Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A

Supporting Information

Nitrogen-doped cuprous oxide as a *p*-type hole-transporting layer in thin-film solar cells

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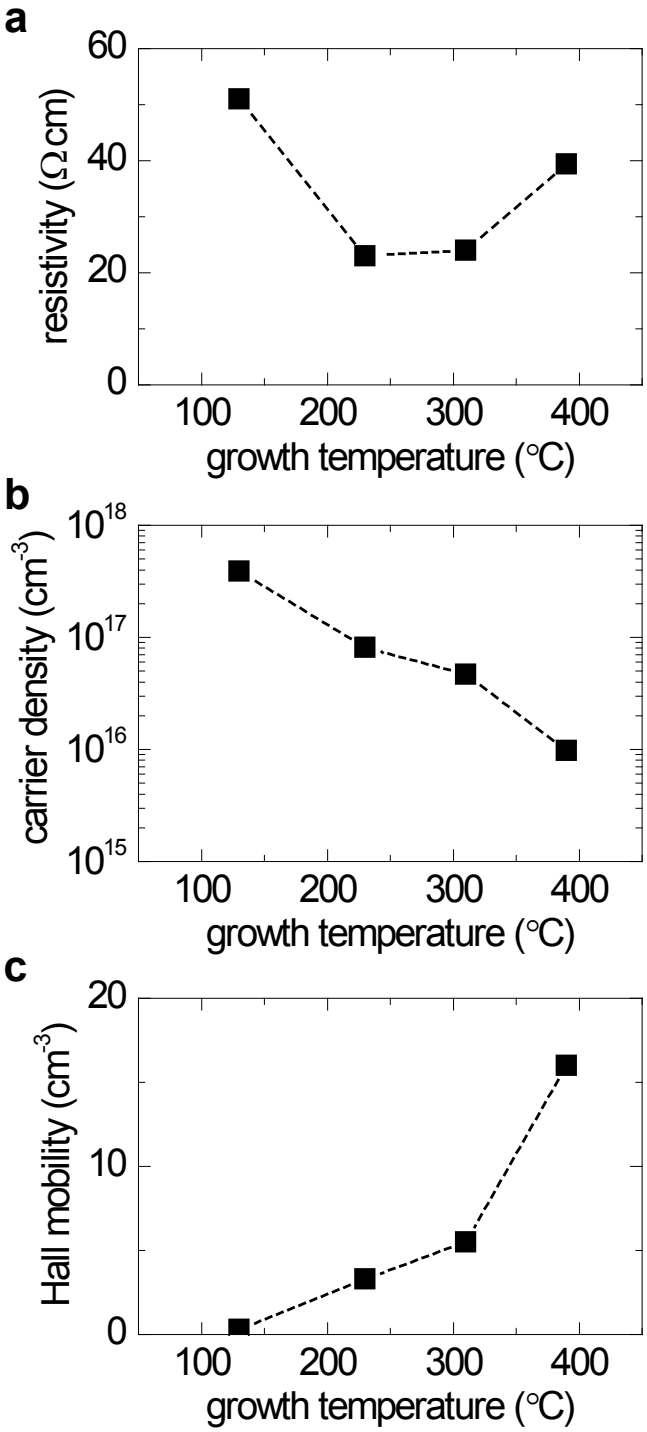

Fig. S1 Film growth temperature effects on (a) electrical resistivity, (b) carrier density, and (c) mobility of 0.6-μm-thick Cu_2O:N films measured by Hall effect measurements at room temperature. Dotted lines are to guide the eye. N_2 flow rate was maintained at 1 sccm. All samples exhibited *p*-type conductivity.

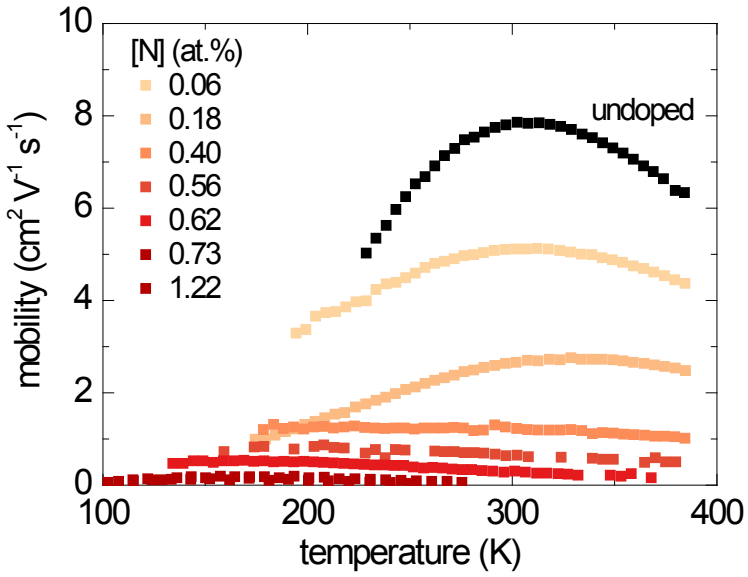

Fig. S2 Temperature-dependent Hall mobility of Cu_2O and Cu_2O:N films.

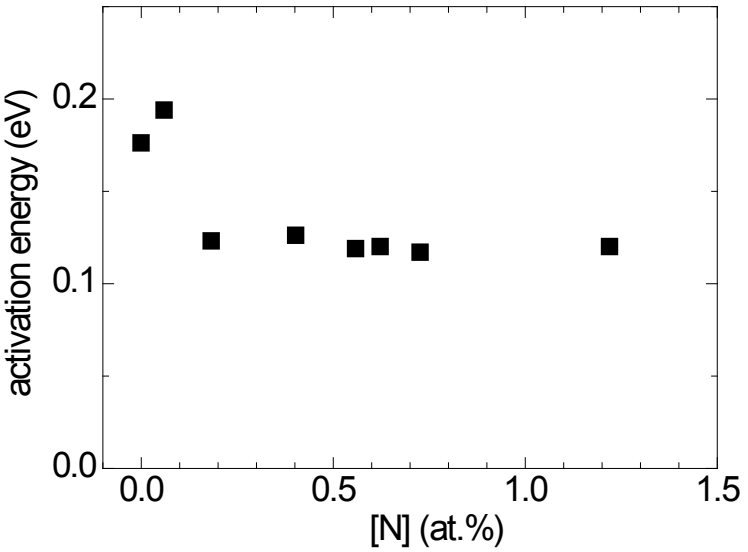

Fig. S3 Carrier (hole) activation energies of Cu_2O:N films estimated from the measured carrier density in the sample in the temperature range of 200 – 330 K.

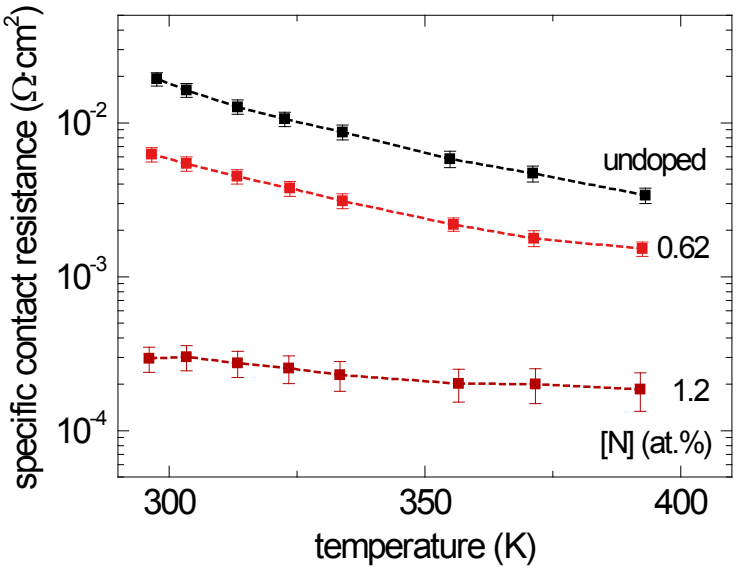

Fig. S4 Temperature-dependence of specific contact resistance between Ag electrode and Cu_2O:N films measured using CTLM. Dotted lines are to guide the eye.