Supporting Information

Tuning the Seebeck Effect in C60-based Hybrid Thermoelectric Devices through Temperature-dependent Surface Polarization and Thermally-modulated Interface Dipoles

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1. The XRD patterns of the oxide film on ITO glass

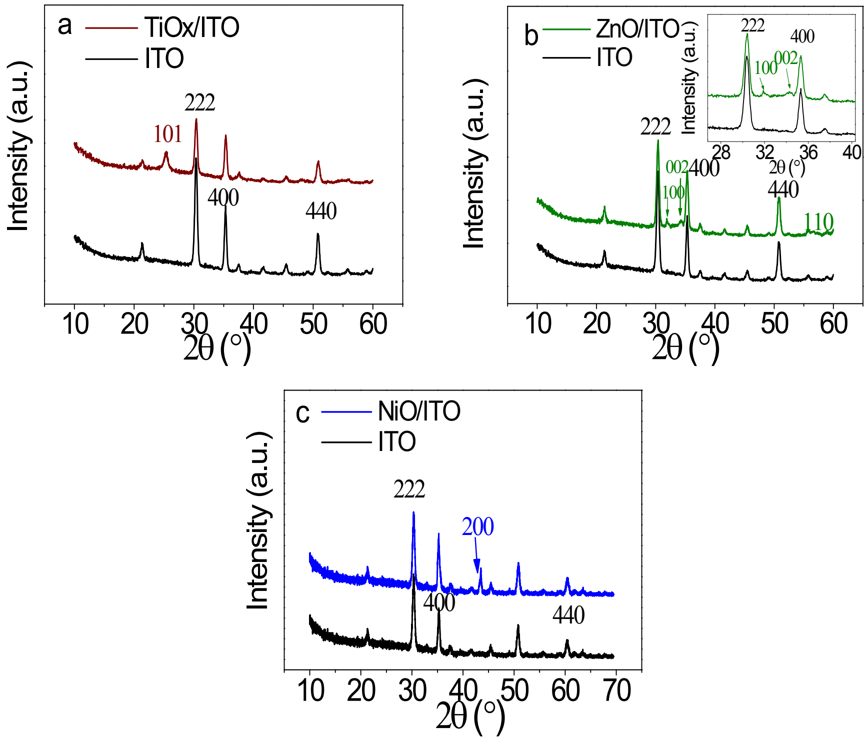

Figure S1: the XRD patterns of the oxide film prepared from the solution method: (a)TiO_x, (b ZnO, (c) NiO. The black line is the XRD for ITO glass substrate.

2. The work function of the oxide film measured by Kelvin Probe

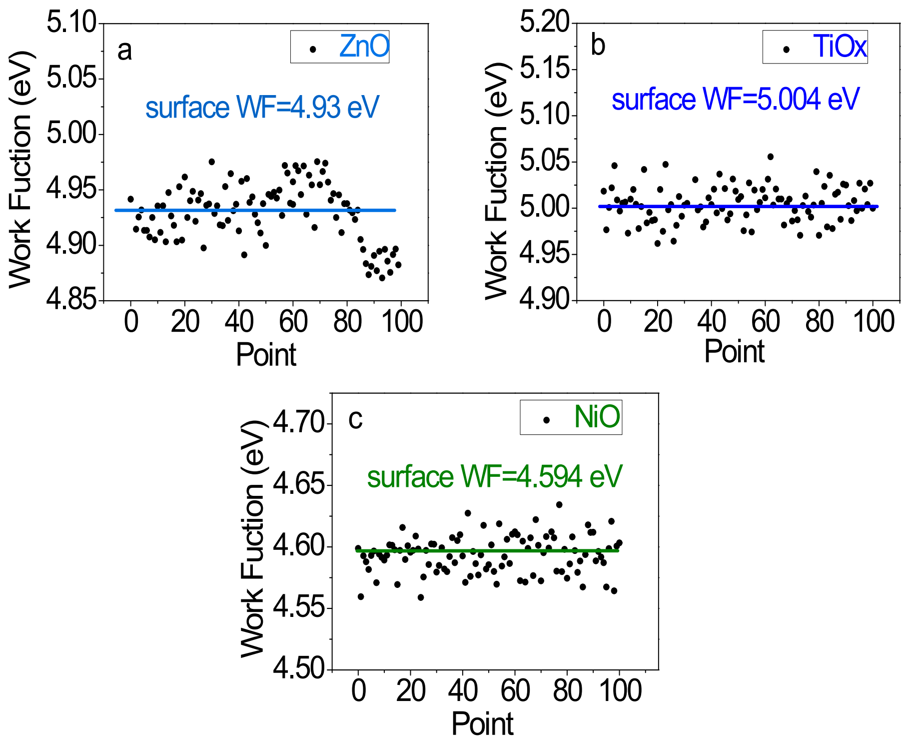

Figure S2: the work function (a)TiO_x, (b) ZnO, (c) NiO, measured from Kelvin Probe at room temperature:

3. The thermovoltage as a function of temperature difference in the thin-film devices

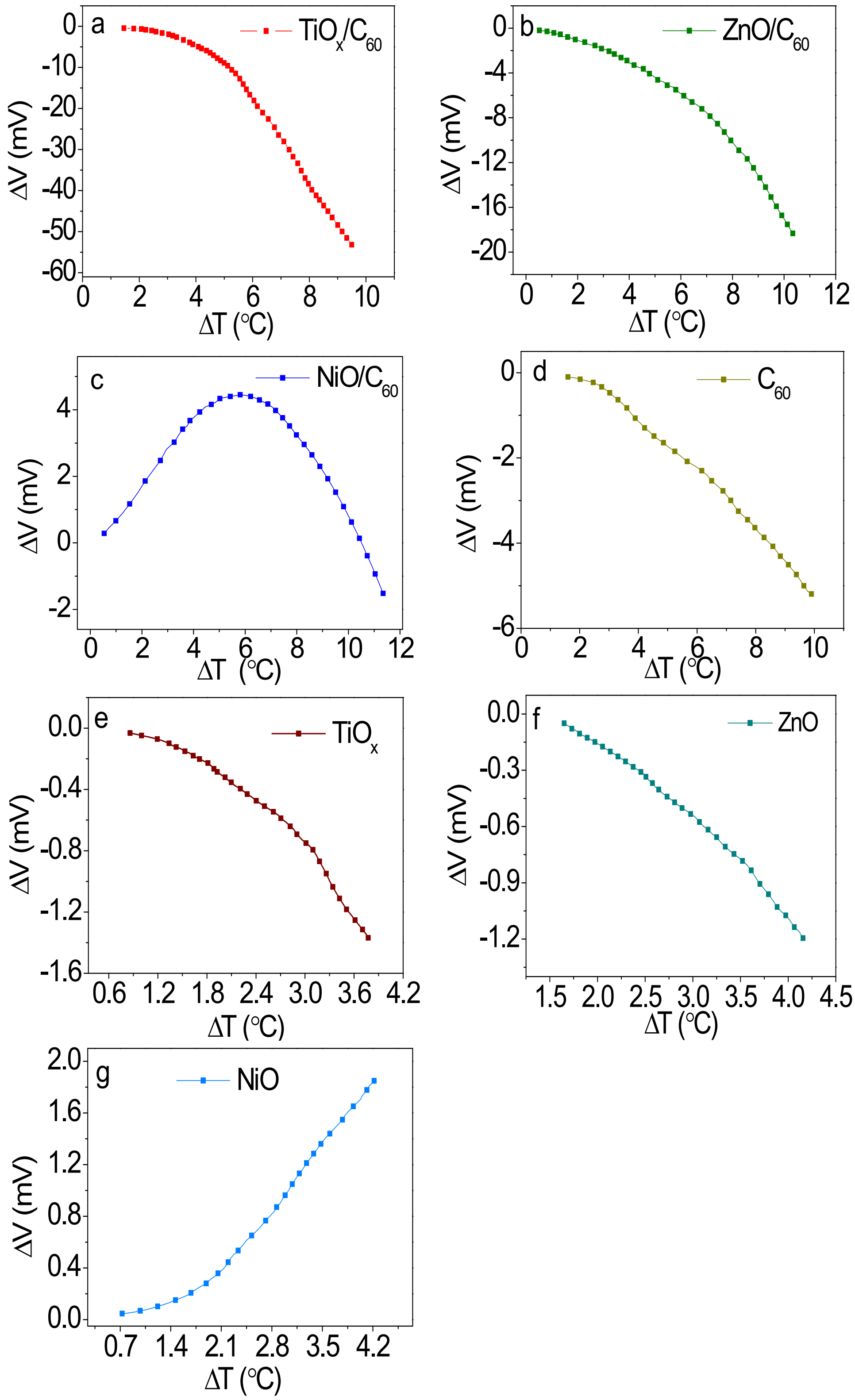

Figure S3: The thermovoltage as a function of temperature difference in the thin-film devices of (a)ITO/TiO_x/C_{60}/Al, (b) ITO/ZnO/C_{60}/Al, (c) ITO/NiO/C_{60}/Al (d) ITO/C_{60}/Al, (e) ITO/TiOx/Al, (f) ITOZnO/Al, (g) ITO/NiO/Al.

4. The temperature dependence of electrical conductivity in the single-layer devices

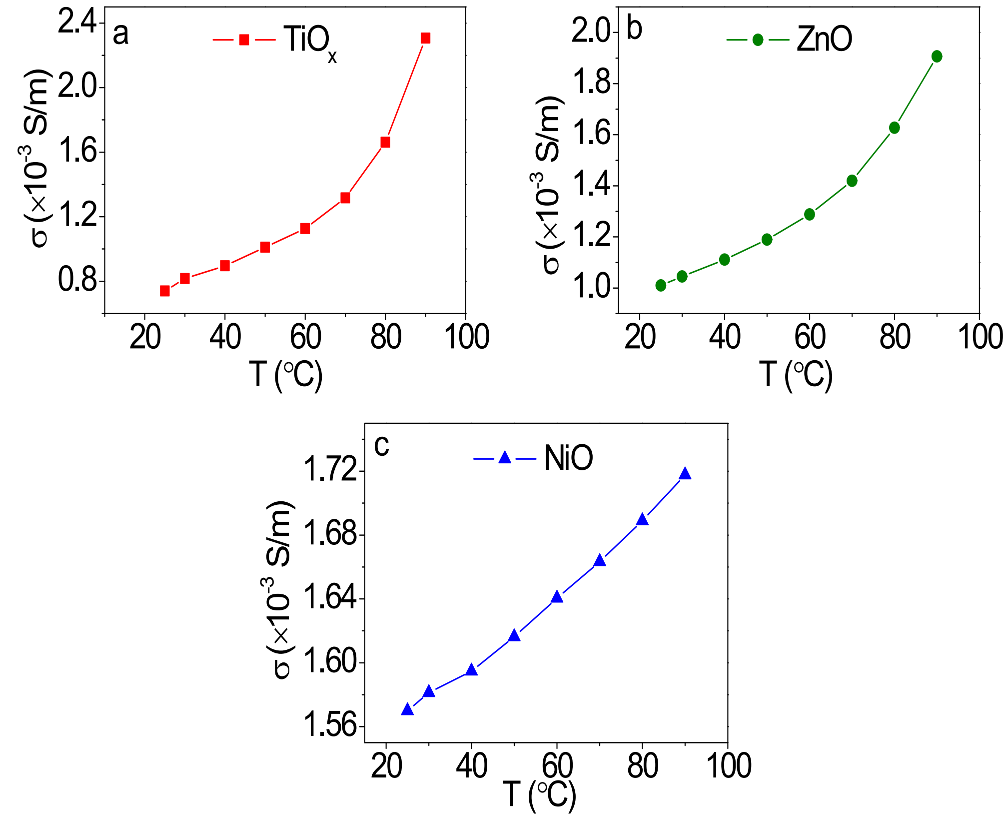

Figure S4: The temperature dependence of electrical conductivity in the single-layer devices:(a)ITO/TiO_x/Al, (b) ITO/ZnO/Al, (c) ITO/NiO/Al.

5. The calculated power factor of C_{60} devices

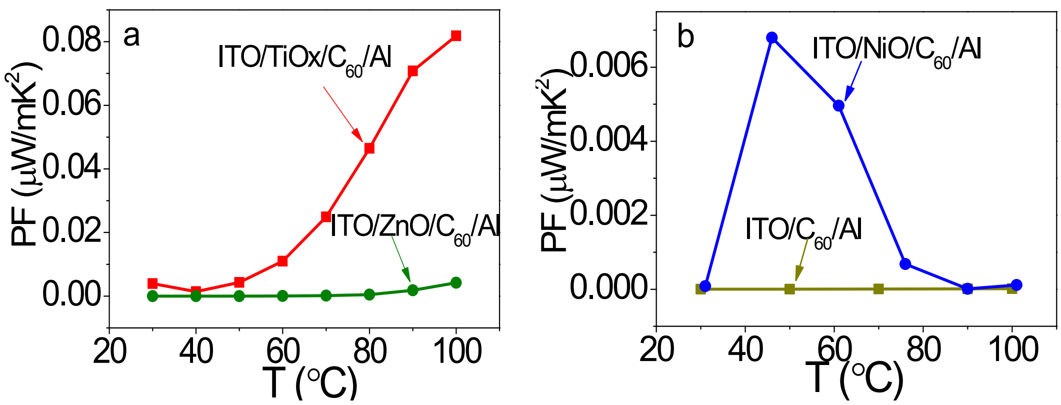

Figure S5: the calculated power factor of devices at different temperature: (a) ITO/TiO_x/C_{60}/Al and ITO/ZnO/C_{60}/Al, (b) ITO/TiO_x/C_{60}/Al and ITO/C_{60}/Al.

Table 1			
DEVICE	$\frac{V_0}{V_T}$ (AT=30℃)	$\frac{V_0}{V_T}$ (AT=45℃)	$\frac{V_0}{V_T}$ (AT=60℃)
ITO/C_{60}/Al	3.3%	3%	1.8%
Al/C_{60}/Al	4.3%	3.5%	2.8%
ITO/ZnO/Al	2.5%	1.8%	1.7%
ITO/TiO_x/Al	1.8%	1.6%	2.1%
ITO/NiO/Al	2.7%	2.5%	1.8%
ITO/ZnO/C_{60}/Al	4.7%	3.4%	2.9%
ITO/TiO_x/C_{60}/Al	5.8%	4.8%	6.3%
ITO/NiO/C_{60}/Al	3.7%	3.1%	4.9%

Table 1: The percentage of $\frac{V_0}{V_T}$ for different devices at the average temperature of 30℃, 45℃, and 60℃, where the V_0 and V_T are the measured voltage signals between the two electrodes of the devices measured without and with temperature difference, and AT is average temperature of the two electrodes.