Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Improved Performance and Stability of Field-Effect Transistors with Polymeric Residue-free Graphene Channel Transferred by Gold Layer

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Supporting Information

Supporting Figure S1

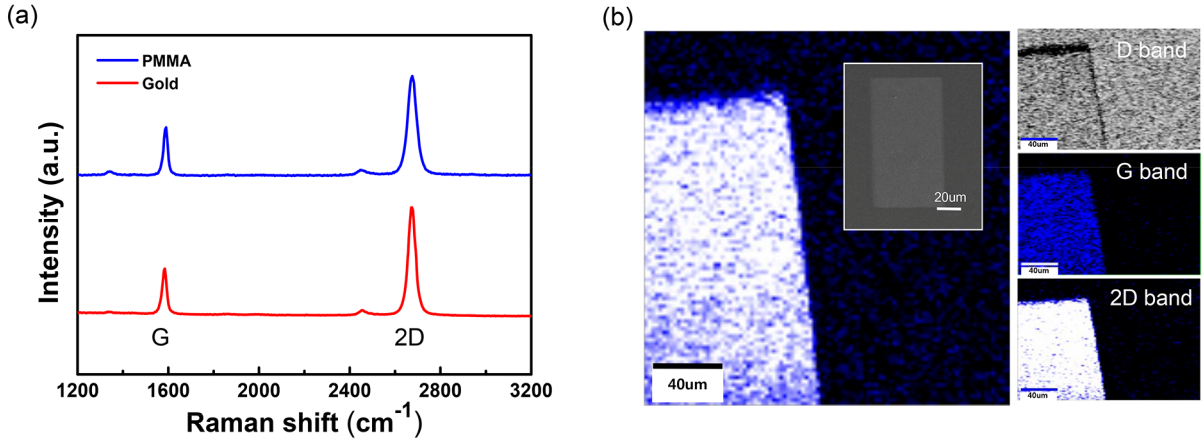

Figure S1. Raman spectra and mapping of Gr layers transferred by the two transfer methods. (a) Raman spectra of CVD-grown Gr transferred by gold and PMMA. **(b)** Confocal Raman spectroscopy on gold-transferred Gr patterned by O_2 RIE, with the inset showing an FE-SEM image for patterned domain size of the active channel layer.

Supporting Figure S2

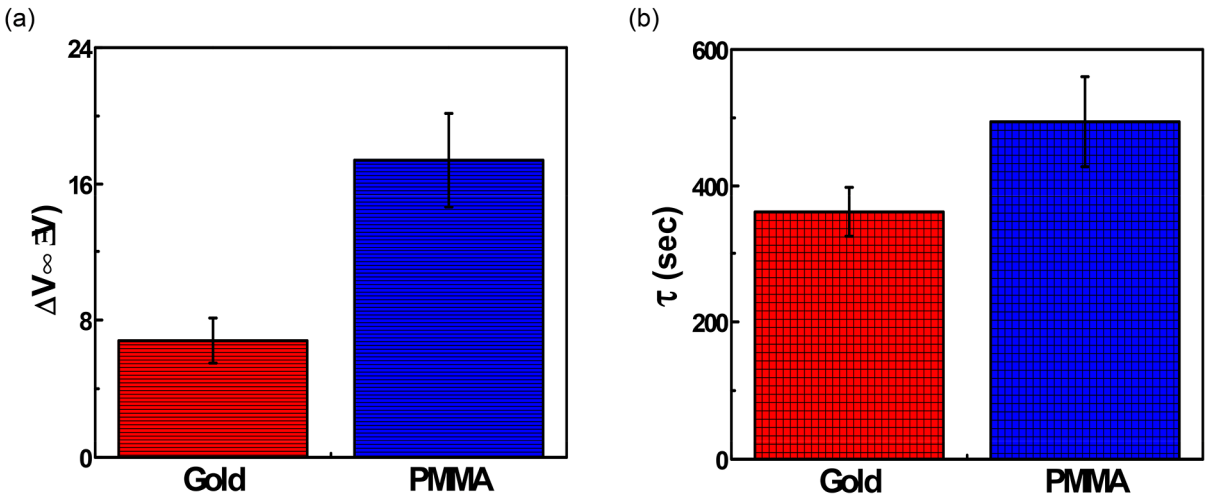

Figure S2. Statistical data of gate bias stress effects in GFET array. The average values with standard deviation of **(a)** the equilibrium shift of the Dirac point at t = +∞ (ΔV_∞) and **(b)** the characteristic equilibrium time constant (τ).

Supporting Table S1. Comparison of the C 1s peak of Gr by the two transfer methods from XPS spectra.

	Gold			PMMA		
	Peak position (eV)	**Area (%)**	**FWHM (eV)**	**Peak position (eV)**	**Area (%)**	**FWHM (eV)**
sp^2	284.6	67	1.49	284.5	54.9	1.53
sp^3	285.4	6.4	1.21	285.4	9.6	1.55
C-O	286.1	13.3	1.55	286.2	16.3	1.93
C=O	287.3	7.7	2.09	287.6	10.7	3.27
O-C=O	289.1	5.6	3.18	290.1	8.5	4.98