Supplementary Information for

Double-Layer CVD Graphene as Stretchable Transparent Electrodes

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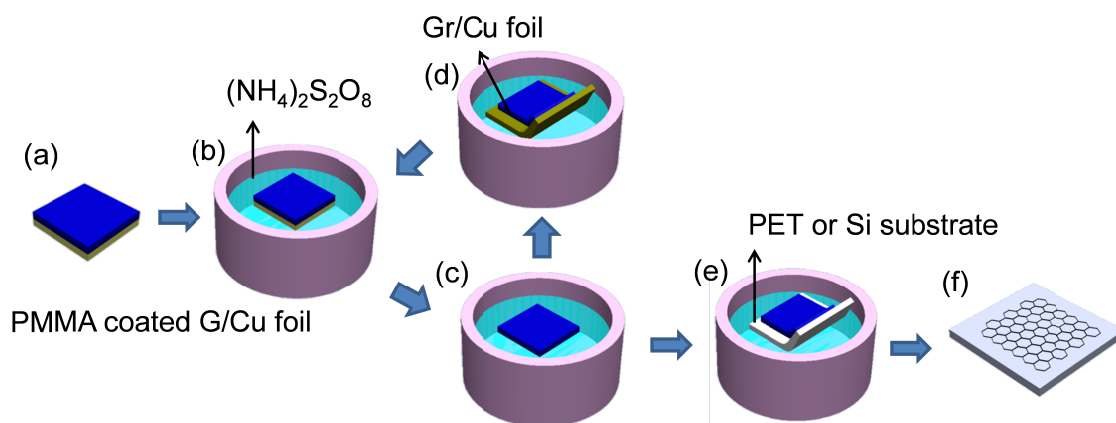[*] Corresponding authors: jaehkim@kimm.re.kr, sblee@kaist.ac.kr

Figure. S1 Schematic of direct-transfer method. a) Spin-coating of PMMA as a supporting layer after the synthesis of graphene on a Cu film. b) Floating of the film on 0.1-M $(NH_4)_2S_2O_8$ solution to dissolve the copper catalyst. c, d) After removing the copper film, the PMMA/graphene film is lifted using another graphene layer grown a Cu foil. Multiple stacked graphene sheets were fabricated by repeating the process from b) to d). e) Transfer of graphene onto a substrate. f) Removal of the PMMA support by dipping the PMMA/graphene layers/substrate in acetone at 80 °C.
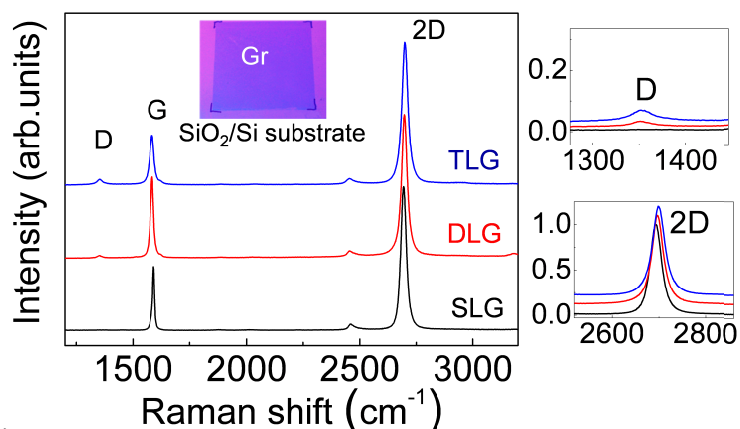
Figure. S2 Raman spectra of single-layer graphene, double-layer graphene and triple-layer graphene on a SiO$_2$/Si substrate. Comparison of that Raman spectra (excitation wavelength λ = 514 nm) measured on single-layer graphene, double-layer graphene, and triple-layer graphene on a SiO$_2$/Si substrate. Right side: Raman spectra of the D and 2D bands.
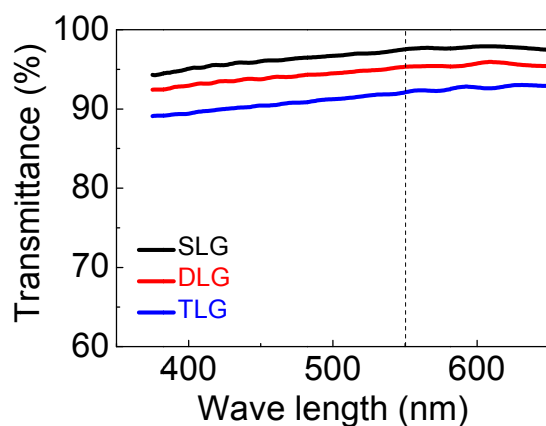

Figure. S3 Transmittances of graphene on PET with a different number of layers.
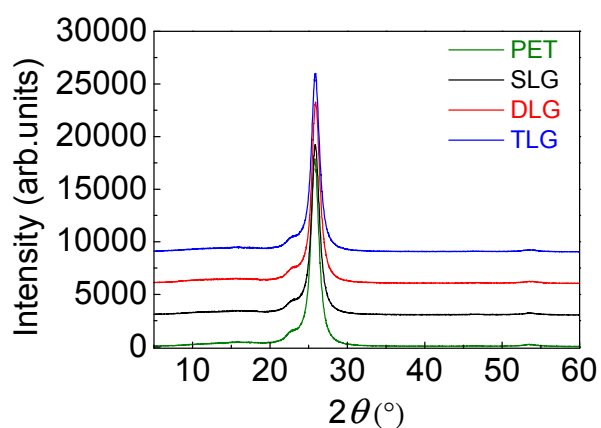
Figure. S4 XRD diffraction patterns: PET substrate and single-layer, double-layer and triple-layer graphene on the PET substrate.

Table. S1 Ratios of the 2D-to-G peak of single-layer graphene, double-layer graphene, and triple-layer graphene

Number of layers	Ratio 2D/G
SLG	2.24
DLG	1.76
TLG	2.80

Table. S2 Transmittances of graphene on PET with a different number of layers

Number of layers	Transmittance (%)	
	Mean	Standard deviation
SLG	97.64	0.71
DLG	95.65	0.93
TLG	91.76	0.28