Supporting Information

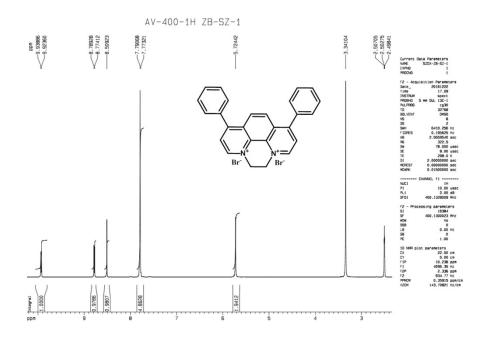
Water- and Alcohol-Soluble Cationic Phenanthroline Derivatives as Efficient Cathode Interfacial Layers for Bulk-Heterojunction Polymer Solar Cells

Bin Zhang,^a Shuwang Yi,^b Guiting Chen,^b Zhicai He,^{b*} Hong-Bin Wu,^b Wei Yang,^b Fangfang Niu,^a Junle Qu,^a Pengju Zeng,^{a*} Yong Cao^b

^a Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, College of Optoelectronic Engineering, Shenzhen University, Shenzhen 518060, China.
*E-mail: zengpj@szu.edu.cn
^b Institute of Polymer Optoelectronic Materials and Devices, State Key Laboratory of Luminescent

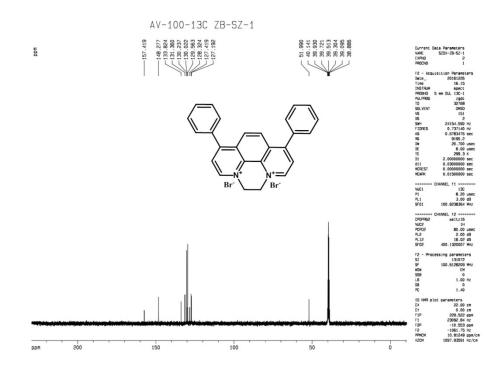
Materials and Devices, South China University of Technology, Guangzhou 510640, China. E-mail: zhicaihe@scut.edu.cn

Supplementary Figures



AV-400-1H ZB-010-090 2.50584 2.50142 2.49724 9.90140 -5.24740 -5.23131 -5.21489 -3.32715 -3.28697 -3.27017 -3.25378 34151 76032 77183 76378 76378 74248 73588 72564 72564 Curre NAME EXPNO PROCN F2 -Date, Time INSTF PROB PULPF TD SOLVE NS DS SWH FIDRE AD RG DW DE TE D1 MCRES MCKRW B NUC1 P1 PL1 SF01 F2 -SI SF WDW SS8 LB G8 PC 1D NM СХ F1P F1 F2P F2 PPMCM HZCM 0.9969 0.9497 1.0162 a -Integral 4.9771 1.9581 Ţ

Figure S1. The ¹H NMR spectra of Bphen-Et and Bphen-Pr



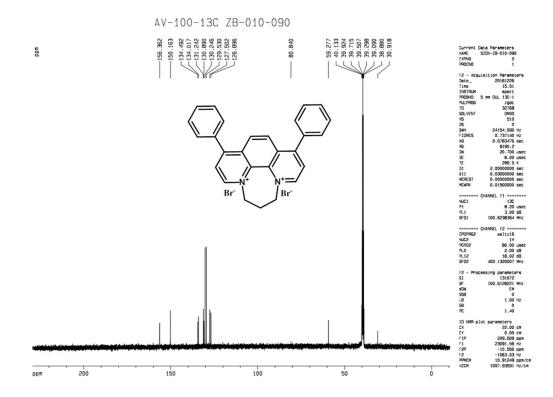


Figure S2. The ¹³C NMR spectra of Bphen-Et and Bphen-Pr

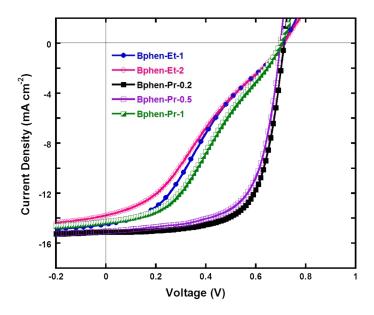


Figure S3. *J–V* characteristics of Bphen-Et and Bphen-Pr CILs with different solution concentration

Table S1. Photovoltaic performance of Bphen-Et and Bphen-Pr CILs with different
solution concentration

CILs (mg/ml)	Voc (V)	Jsc (mA/cm ²)	FF (%)	PCE (%)
Bphen-Et (1)	0.71	14.50	31.11	3.20
Bphen-Et (2)	0.71	13.77	29.92	2.93
Bphen-Pr (0.2)	0.71	15.12	67.68	7.27
Bphen-Pr (0.5)	0.71	15.04	64.88	6.93
Bphen-Pr (1)	0.71	14.28	36.52	3.70