Supporting Information

Selective photocatalytic oxidation of aromatic alcohols to aldehydes with air by magnetic WO_3ZnO/Fe_3O_4. *In situ* photochemical synthesis of 2-substituted benzimidazoles

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General

^{1}H- and ^{13}C-NMR spectra were recorded on a 300 MHz Bruker AVANCEC III spectrometer in DMSO-d_6 using TMS as the internal reference.

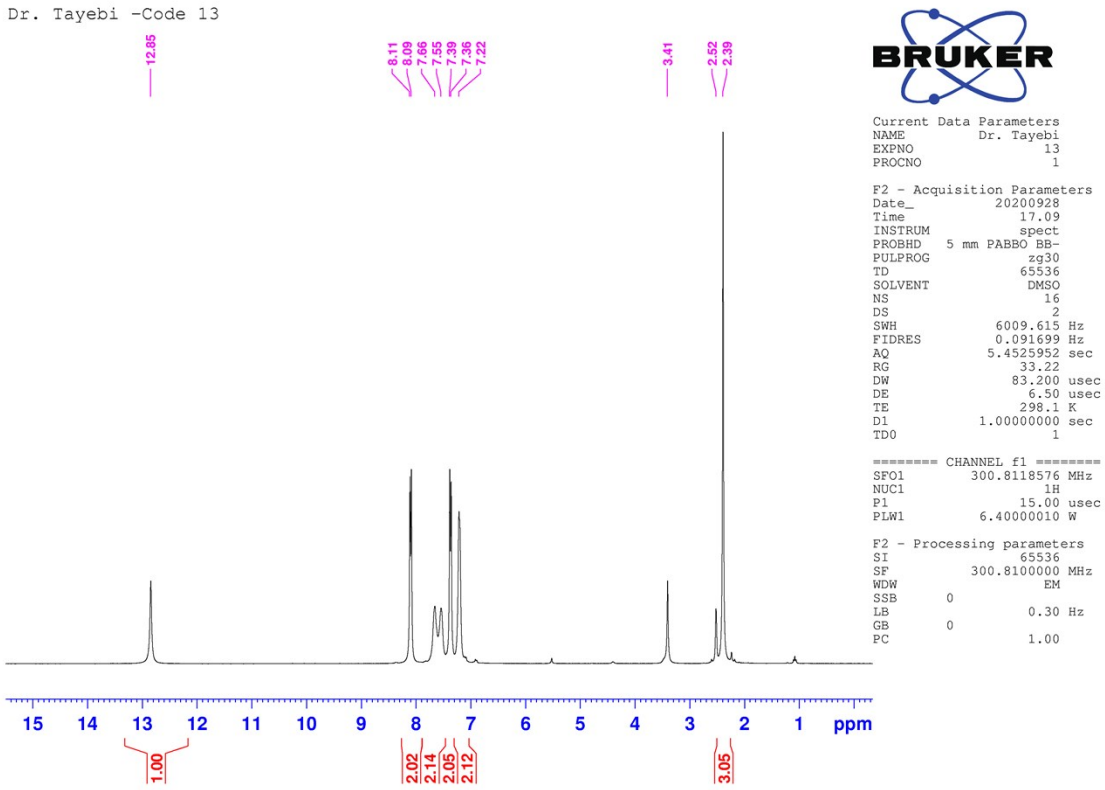

Fig. S1 ^{1}H-NMR Spectrum of 2-(4-methyl-phenyl)-benzimidazole (Table 2, entry 1).

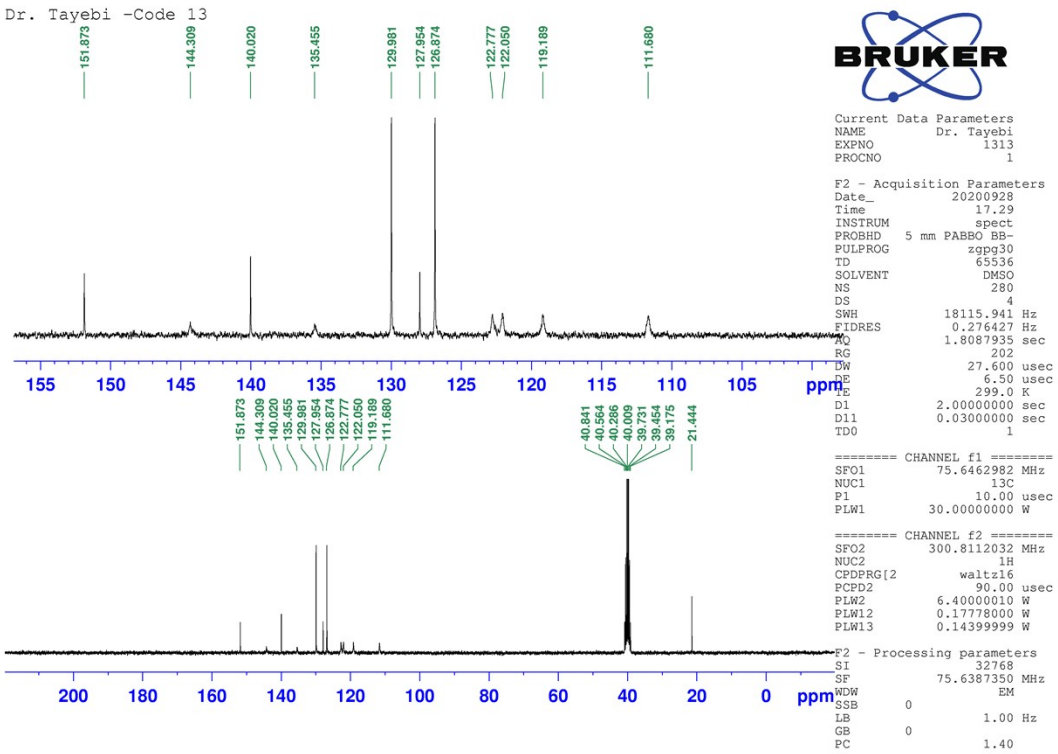

Fig. S2 ^{13}C-NMR Spectrum of 2-(4-methyl-phenyl)-benzimidazole (Table 2, entry 1)

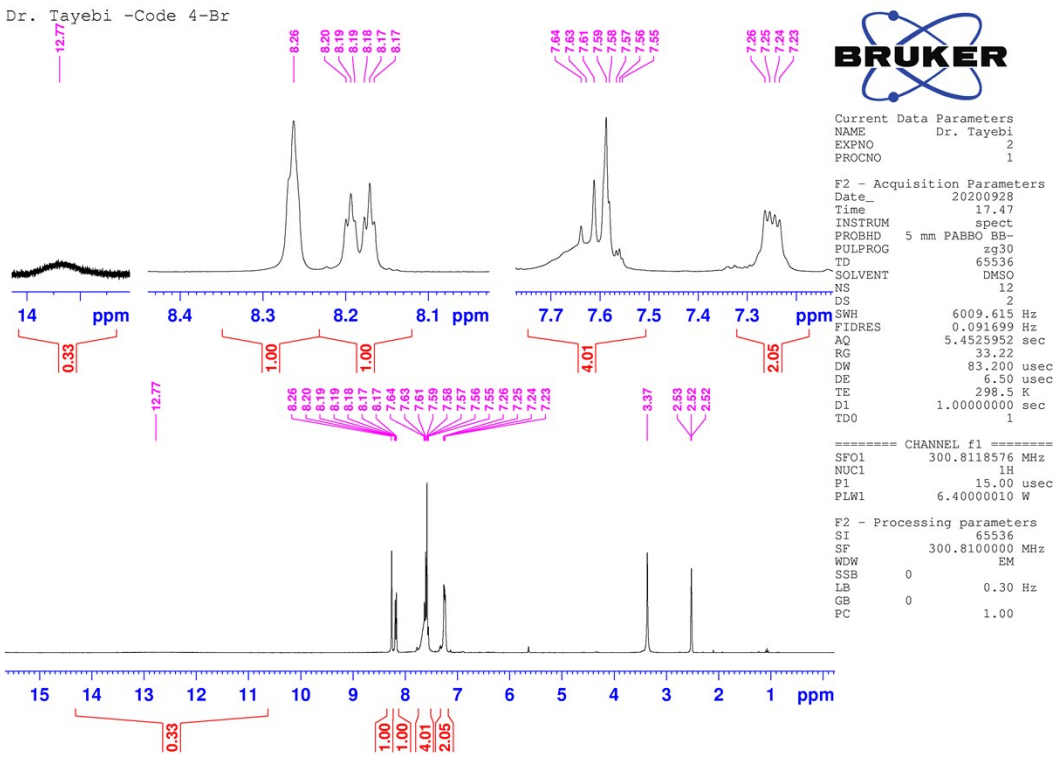

Fig. S3 ^{1}H-NMR Spectrum of 2-(4-bromo-phenyl)-benzimidazole (Table 2, entry 2)

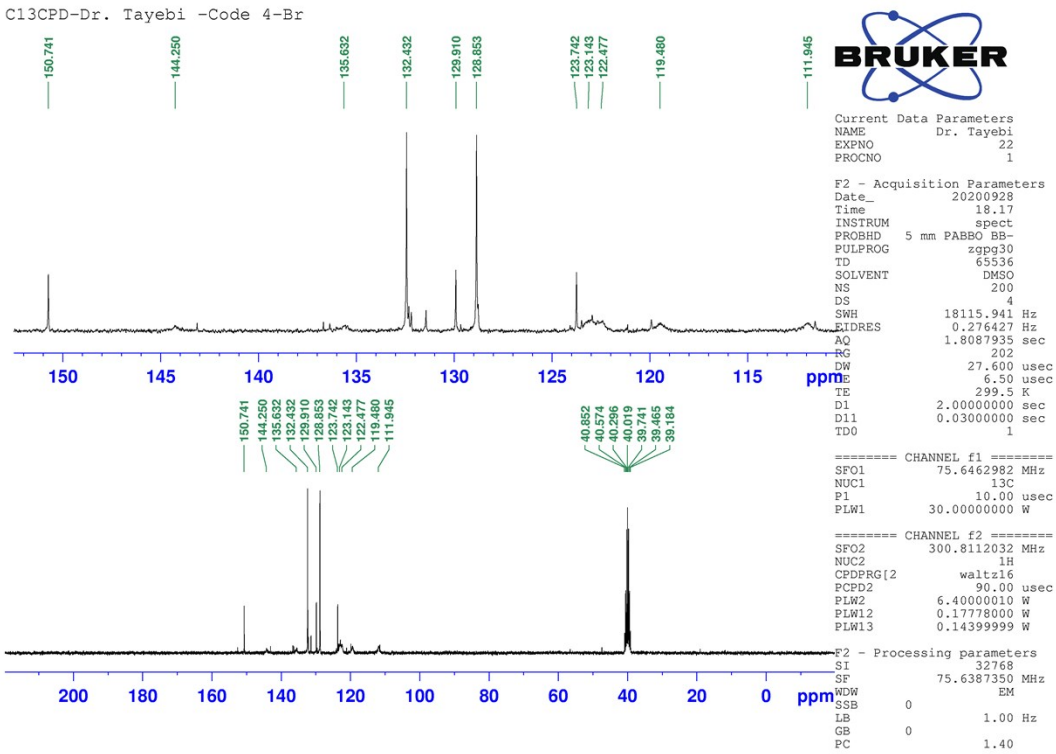

Fig. S4 ^{13}C-NMR Spectrum of 2-(4-bromo-phenyl)-benzimidazole (Table 2, entry 2)

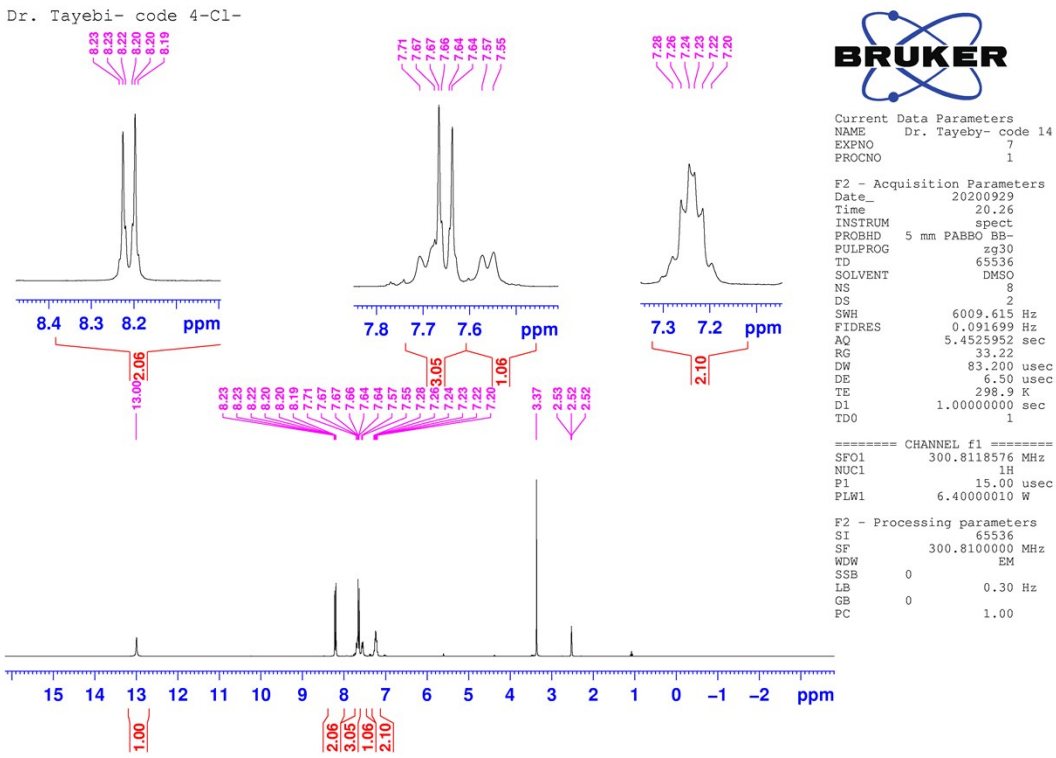

Fig. S5 ^{1}H-NMR Spectrum of 2-(4-chloro-phenyl)-benzimidazole (Table 2, entry 3)

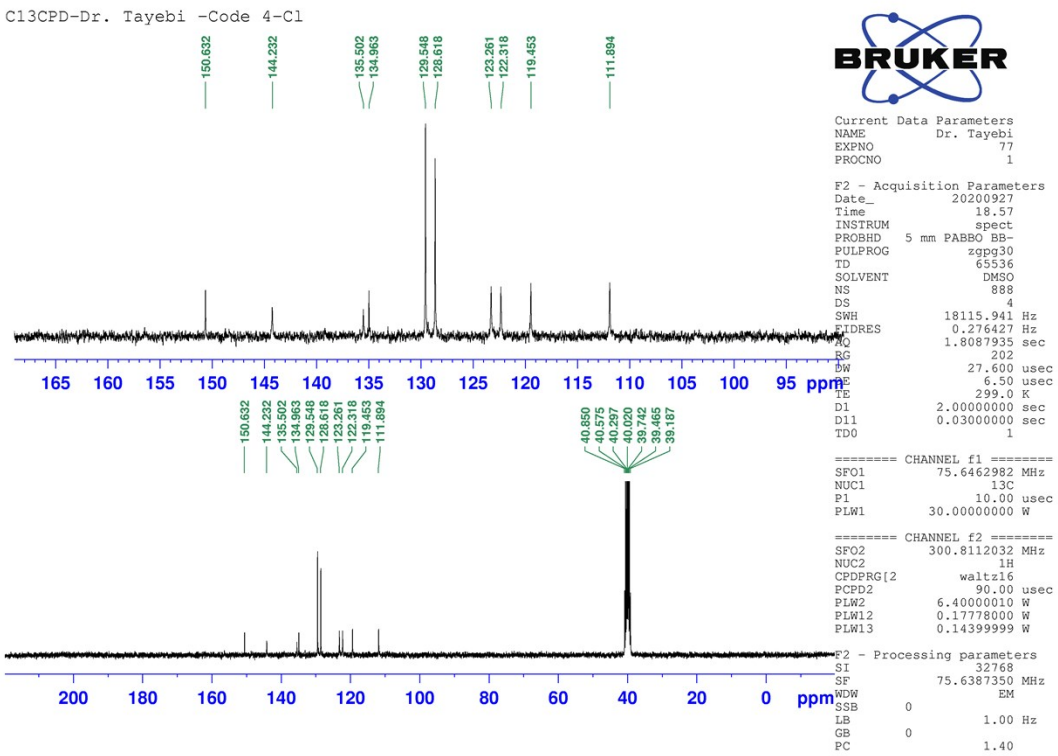

Fig. S6 ^{13}C-NMR Spectrum of 2-(4-chloro-phenyl)-benzimidazole (Table 2, entry 3)

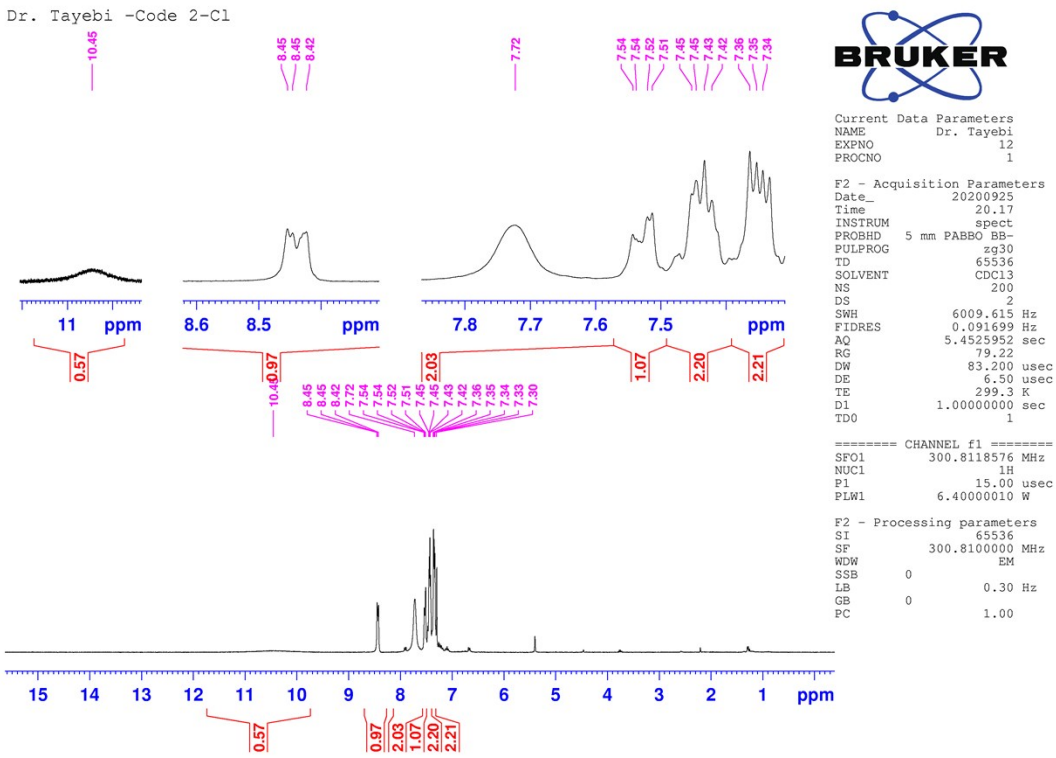

Fig. S7 ^{1}H-NMR Spectrum of 2-(2-chloro-phenyl)-benzimidazole (Table 2, entry 4)

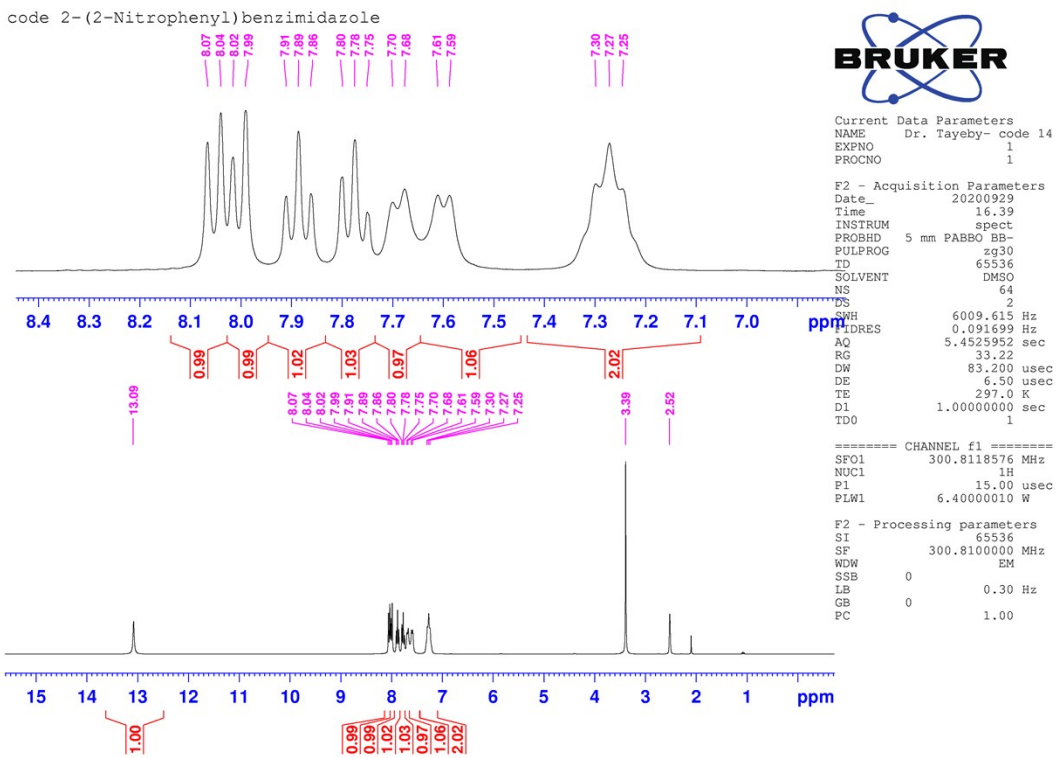

Fig. S8 [1]H-NMR Spectrum of 2-(2-nitro-phenyl)-benzimidazole (Table 2, entry 5)

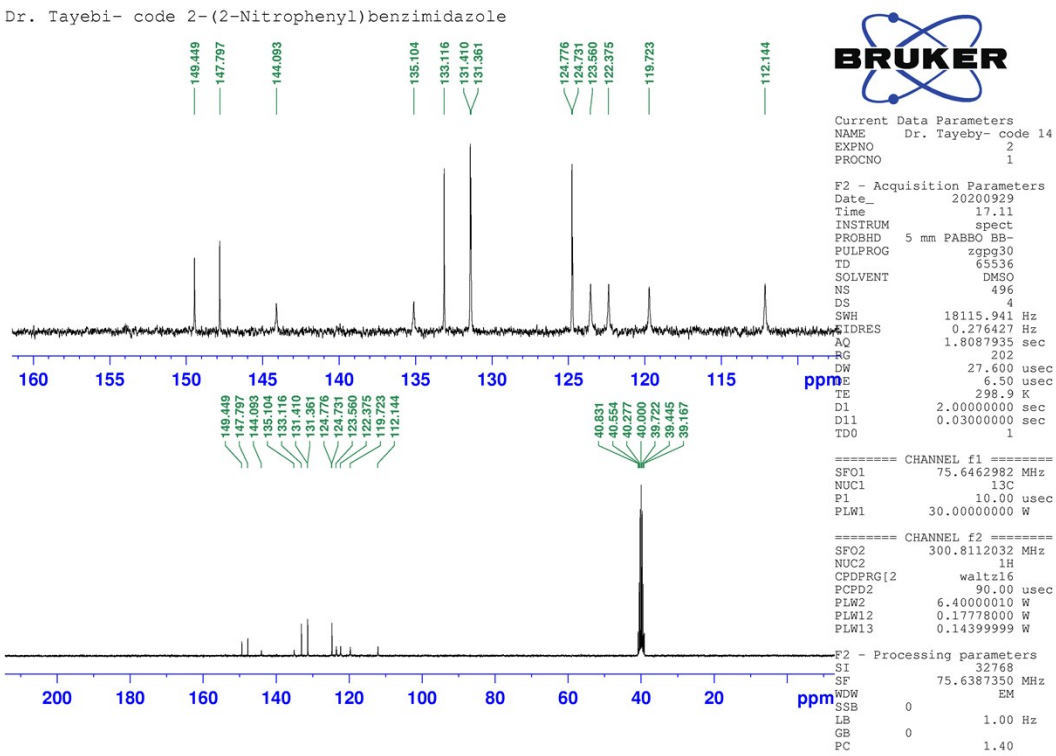

Fig. S9 ^{13}C-NMR Spectrum of 2-(2-nitro-phenyl)-benzimidazole (Table 2, entry 5)

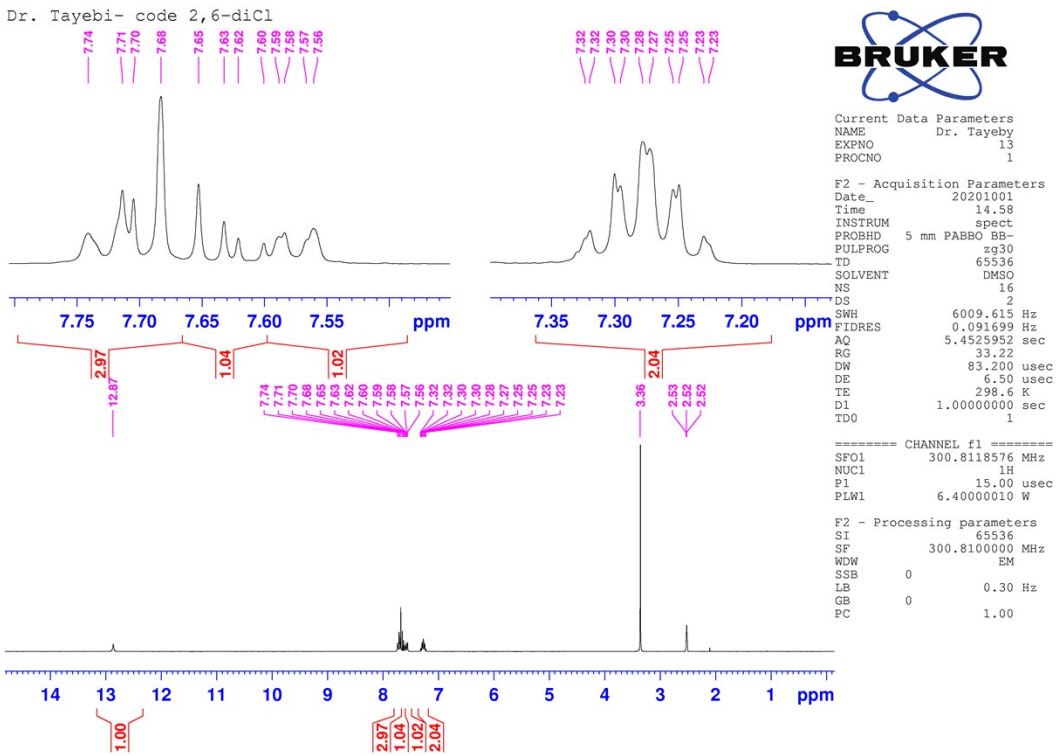

Fig. S10 [1]H-NMR Spectrum of 2-(2, 6-dichloro-phenyl)-benzimidazole (Table 2, entry 6)

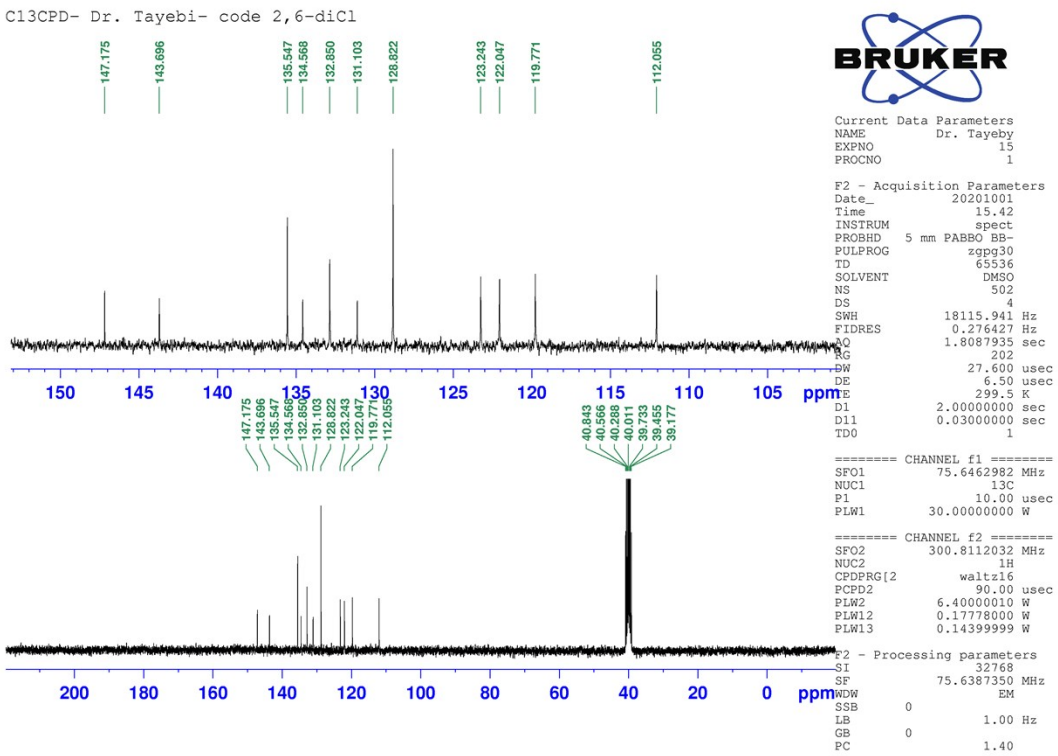

Fig. S11 ^{13}C-NMR Spectrum of 2-(2, 6-dichloro-phenyl)-benzimidazole (Table 2, entry 6)

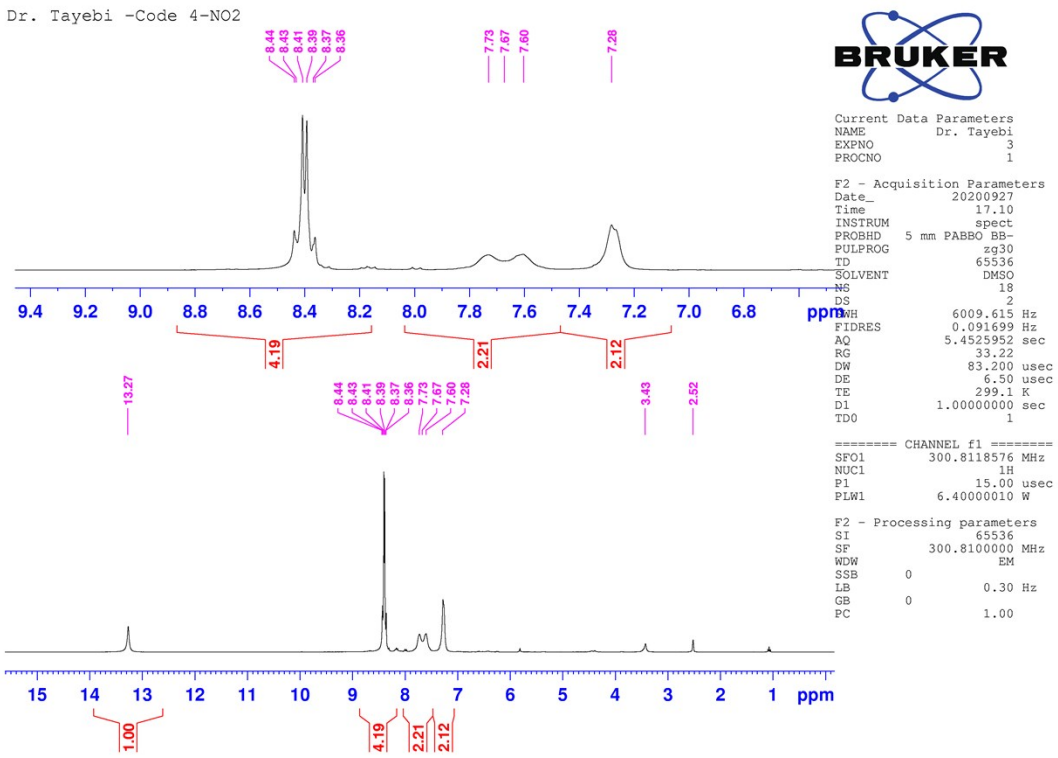

Fig. S12 [1]H-NMR Spectrum of 2-(4-nitro-phenyl)- benzimidazole (Table 2, entry 7)

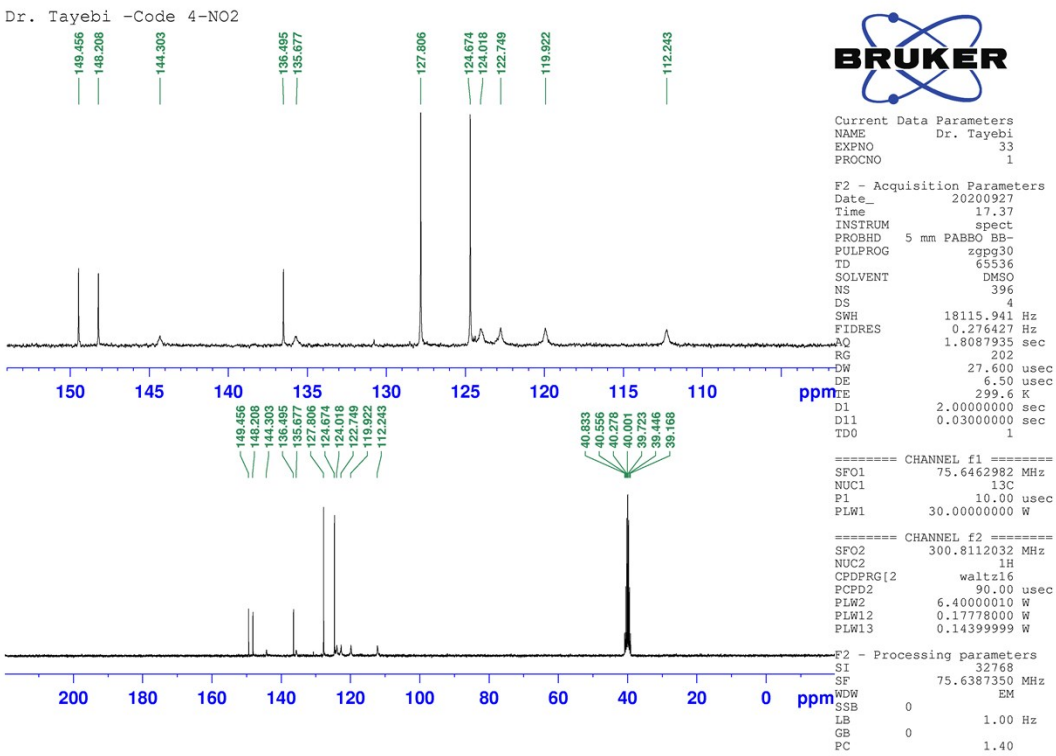

Fig. S13 ^{13}C-NMR Spectrum of 2-(4-nitro-phenyl)- benzimidazole (Table 2, entry 7)

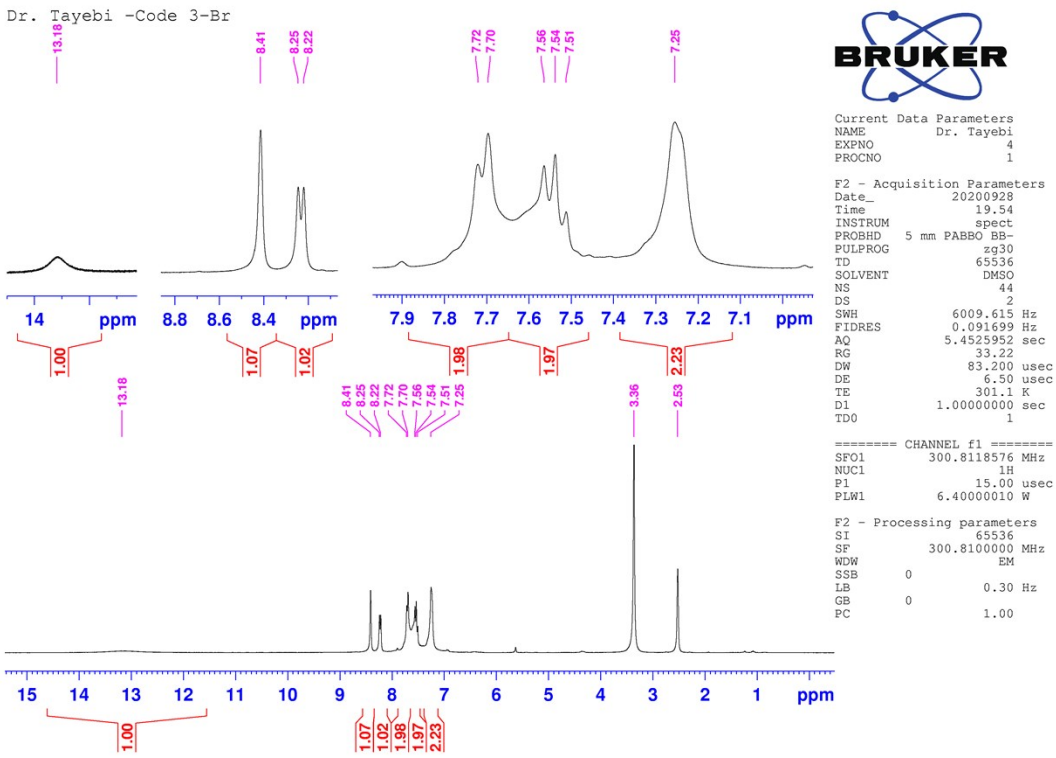

Fig. S14 [1]H-NMR Spectrum of 2-(3-bromo-phenyl)-benzimidazole (Table 2, entry 8)

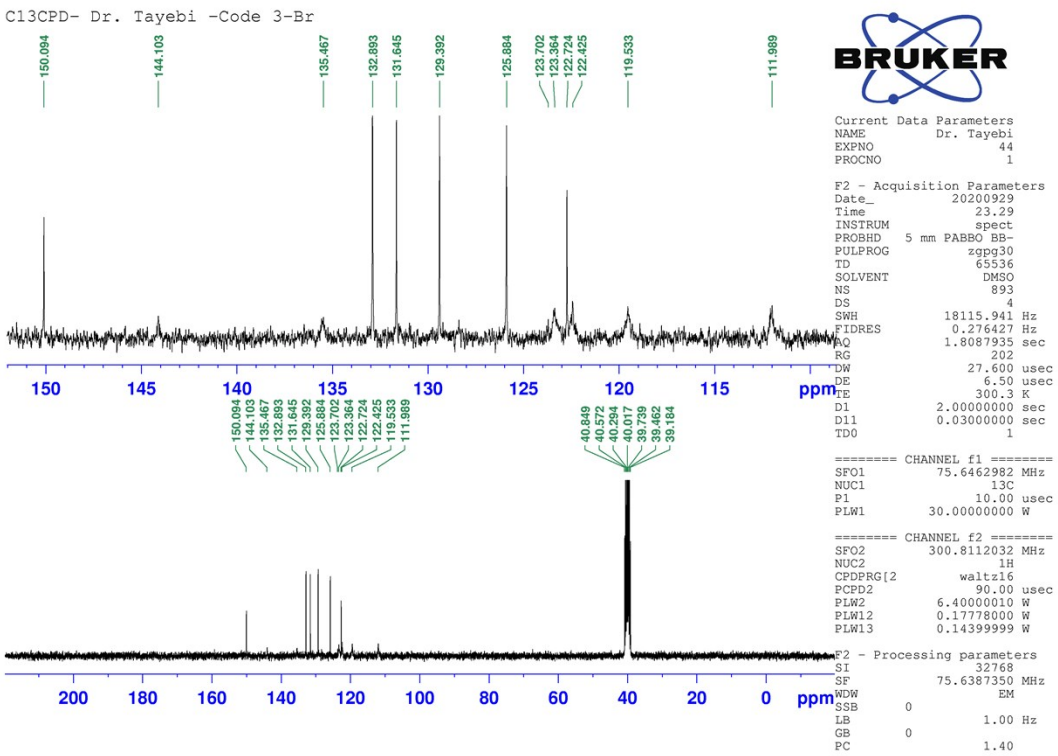

Fig. S15 ^{13}C-NMR Spectrum of 2-(3-bromo -phenyl)-benzimidazole (Table 2, entry 8)

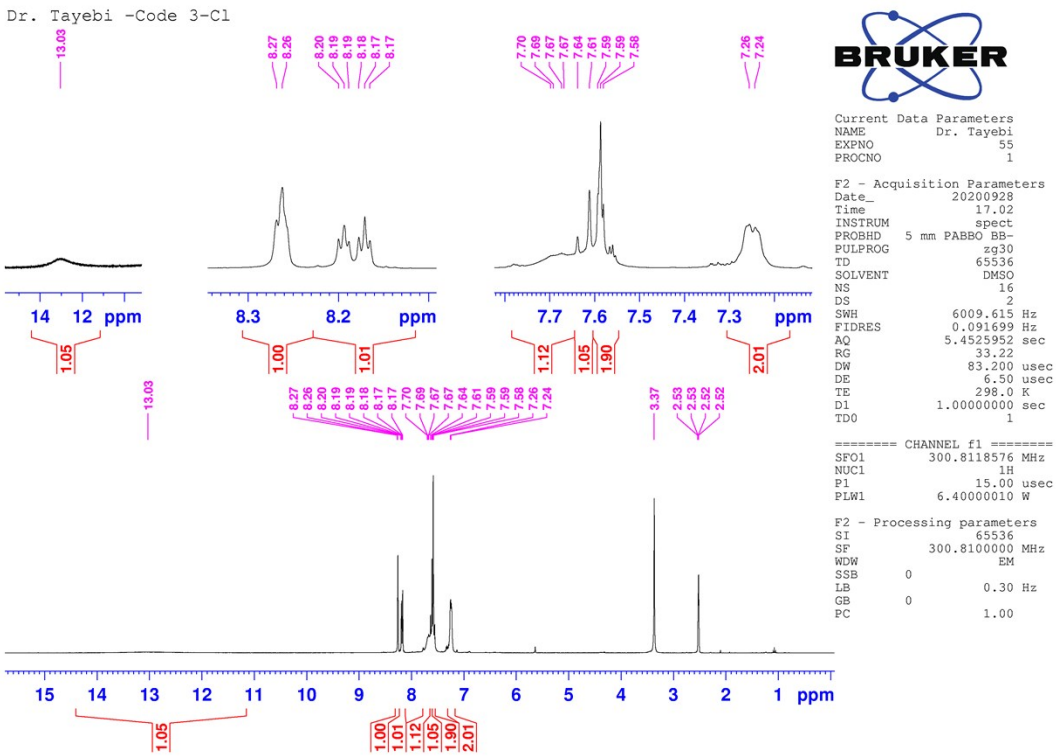

Fig. S16 [1]H-NMR Spectrum of 2-(3-chloro-phenyl)-benzimidazole (Table 2, entry 9)

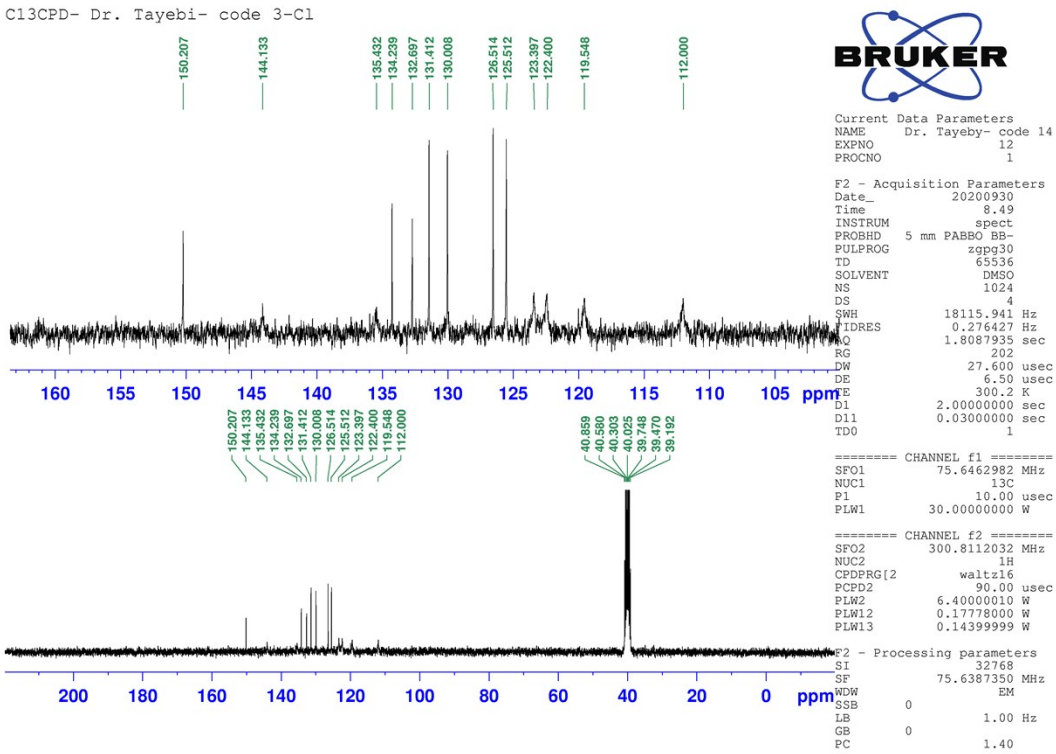

Fig. S17 ^{13}C-NMR Spectrum of 2-(3-chloro-phenyl)-benzimidazole (Table 2, entry 9)

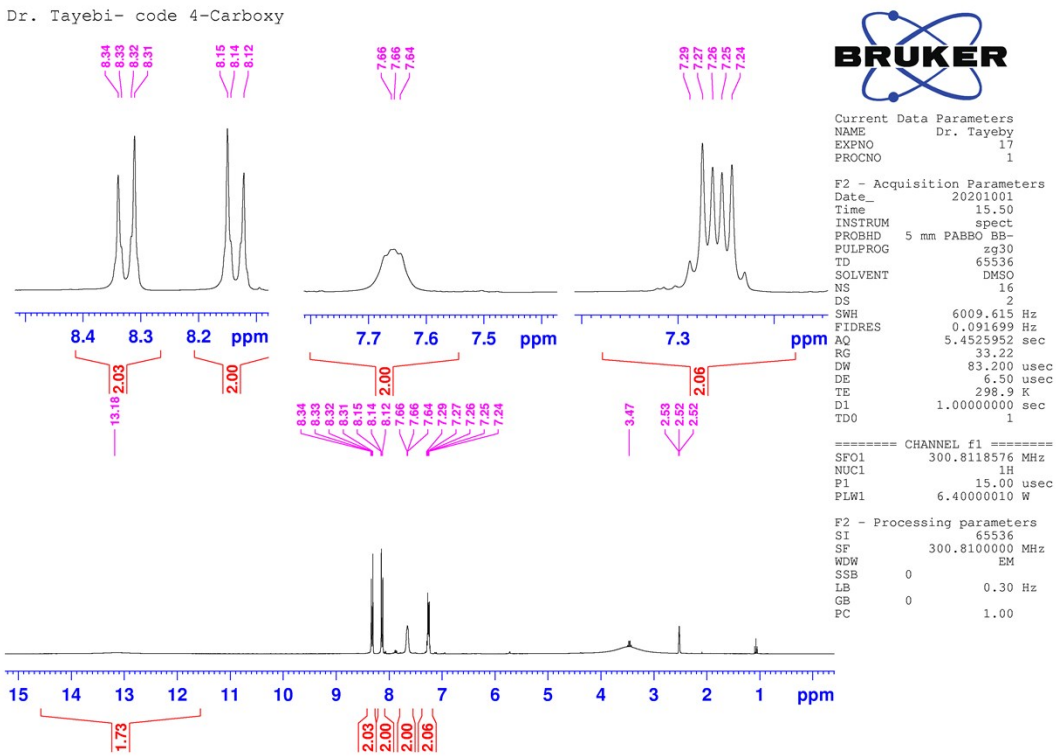

Fig. S18 [1]H-NMR Spectrum of 2-(4-carboxy-phenyl)-benzimidazole (Table 2, entry 10)

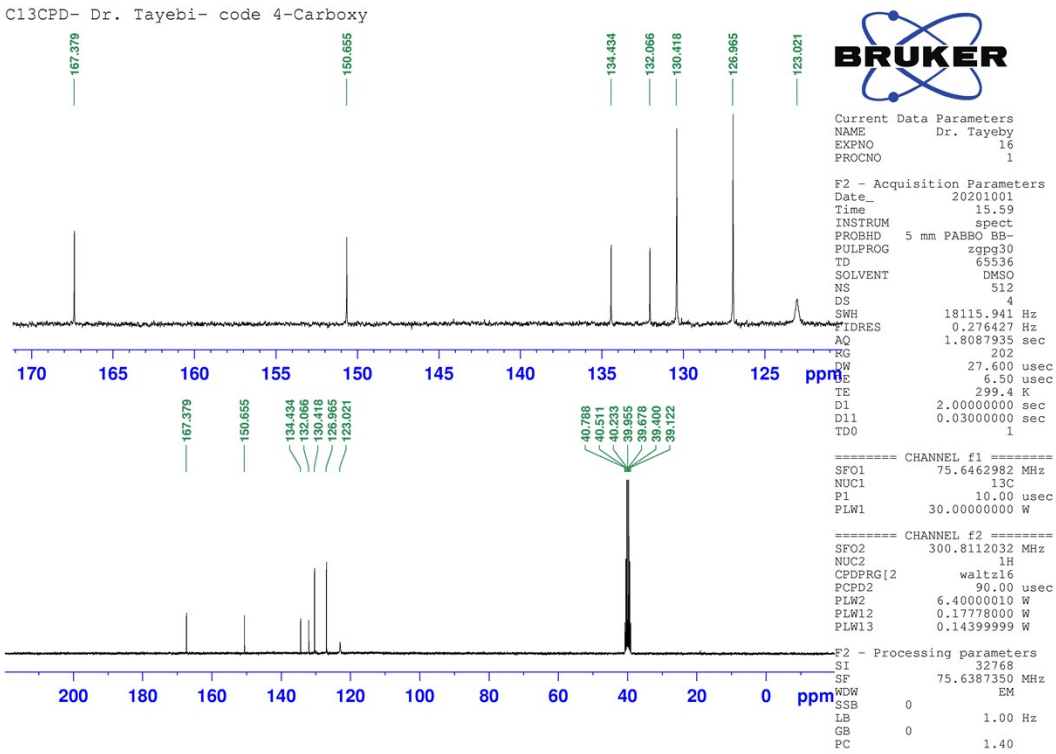

Fig. S19 ^{13}C-NMR Spectrum of 2-(4-carboxy-phenyl)-benzimidazole (Table 2, entry 10)

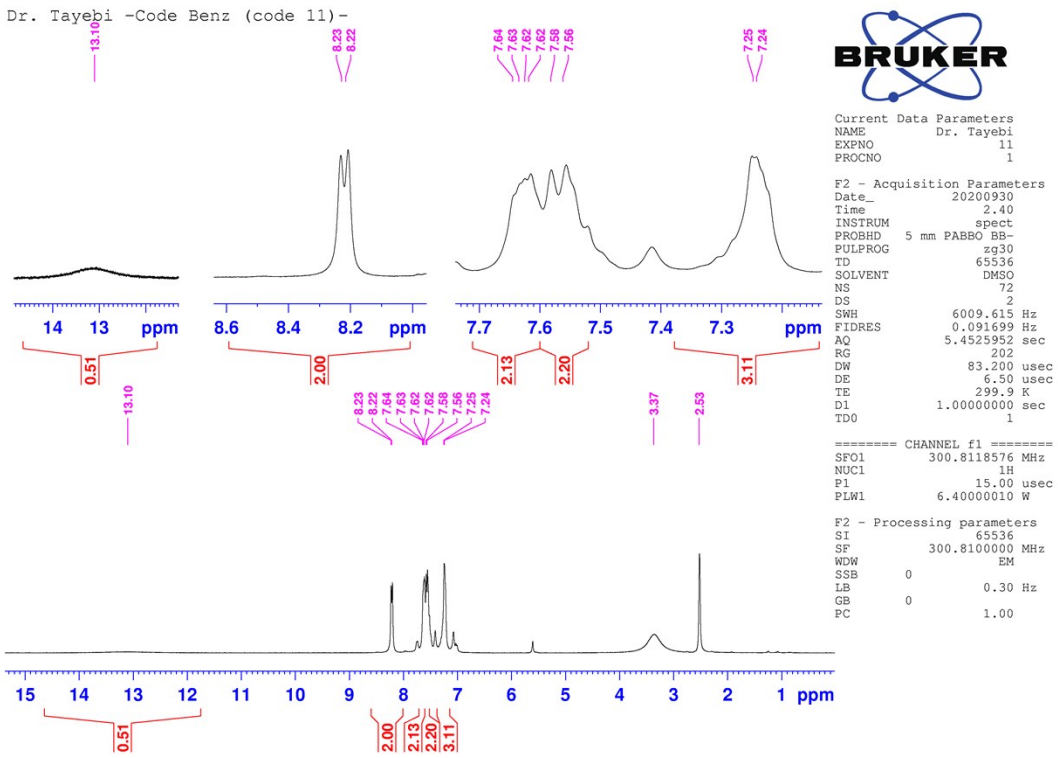

Fig. S20. [1]H-NMR Spectrum of 2-(phenyl)-benzimidazole (Table 2, entry 11)

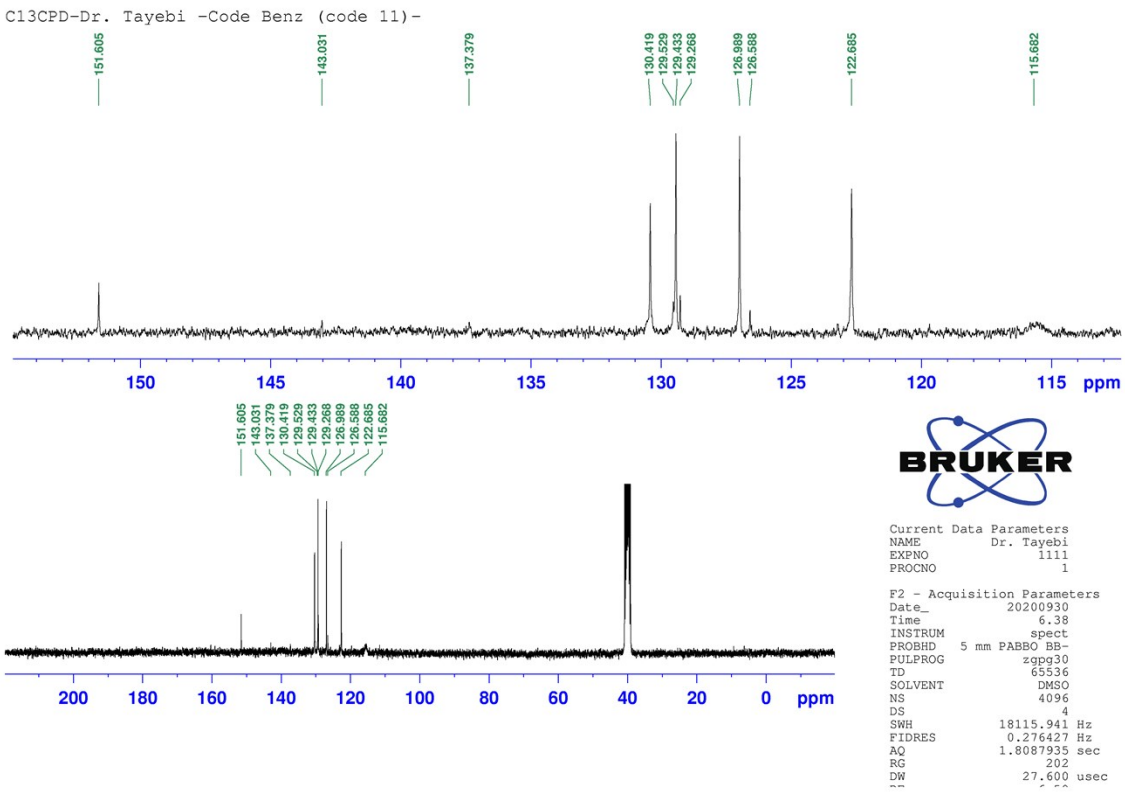

Fig. S21. ^{13}C-NMR Spectrum of 2-(phenyl)-benzimidazole (Table 2, entry 11)

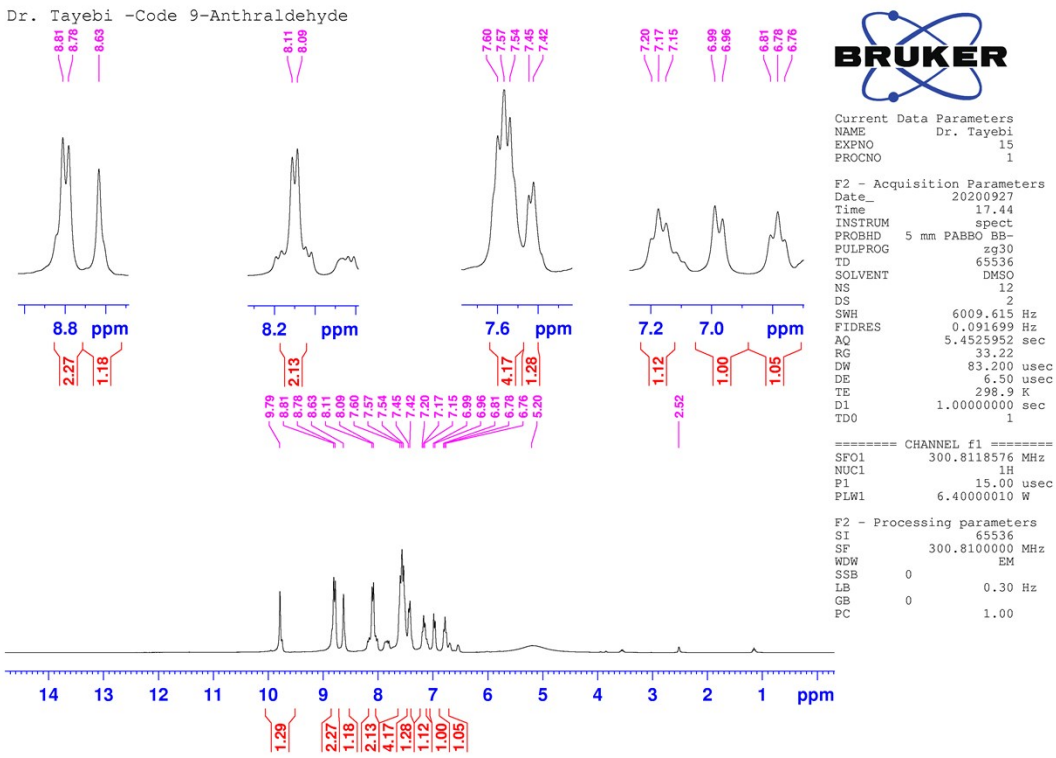

Fig. S22. [1]H-NMR Spectrumof 2-(9-anthracene)-benzimidazole (Table 2, entry 12)

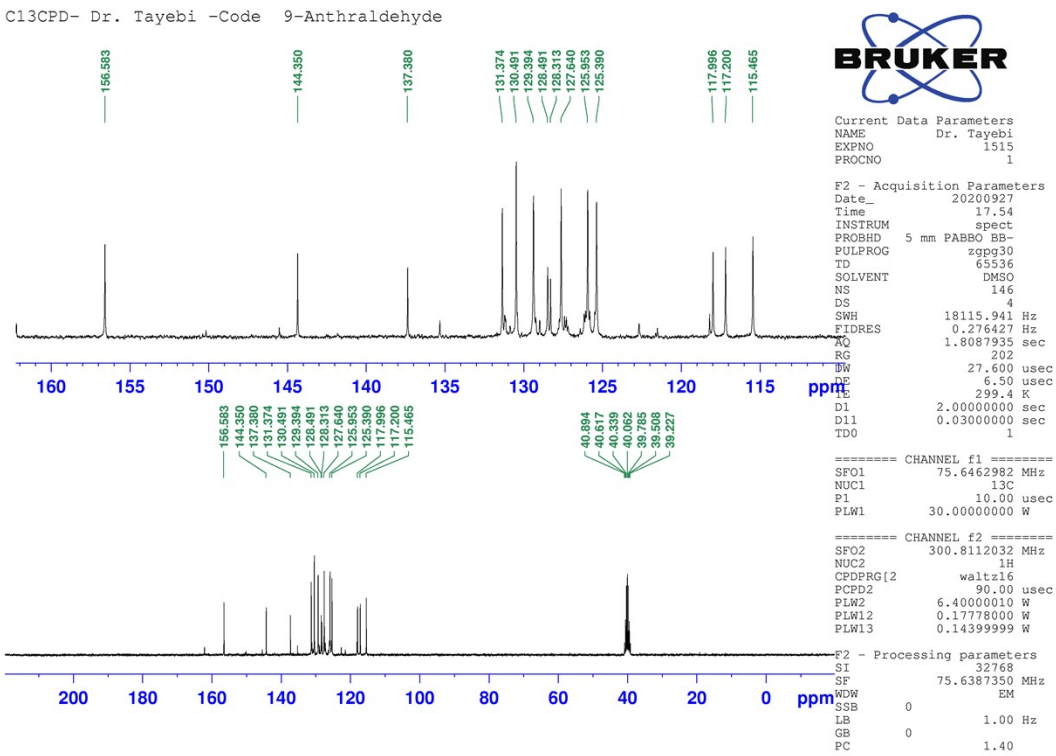

Fig. S23 ^{13}C-NMR Spectrum of 2-(9-anthracene)-benzimidazole (Table 2, entry 12)

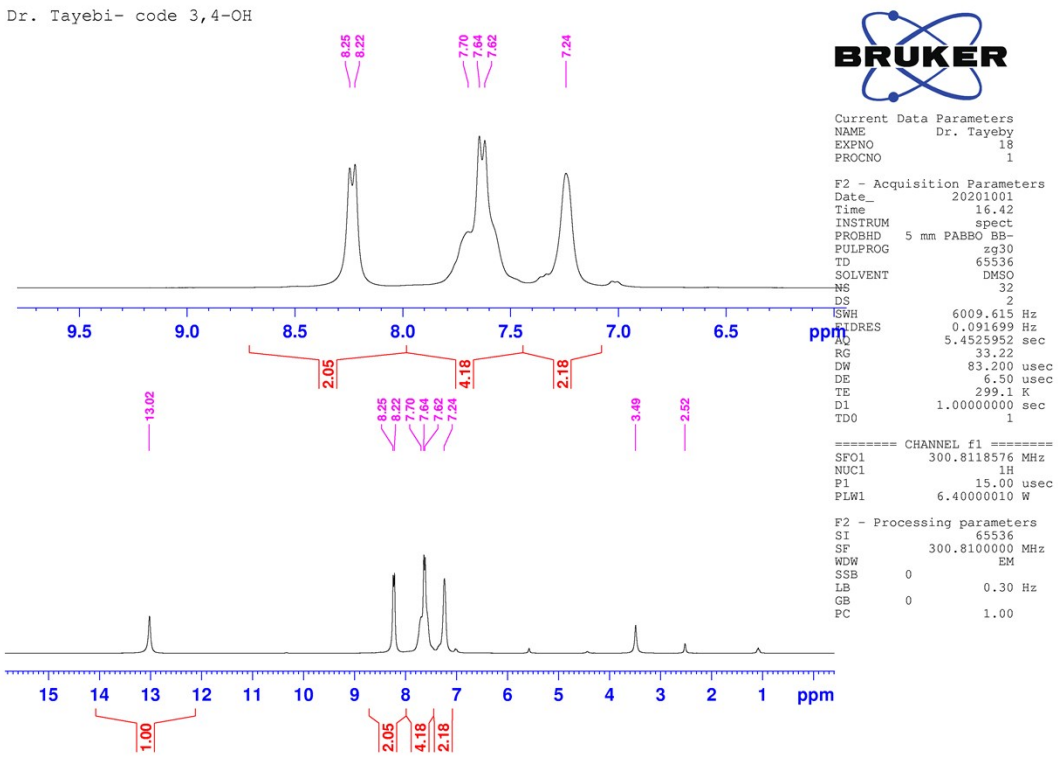

Fig. S24 [1]H-NMR Spectrum of 2-(3,4-dihydroxy-phenyl)-benzimidazole (Table 2, entry 13)

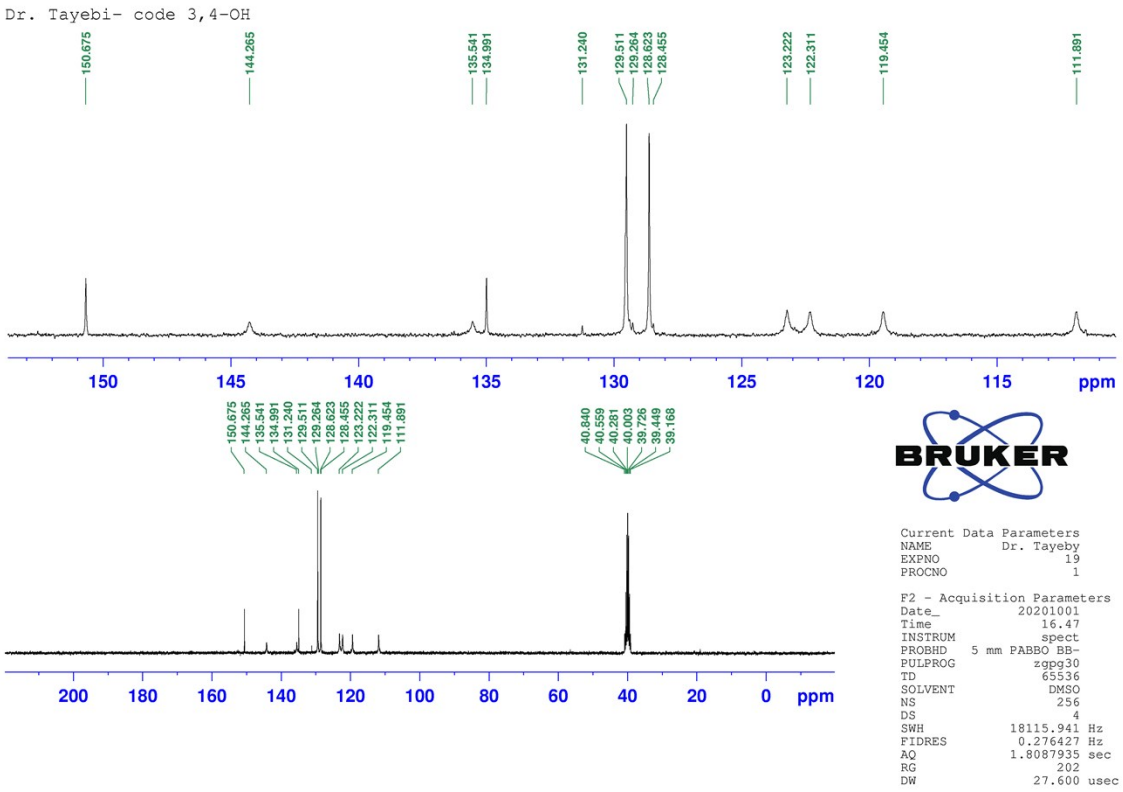

Fig. S25 ^{13}C-NMR Spectrum of 2-(3,4-dihydroxy-phenyl)-benzimidazole (Table 2, entry 13)