Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information

Graphene chemiresistors modified with functionalized triphenylene for highly sensitive and selective detection of dimethyl methylphosphonate

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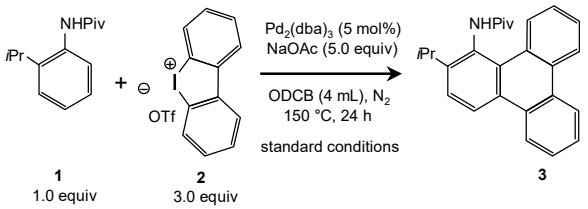

Fig. S1. Synthesis of N-substituted triphenylene. Refer to Ref. 14 for details.

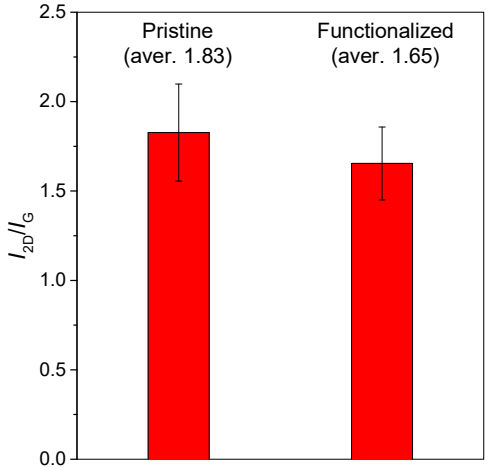

Fig. S2. I_{2D}/I_G ratio before and after the functionalization. The decreased I_{2D}/I_G ratio by the functionalization implies n- or p-doping of graphene.

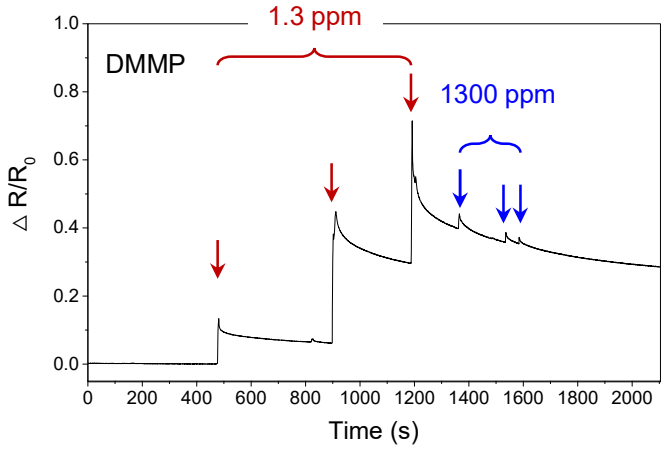

Fig. S3. Responses to DMMP at a high concentration (1300 ppm) after partially irreversible responses at a low concentration (1.3 ppm).

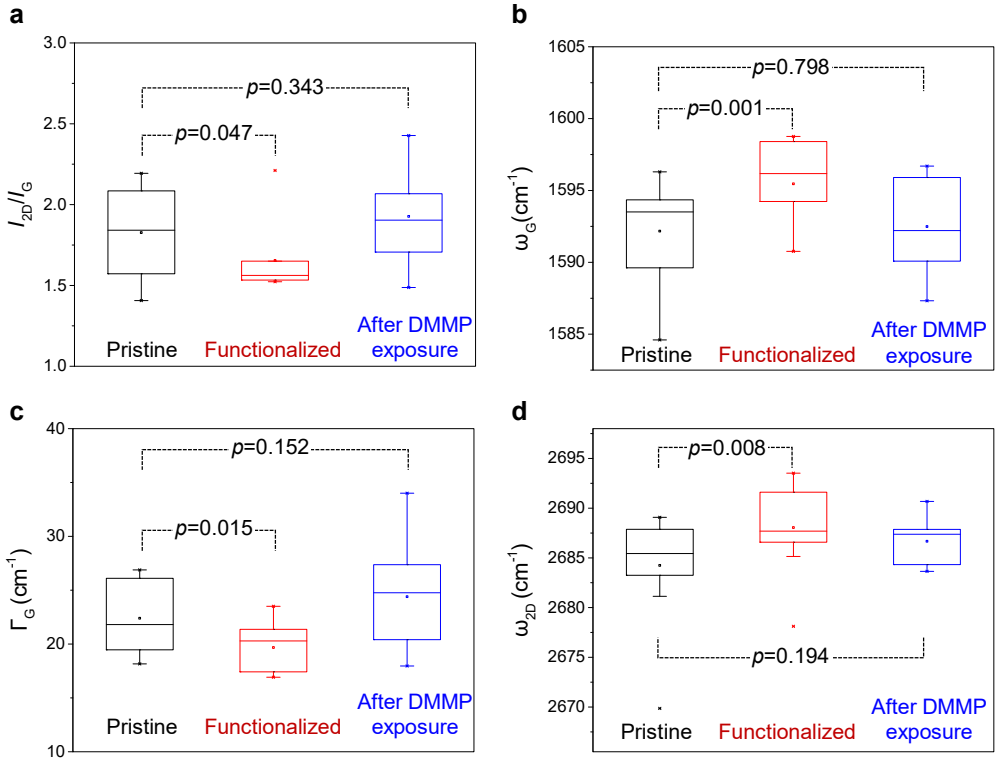

Figure S4. Recovery of Raman peak parameters of graphene when pristine (black), functionalized (red), and after the exposure to DMMP (blue). (a) 2D/G intensity ratio (I_{2D}/I_G). (b) Peak positions of G peak (ω_G). (c) FWHM of G peak (Γ_G). (d) Peak positions of 2D peak (ω_{2D})