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Supplementary information

Residual Oxygen–Driven P–N Conversion and Thermoelectric Properties in CrN Films

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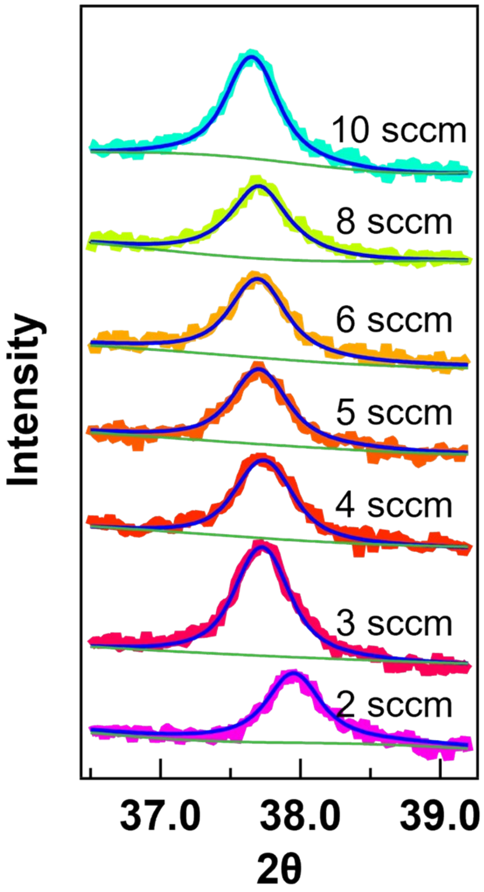

Figure S1. The fitting result of 111 peak of XRD at various N_2 flow rate. For all peaks, the background was fitted using a low-order polynomial function, and the diffraction peaks were fitted using a Voigt function to account for peak broadening mechanisms.

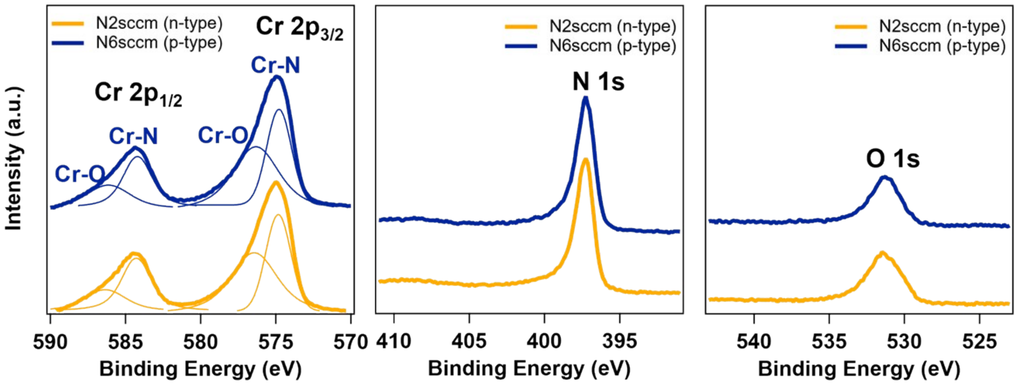

Figure S2. XPS core level spectra for Cr 2*p*, N 1*s*, and O 1*s*. The spectra were taken from the middle of the CrN film to minimize the influence of surface oxidation.

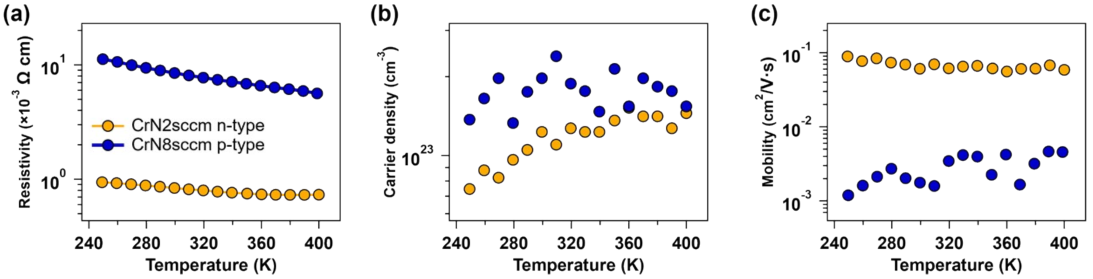

Figure S3. Temperature dependency of **(a)** resistivity, **(b)** carrier density and **(c)** mobility of *n*-type CrN(O) (f_{N2}~2 sccm, $CrN_{0.72}O_{0.11}$) and the *p*-type CrN(O) (f_{N2}~8 sccm, $CrN_{0.93}O_{0.27}$) films.