Electronic Supplementary Material (ESI) for RSC Advances.

Salt Doping to Improve Thermoelectric Power Factor of Organic Nanocomposite Thin Films

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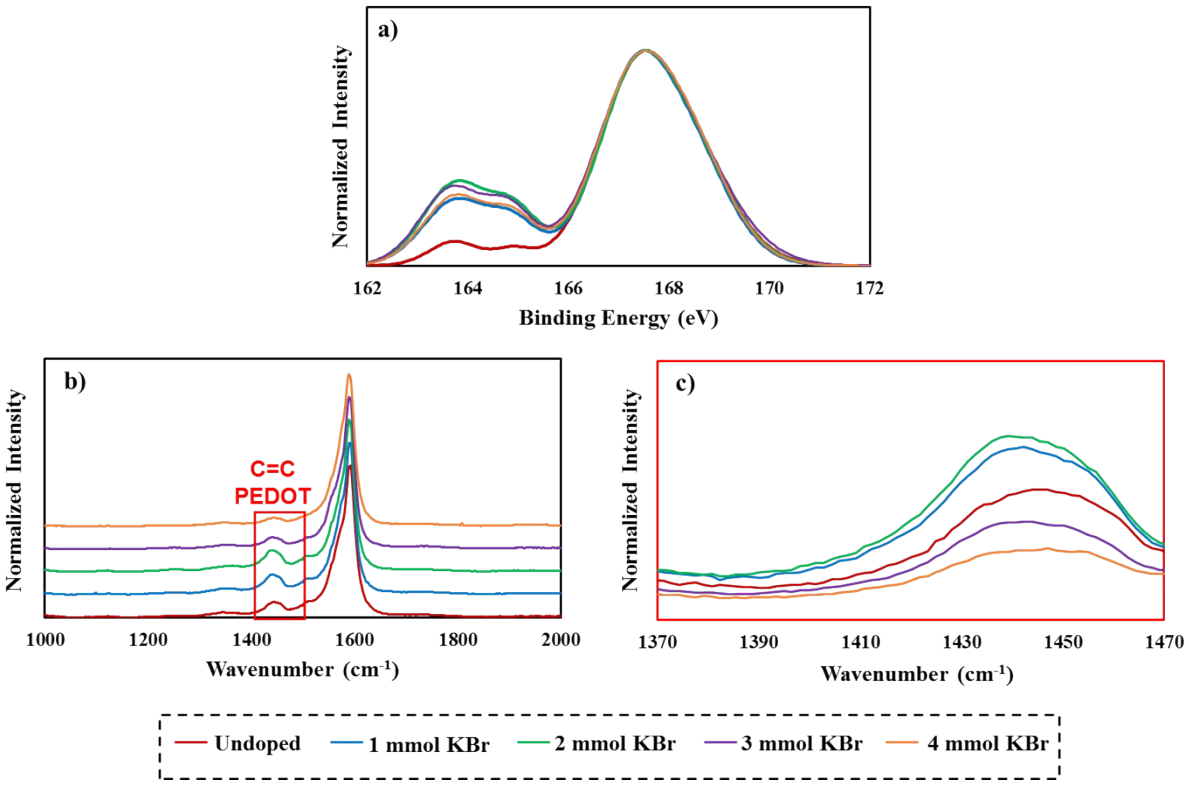

Figure S1. (a) Normalized XPS S 2p spectra and (b) normalized Raman spectra on 20 BL PDDA/PEDOT:PSS-DWNT films as a function of KBr concentration. (c) The same Raman spectra, highlighting the peak corresponding to the C=C symmetric stretch in PEDOT.

Table S1. Thermoelectric properties of a 20 BL film doped with varying concentration of KBr.

20 BL Sample	Thickness (nm)	R_s (Ω Sq^{-1})	σ (S cm^{-1})	S (μV K^{-1})	Power Factor (μW m^{-1} K^{-2})
Undoped	32.4 ± 0.9	1324 ± 52	238.3 ± 9.7	69.5 ± 2.6	115.3 ± 7.7
1 mmol KBr	50.5 ± 0.7	436 ± 28	471 ± 30	72.4 ± 4.4	247 ± 26
2 mmol KBr	50.0 ± 1.0	371 ± 17	544 ± 15	68.1 ± 1.4	295 ± 18
3 mmol KBr	46.3 ± 1.1	153.5 ± 8.0	1479 ± 78	65.1 ± 1.5	626 ± 39
4 mmol KBr	40.9 ± 1.0	236.1 ± 5.8	1068 ± 28	57.4 ± 1.4	351 ± 15

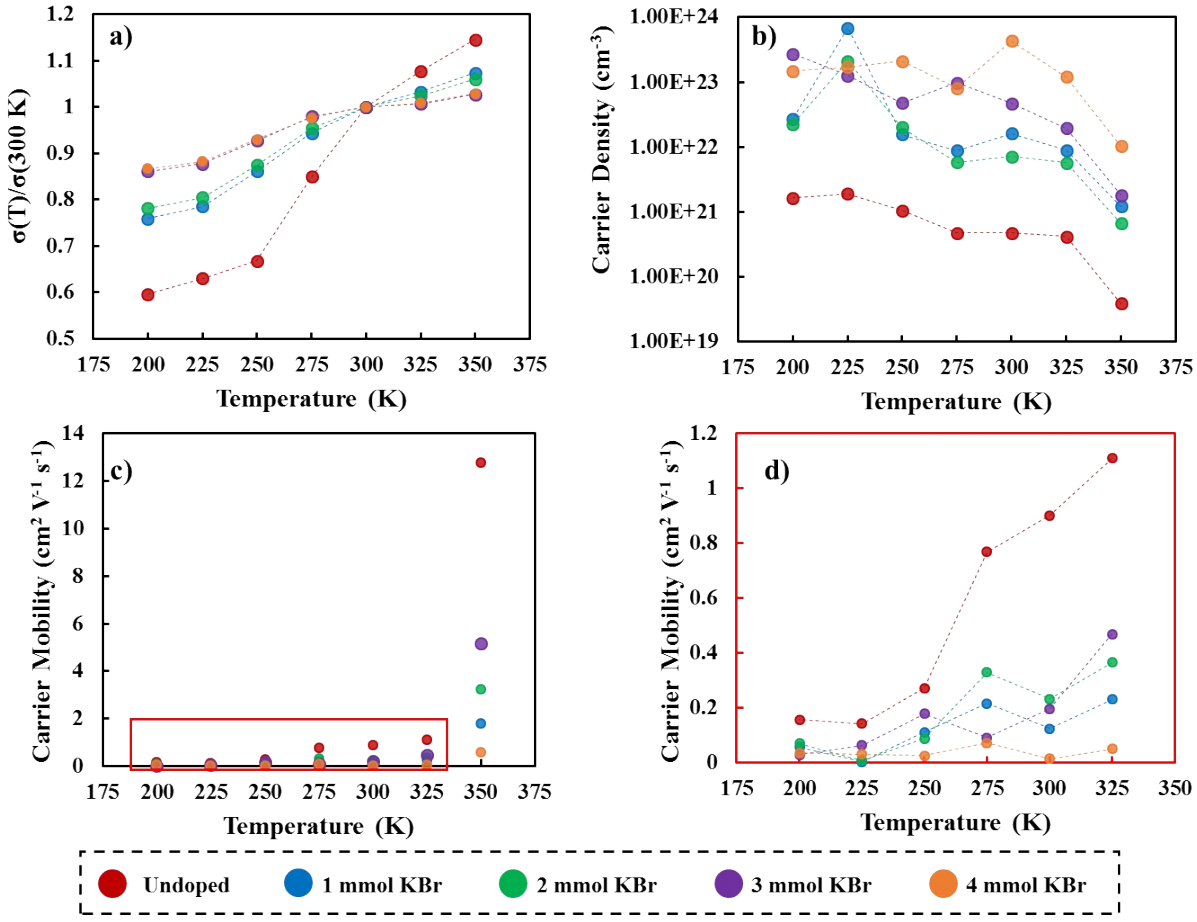

Figure S2. (a) Temperature-dependent electrical conductivity, (b) temperature-dependent carrier density, and (c,d) temperature –dependent carrier mobility of 20 BL PDDA/PEDOT:PSS-DWNT films prepared with varying concentrations of KBr.

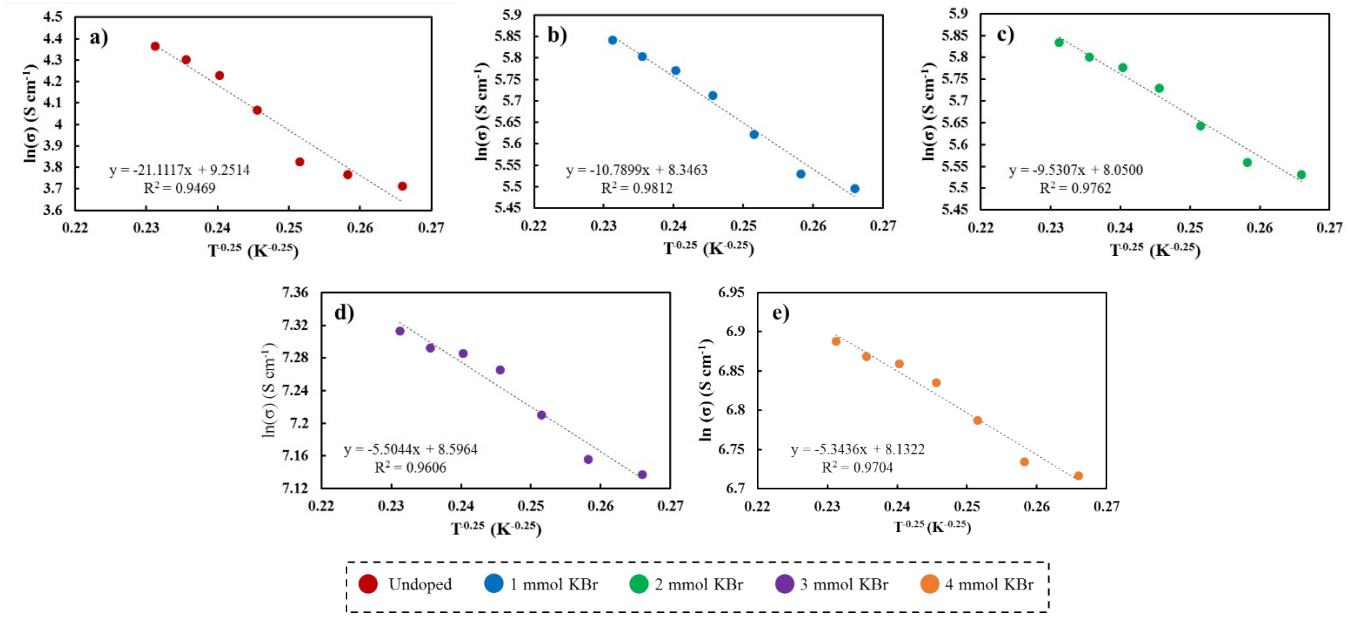

Figure S3. Individual 3D VRH plots of 20 BL PDDA/PEDOT:PSS-DWNT films: (a) undoped, (b) 1 mmol KBr, (c) 2 mmol KBr, (d) 3 mmol KBr, and (e) 4 mmol KBr.

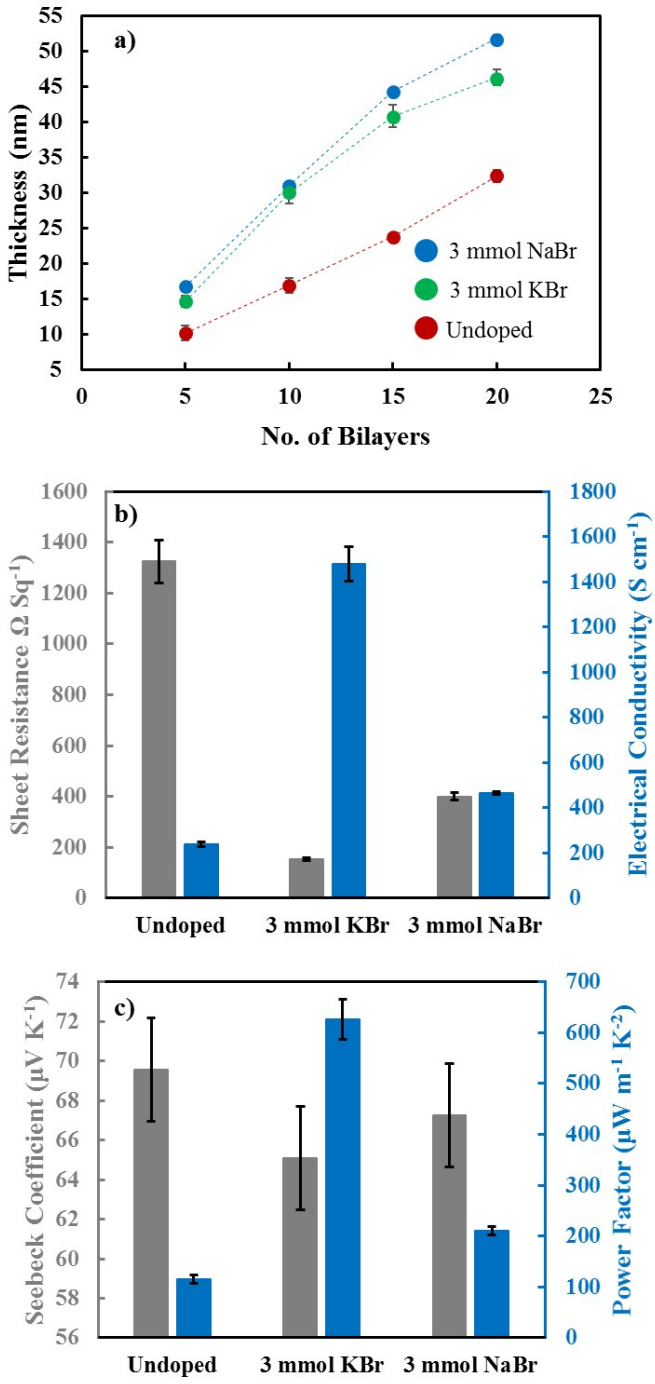

Figure S4. (a) Film thickness, (b) sheet resistance and electrical conductivity, and (c) Seebeck coefficient and power factor of 20 BL PDDA/PEDOT:PSS-DWNT films doped with 3 mmol KBr and 3 mmol NaBr.