Supporting Information

Highly Conducting Graphene Film with Dual-Side Molecular n-Doping

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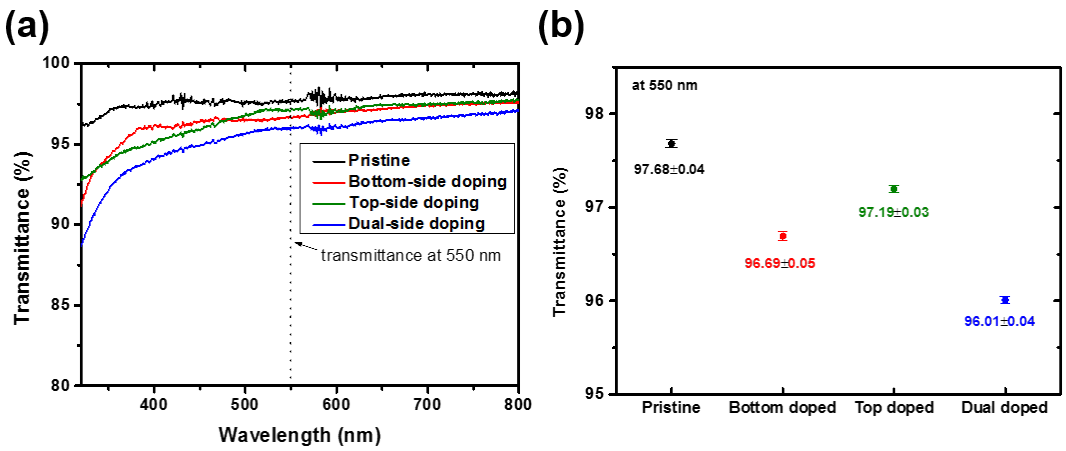

Figure S1. (**a**) Representative UV-Vis spectra of top, bottom and dual-side doped graphene film (**b**) Transmittance of pristine, top-side doped, bottom-side doped and dual-side doped graphene.

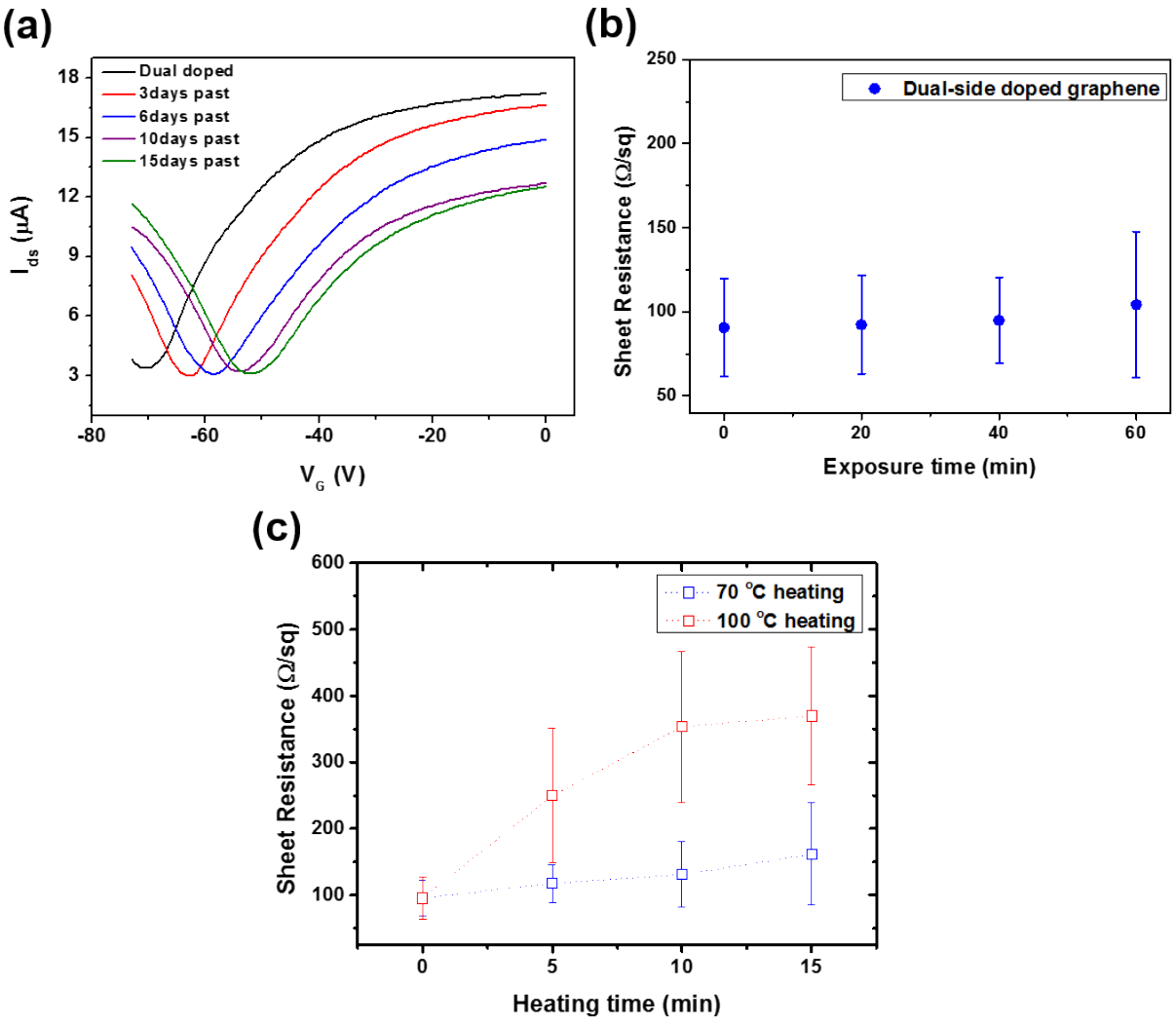

Figure S2. (**a**) The Dirac voltage shift of dual-side doped graphene as a function of exposure time in the ambient condition at room temperature (**b**) Light stability of dual-side doped graphene with respect to exposure time (100 W light bulb was used as a light source). (**c**) Thermal stability of dual-side doped graphene with heating time under 70 °C (blue) and 100 °C (red).

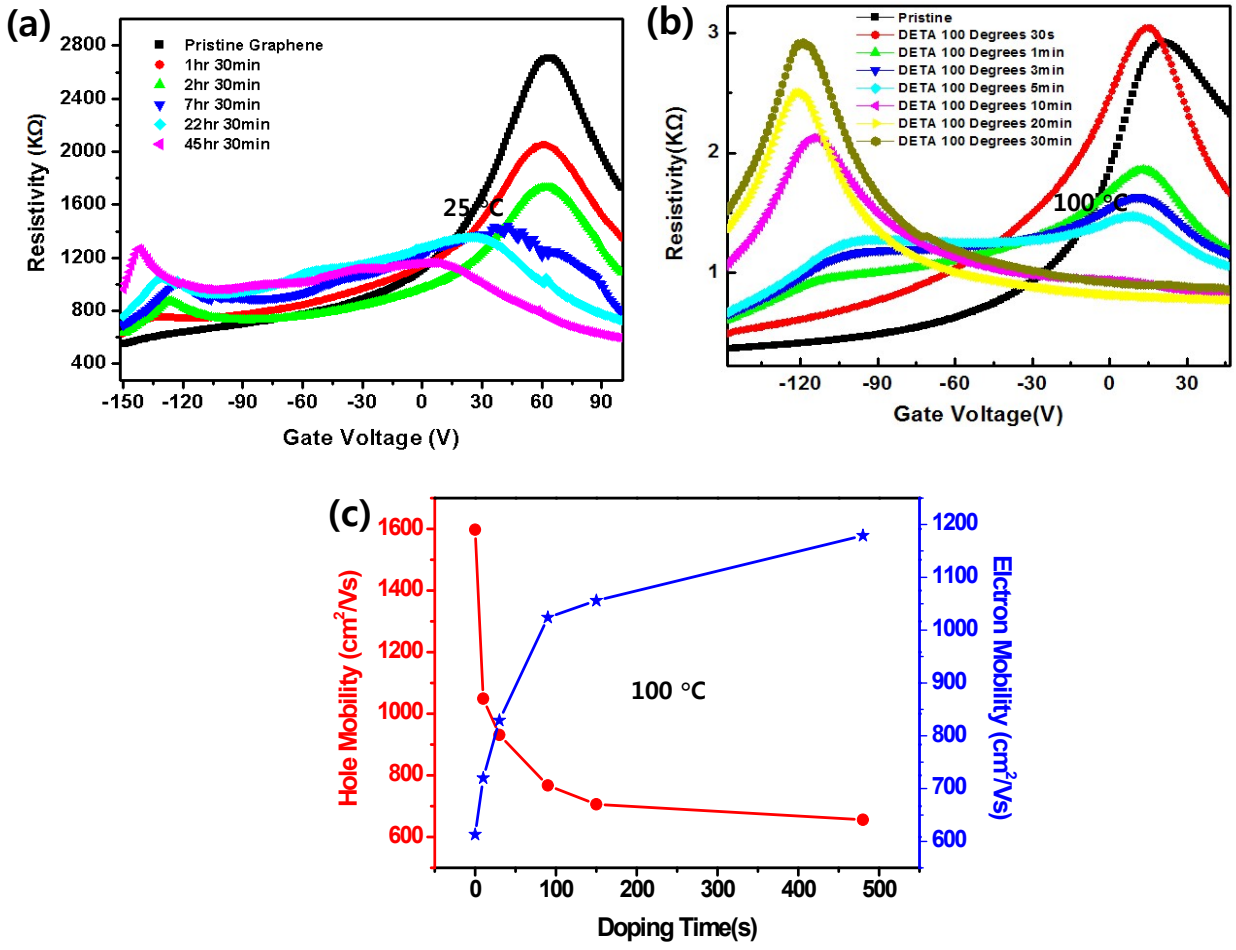

Figure S3. FET characteristics of DETA-doped graphene with respect to doping time and temperature. (**a, b**) Change in Dirac curves with respect to doping time at 25 °C and 100 °C, respectively. (**c**) Change in electron and hole mobility with respect to doping time at 100 °C.

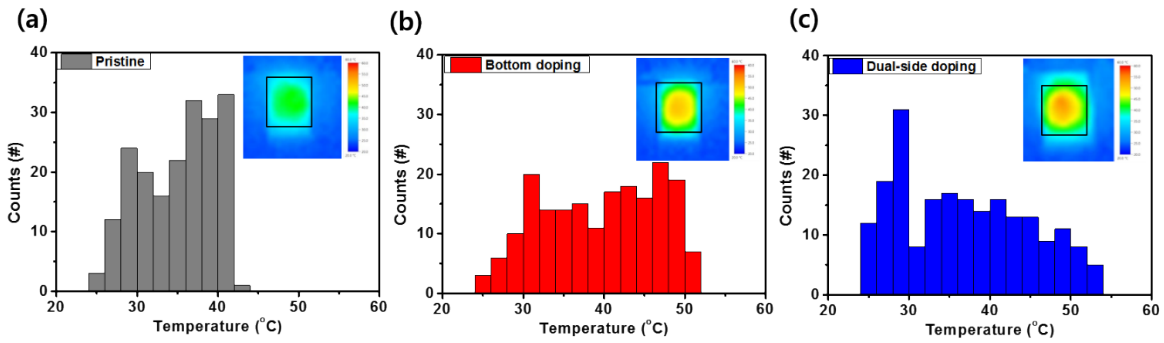

Figure S4. Statistical analysis of temperature distribution in the graphene-based heaters. (**a**) a pristine graphene-based heater, (**b**) a bottom doped graphene-based heater, and (**c**) a dual-side doped graphene heater. The insets show the corresponding infrared images at the steady state temperature at 20V.