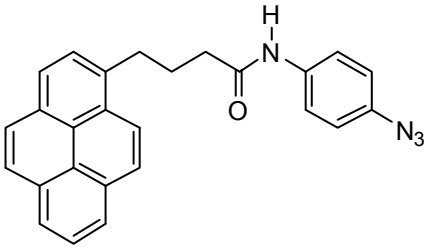
Supplementary information

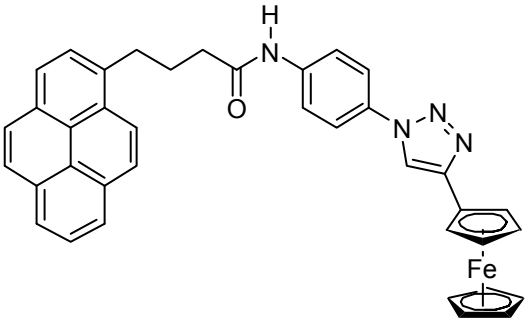
NMR spectra were recorded with a Bruker AVANCE III 300 (^{1}H, 300 MHz and ^{13}C, 75 MHz). Chemical shifts are given in ppm relative to TMS. Infrared spectra were recorded on a Bruker spectrometer Vertex 70 and UV-Vis spectra with a Perkin Elmer Lambda 1050 spectrometer. Melting points are uncorrected. Matrix Assisted Laser Desorption/Ionization was performed on MALDI-TOF MS BIFLEX III Bruker Daltonics spectrometer using dithranol as matrix. Electrospray ionization (ESI) mass spectra were recorded on a JMS Jeol 700 spectrometer.



Compound 1. Under a N_2 atmosphere, thionyl chloride (0.8 mL, 11 mmol) was slowly added *via* a syringe to a solution of 4-(pyren-1-yl)butanoic acid (2 g, 6.94 mmol) in anhydrous $CHCl_3$ (20 mL) placed in a 50 mL three-necked round bottom flask. The reaction mixture was refluxed for 2 h, cooled down to room temperature and concentrated under reduced pressure. CH_2Cl_2 (20 mL) was added to the mixture and the solvent was then evaporated under reduced pressure to eliminate the excess of thionyl chloride. This procedure was repeated two times to give the intermediate acyl chloride. Under N_2 atmosphere, a solution of the later compound in anhydrous $CHCl_3$ (20 mL) was added dropwise to a solution of 4-azidoaniline hydrochloride (1.2 g, 7.03 mmol) in anhydrous $CHCl_3$ (20 mL) in the presence of triethylamine (2 mL, 14.4 mmol). The reaction mixture was stirred for 15 h leading to the formation of grey white a precipitate. The solvent was evaporated under reduced pressure and the crude product was extracted with hot EtOAc (3 x 250 mL). The extracts were gathered and washed with a saturated aqueous solution of NaCl (2 x 150 mL), dried over $MgSO_4$ and concentrated to give compound **1** as a beige powder (2.54 g, 91% yield).

m. p. 176-177°C. ^{1}H NMR (300 MHz, DMSO-d6) δ: 9.99 (br. s, 1H, N-H) ; 8.41 (d, 1H, ^{3}J=9.3Hz) ; 8.29-8.20 (m, 4H) ; 8.15 (d, 1H, ^{3}J=9.1Hz) ; 8.12 (d, 1H, ^{3}J=9.1Hz) ; 8.06 (t, 1H, ^{3}J=7.7Hz) ; 7.97 (d, 1H, ^{3}J=7.7Hz) ; 7.65 (d, 2H, ^{3}J=8.7Hz) ; 7.06 (d, 2H, ^{3}J=8.7Hz) ; 3.38 (t, 2H, ^{3}J=7.5Hz); 2.46 (t, 2H, ^{3}J=7.2Hz); 2.11 (quint., 2H, ^{3}J=7.5Hz). IR (neat): $\tilde{\nu}$ = 3253 cm^{-1} (N-H), 2116 cm^{-1} (-N_3), 1655 cm^{-1} (C=O). ESI^{-} MS: 439.4 [M+Cl^{-}], 842.8 [2M+Cl^{-}]. Anal. Calcd. for $C_{26}H_{18}N_4O$: C, 77.21; H, 4.98; N, 13.85; found: C, 77.14; H, 4.95; N, 13.36.

Compound MM. *N*,*N*-Diisopropylethylamine DIPEA (107.8 µL, 0.65 mmol) and CuI (7.3 mg, 0.04 mmol) were added to a solution of compound **1** (100 mg, 0.25 mmol) and ethynylferrocene (52 mg, 0.25 mmol) in CH_3CN (7.5 mL). The reaction mixture was stirred at 20°C for 5 days. After dilution with EtOAc (100 mL), the organic phase was washed with a saturated aqueous solution of NaCl (2 x 20 mL), dried over $MgSO_4$ and concentrated under reduced pressure to give a slightly brown powder (116 mg, 76% yield).



m. p. 270-272°C. ^{1}H NMR (300 MHz, pyridine-d5) δ: 11.01 (br. s, 1H, N-H) ; 8.44 (d, 1H, ^{3}J=9.3Hz) ; 8.26-7.94 (m, 12H) ; 7.87 (d, 1H, ^{3}J=7.8Hz) ; 5.03 (br. s, 2H, Fc) ; 4.35 (br. s, 2H, Fc) ; 4.16 (br. s, 5H, Fc); 3.47 (t, 2H, ^{3}J=7.5Hz); 2.63 (t, 2H, ^{3}J=7.2Hz); 2.40 (quint., 2H, ^{3}J=7.2Hz). IR (neat): $\tilde{\nu}$ = 3347 cm^{-1} (N-H), 1670 cm^{-1} (C=O). MALDI-TOF MS: 613.8 [M$^+$]. UV-Vis (EC:DMC $LiPF_6$ 1M) λ_{max}/nm: 200; 223; 234; 242; 254; 265; 276; pyrene groups, 310; 326; 343. Anal. Calcd. for $C_{38}H_{30}FeN_4O$: C, 74.27; H, 4.92; N, 9.12; found: C, 71.30; H, 4.79; N, 7.74.

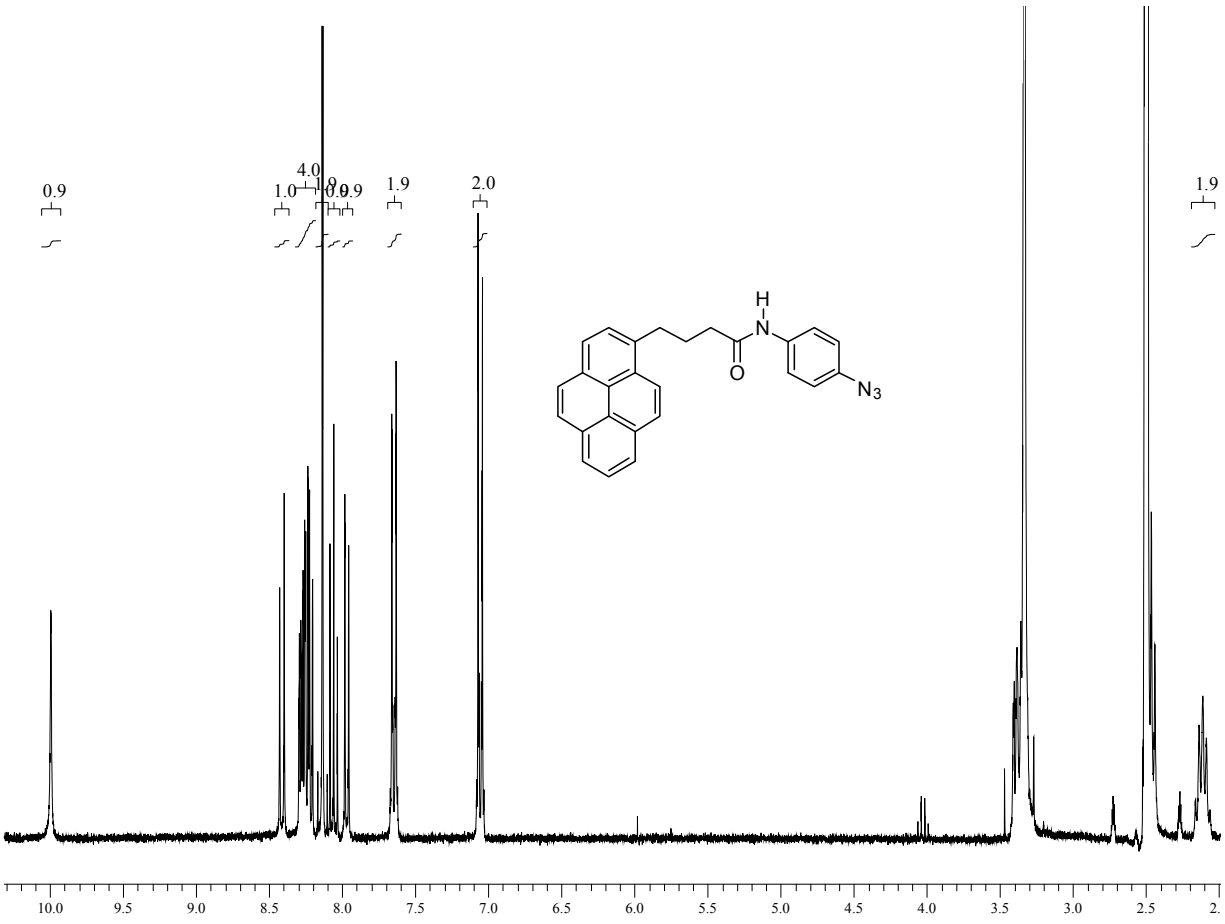


Figure S1. ^{1}H NMR Spectrum (300 MHz, DMSO-d6) of **1** recorded at 20°C. The intense peaks at 2.50 and 3.35 ppm correspond to the signals of DMSO and H_2O, respectively.

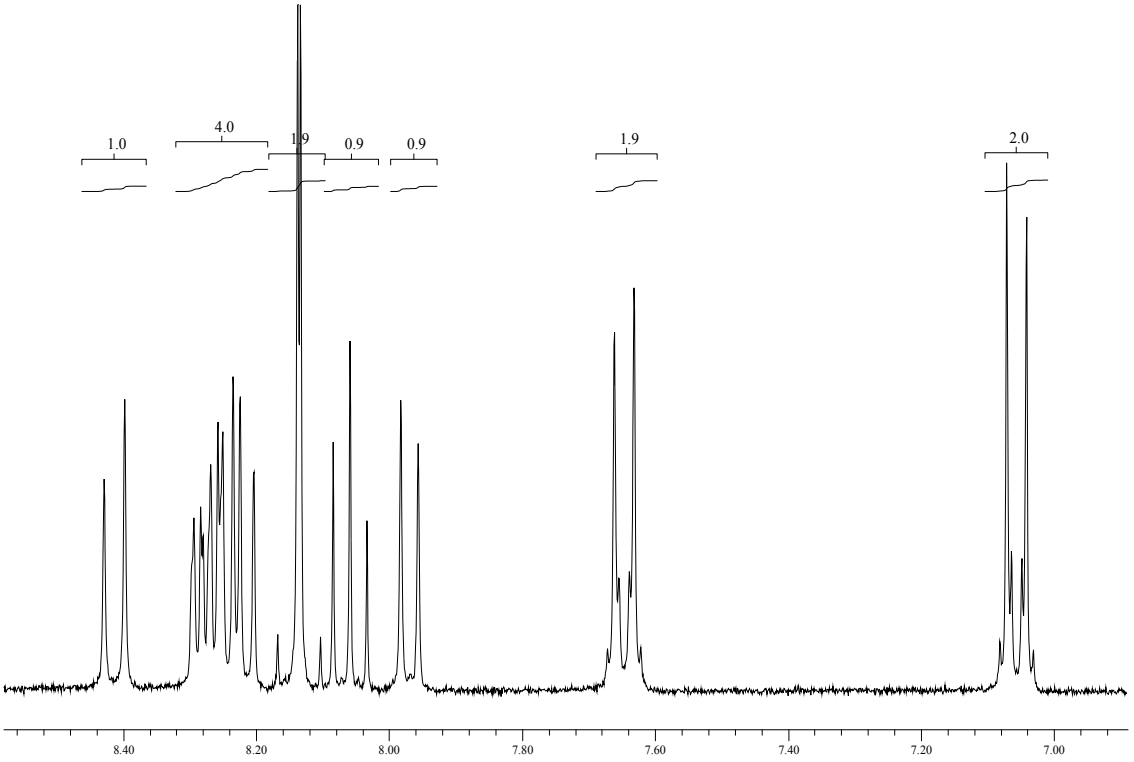


Figure S2. Aromatic region of the ^{1}H NMR Spectrum (300 MHz, DMSO-d6) of **1** recorded at 20°C.

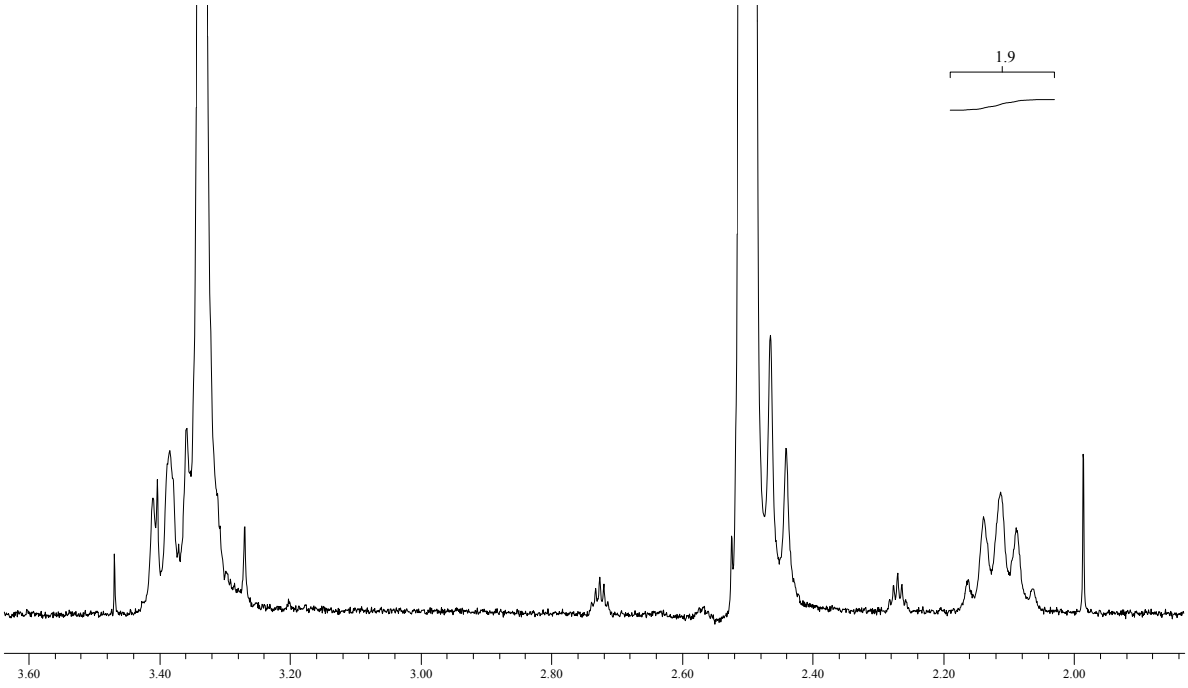


Figure S3. Aliphatic region of the ^{1}H NMR Spectrum (300 MHz, DMSO-d6) of **1** recorded at 20°C. The intense peaks at 2.50 and 3.35 ppm correspond to the signals of DMSO and H_2O, respectively.

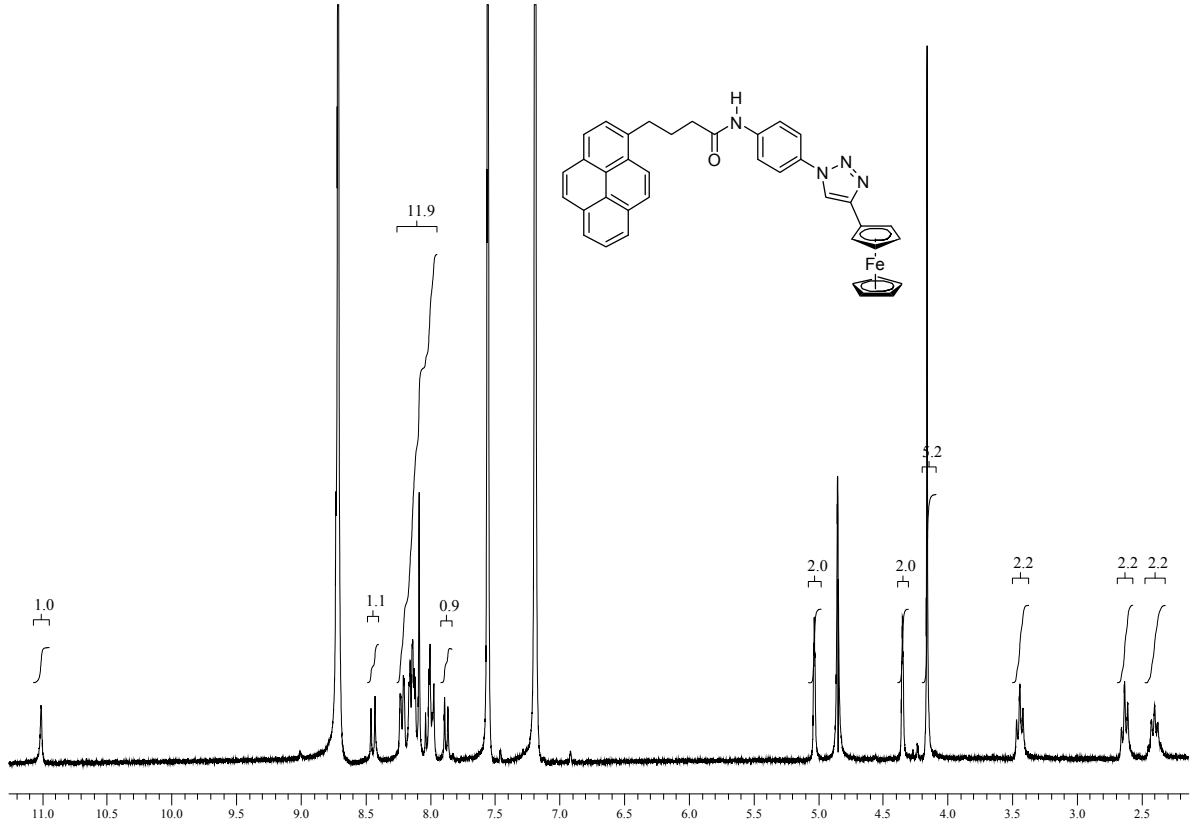


Figure S4. ^{1}H NMR Spectrum (300 MHz, pyridine-d5) of **MM** recorded at 20°C. The intense peaks at 8.71, 7.56 and 7.19 ppm are associated to pyridine whereas the signal at 4.85 ppmcorresponds to H_2O.

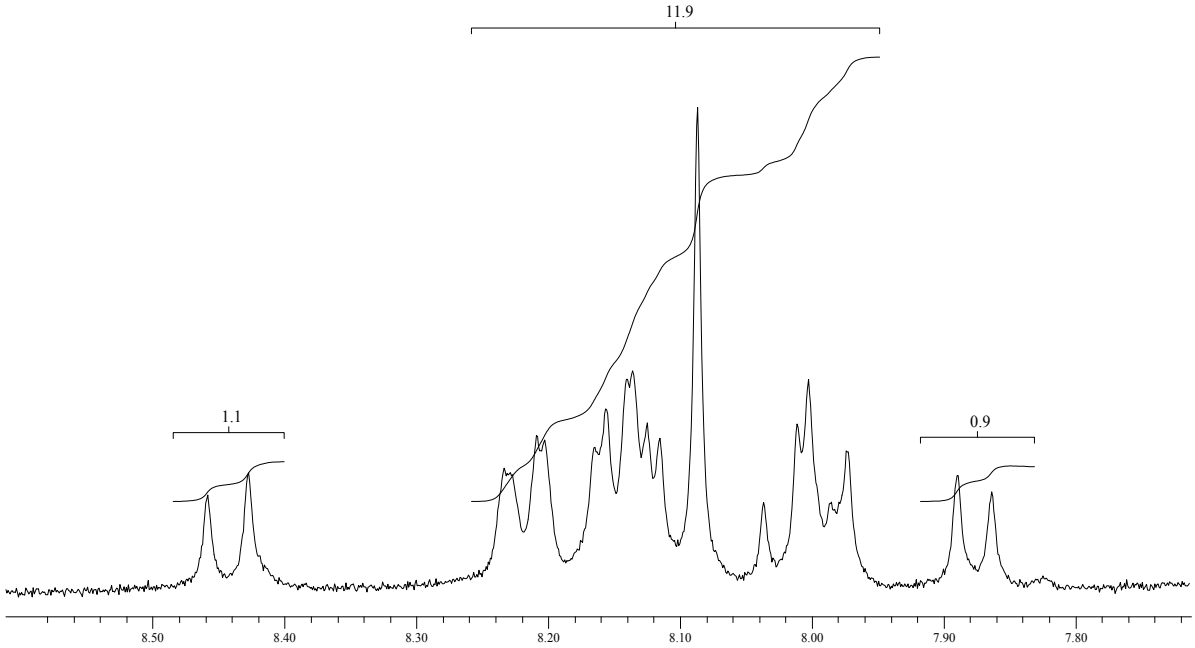


Figure S5. Aromatic region of the ^{1}H NMR Spectrum (300 MHz, pyridine-d5) of **MM** recorded at 20°C.

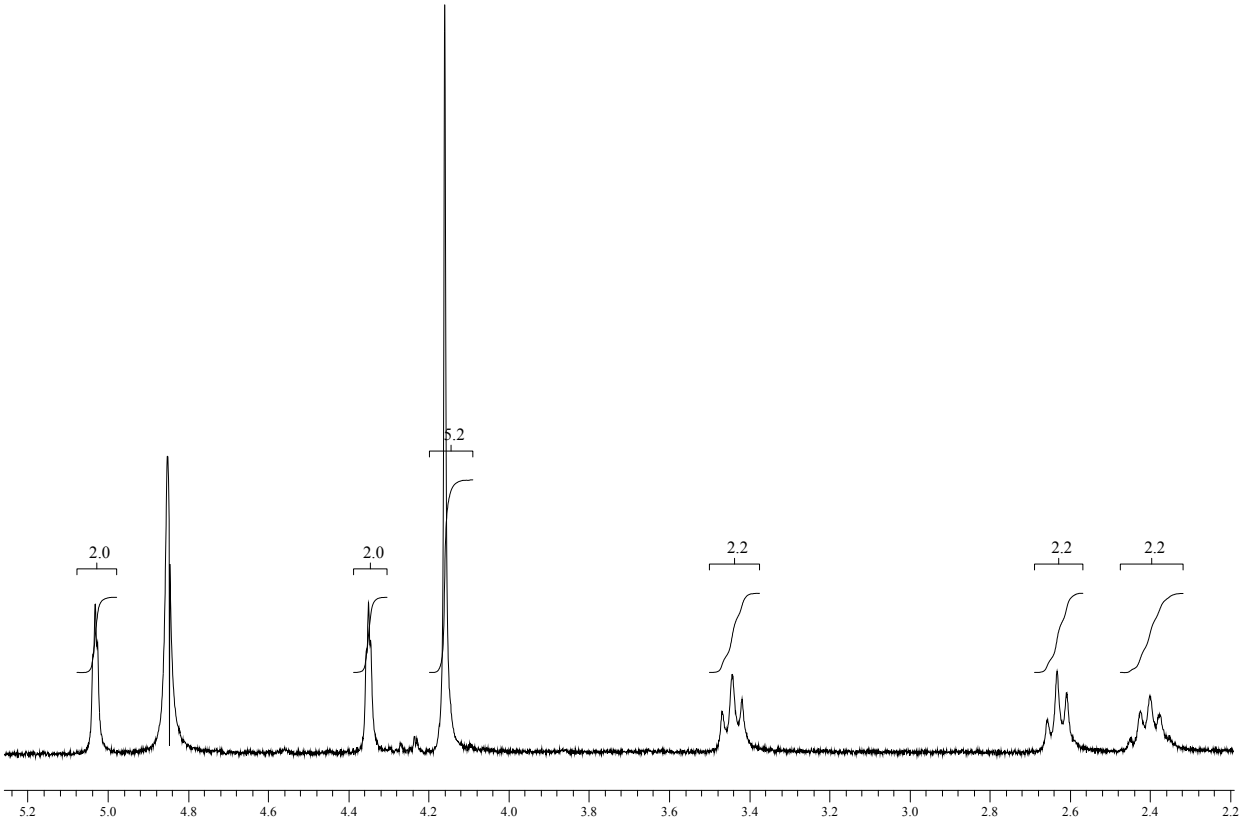


Figure S6. Aromatic region of the ^{1}H NMR Spectrum (300 MHz, pyridine-d5) of **MM** recorded at 20°C. The signal at 4.85 ppm corresponds to H_2O.

UV-Vis of MM-electrolyte

UV-Vis optical data were recorded with a Perkin Elmer Lambda 1050. Concentrations of MM in MM-electrolyte upon different immersion time of CF electrodes were deduced from the intensity of the absorption band at 343 nm.

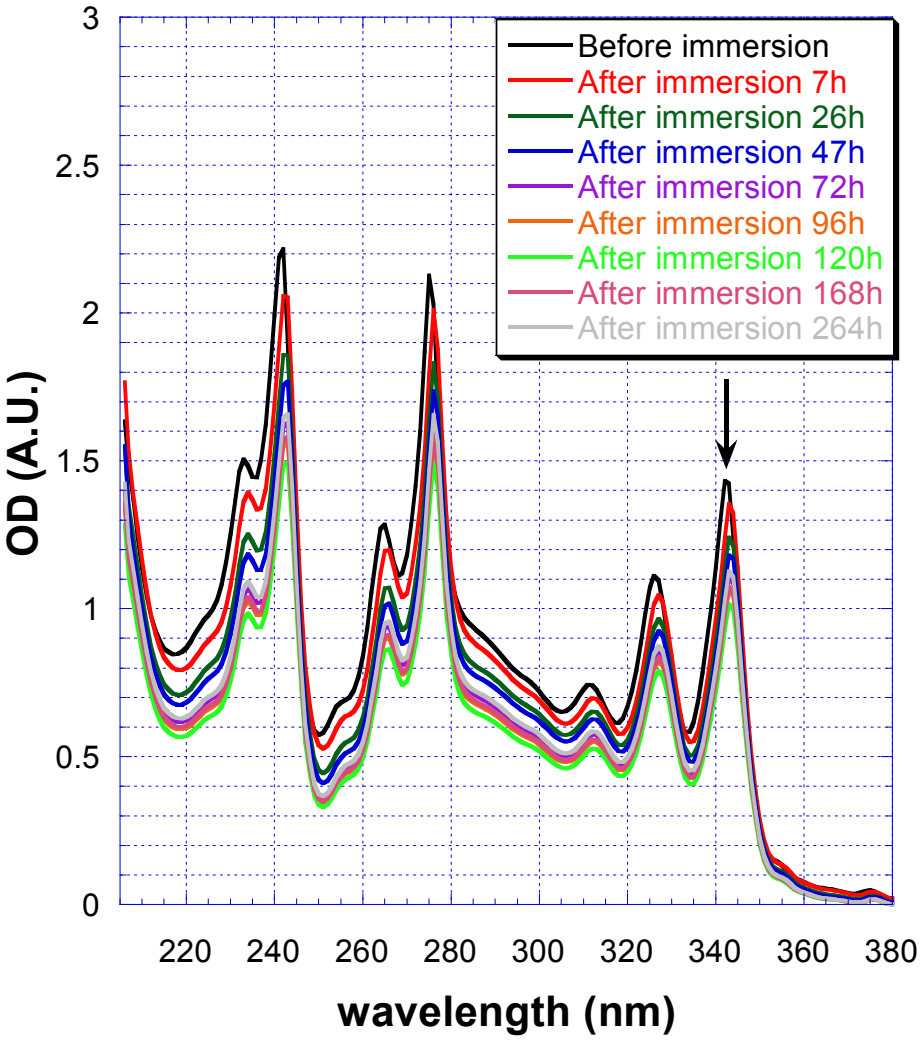


Figure S7: UV-vis spectra obtained upon immersion of CF electrodes in MM-electrolyte.

	Capacity of peak 2 (mAh/g)
Cycle B Ox1	10
Cycle B, Ox 2	4.7
Cycle B Ox 3	3.9
Cycle D Ox1	4.8

Table S1: Capacity associated with Peak 2 in figure 3.