Supplementary Information

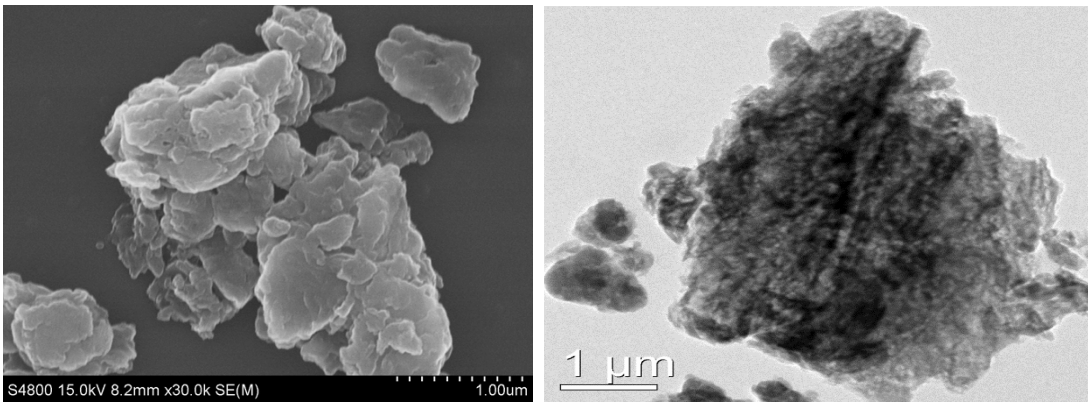

Fig. S1 TEM and SEM images of boron nitride at 900 °C for 3 h under NH_3 atmosphere.

Table S1 The effect of filler content on electrical resistivity of the PI nanocomposite films.

Sample	**Content(wt%)**	**Volume resistance (Ω/cm^2)**	**Surface resistiance (Ω cm)**
Neat-PI	0	3.77×10^{14}	1.17×10^{13}
MWCNTs/PI	0.1	3.69×10^{14}	2.78×10^{12}
	1	1.66×10^{11}	1.48×10^{10}
	3	6.82×10^{7}	2.31×10^{7}
BN-c-MWCNTs/	0.1	3.84×10^{14}	8.14×10^{12}
PI	1	4.51×10^{14}	4.49×10^{11}
	3	7.69×10^{9}	3.82×10^{9}

Table S2 Thermal conductivity of the MWCNTs/PI and BN-c-MWCNTs/PI nanocomposite films.

Sample	**Content (wt%)**	**α(mm²/s)[a]**	**ρ (g/cm^{-3})[b]**	**c_p (J/gK)[c]**	**λ(W/mK)[d]**
Neat-PI	0	0.141	1.268	1.049	0.188
MWCNTs/PI	0.1	0.204	1.311	1.146	0.306
	1	0.165	1.364	1.112	0.250
	3	0.175	1.373	0.993	0.239
BN-c-	0.1	0.211	1.301	1.146	0.315
MWCNTs/	1	0.204	1.467	1.067	0.319
PI	3	0.222	1.498	1.167	0.388

[a]α: Thermal diffusivity, [b]ρ:Density, [c]c_p: Specific heat capacity, [d]λ:Thermal conductivity.