

Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supplementary Information:

Synthesis and Characterization of Conjugated Porphyrin Dyad Entangled with Carboxyl Functionalized Benzimidazolium: An Efficient Metal Free Sensitizer for DSSC

*Darpan V Bhuse, Pundlik R. Bhagat**

Department of Chemistry, School of Advanced Sciences, Vellore Institute of Technology, Vellore, Tamilnadu- 632014, India

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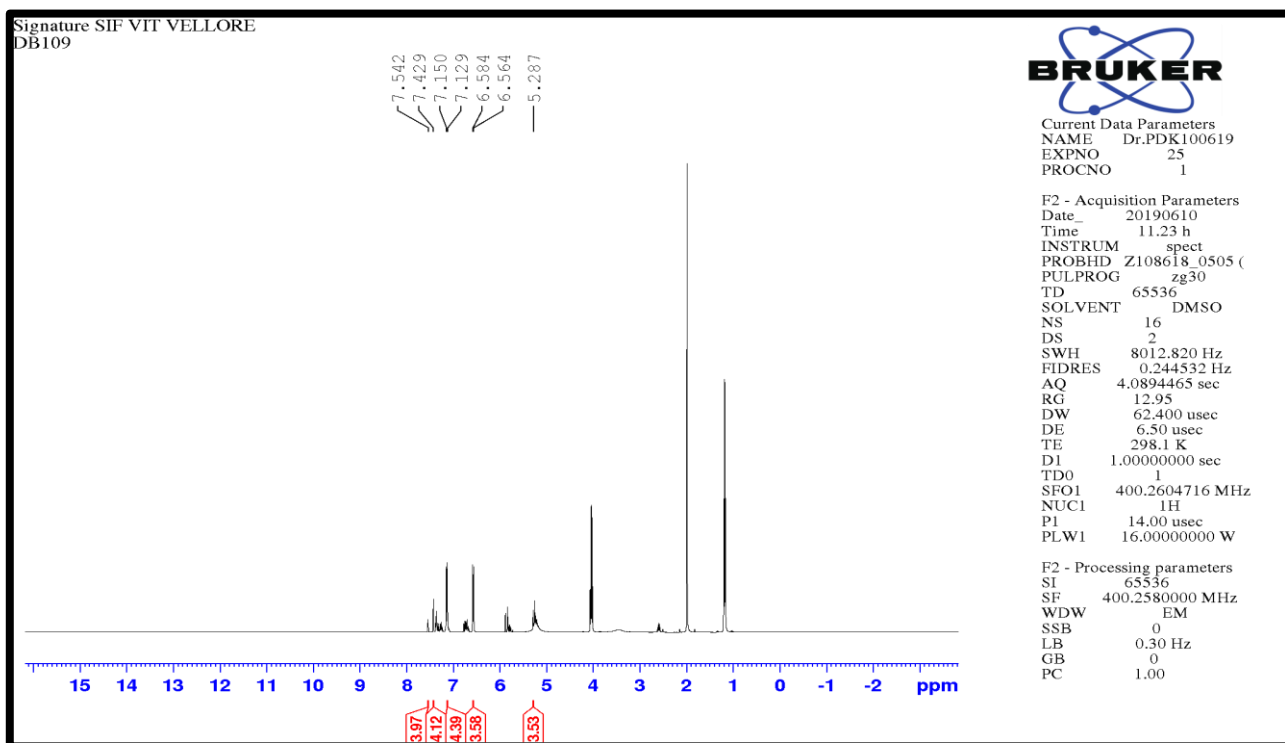


Fig S1 ^1H NMR spectrum of 1,4-phenylene bis (ethene-2,1-diyl) dianiline -1A

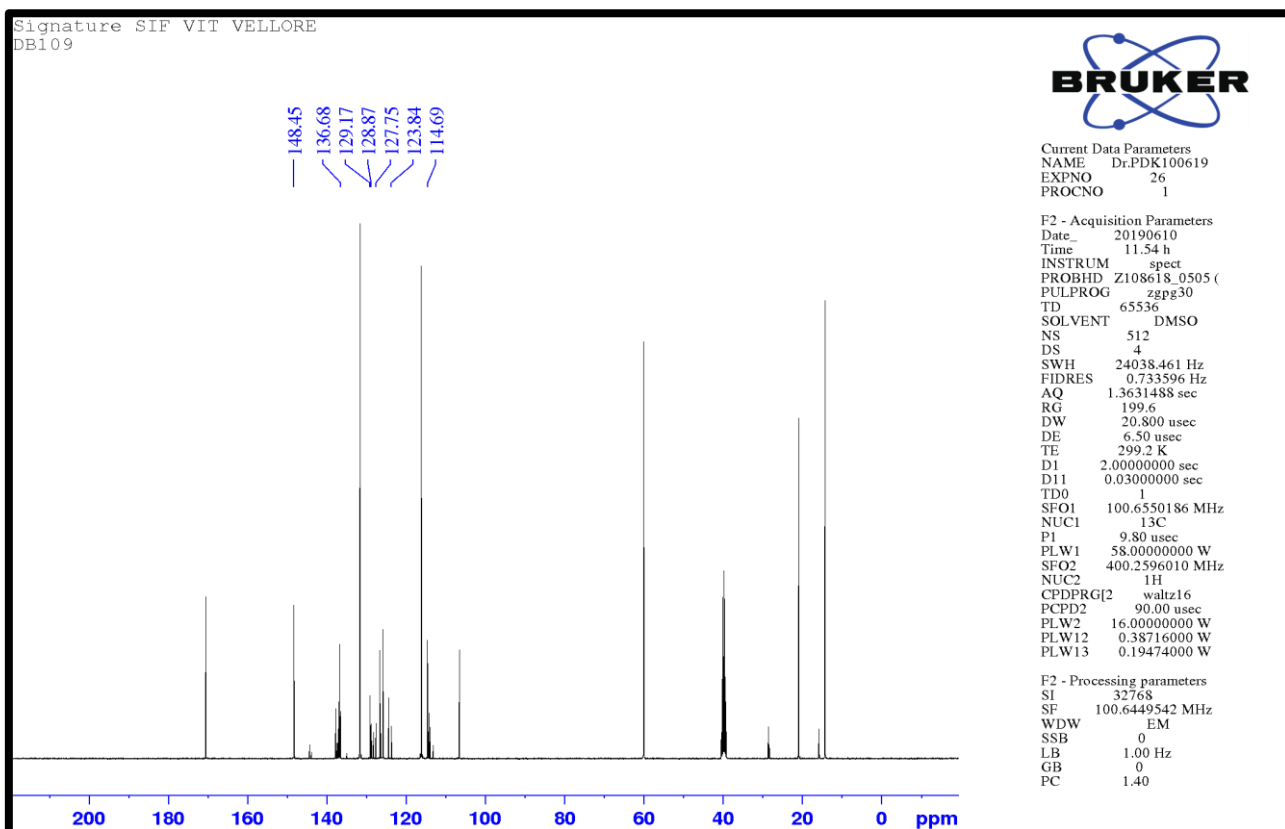


Fig S2 ^{13}C NMR spectrum of 1,4-phenylene bis (ethene-2,1-diyl) dianiline -1A

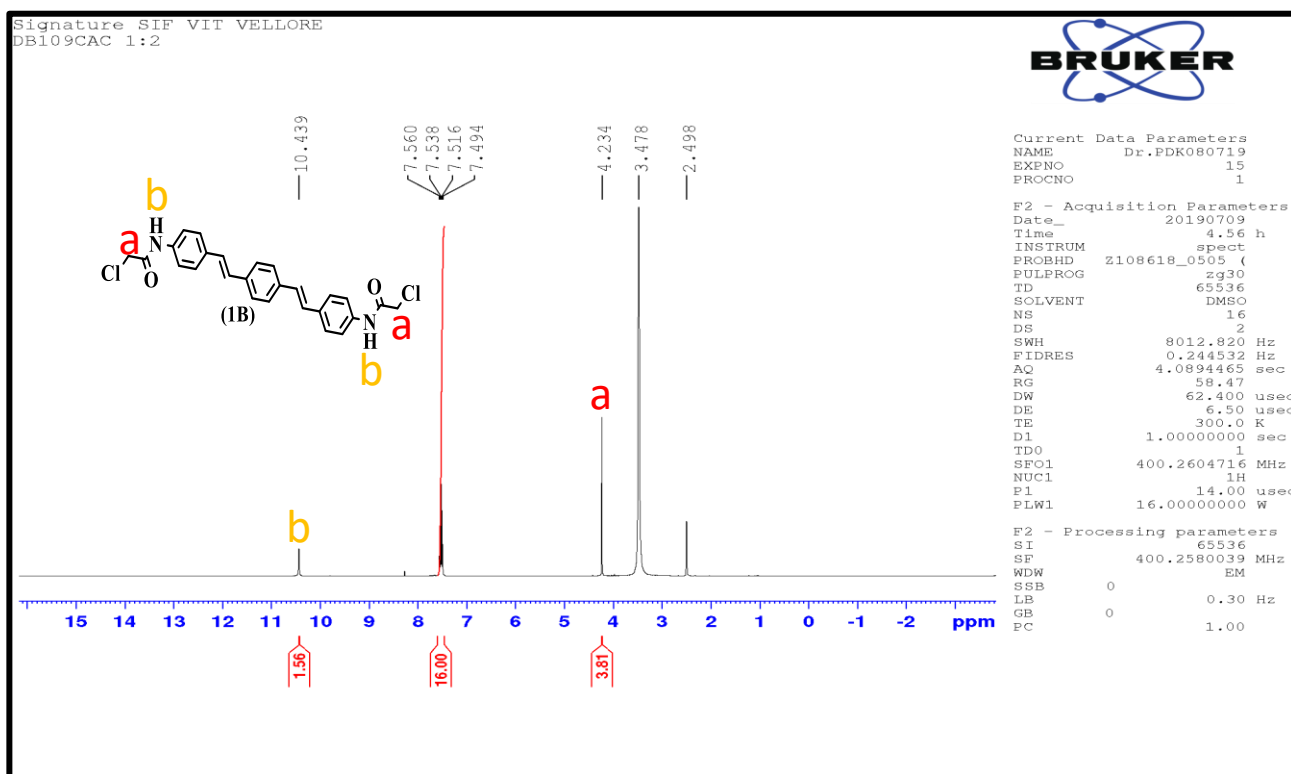


Fig S3 ^1H NMR spectrum of 1,4-phenylenebis (ethene-2,1-diyl) bis(4,1-phenylene) bis(2-chloroacetamide) 1B

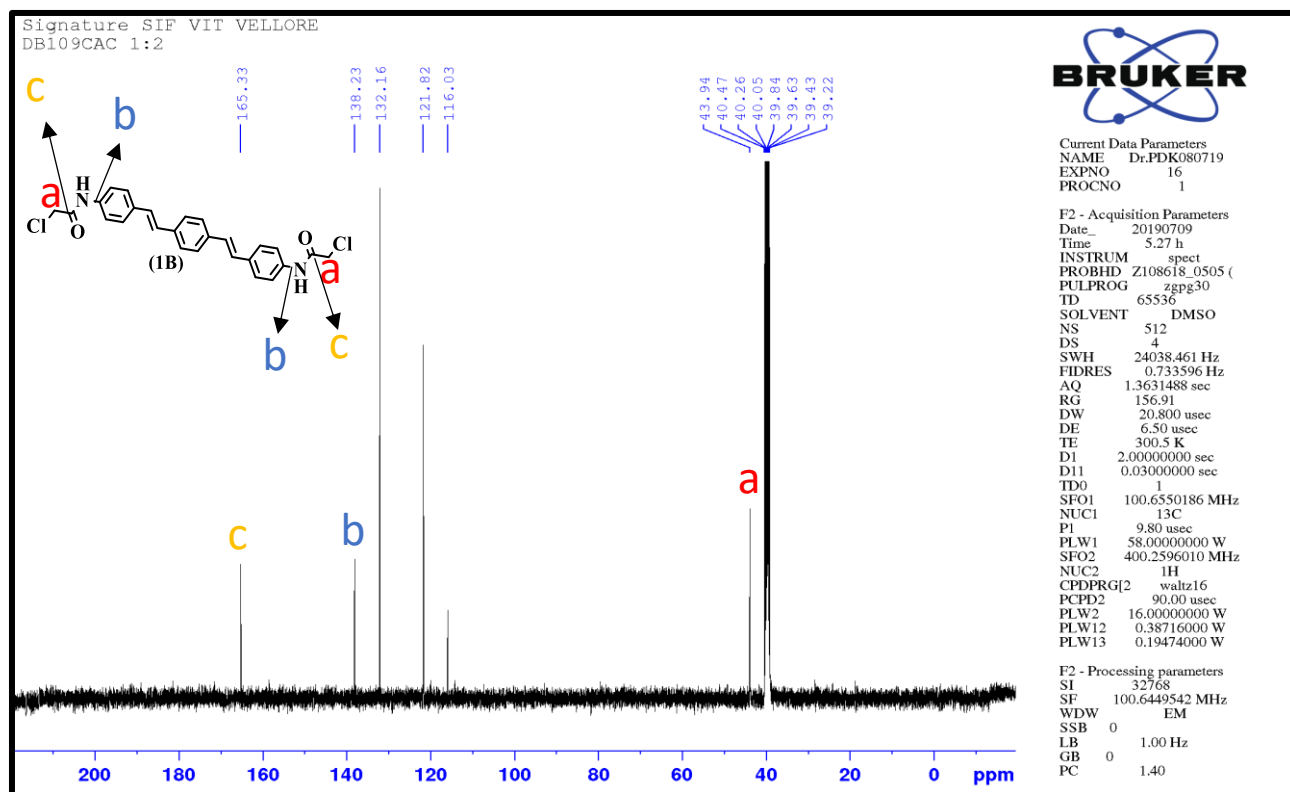


Fig S4 ^{13}C NMR spectrum of 1,4-phenylenebis (ethene-2,1-diyl) bis(4,1-phenylene) bis(2-chloroacetamide) -1B

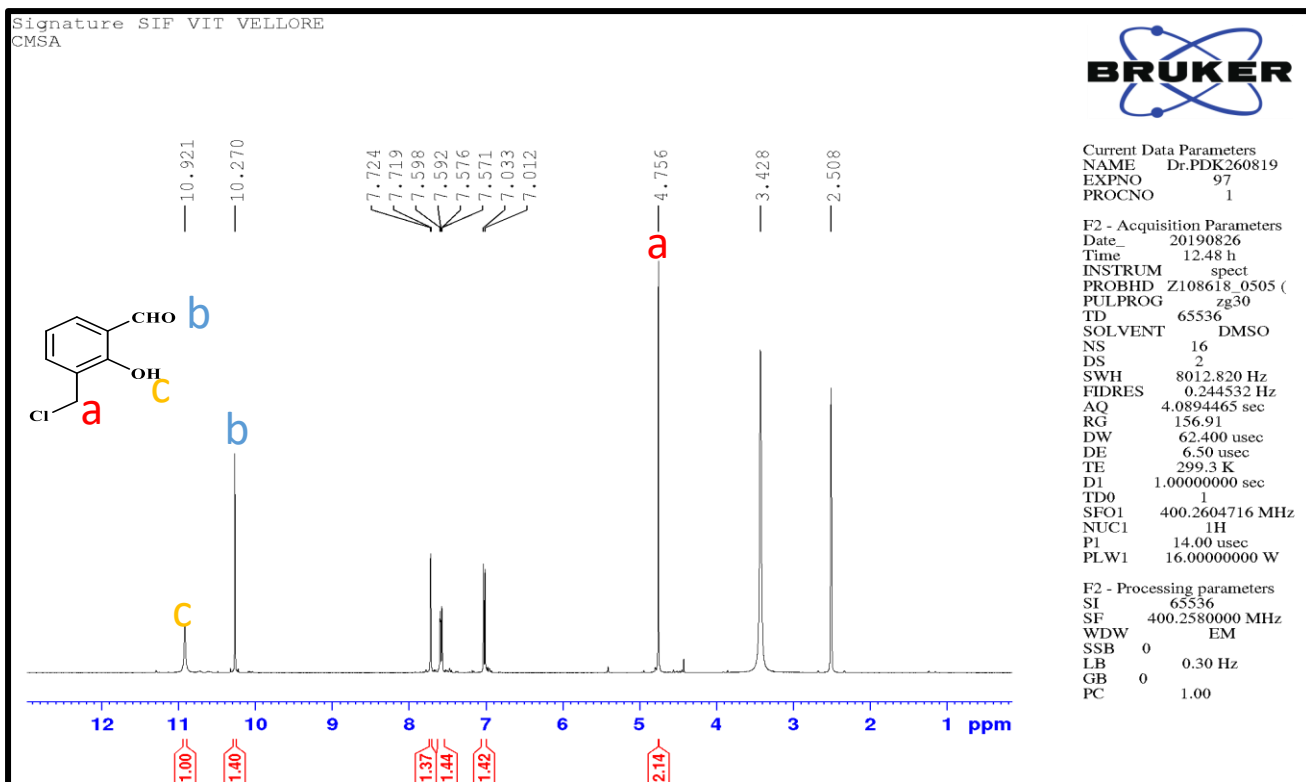


Fig S5 ^1H NMR Spectrum of 5- (Chloromethyl)-2- Hydroxybenzaldehyde-2A

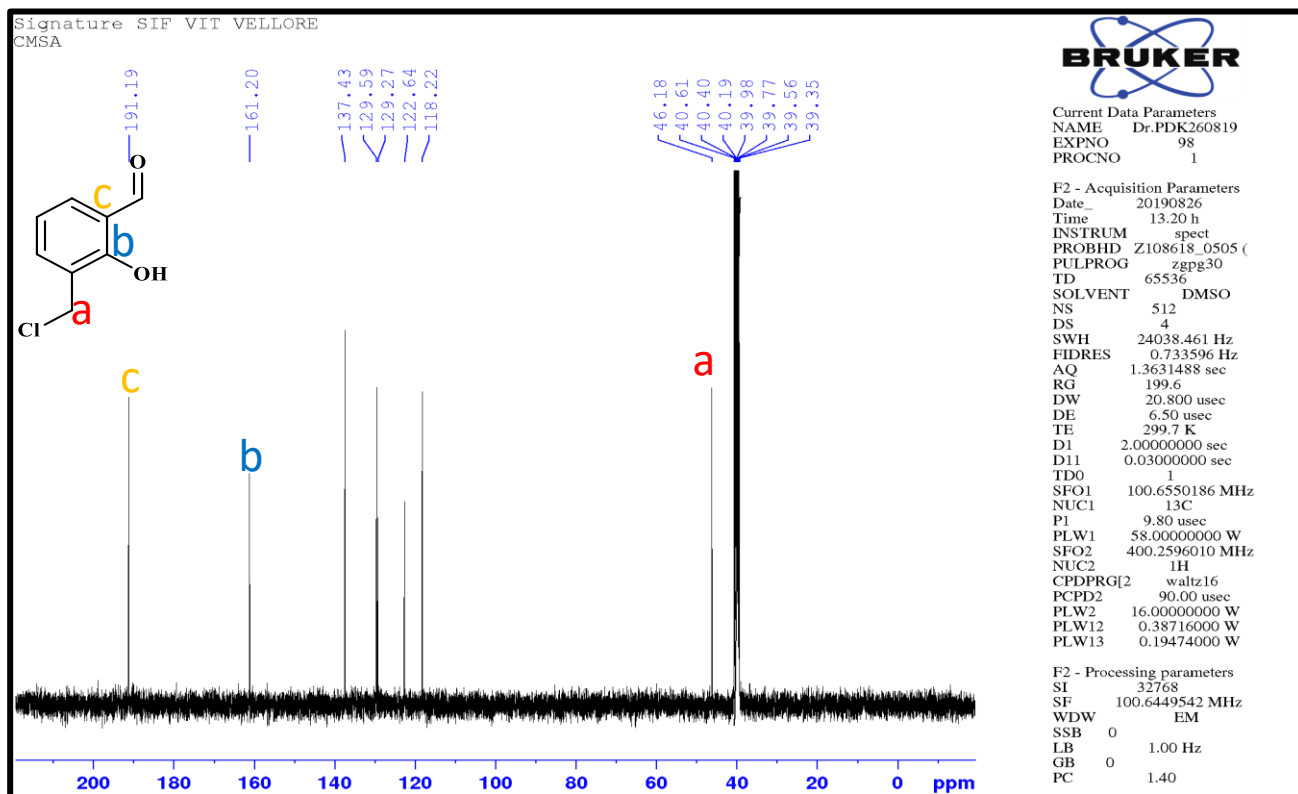


Fig S6 ^{13}C NMR Spectrum of 5- (Chloromethyl)-2- Hydroxybenzaldehyde-2A

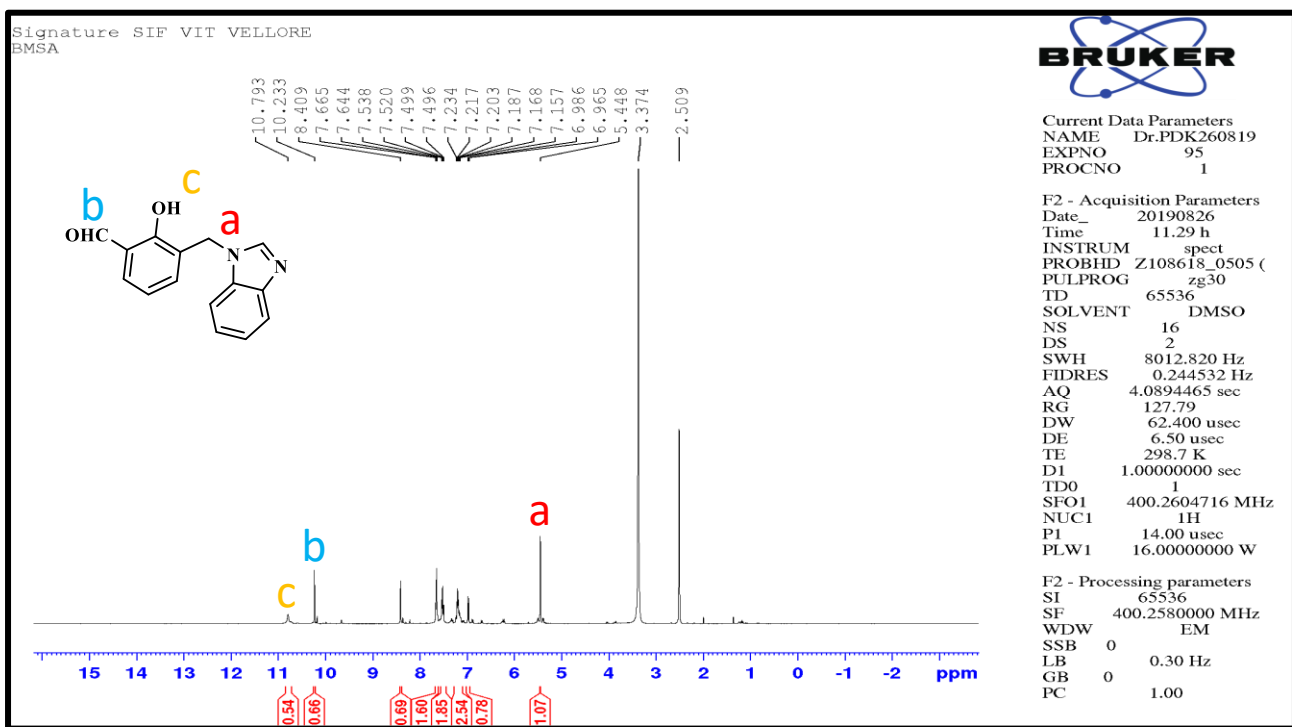


Fig S7 ¹H NMR Spectrum of 5-((1H-Benzoimidazole-1-yl) methyl)-2-Hydroxybenzaldehyde 2B

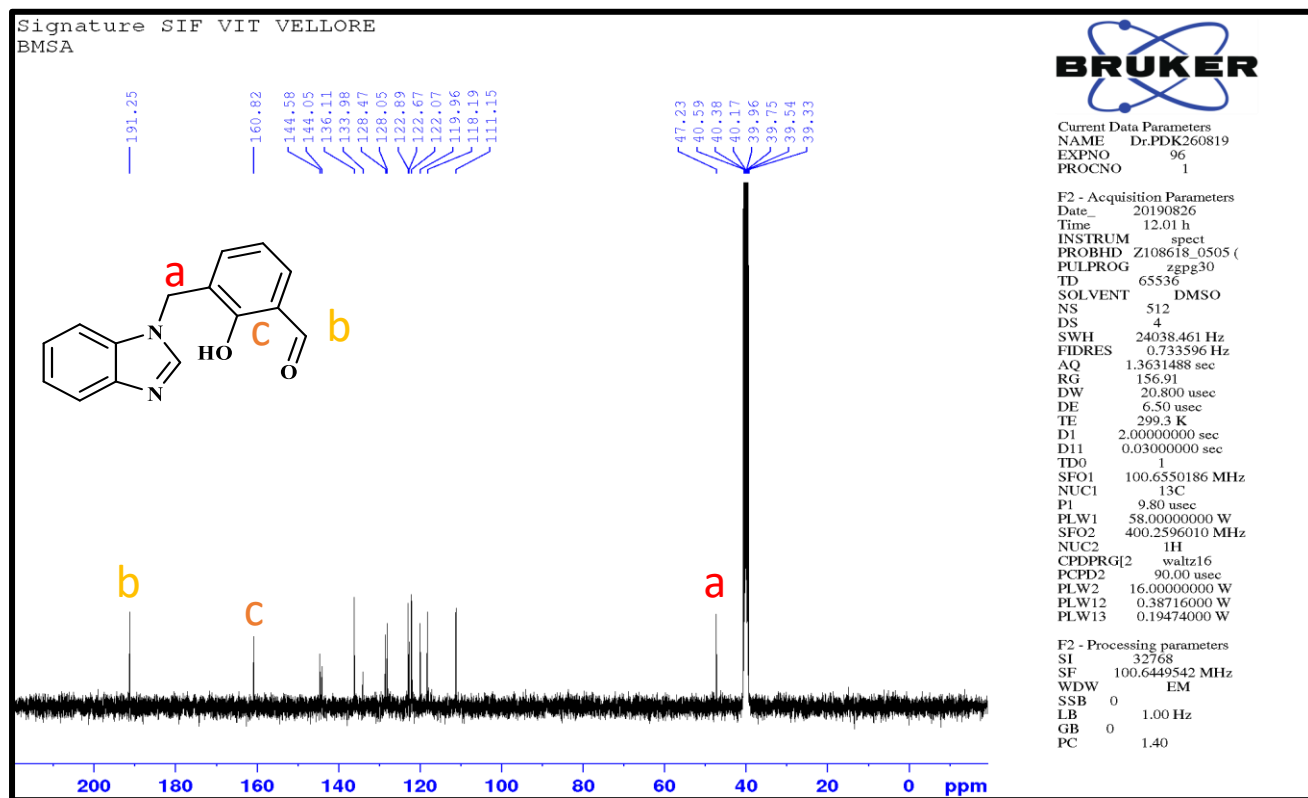


Fig S8 ¹³C NMR Spectrum of 5-((1H-Benzoimidazole-1-yl) methyl)-2-Hydroxybenzaldehyde 2B

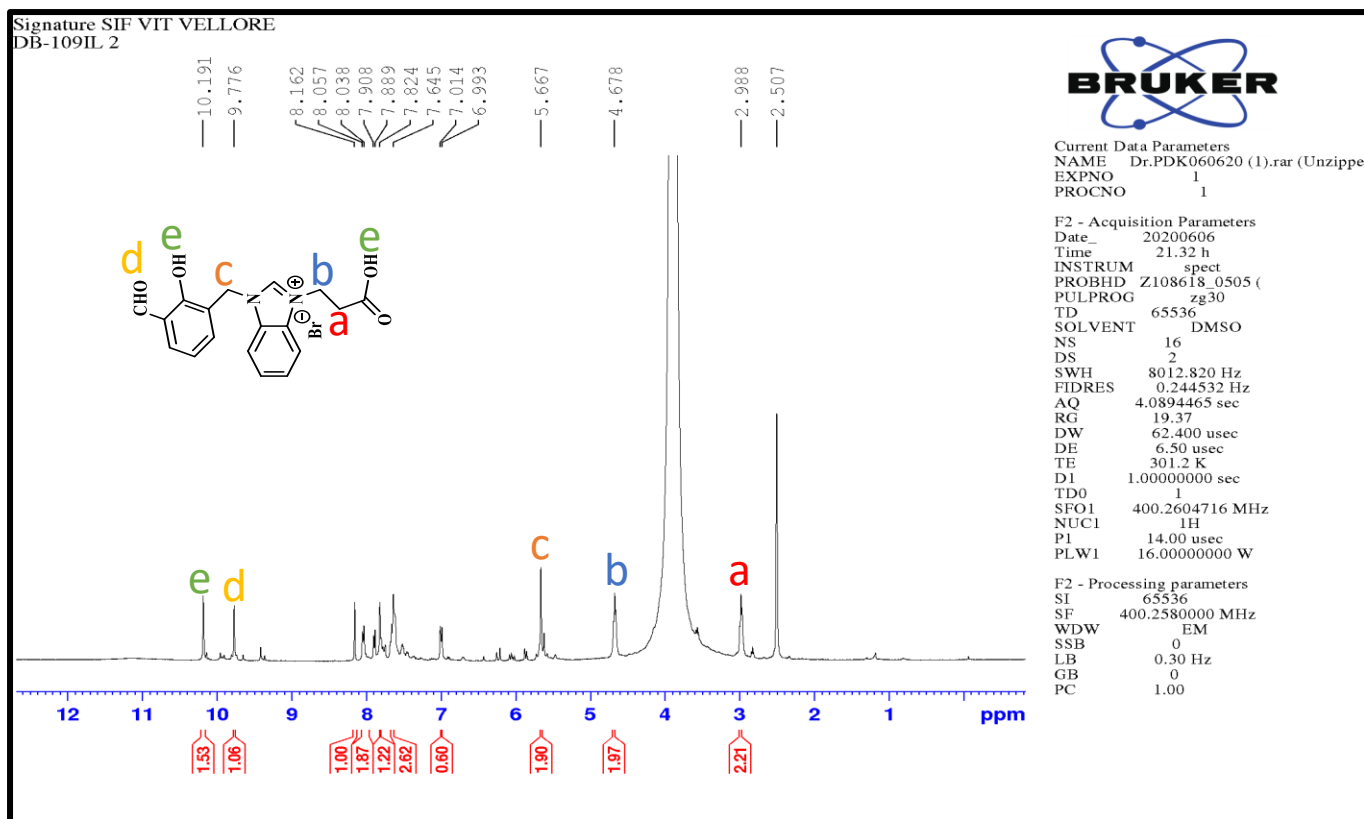


Fig S9 ¹H NMR Spectrum of 3-(2-carboxyethyl)-1-(3-formyl-4-hydroxybenzyl)-1H-benzoimidazole-3-ium-2C

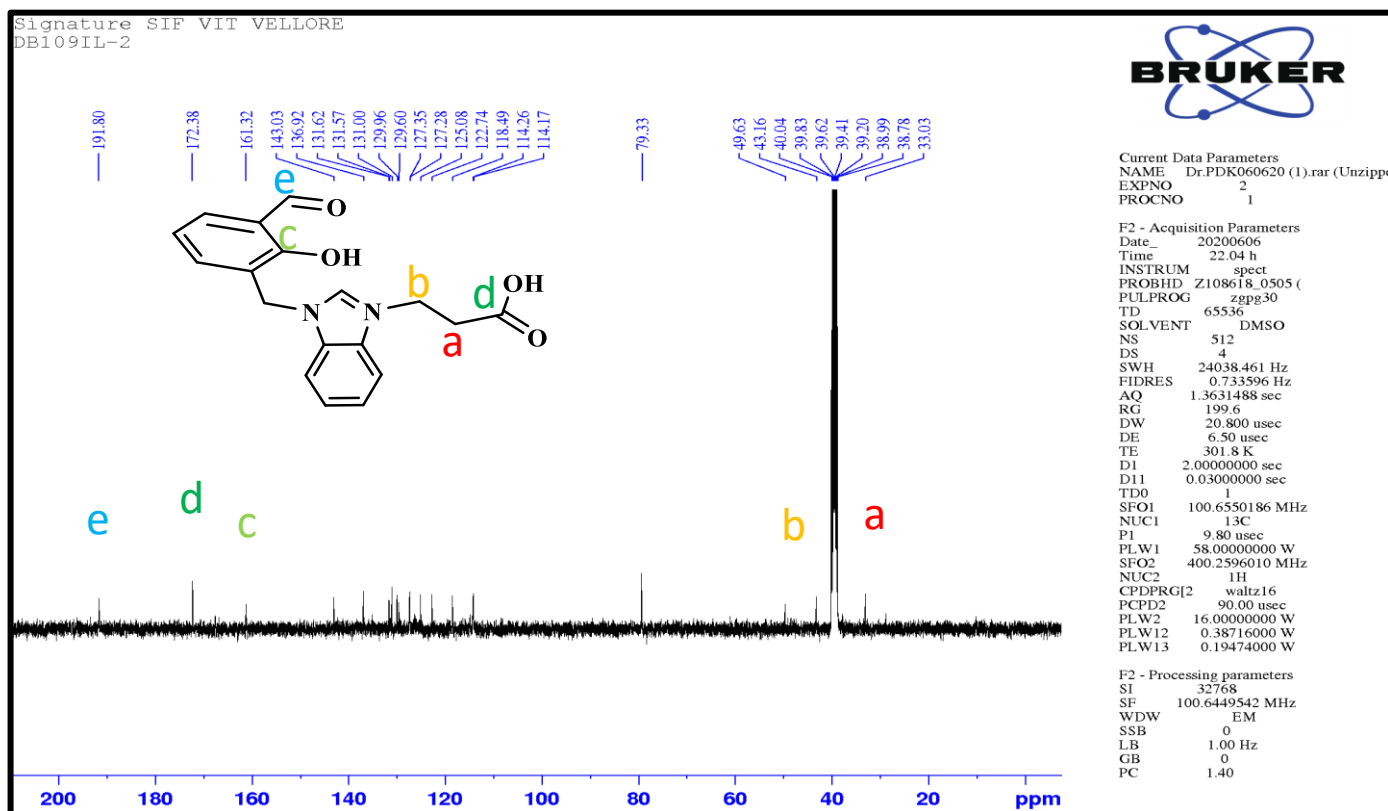


Fig S10 ¹³C NMR Spectrum of 3-(2-carboxyethyl)-1-(3-formyl-4-hydroxybenzyl)-1H-benzoimidazole-3-ium-2C

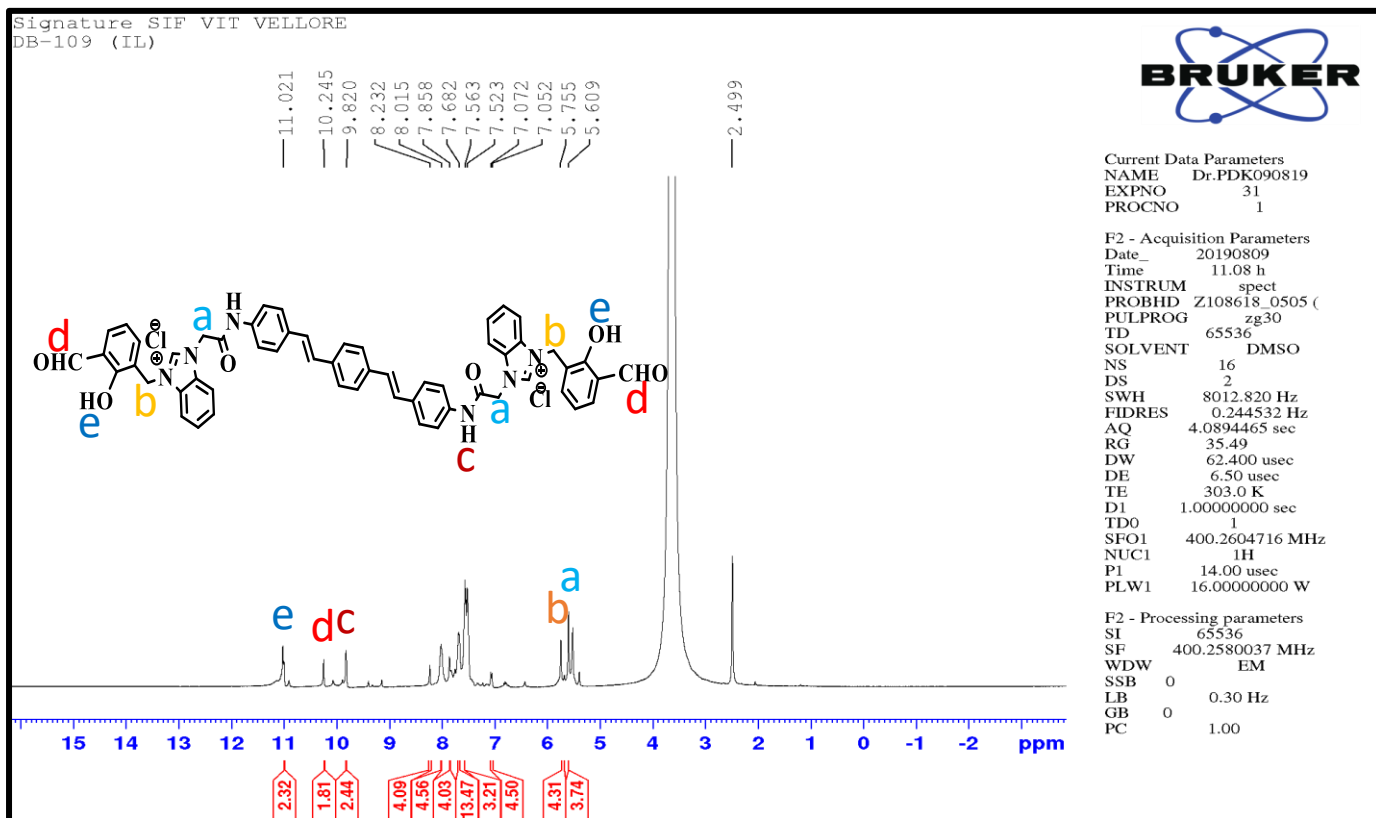


Fig S11 ¹H NMR Spectrum of 1,1-(((1,4-phenylenebis(ethene-2,1-diyl))bis(4,1-phenylene))bis(azanediy))bis(2-oxoethane-2,1-diyl))bis(3-(3-formyl-4-hydroxybenzyl)-1H-benzoimidazol-3-ium),3A

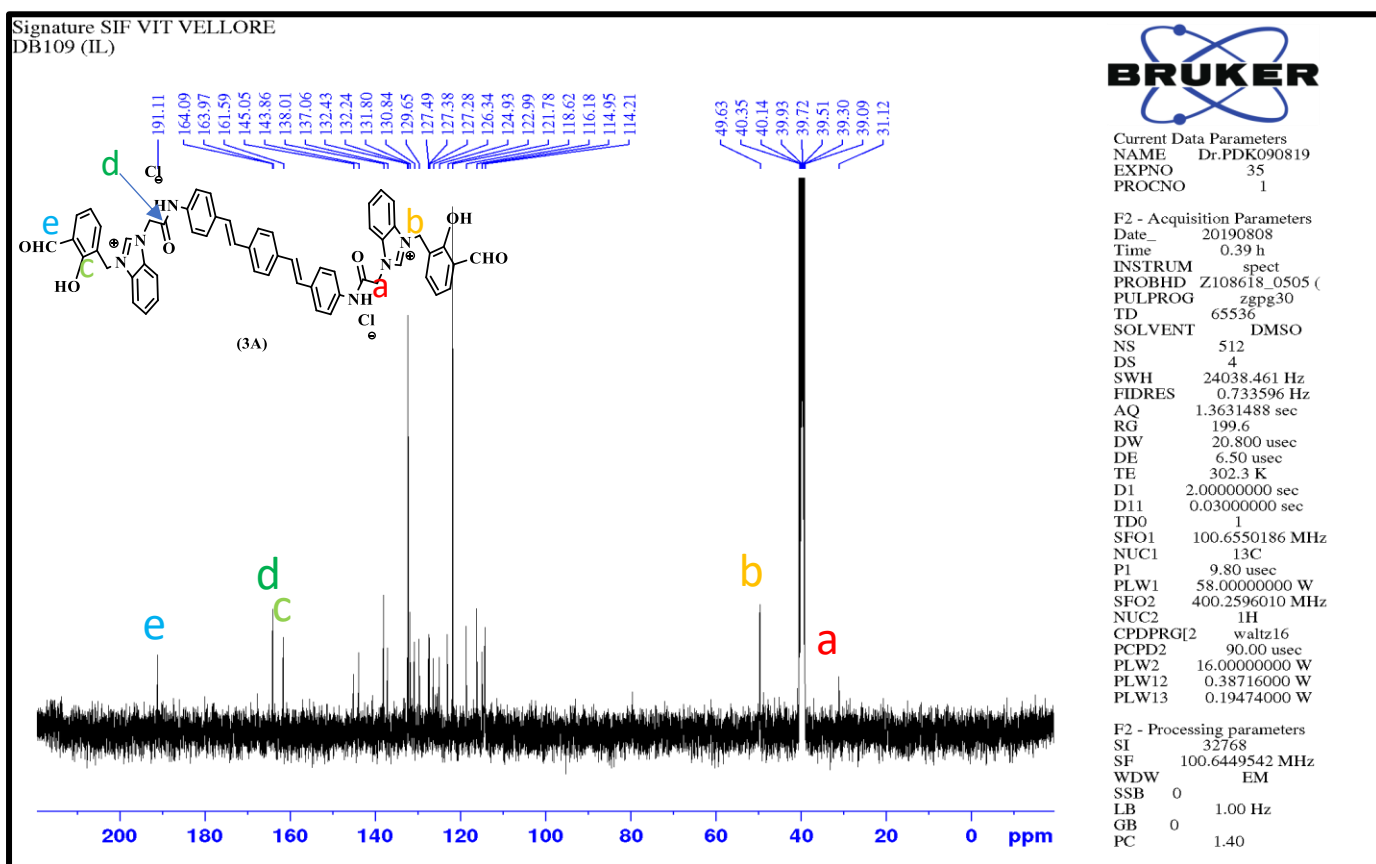


Fig S12 ¹³C CMR Spectrum of 1,1-(((1,4-phenylenebis(ethene-2,1-diyl))bis(4,1-phenylene))bis(azanediy))bis(2-oxoethane-2,1-diyl))bis(3-(3-formyl-4-hydroxybenzyl)-1H-benzoimidazol-3-ium),3A

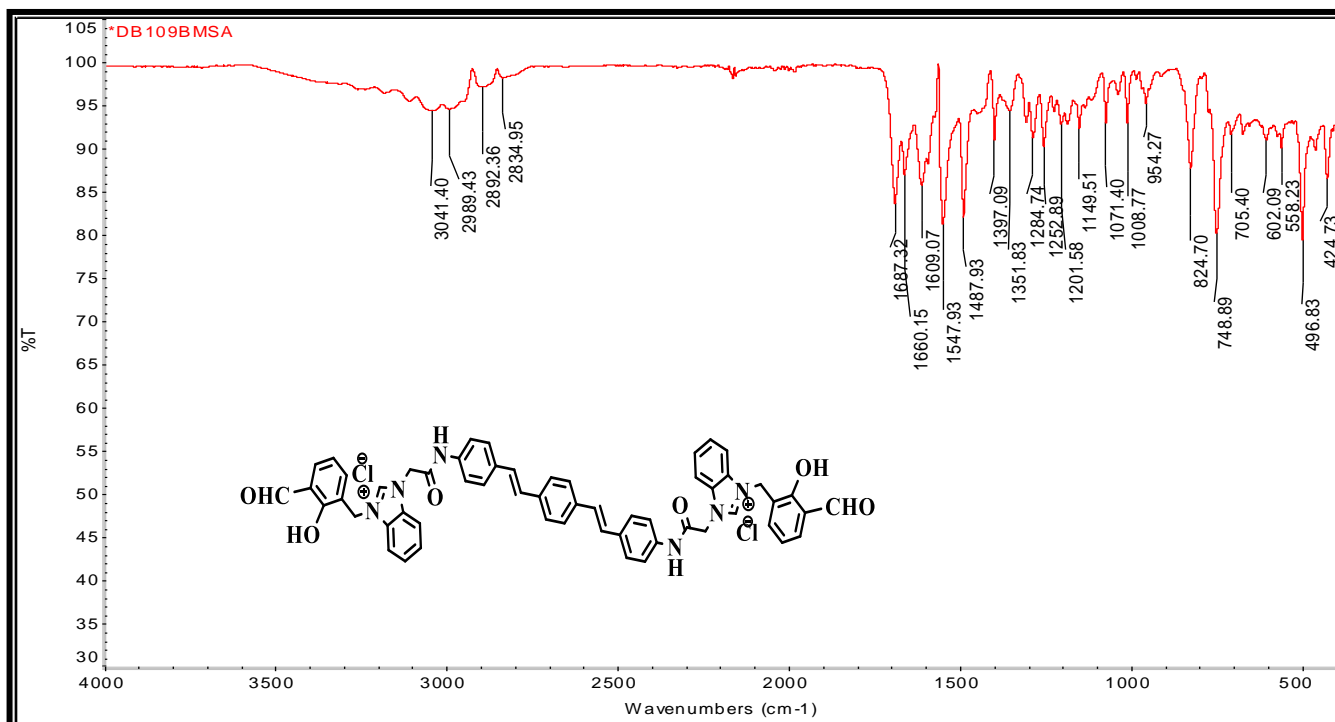


Fig S13 FTIR Spectrum of 1,1-(((1,4-phenylenebis(ethene-2,1-diyl))bis(4,1-phenylene))bis(azanediyl))bis(2-oxoethane-2,1-diyl))bis(3-(3-formyl-4-hydroxybenzyl)-1H-benzimidazol-3-ium), 3A

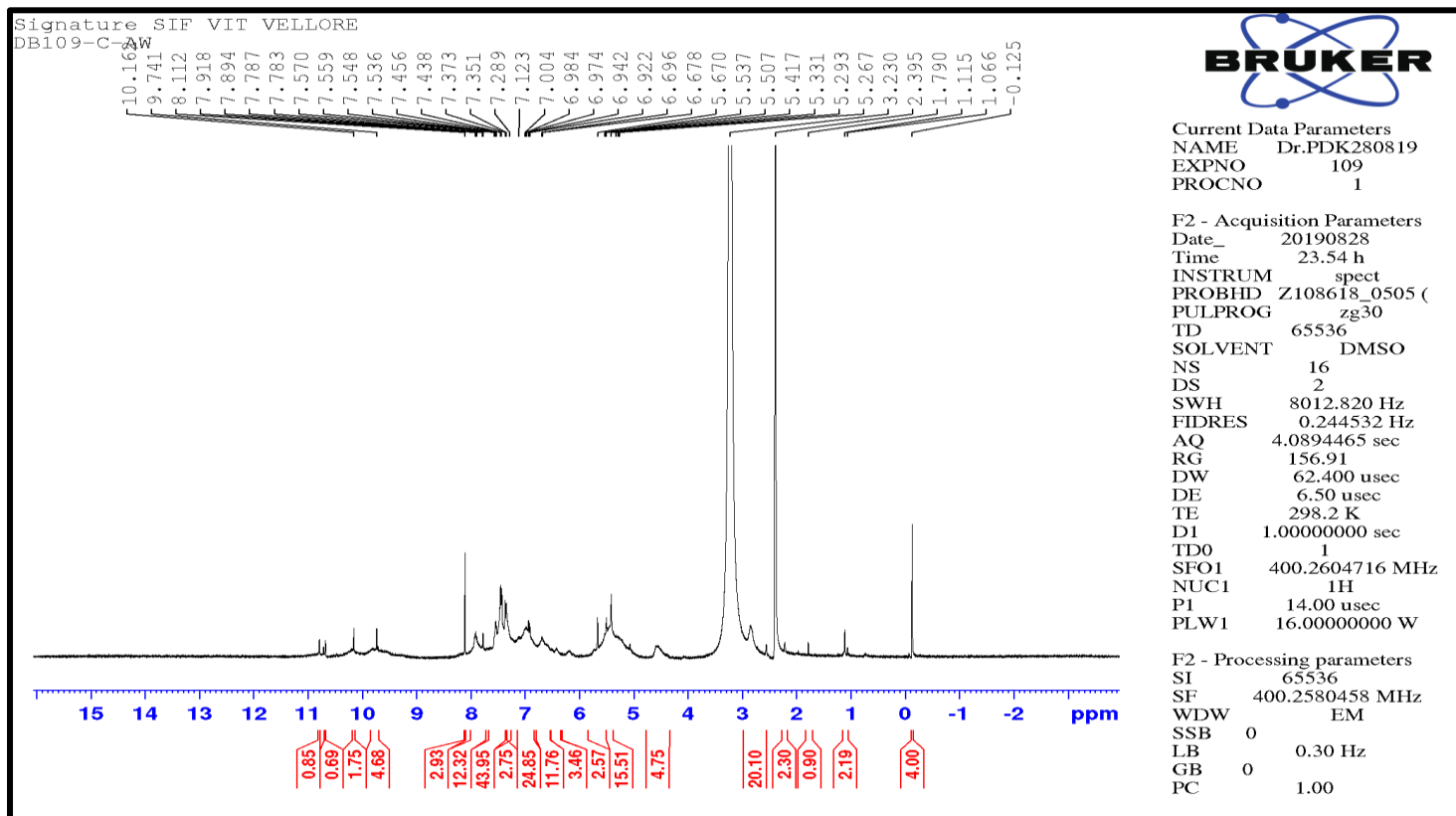
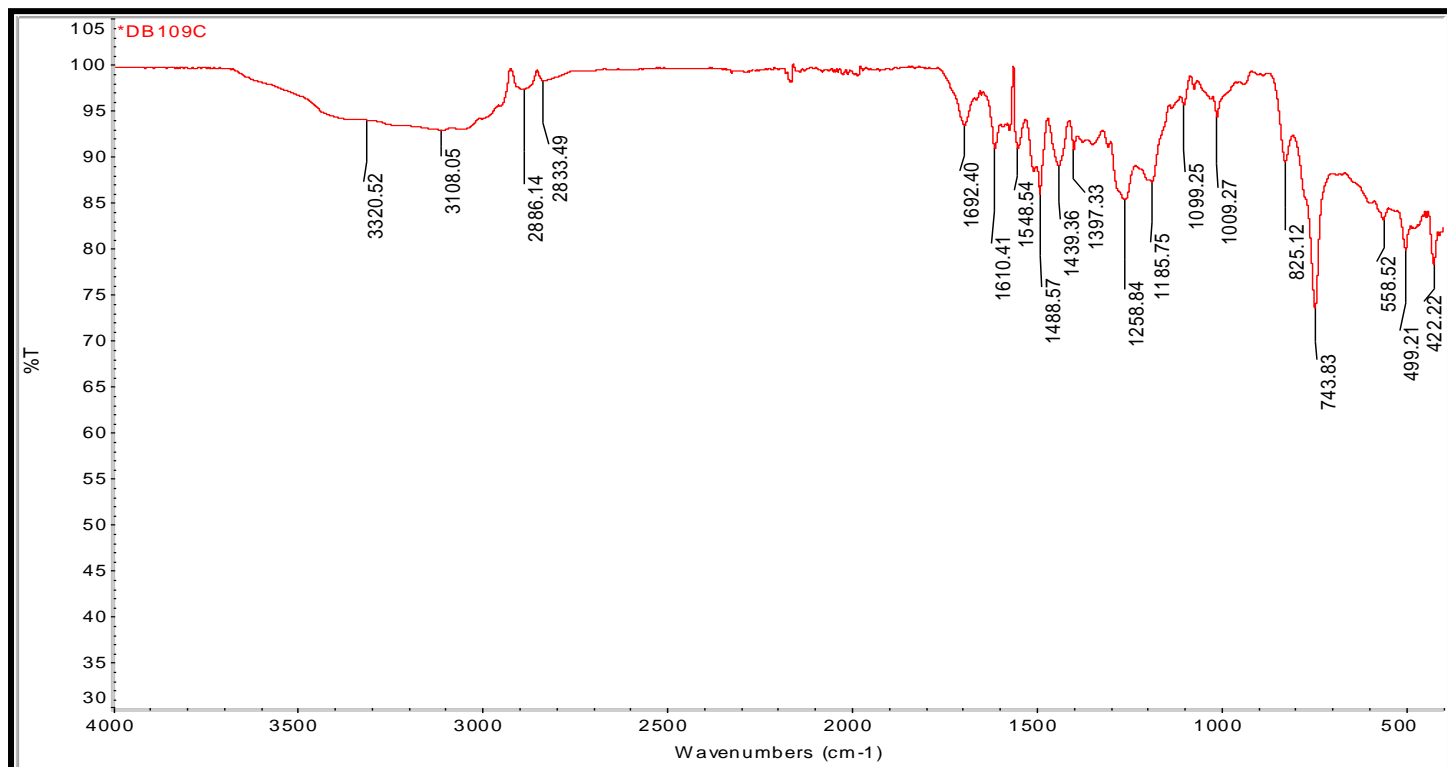


Fig S14 NMR spectrum of CPDCFBM, 3B



S15 FT-IR Spectrum of CPDCFBM, 3B

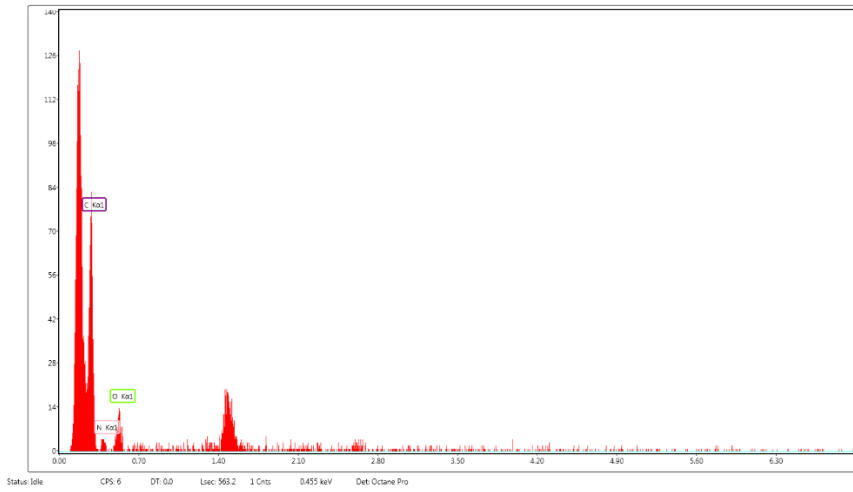


Fig S16. EDAX of Dyad

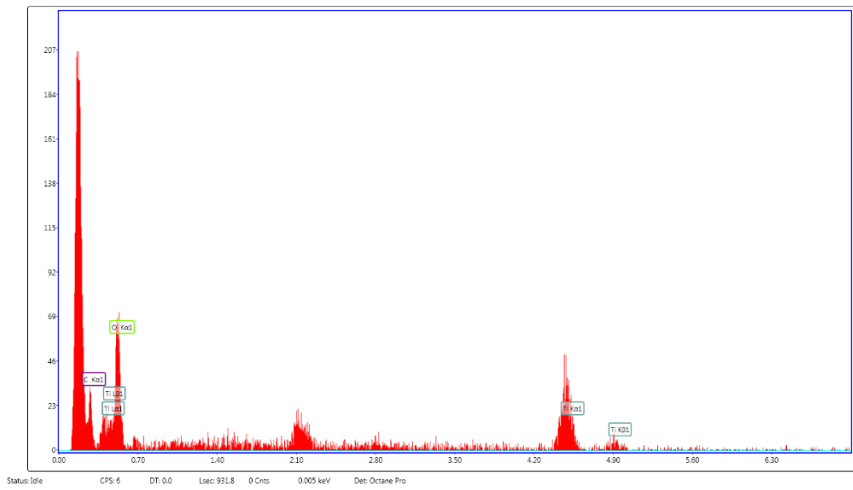


Fig S17. EDAX of TiO₂ with Dyad