

## Supplementary data for

# Investigation of Catalytic Processes of Thio-Compounds Conversion to Disulfides Using Novel Butyl/Butoxy-Phthalocyaninates of d-Metals

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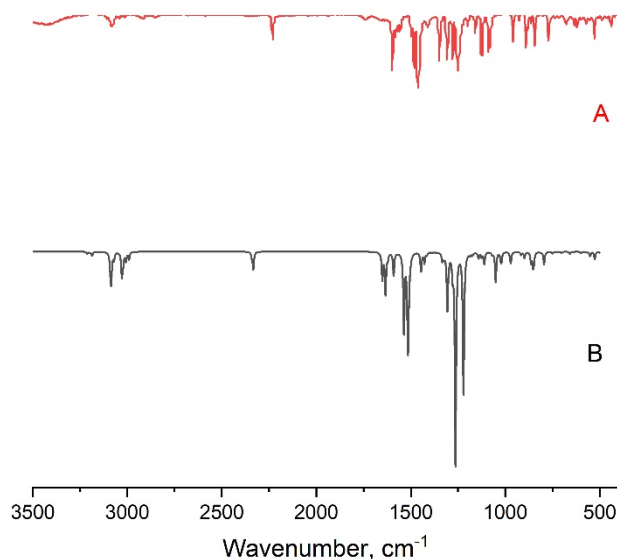
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**Figure 1S.** FT-IR of 4-(4'-butoxyphenoxy)phthalonitrile (3):

A – experimental, B – theoretical.

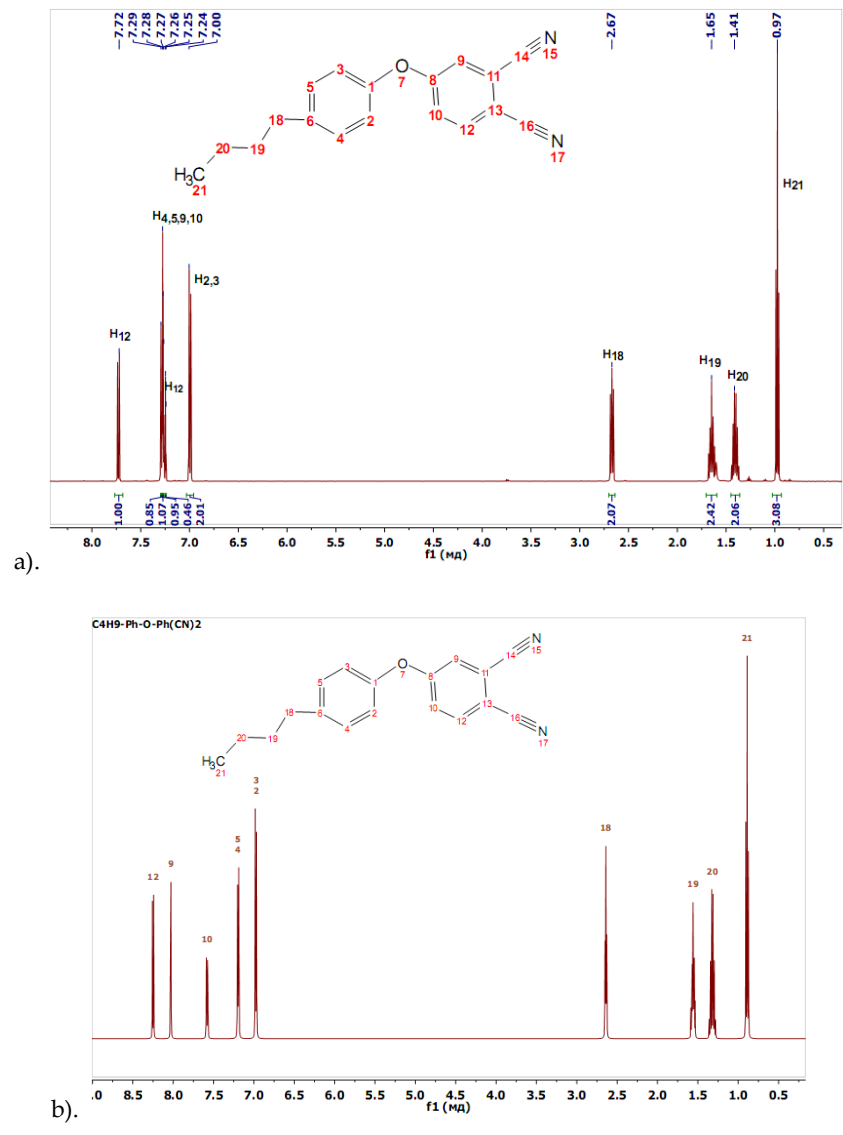
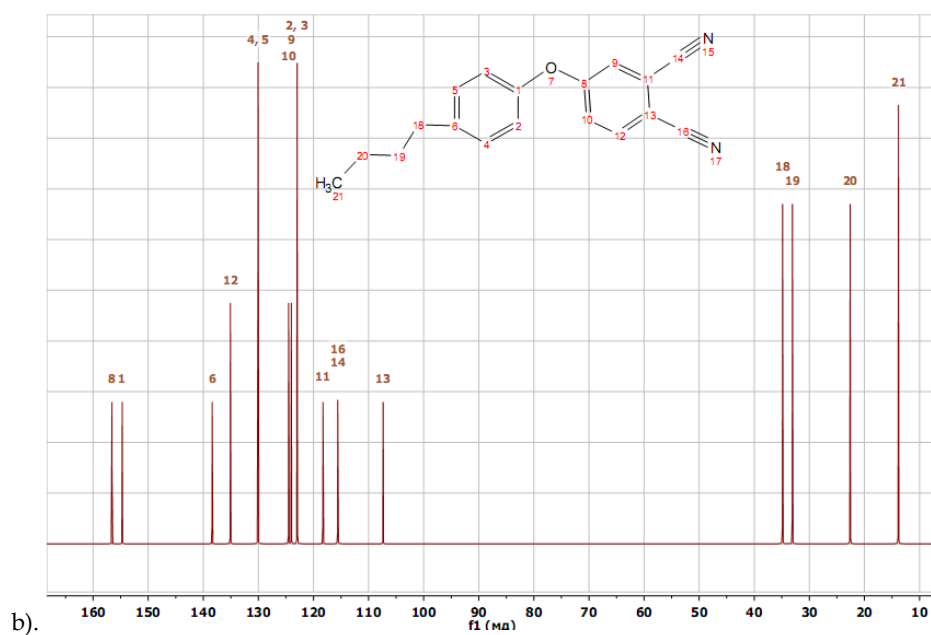
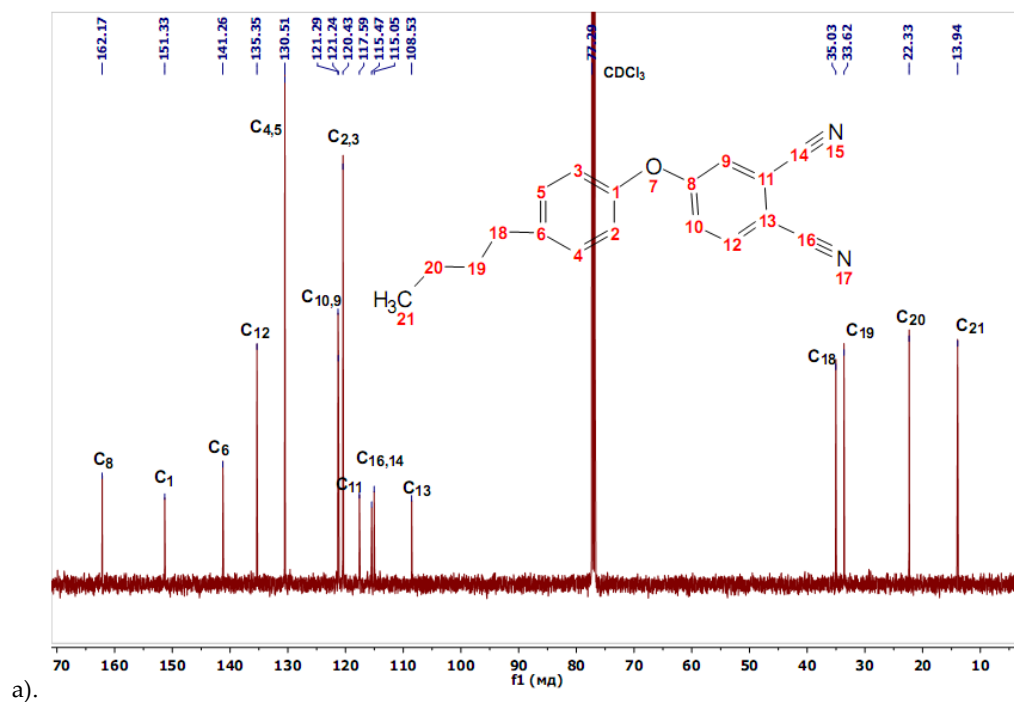


Figure 2S.  $^1\text{H}$  spectra of phthalonitrile 2:

a) experimental (Bruker Avance III), b) theoretical (MestReNova 9)



**Figure 3S.**  $^{13}\text{C}$  spectra of phthalonitrile 2:

a) experimental (BrukerAvance III), b) theoretical (MestReNova 9)

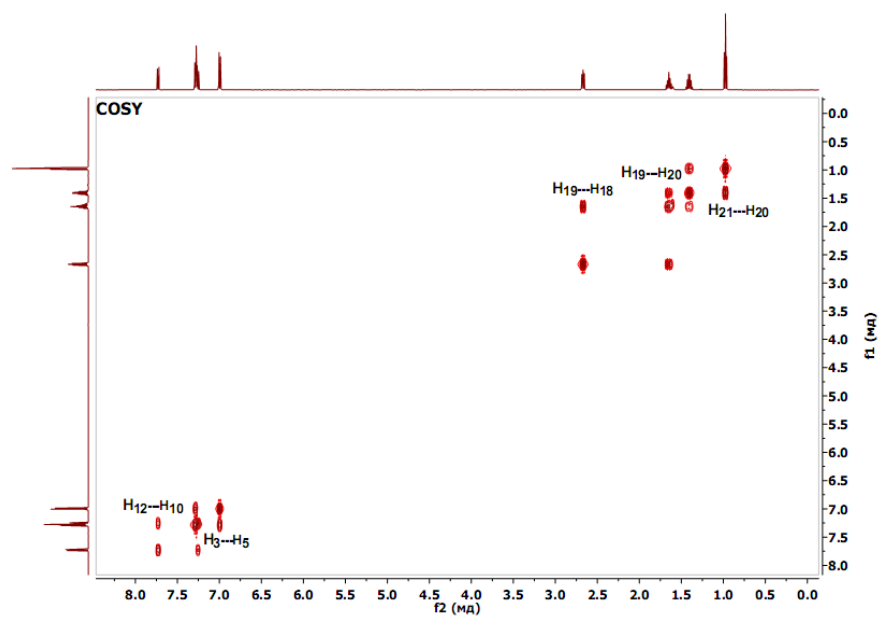


Figure 4S. COSY<sup>1</sup>H-<sup>1</sup>H correlation spectrum of phthalonitrile 2

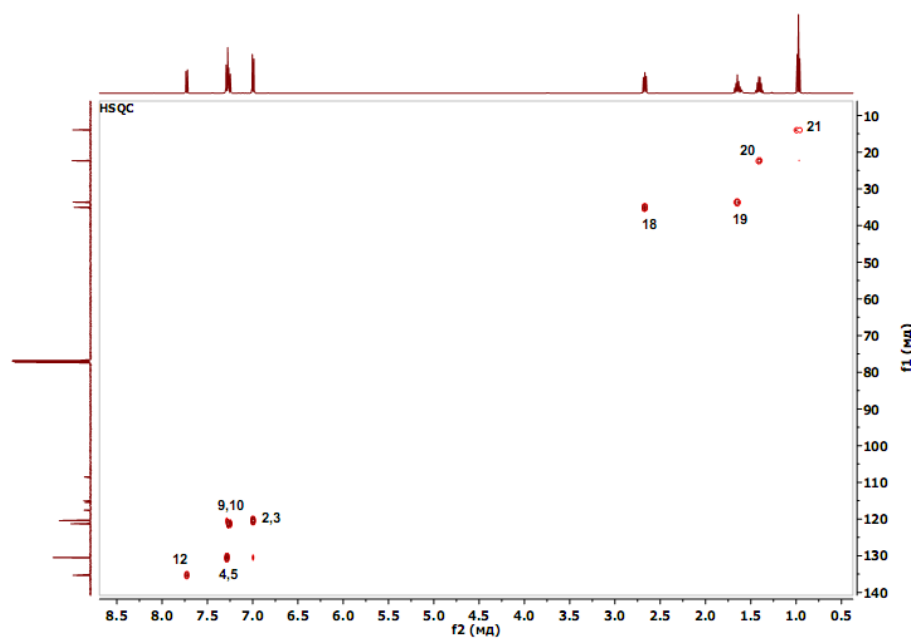


Figure 5S. HSQC<sup>1</sup>H-<sup>13</sup>C two-dimensional spectrum of phthalonitrile 2



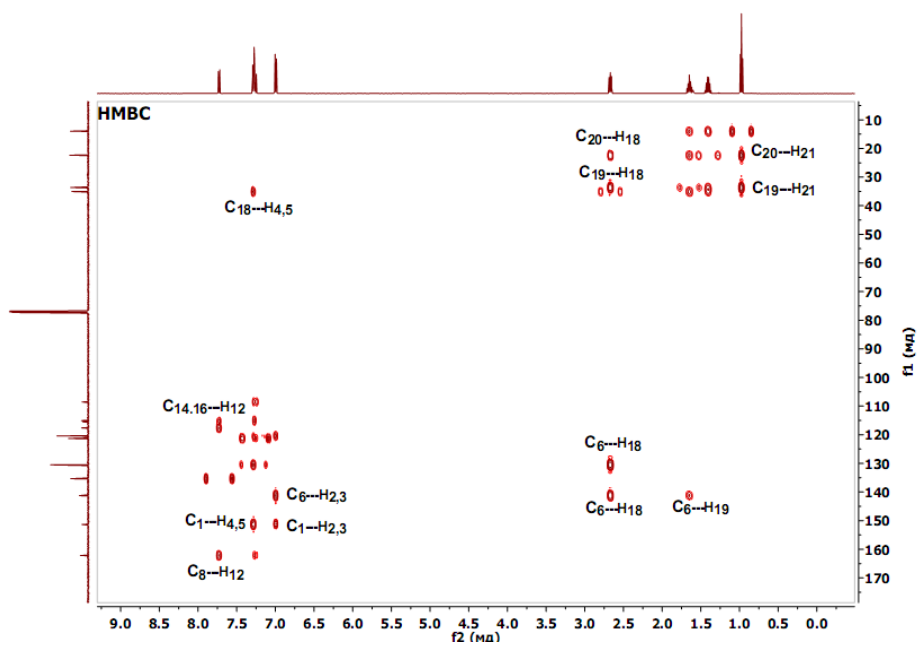


Figure 6S. HMBC<sup>1</sup>H-<sup>13</sup>C two-dimensional spectrum of phthalonitrile 2

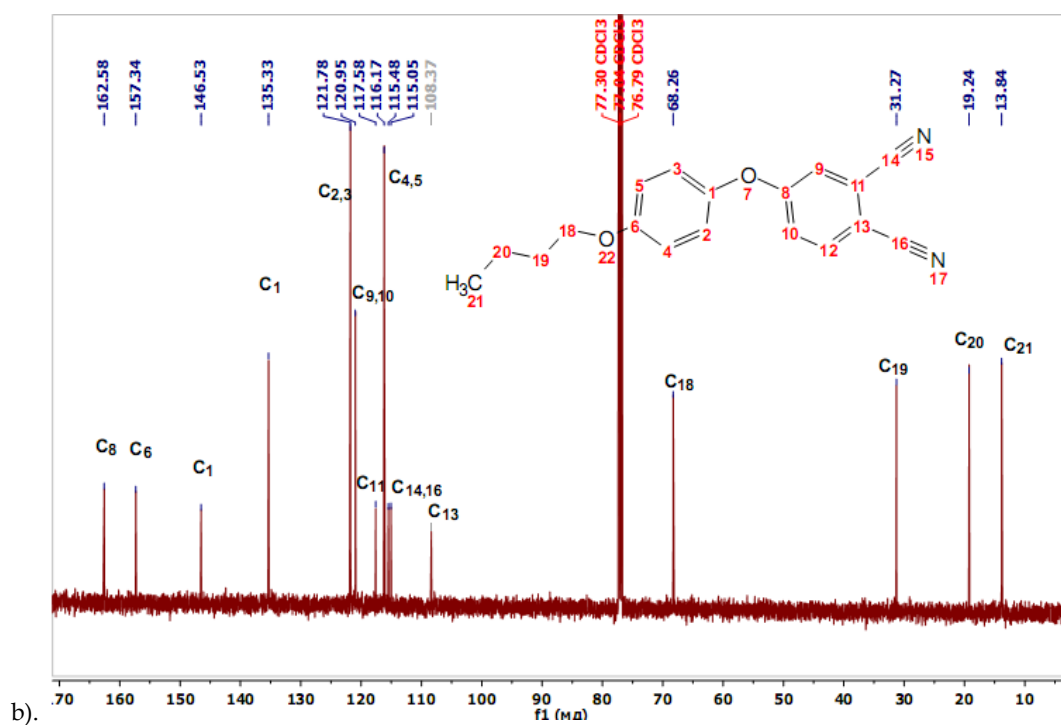
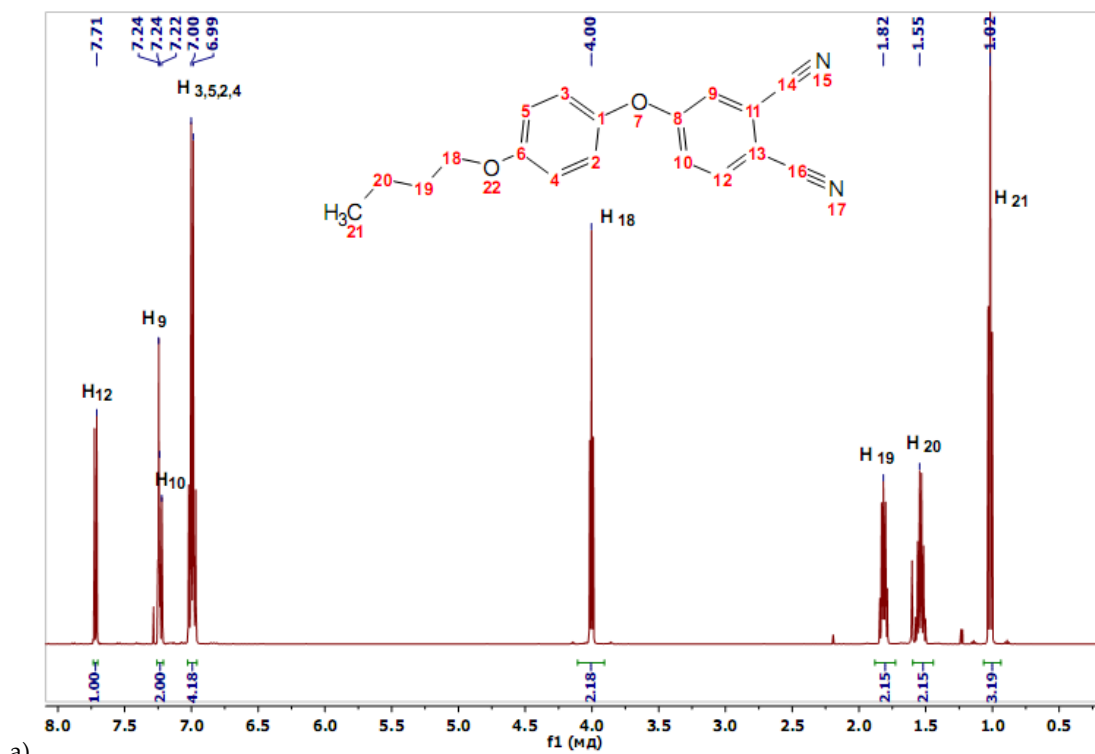
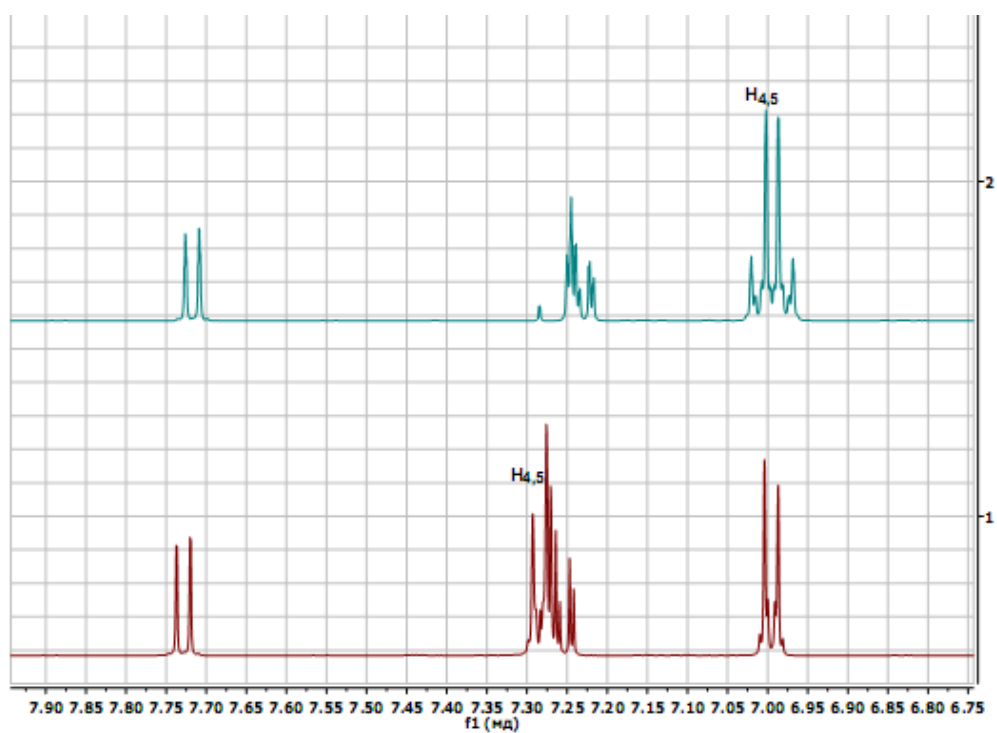


Figure 7S.  $^1\text{H}$  (a) and  $^{13}\text{C}$  (b) spectra of phthalonitrile 3

a) aromatic protons area



b) aliphatic protons area

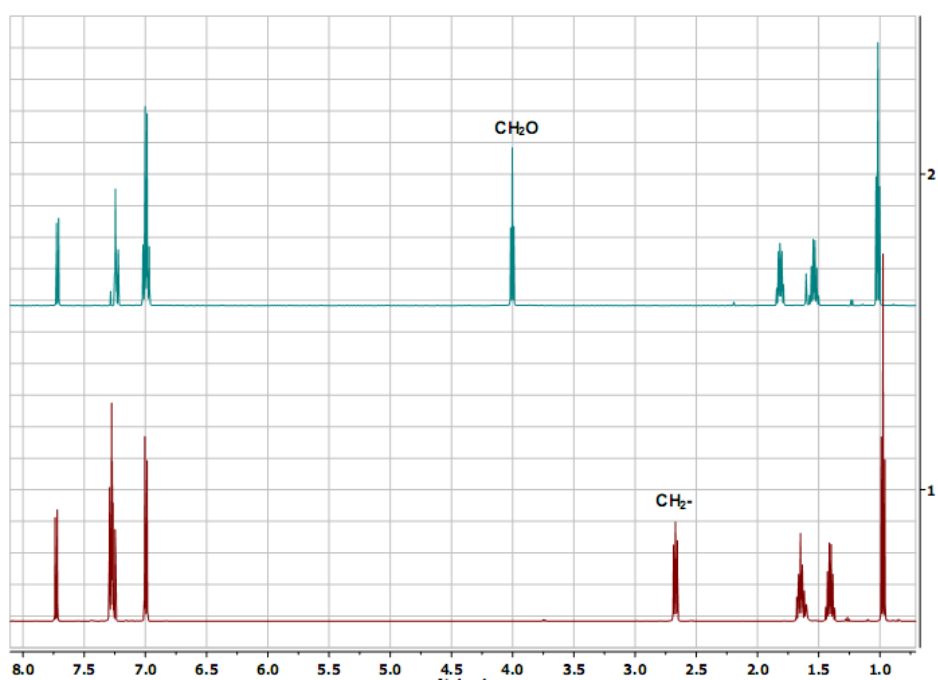
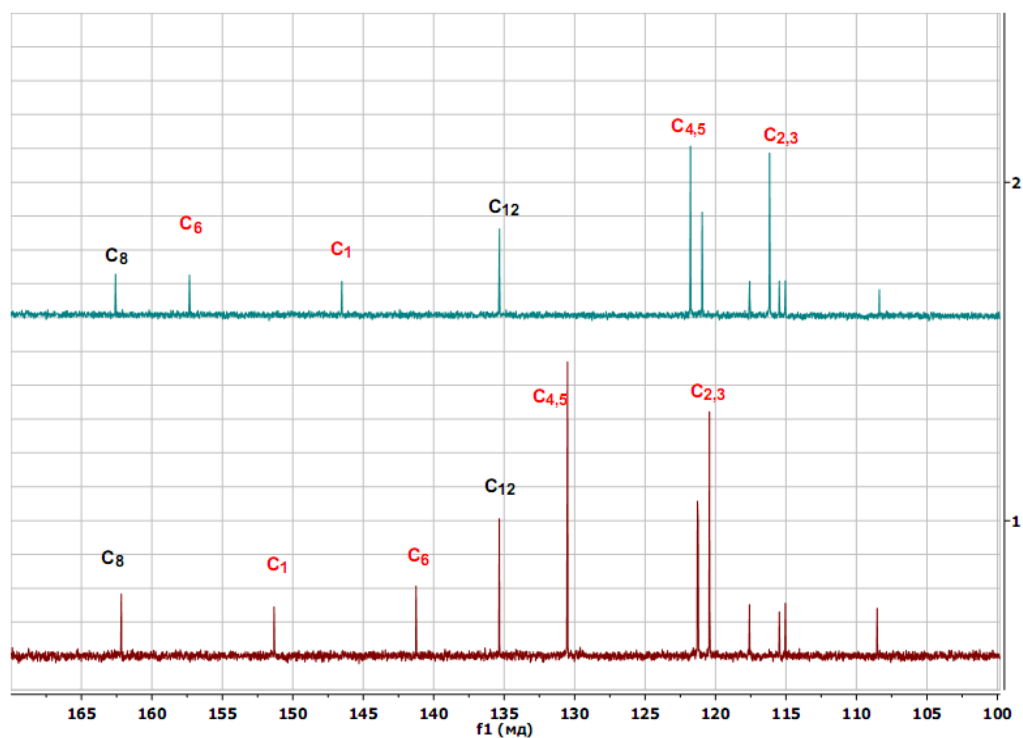


Figure 8S. <sup>1</sup>H NMR spectra of nitrile 1 (1) and nitrile 2 (2)

a) aromatic carbons area



b) aliphatic carbons area

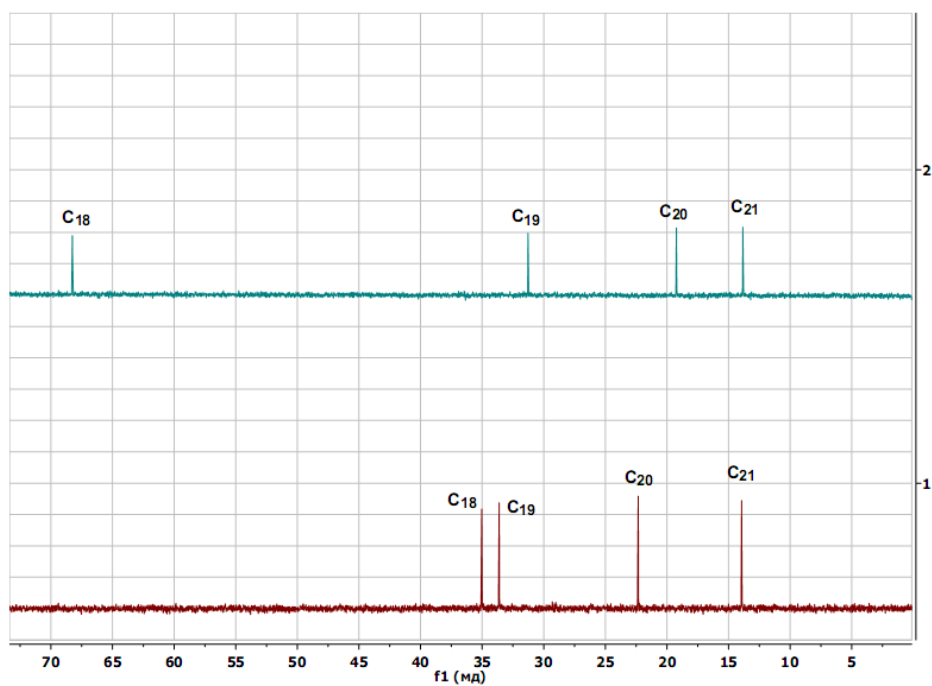


Figure 9S. <sup>13</sup>C spectra of nitrile 2 (1) and nitrile 3 (2)

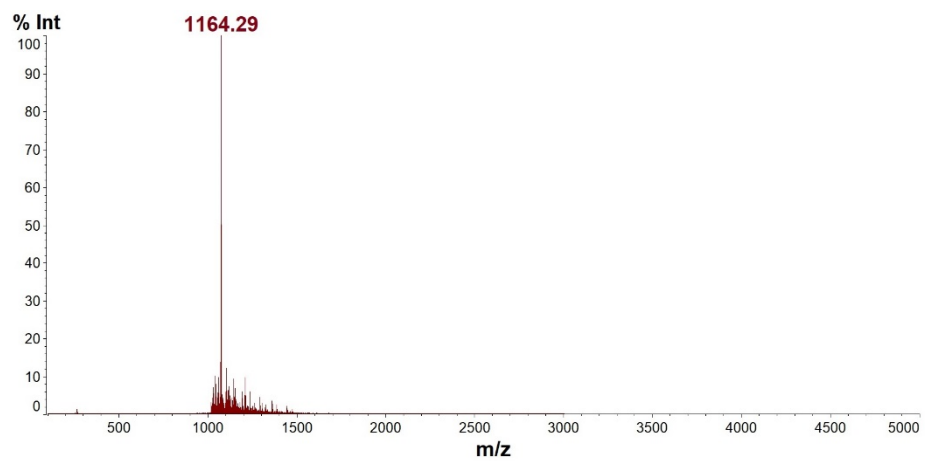


Figure 10S. MALDI-TOF mass spectrum of cobalt tetra-4-[4-(4-butylphenoxy)]phthalocyaninato (4a)

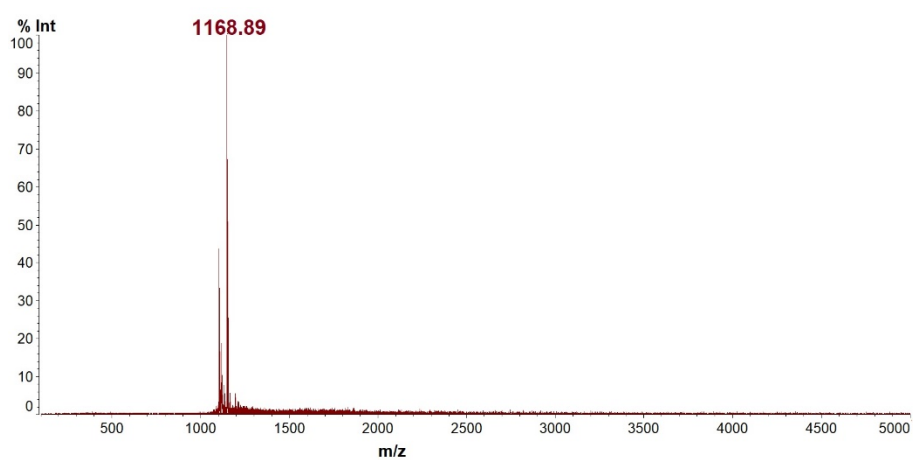


Figure 11S. MALDI-TOF mass spectrum of copper tetra-4-[4-(4-butylphenoxy)]phthalocyaninato (4b)

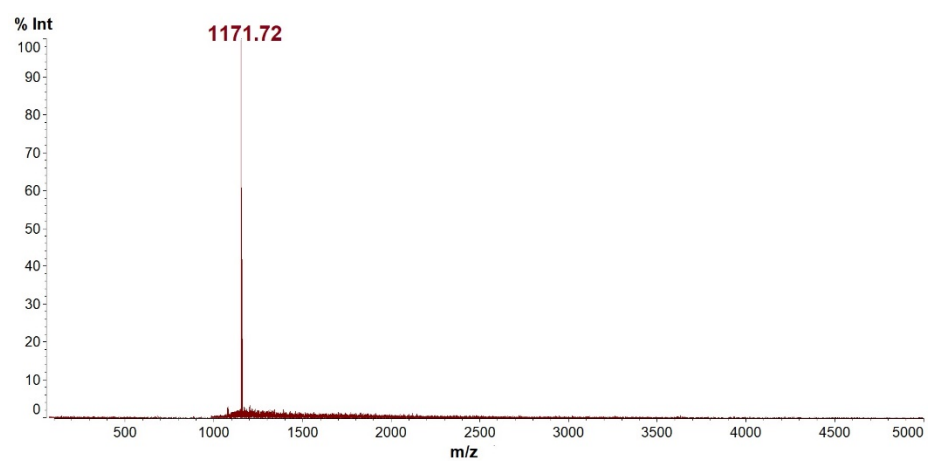
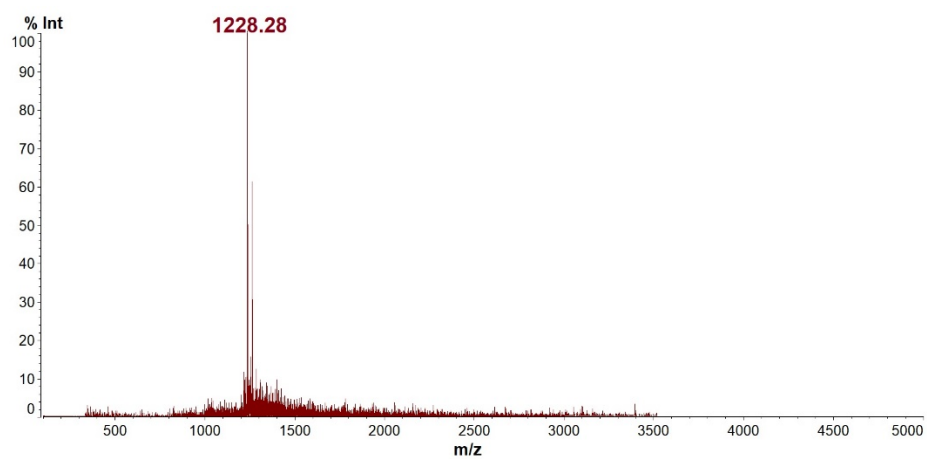
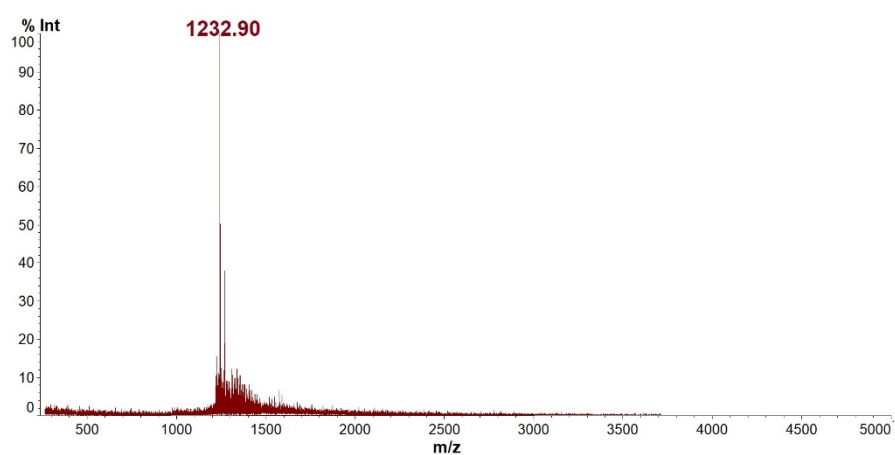


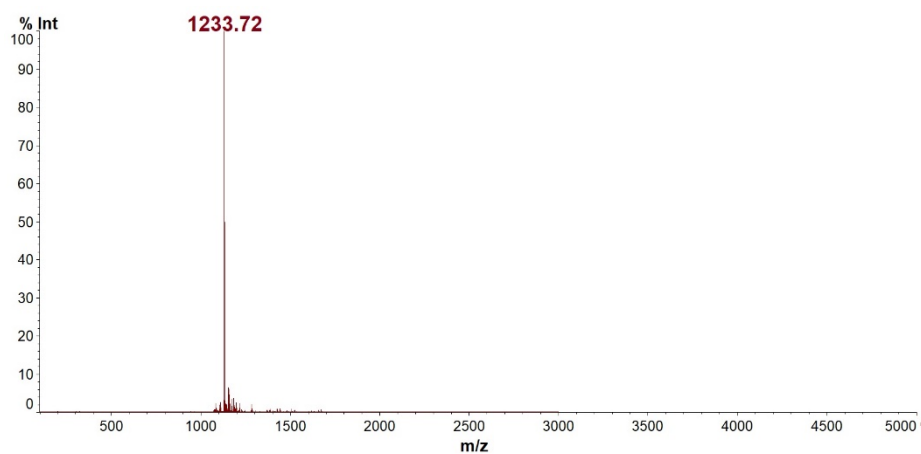
Figure 12S. MALDI-TOF mass spectrum of zinc tetra-4-[4-(4-butylphenoxy)]phthalocyaninato (4c)



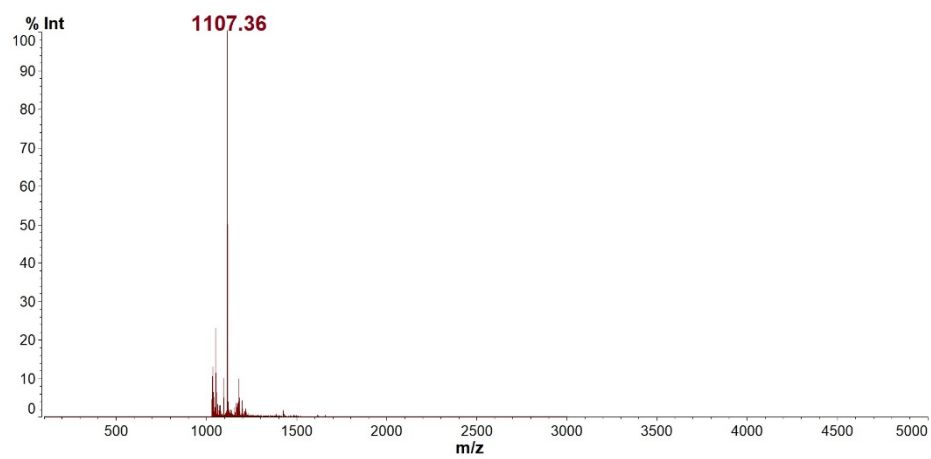
**Figure 13S.** MALDI-TOF mass spectrum of cobalt tetra-4-[4-(4-butoxyphenoxy)]phthalocyaninato (**5a**)



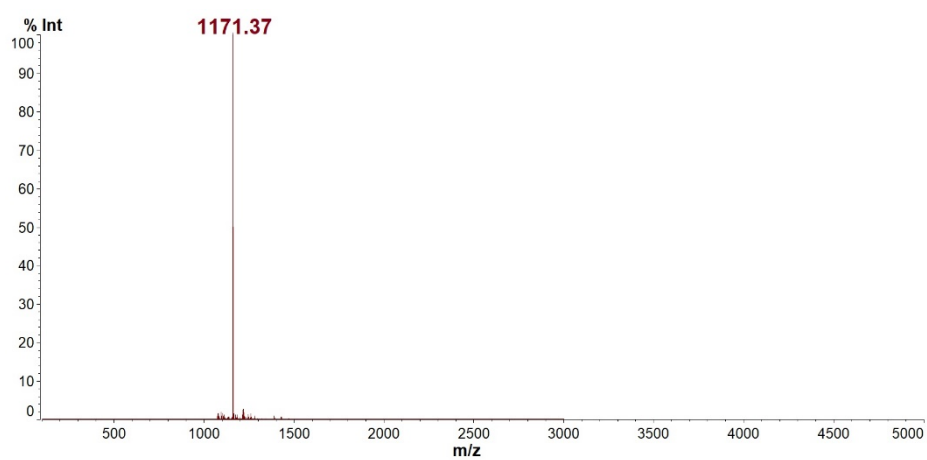
**Figure 14S.** MALDI-TOF mass spectrum of copper tetra-4-[4-(4-butoxyphenoxy)]phthalocyaninato (**5b**)



**Figure 15S.** MALDI-TOF mass spectrum of zinc tetra-4-[4-(4-butoxyphenoxy)]phthalocyaninato (**5c**)



**Figure 16S.** MALDI-TOF mass spectrum of tetra-4-[4-(4-butylphenoxy)]phthalocyanine (6)



**Figure 17S.** MALDI-TOF mass spectrum of tetra-4-[4-(4-butoxyphenoxy)]phthalocyanine (7)