

SUPPORTING INFORMATION

DYNAMIC MODIFICATION OF FERMI ENERGY IN SINGLE LAYER GRAPHENE BY PHOTOINDUCED ELECTRON TRANSFER FROM CARBON DOTS

A. Armano^{a,b}, G. Buscarino^{a,c,d}, F. Messina^{a,c}, A. Sciortino^a M. Cannas^a,
F. M. Gelardi^a, F. Giannazzo^d, E. Schilirò^d, and S. Agnello^{a,c,d,*}

a Università degli Studi di Palermo, Dipartimento di Fisica e Chimica, Via Archirafi 36, 90123 Palermo, Italia

b Università degli Studi di Catania, Dipartimento di Fisica e Astronomia, Via Santa Sofia 64, 95123 Catania, Italia

c Università degli Studi di Palermo, ATen Center, Viale delle Scienze, Edificio 18, 90128 Palermo, Italia

d Consiglio Nazionale delle Ricerche—Istituto per la Microelettronica e Microsistemi, Strada VIII 5, 95121 Catania, Italia

* Corresponding Author

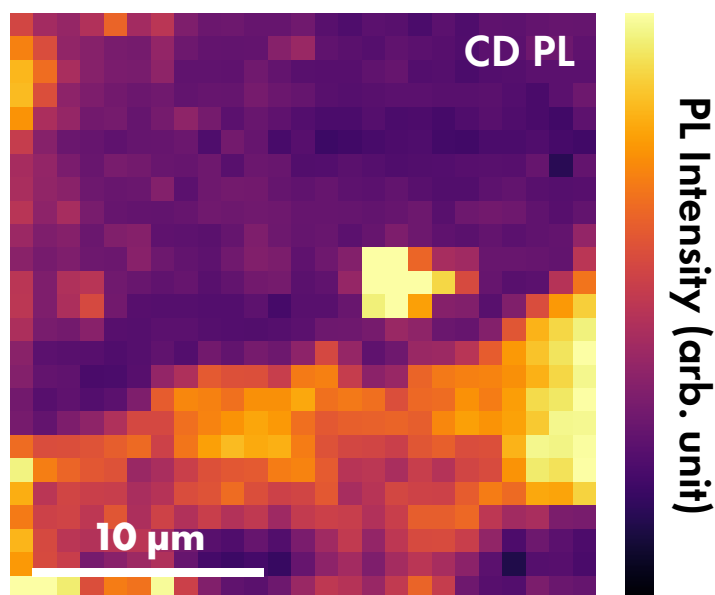


Figure S1: μ -PL Mapping shown in Figure 5b reported without pixel interpolation.

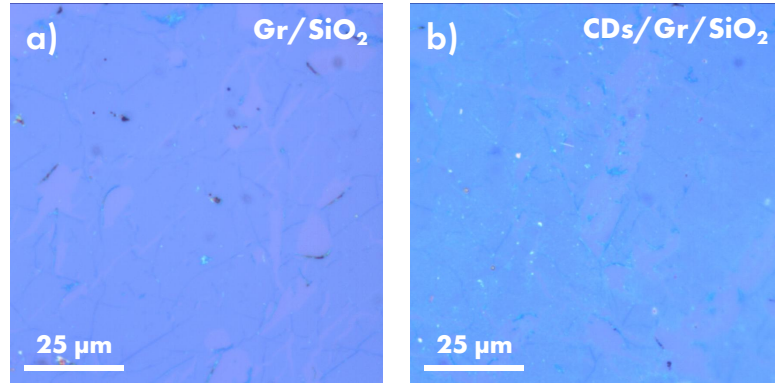


Figure S2: Optical images shown in Figure 3a,b reported without color curves correction.

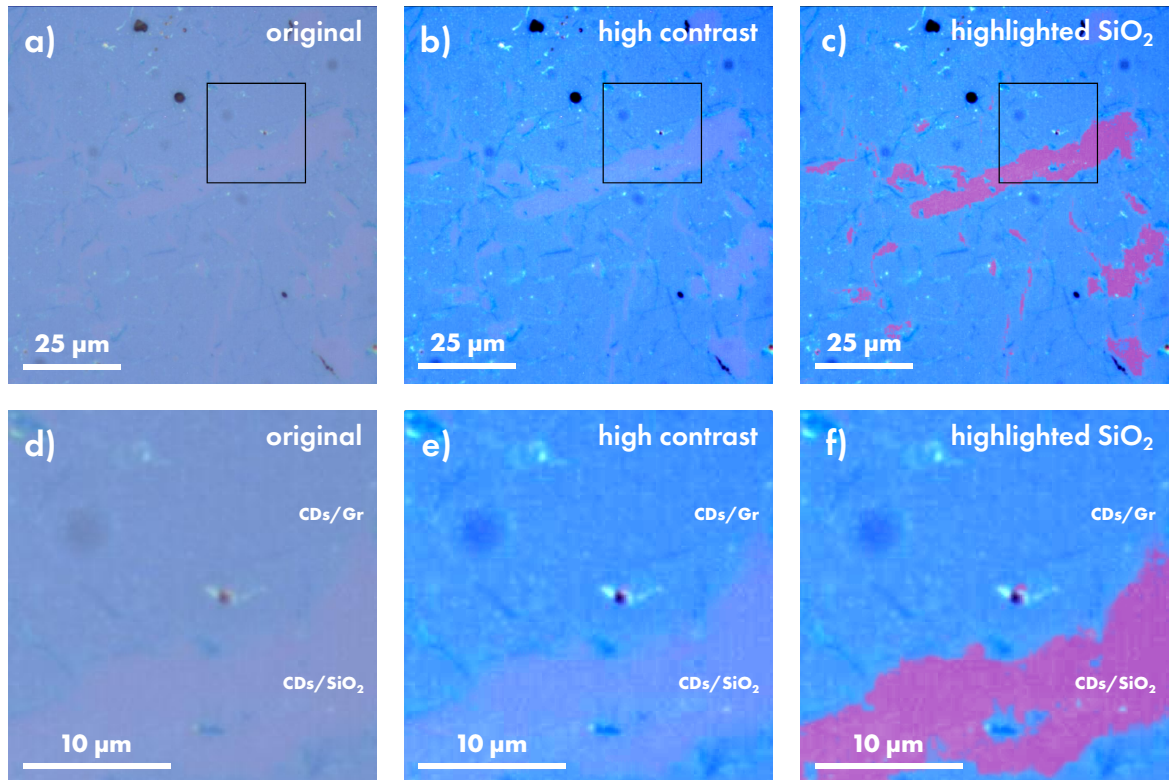


Figure S3: Optical images shown in Figure 5a reported in original and cropped version (a,d) before and (b,e) after color curves correction, and (c,f) with highlighted surface SiO_2 regions. The selected region is pointed out in panels (a,b,c) by black squares border.

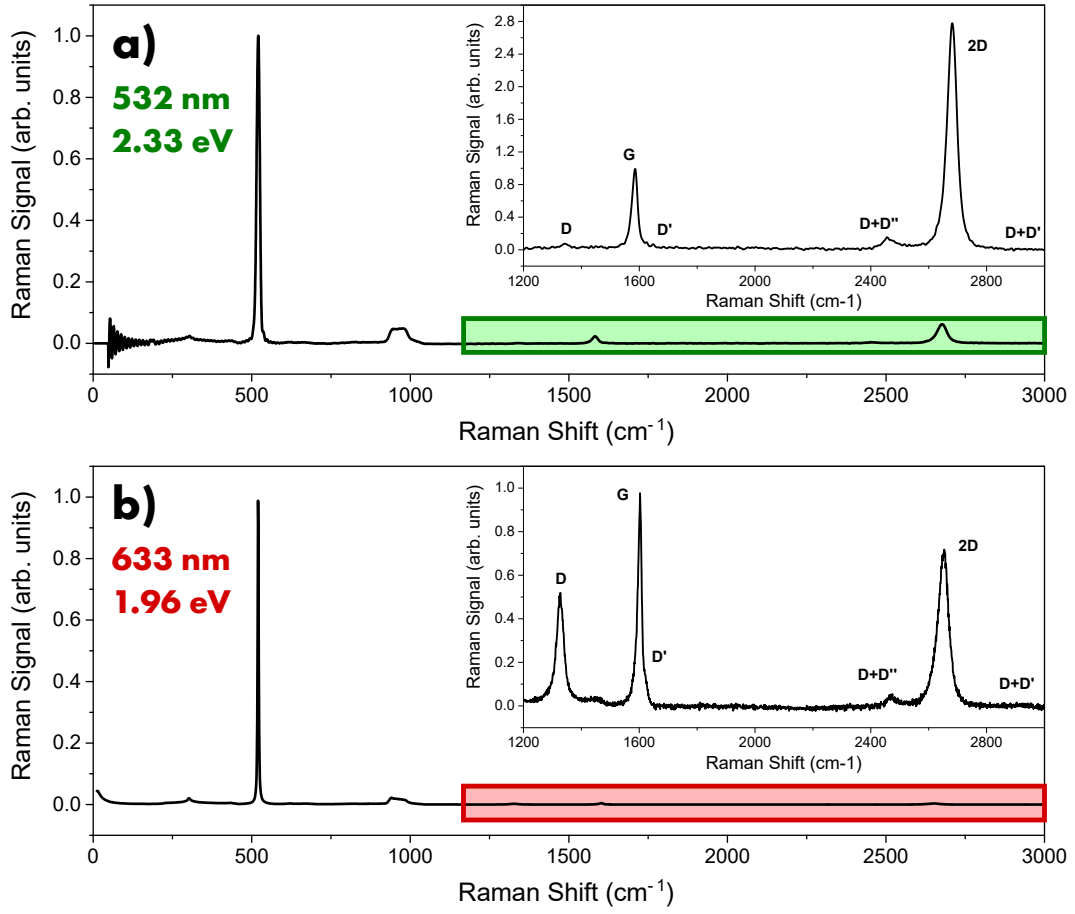


Figure S4: Raman spectrum of undoped graphene acquired by using laser at (a) 532 nm (2.33 eV) and (b) 633 nm (1.96 eV). In both panels, insets show the spectral range between 1200–3000 cm^{-1} containing the main bands of graphene.

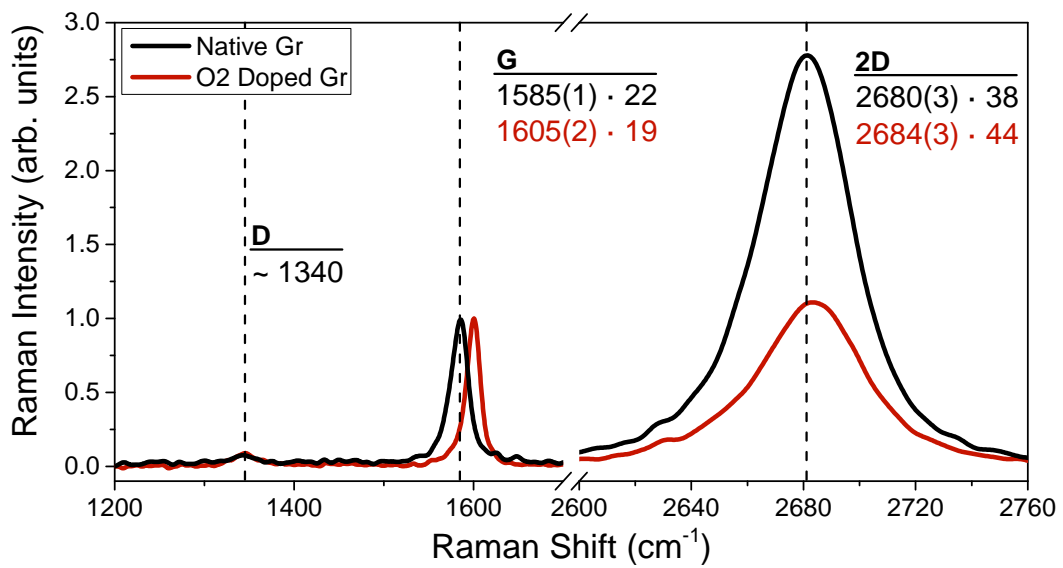


Figure S5: Raman spectra of undoped (black) and p-doped graphene (red) acquired by using laser at 532 nm. The mean value of peak position and FWHM of main bands are reported. Adapted from Ref. [41]

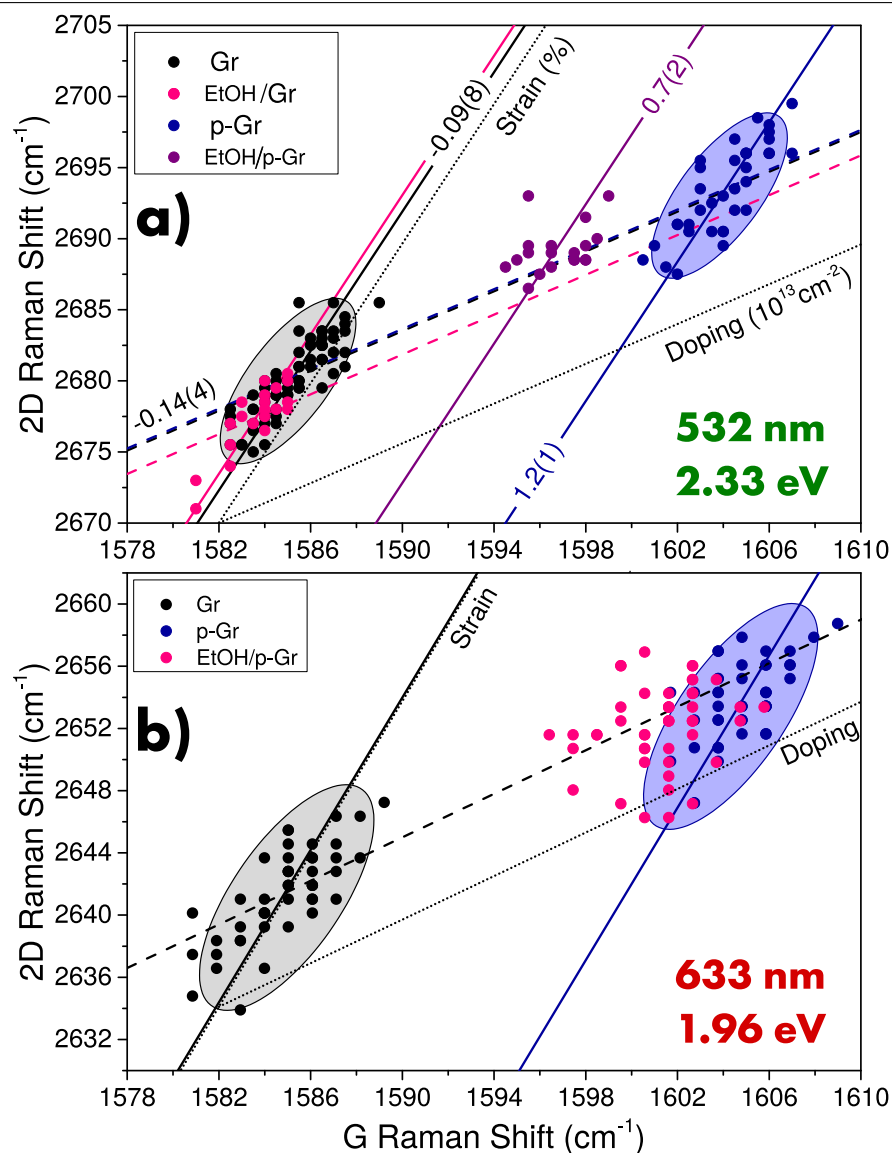


Figure S6: G-2D correlation map at (a) 532 nm and (b) 633 nm laser excitation of undoped and p-doped Gr (reported from Ref. [41] for 532 nm only), undoped and p-doped graphene previously wetted in ethanol. Doping and strain axes are marked by dotted lines and reference levels are pointed out by continuous and dashed lines, respectively.

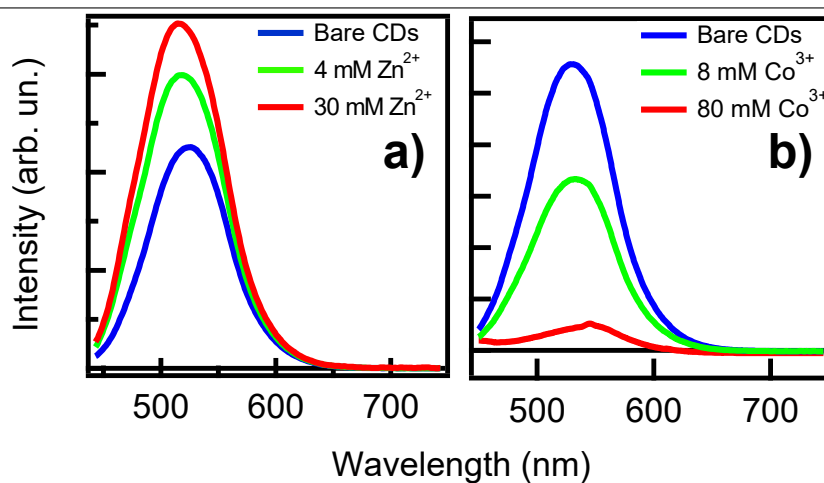


Figure S7: Emission spectra of bare CDs (blue) with (a) zinc, and (b) cobalt ions in solution. Different concentrations of ions are compared (green, red).