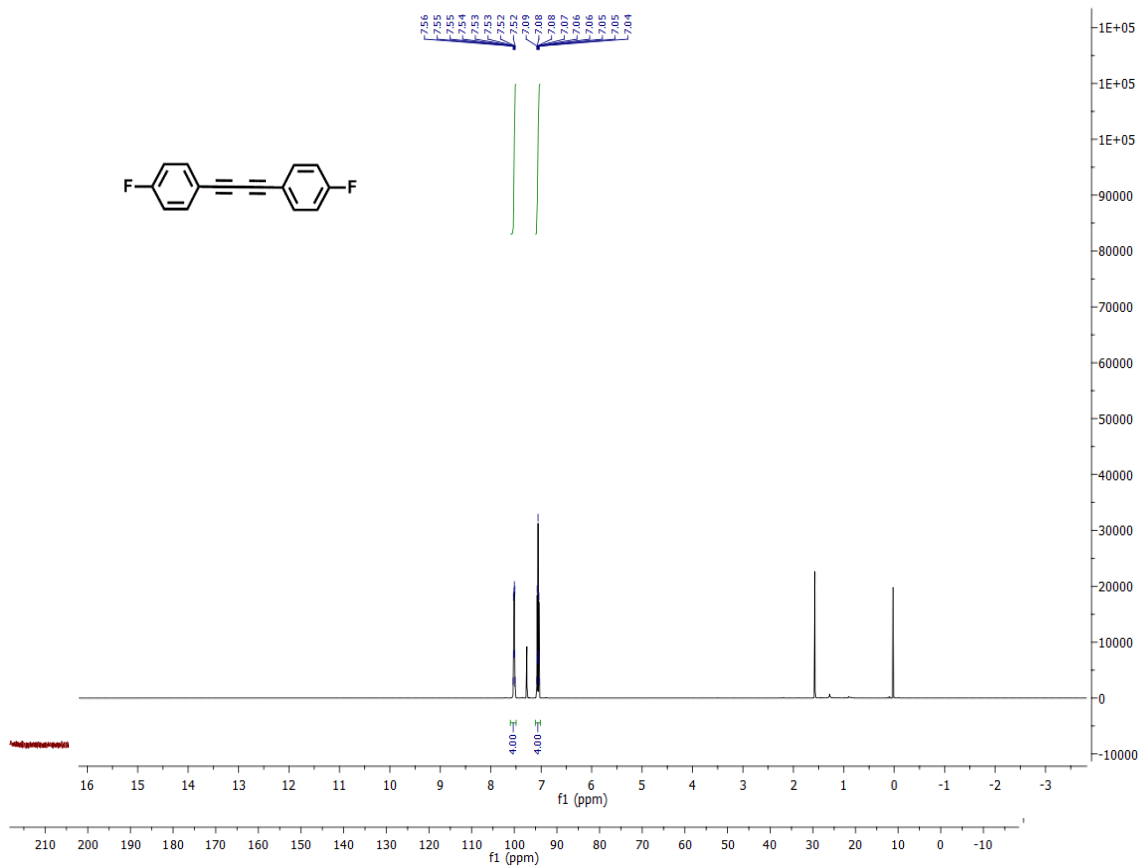
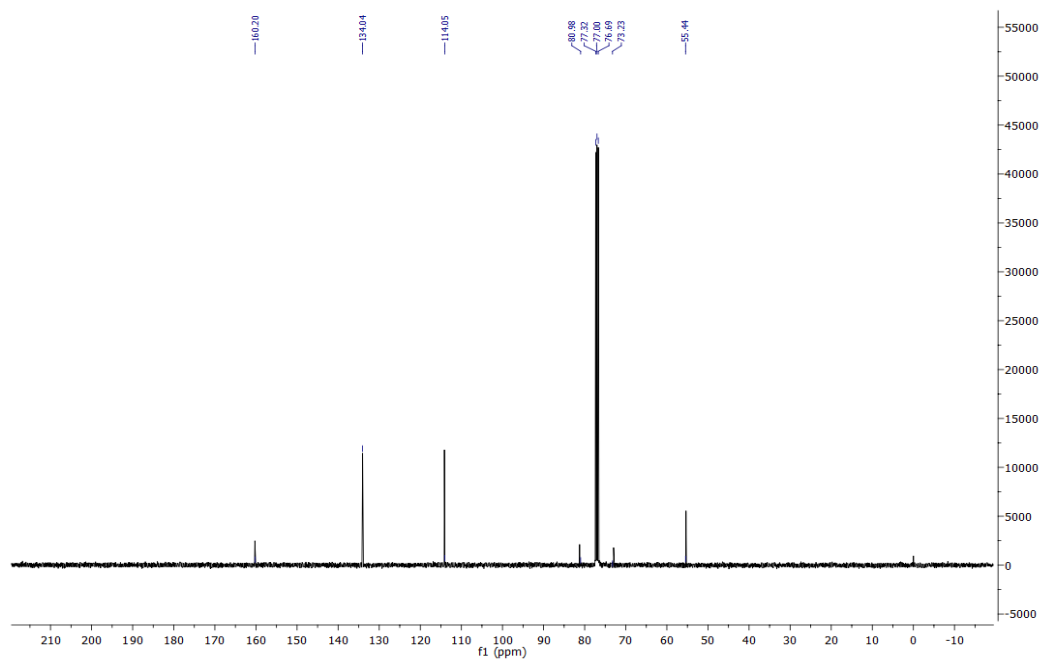
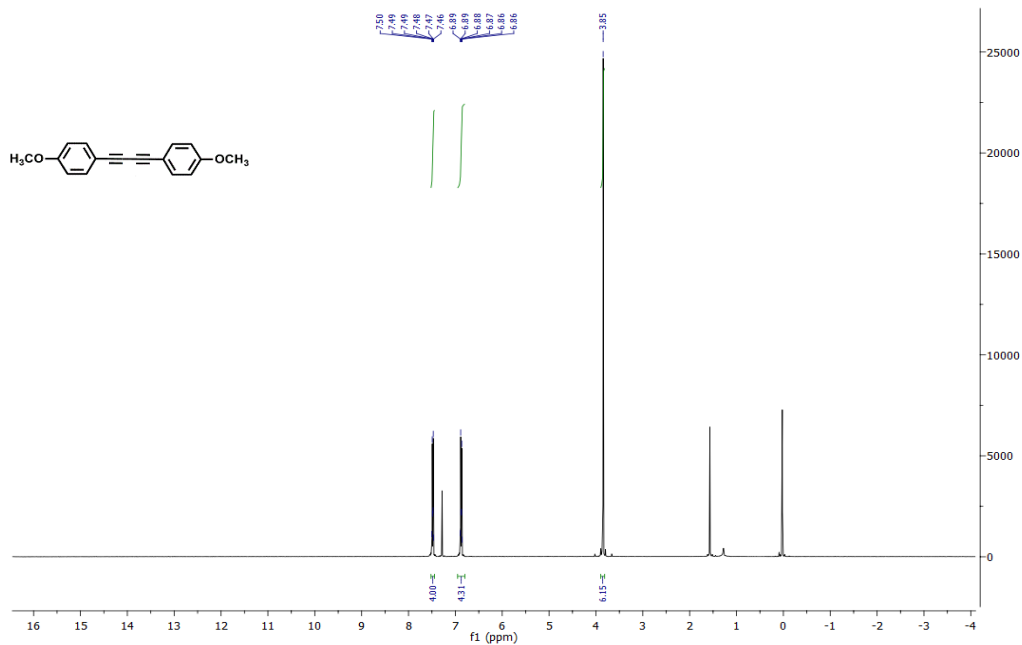
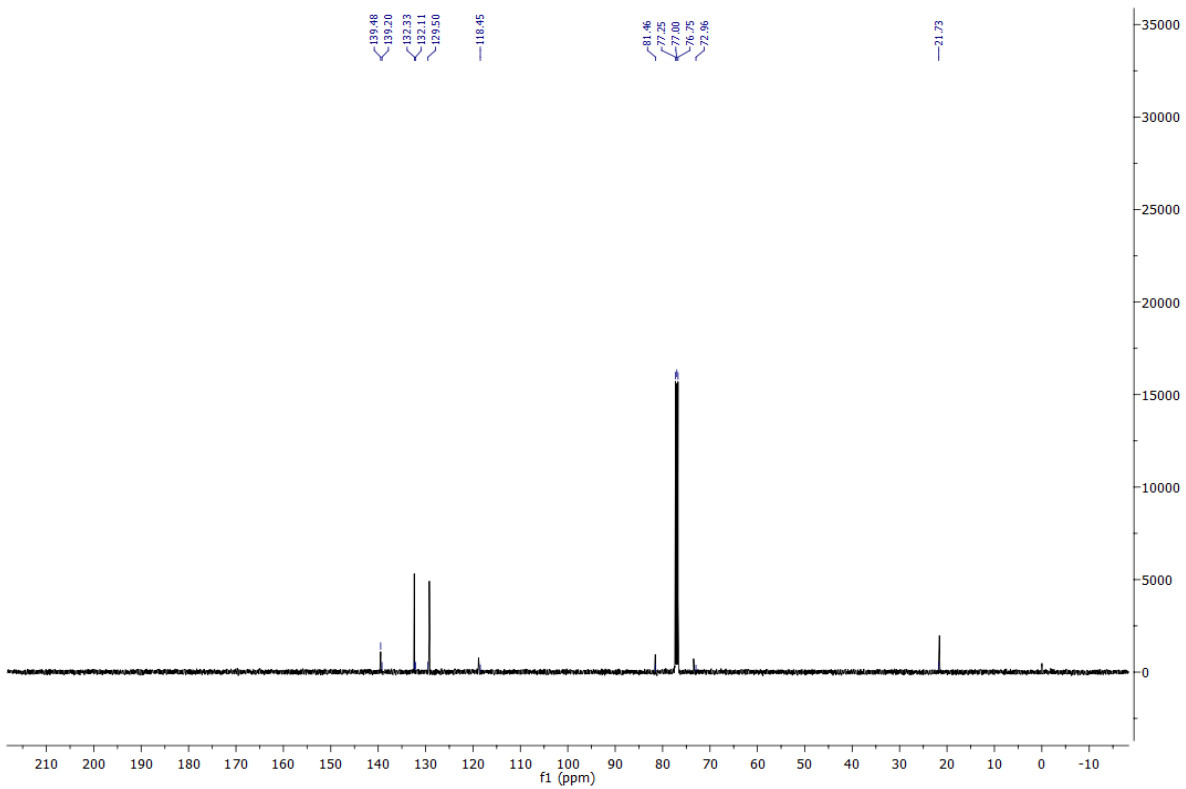
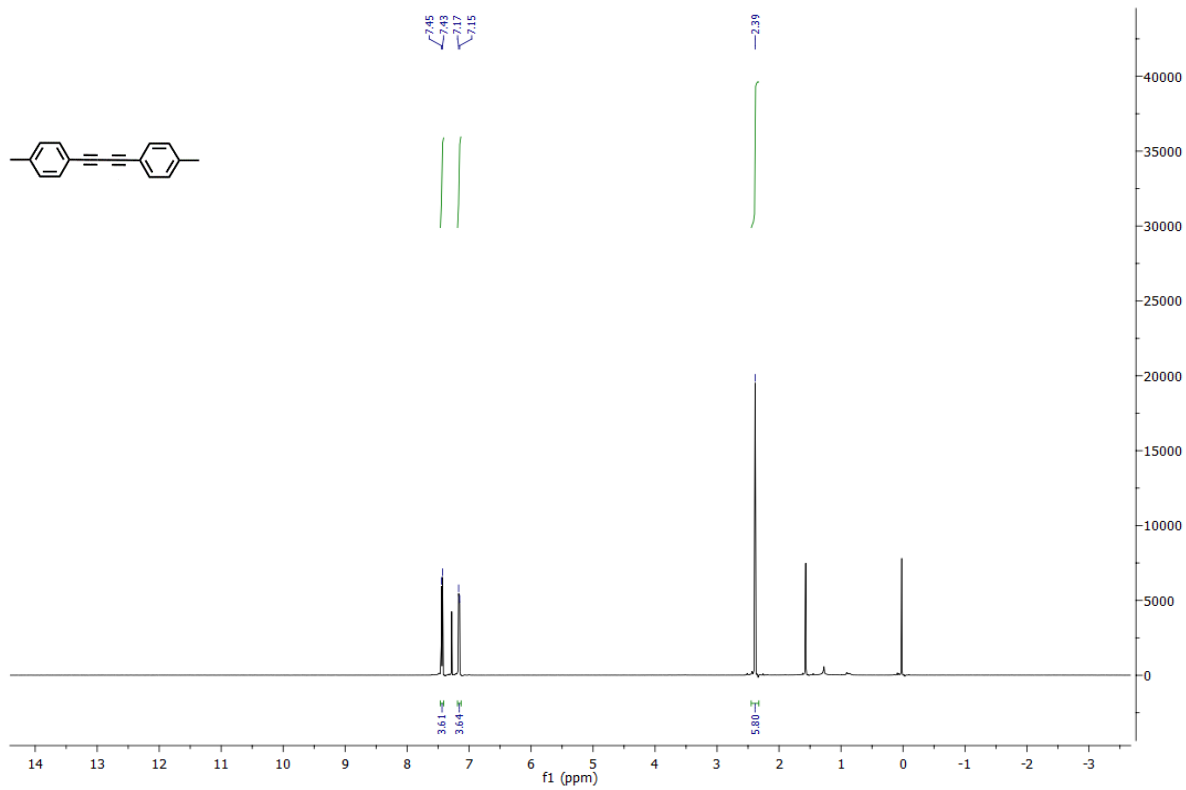


Figure S3: <sup>1</sup>H NMR and <sup>13</sup>C NMR data of the compound 3

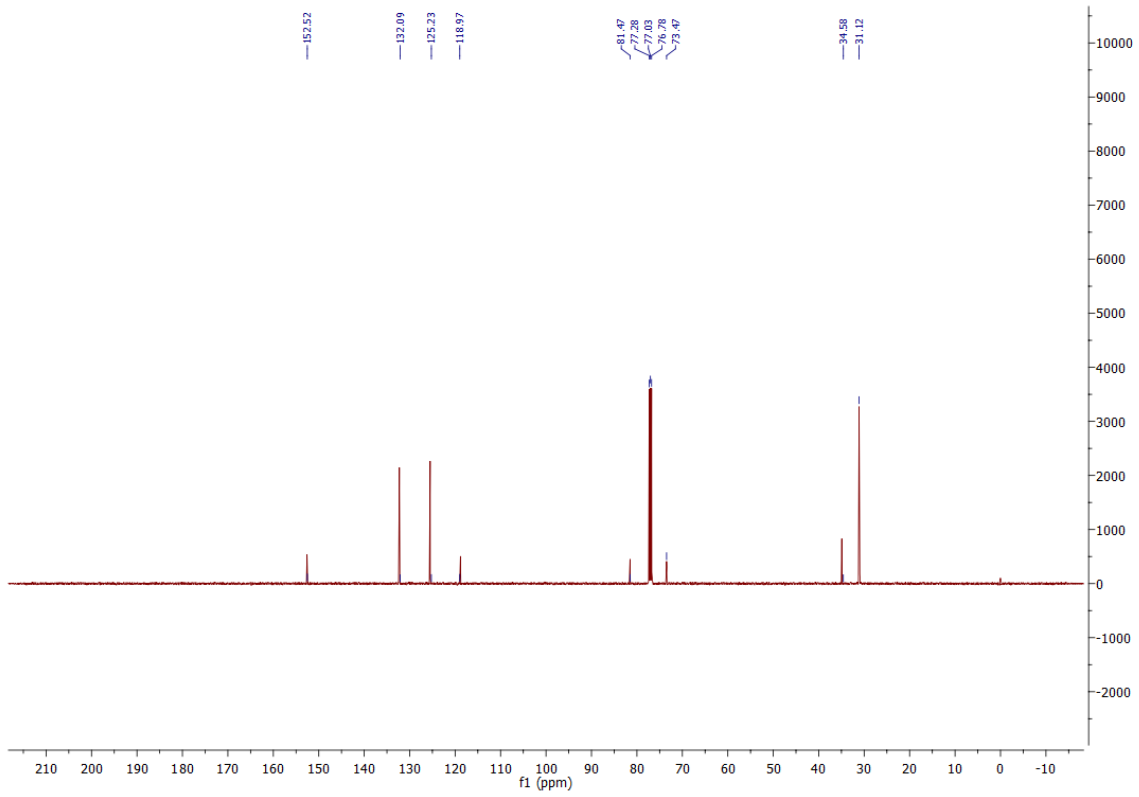
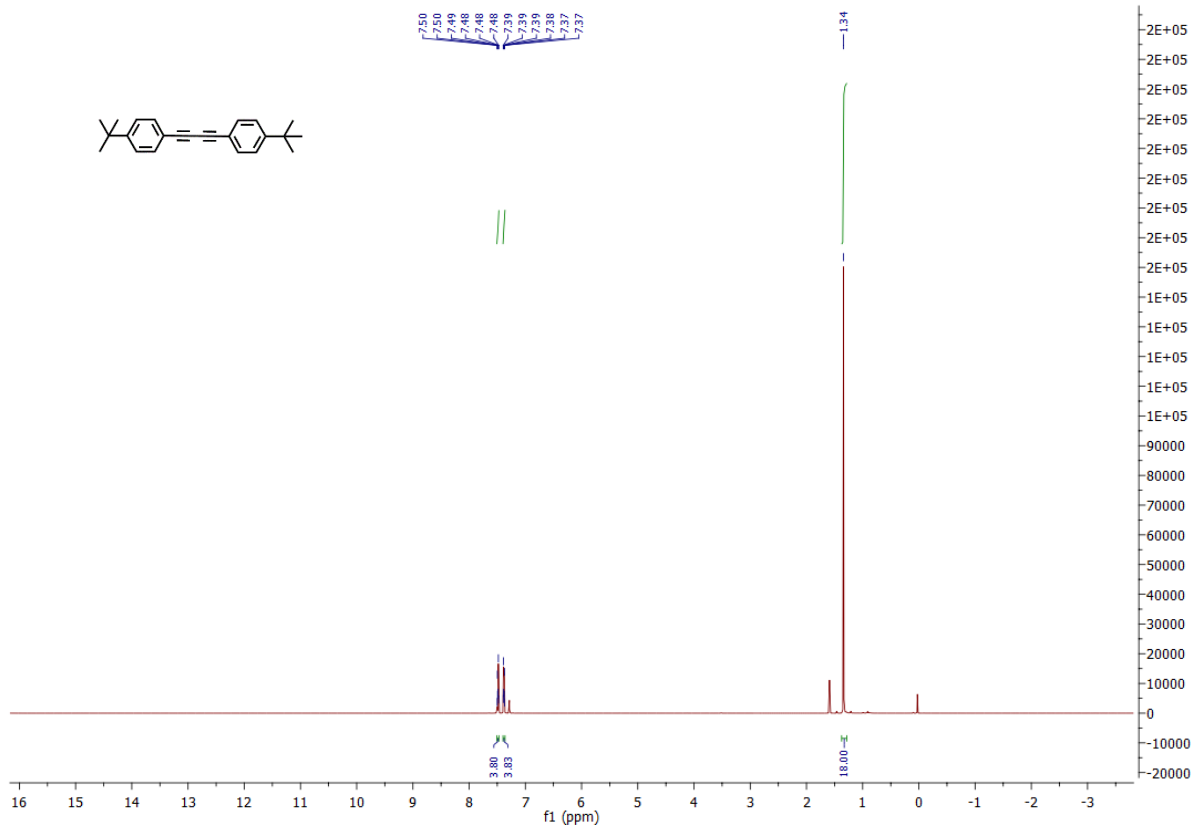


**Figure S4:  $^1\text{H}$  NMR and  $^{13}\text{C}$  NMR data of the compound 4**

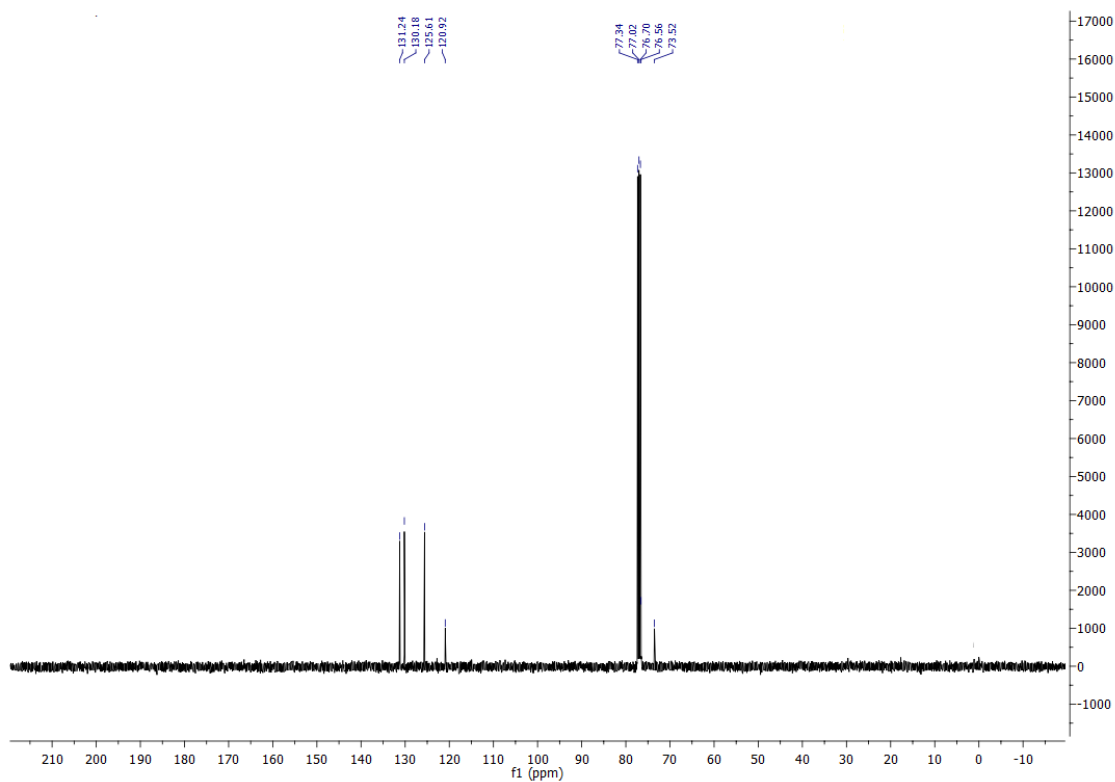
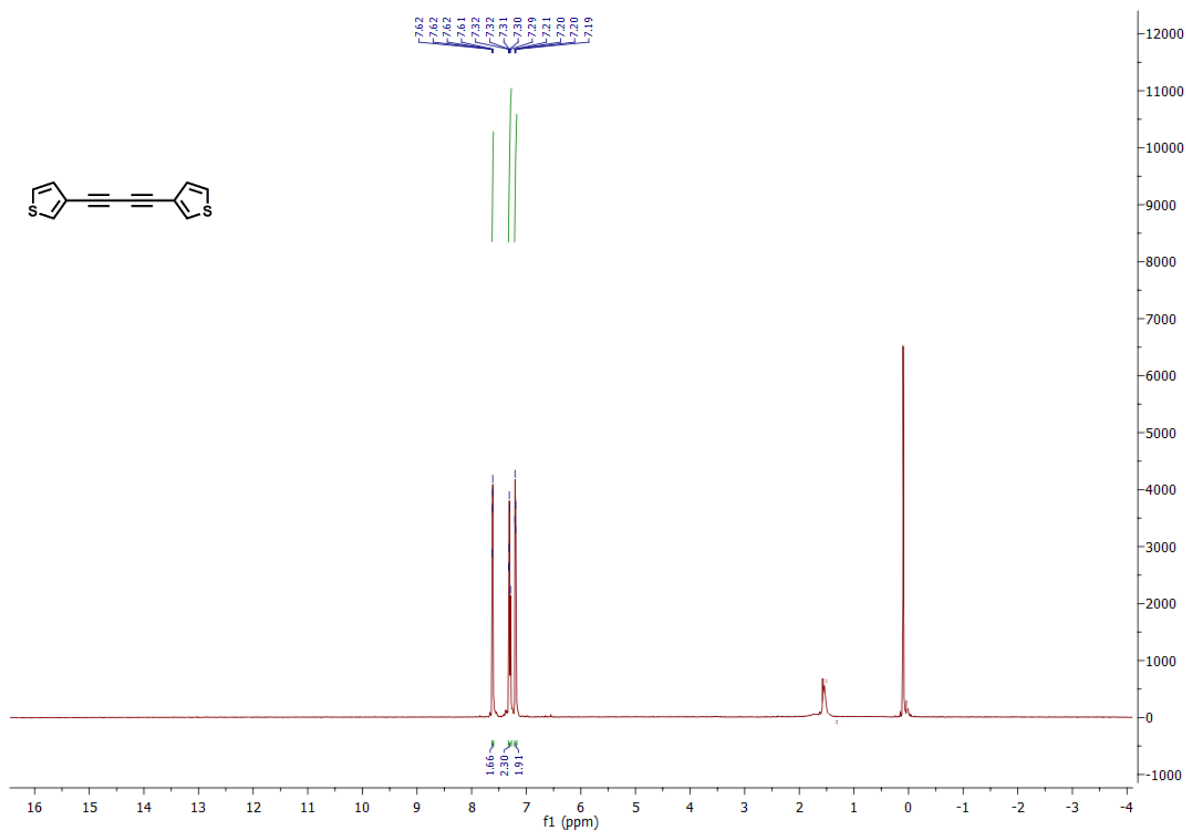




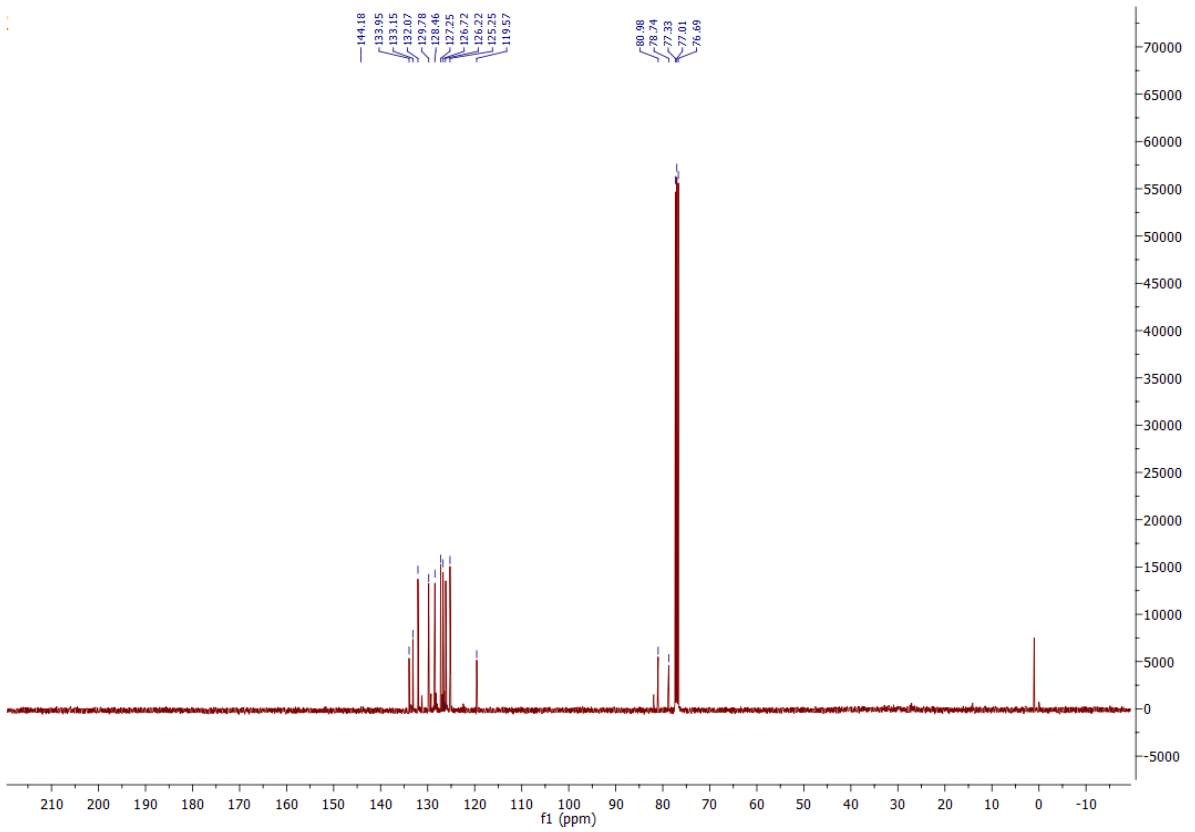
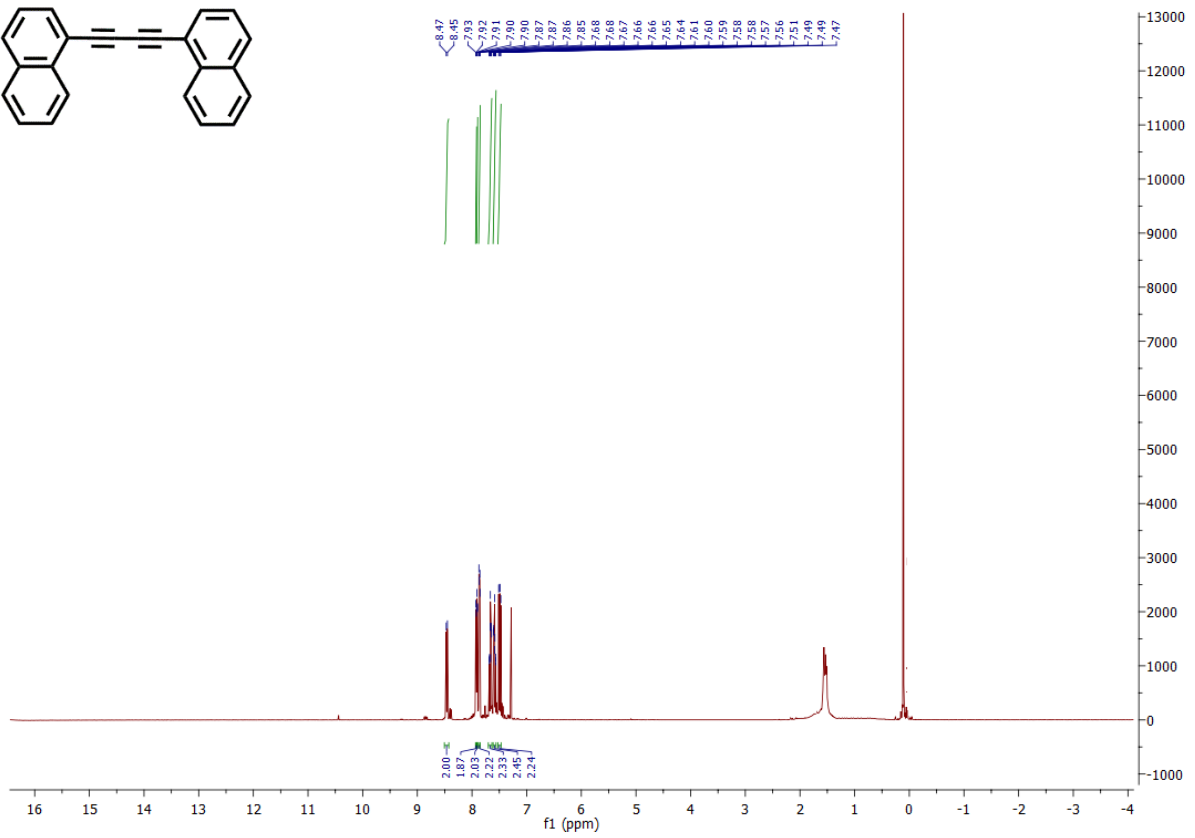
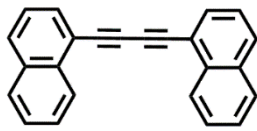




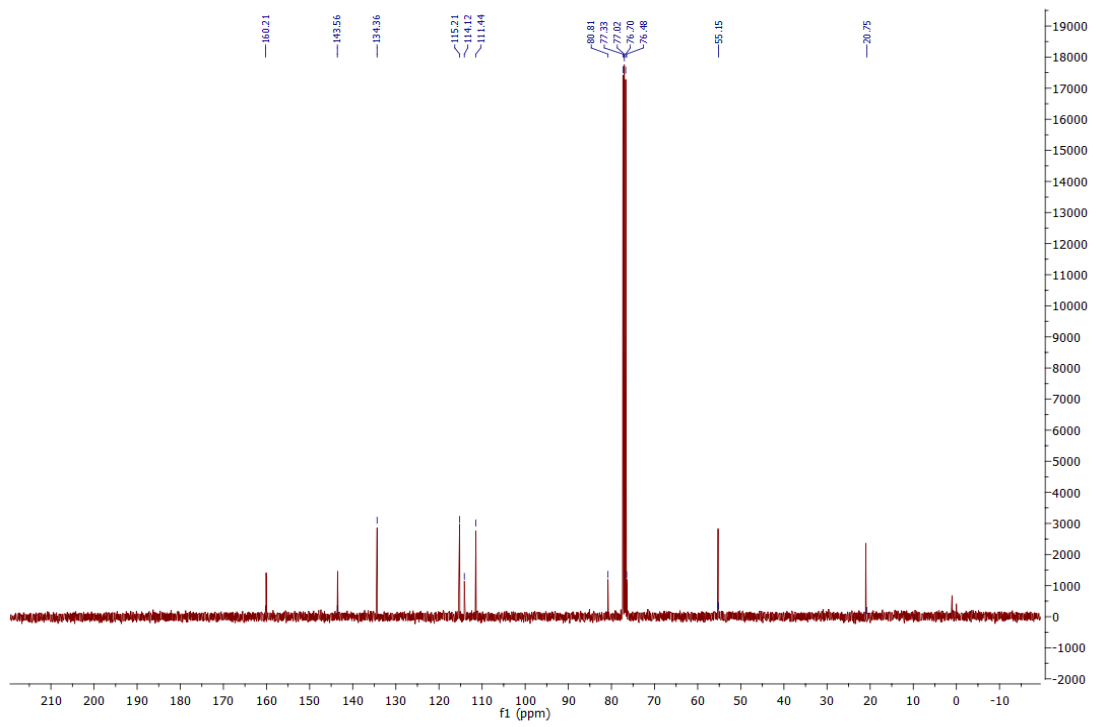
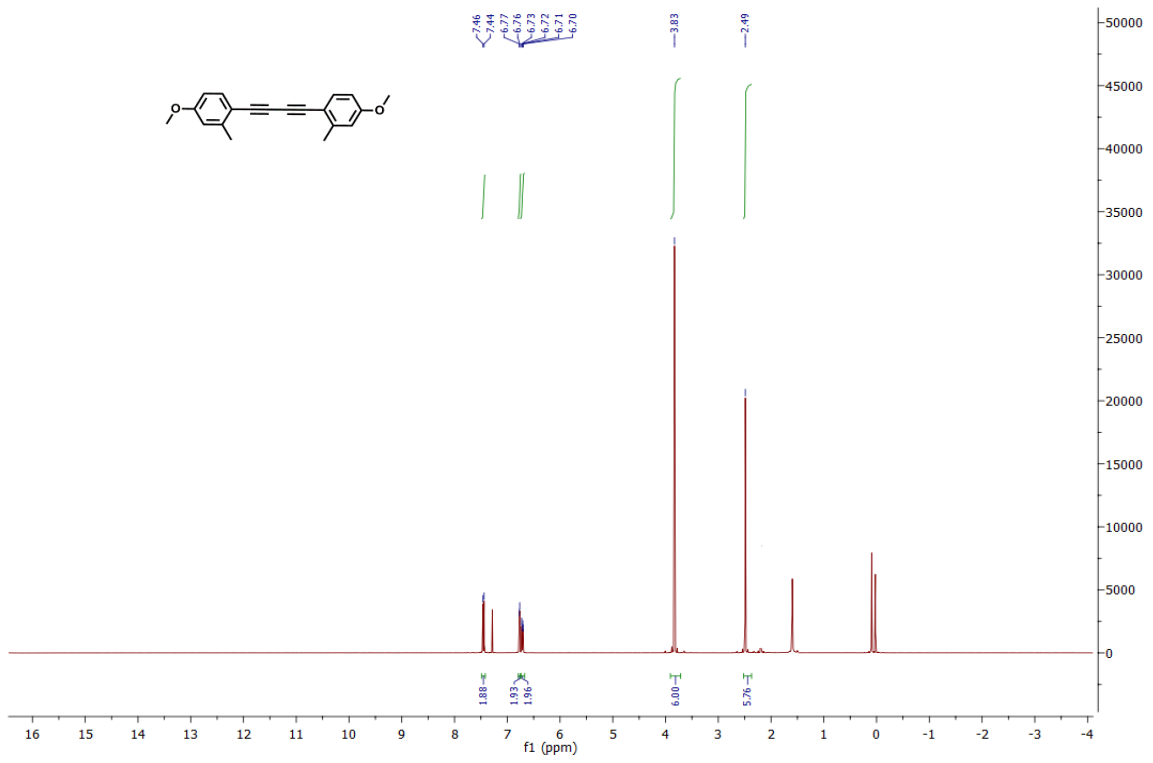
**Figure S6:  $^1\text{H}$  NMR and  $^{13}\text{C}$  NMR data of the compound 6**



**Figure S7:  $^1\text{H}$  NMR and  $^{13}\text{C}$  NMR data of the compound 7**

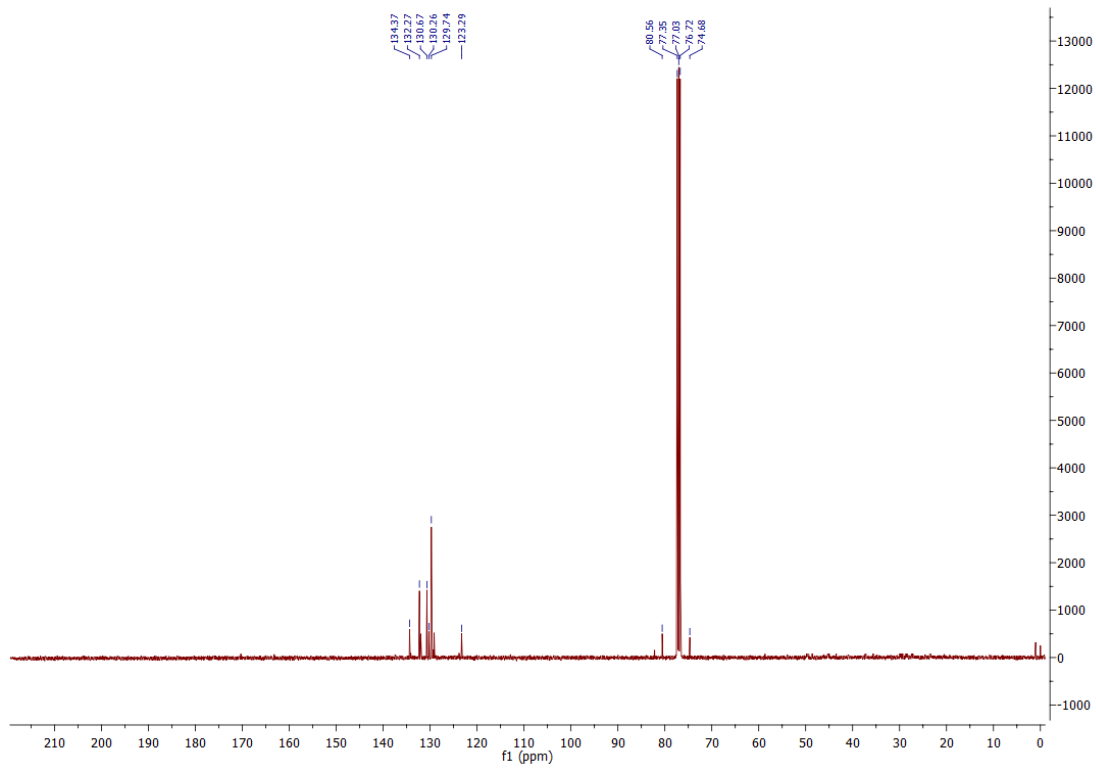
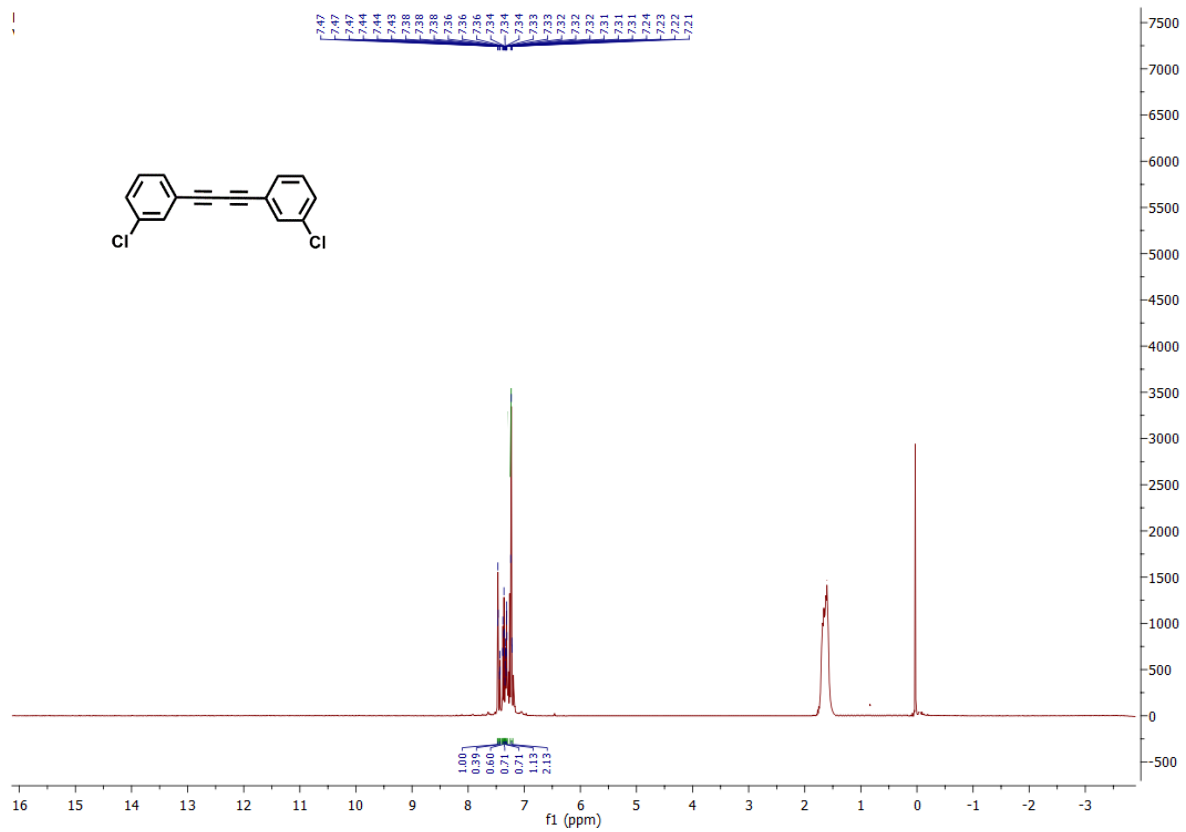


**Figure S8:  $^1\text{H}$  NMR and  $^{13}\text{C}$  NMR data of the compound 8**



**Figure S9:  $^1\text{H}$  NMR and  $^{13}\text{C}$  NMR data of the compound 9**





**Figure S10:  $^1\text{H}$  NMR and  $^{13}\text{C}$  NMR data of the compound 10**

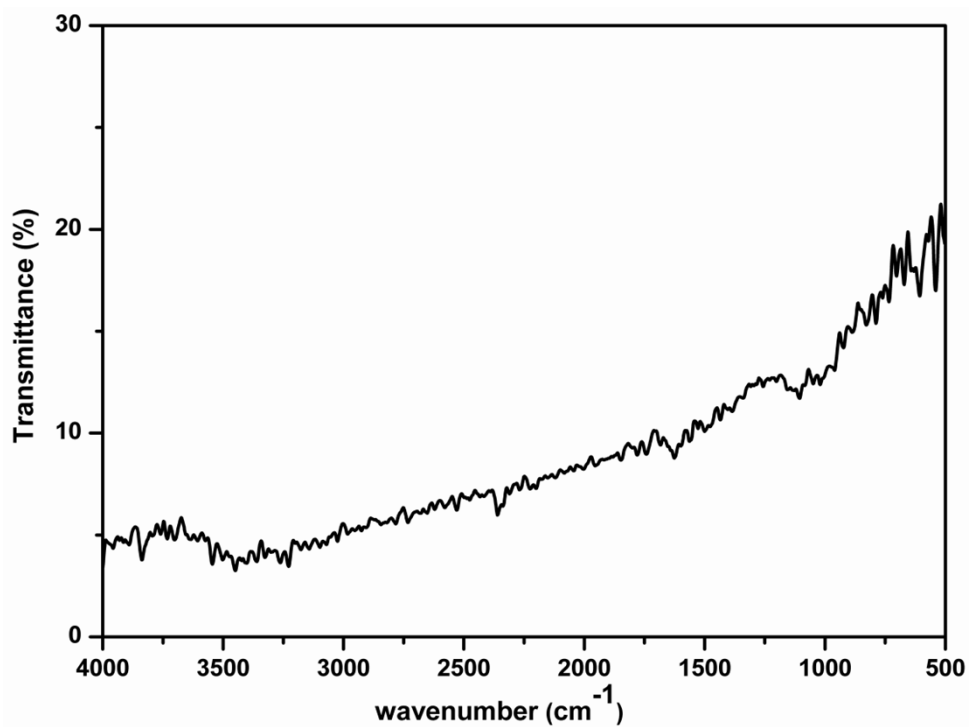


Figure S11. FT-IR spectrum of  $\text{sf-CuInS}_2$

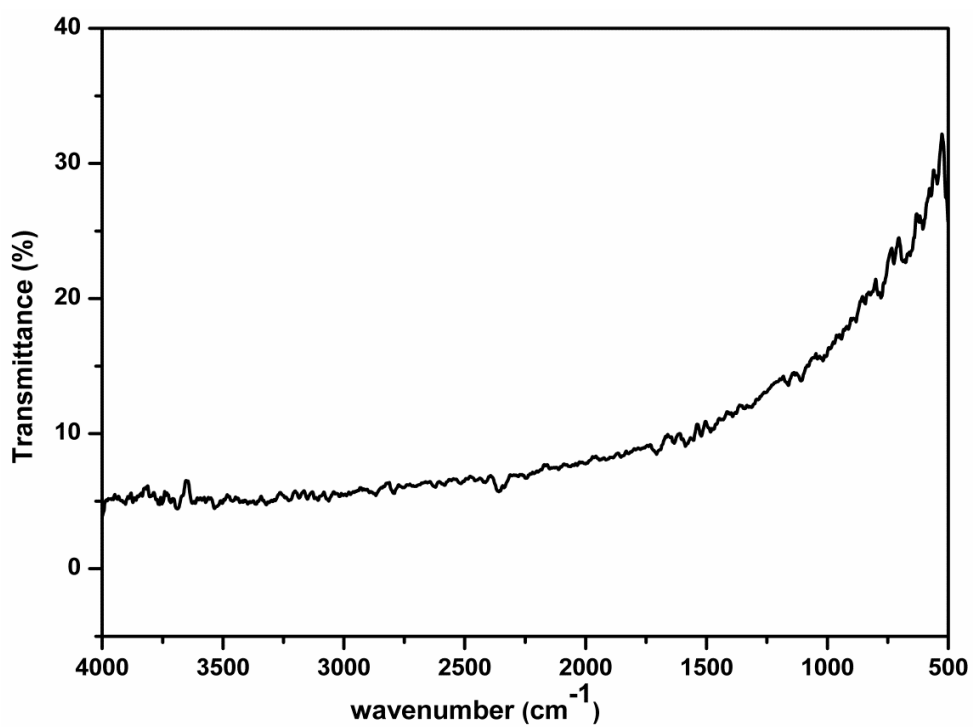
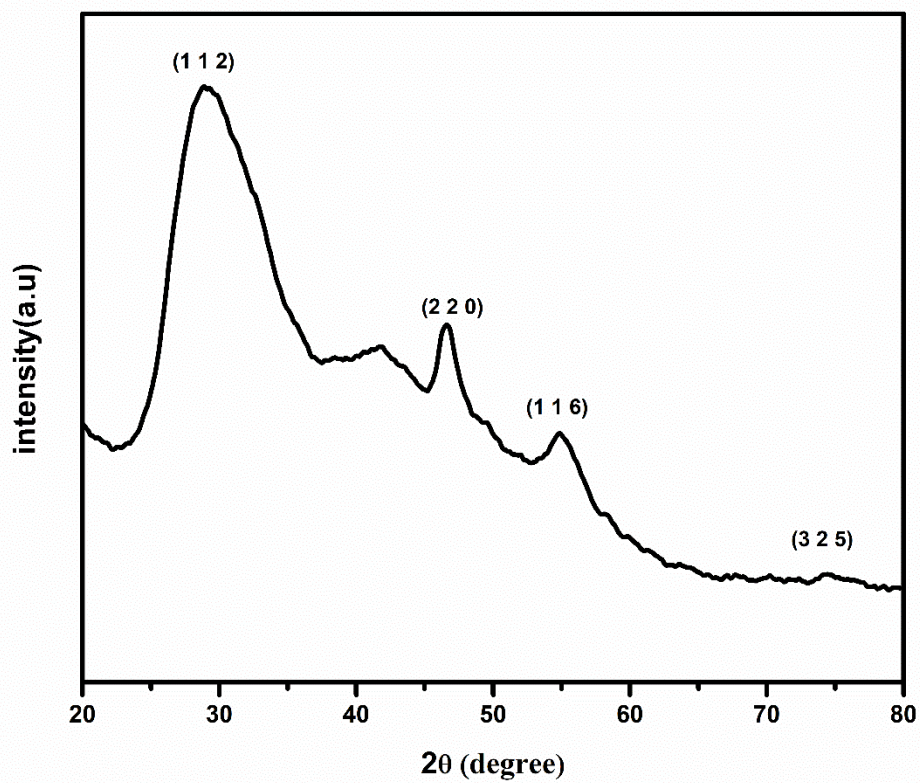


Figure S12. FT-IR spectrum of  $\text{sf-CuInSe}_2$



**Figure S13.** Powder X-ray diffraction pattern of **sf-CuInS<sub>2</sub>** nanoparticles after 6<sup>th</sup> cycle catalysis.