

## Supporting Information

### Quasi-liquid polymer-based cobalt redox mediator electrolyte for dye-sensitized solar cells

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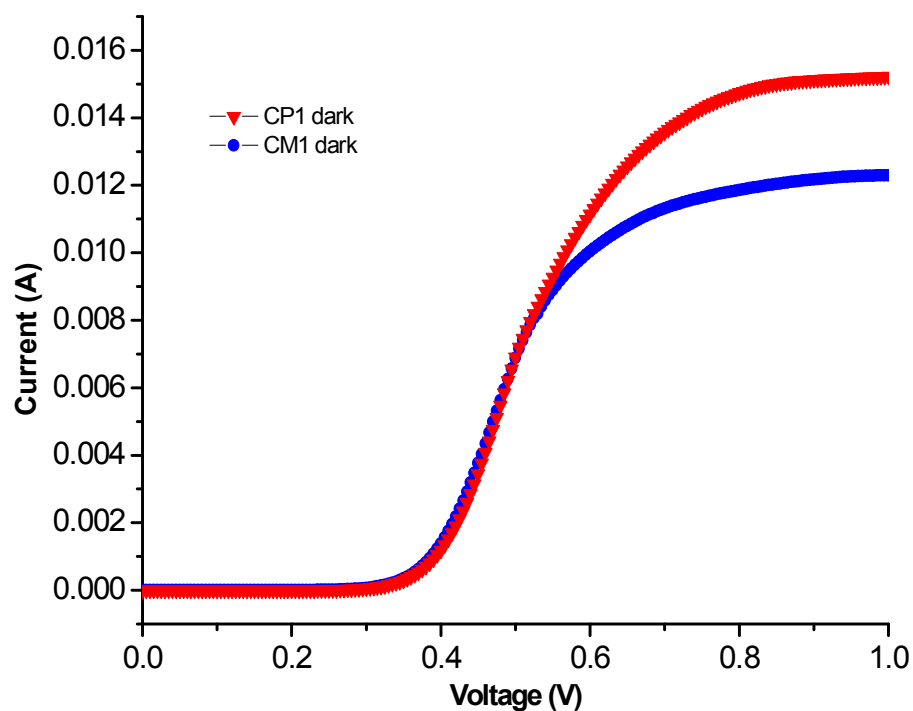


Fig. S1 Dark IV-curves of DSCs CM1 and CP1

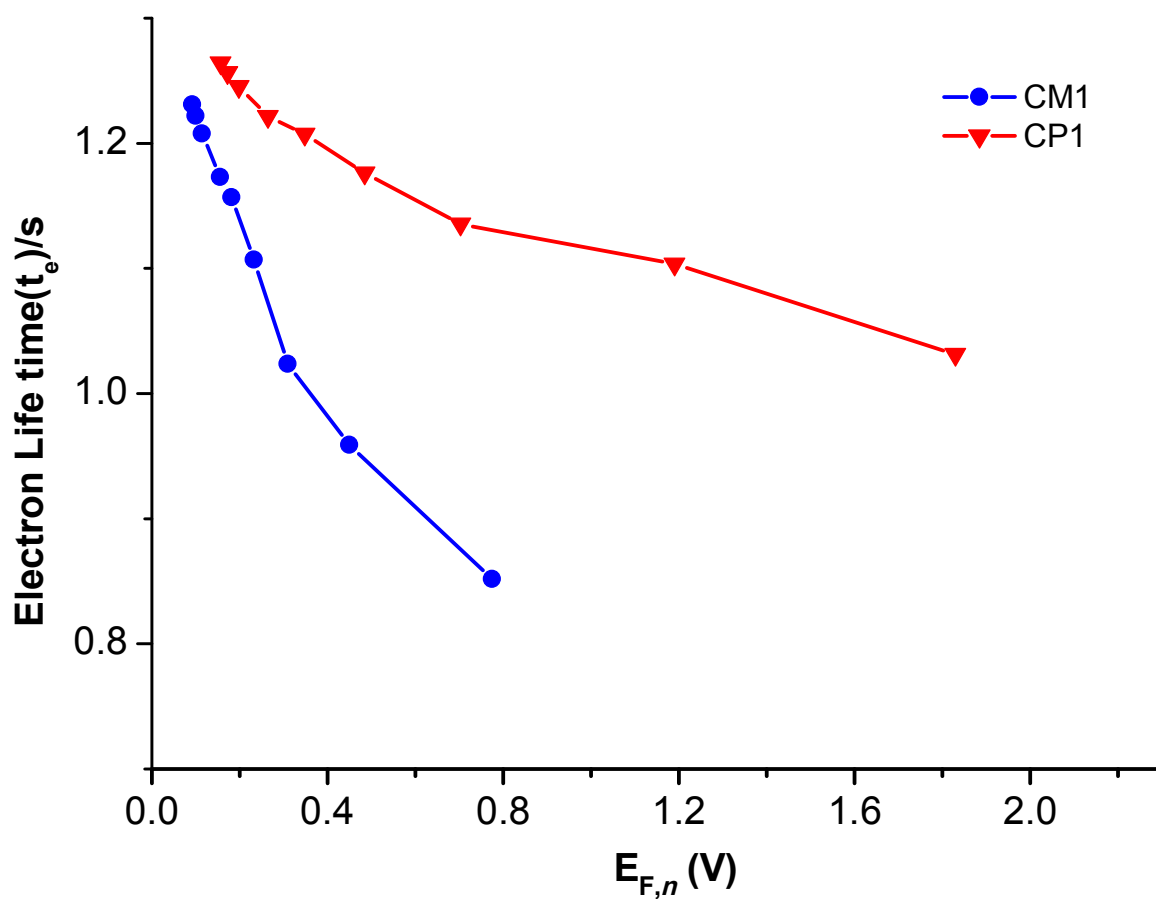


Fig. S2 Electron lifetime as a function of quasi-Fermi level for the two different electrolytes in the cells **CM1** and **CP1**

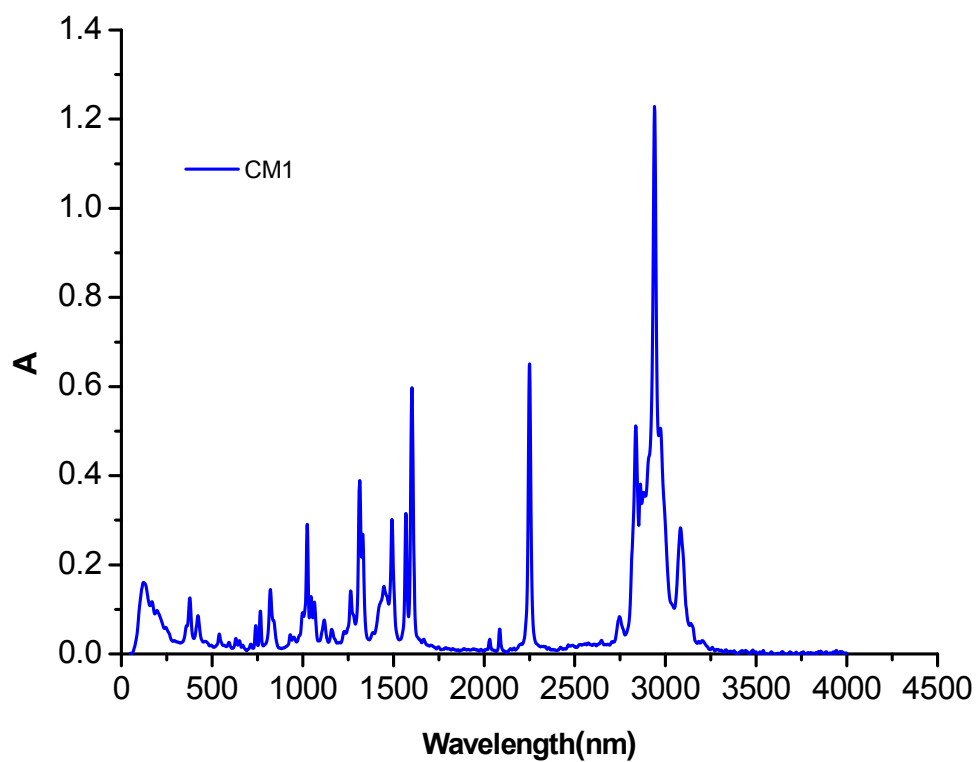


Fig. S3 Raman spectrum of CM1

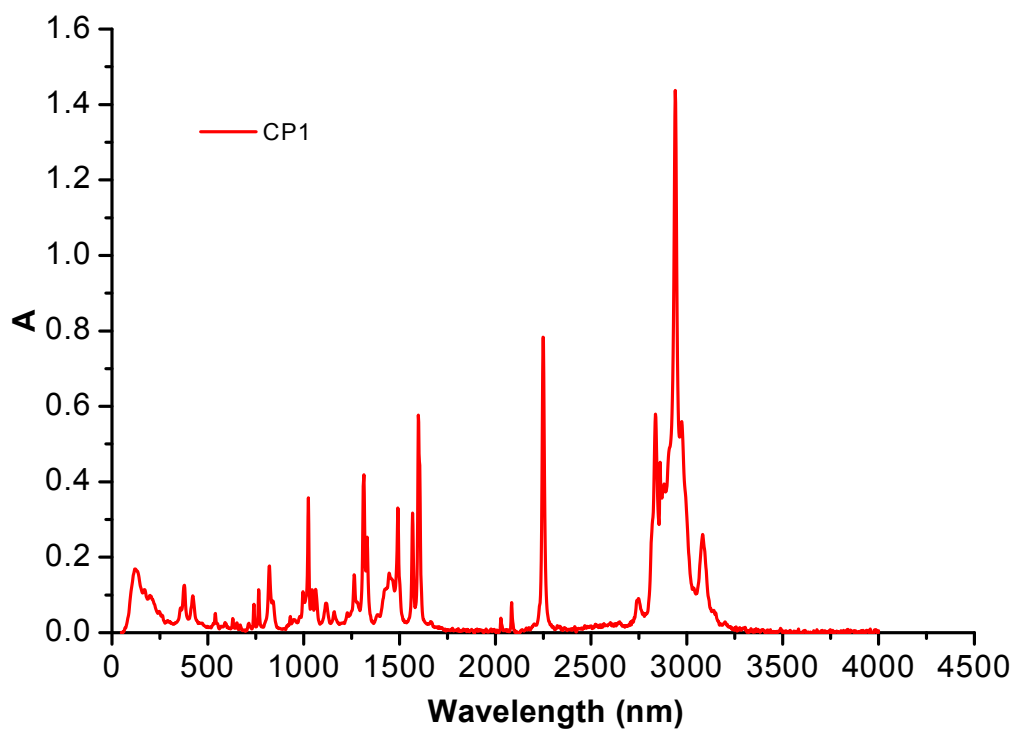


Fig. S4 Raman spectrum of CP1

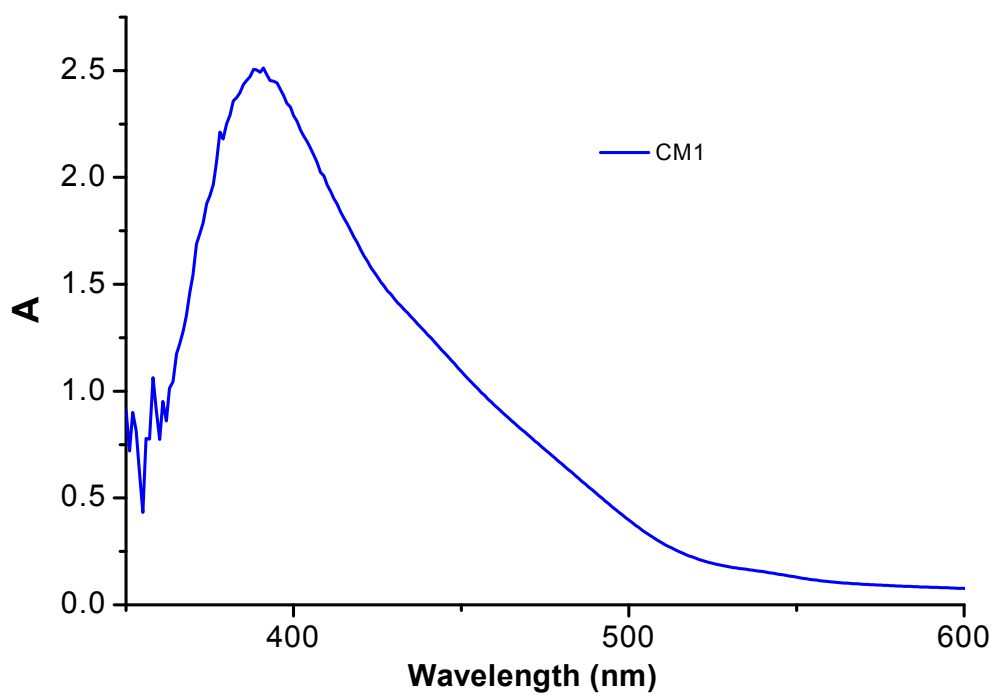


Fig. S5 UV-Visible spectrum of **CM1**

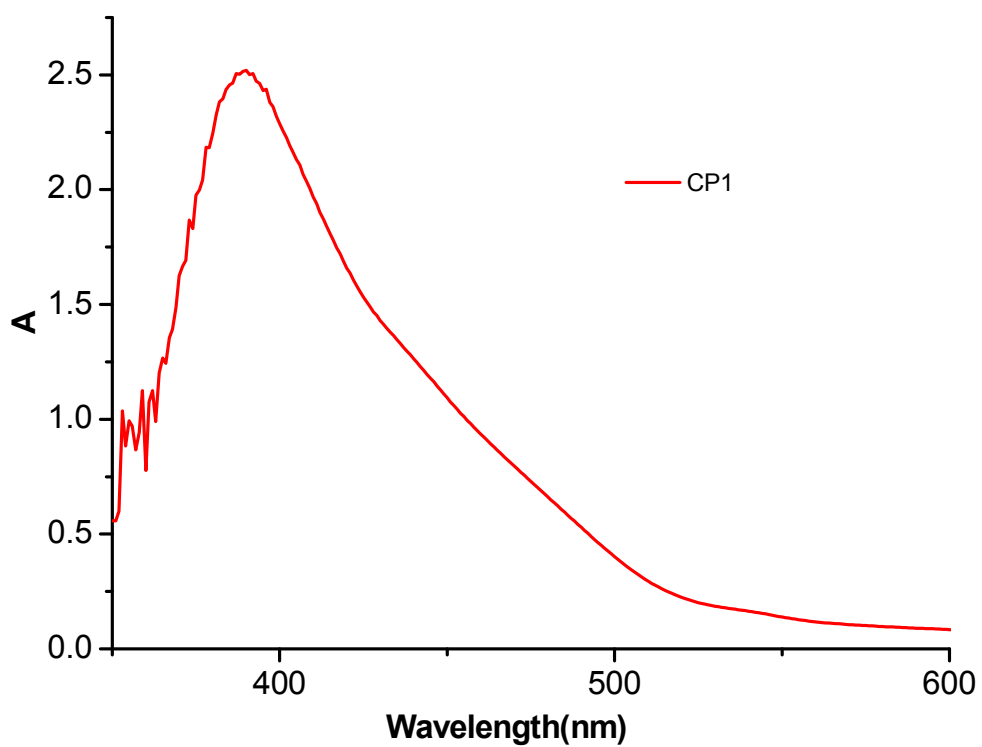


Fig. S6 UV-Visible spectrum of **CP1**

**Table S1** UV-Visible spectra data of **CM1** and **CP1**

	<b>MPN</b>	<b>Polymer + MPN</b>	<b>Electrolyte in MPN(CM1)</b>	<b>Electrolyte in MPN + Polym(CP1)</b>
Wave length of Max absorption of Co (II)	383	382		
Wave length of Max absorption of Co (III)	380	379		
Max absorption of Co (II)	2.00611	1.96075	2.39683	2.45688
Max absorption of Co (III)	1.22856	1.22298	2.2515	2.1829
E (extinction coefficient) (lit mol <sup>-1</sup> cm <sup>-1</sup> ) Co(II)	212.4092	228.4119		
E (extinction coefficient) (lit mol <sup>-1</sup> cm <sup>-1</sup> ) Co(III)	565.1376	562.5708		
Calculated Concentration of Co(II)(mol/lit)			0.282101	0.268909
Calculated Concentration of Co(III) )(mol/lit)			0.0996	0.097005

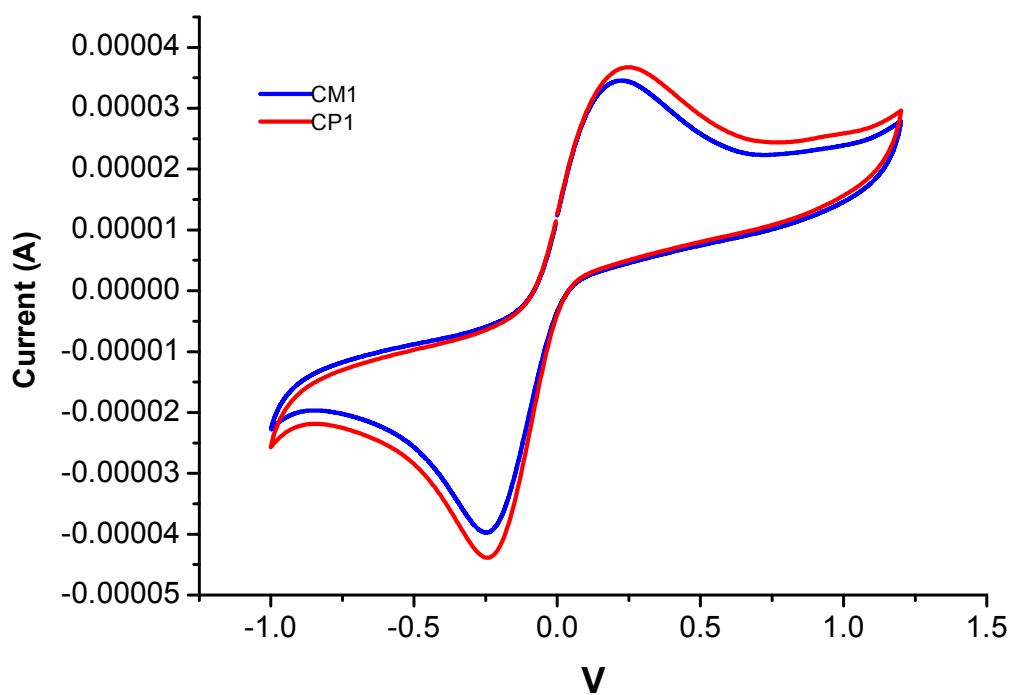


Fig. S7 Cyclic voltammetry of DSCs CM1 and CP1

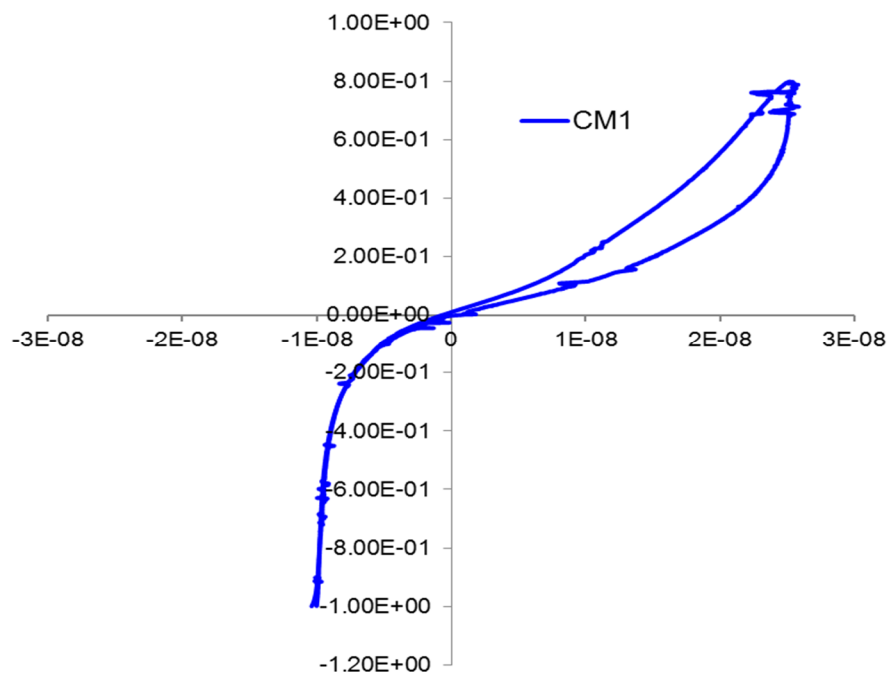


Fig. S8 Diffusion limiting current for CM1 determined by cyclic voltammetry

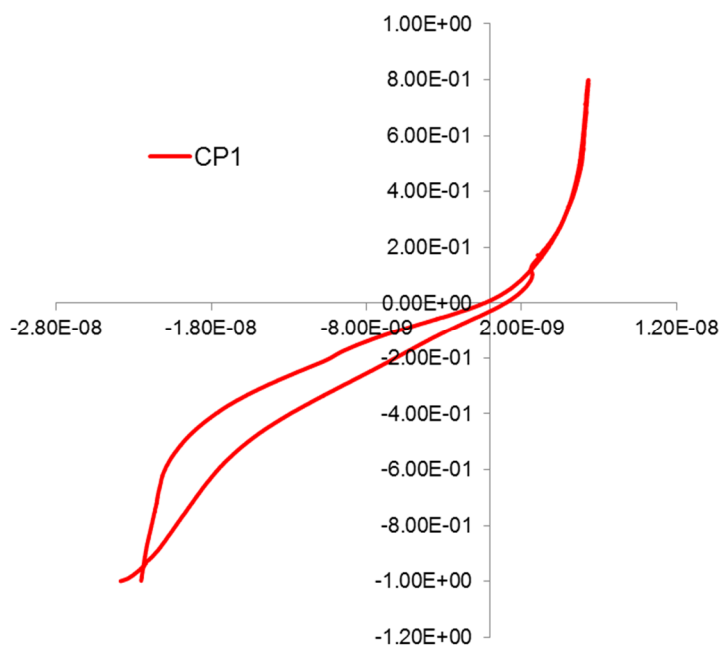


Fig. S9 Diffusion limiting current for CP1 determined by cyclic voltammetry