Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information :

Infrared dichroism studies and anisotropic photoluminescence properties of poly(para-phenylene vinylene) functionalized reduced graphene oxide

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Table 1S. Vibration modes observed by IR spectroscopy for the samples prepared by the electrochemical polymerization of TBPX, PPV in doped state and DSB

ν(cm^{-1}) observed in this study	**ν(cm^{-1}) for PPV in doped state[7, 18, 21]**	**ν(cm^{-1}) for DSB[19]**	**Assignment of frequencies for DSB[19]**
885	876	856	A_{1g}
1032	1032	1026–1027	$E_{1u,a}$
1068		1072–1076	$E_{1u,b}$
1109	1108	1114–1116	B_{2u}
1149	1151	1151–1154	B_{2u}
1180	1176	1174–1180	$E_{2g,a}$
1380–1394	1395		
1423	1423	1417–1428	$E_{1u,b}$
1466		1466–1453	$E_{1u,b}$
1487	1484–1485	1486–1491	$E_{1u,a}$
1510–1512	1506	1509–1511	$E_{2g,b}$

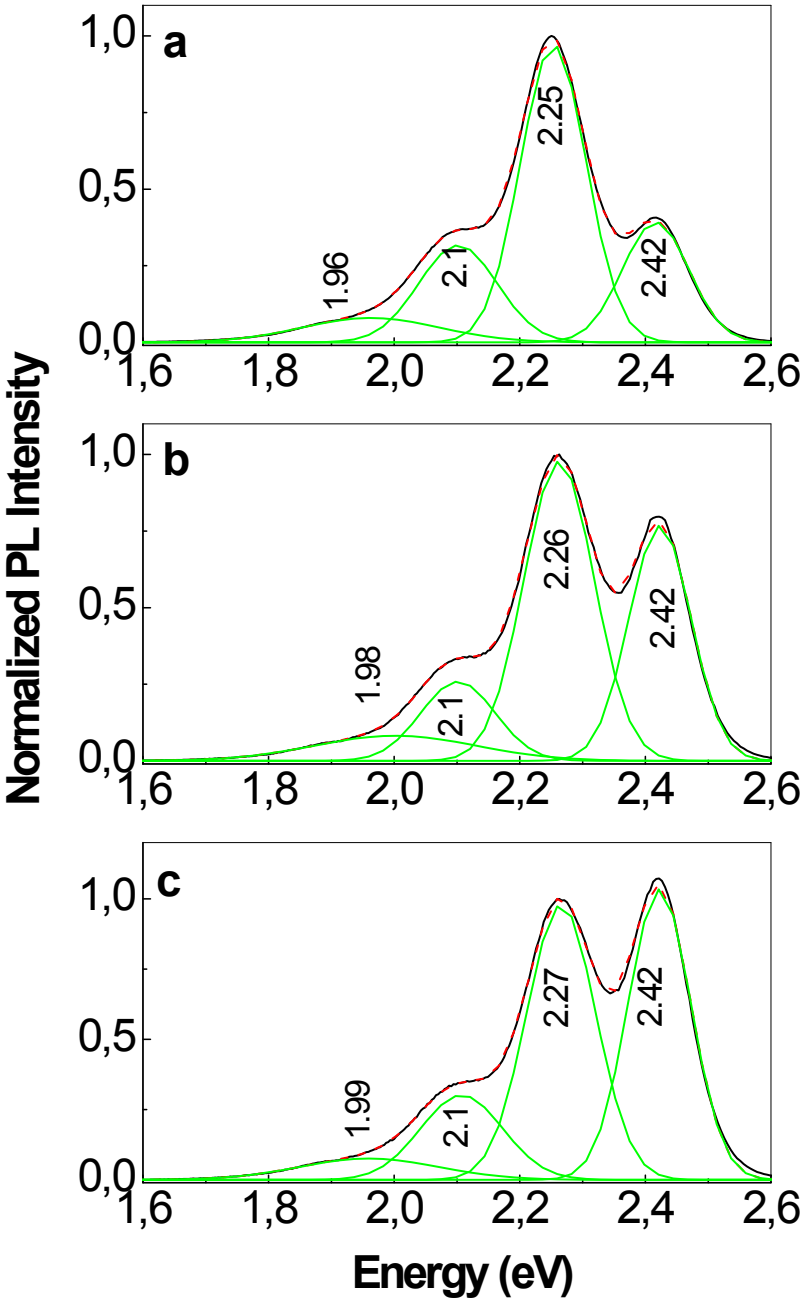
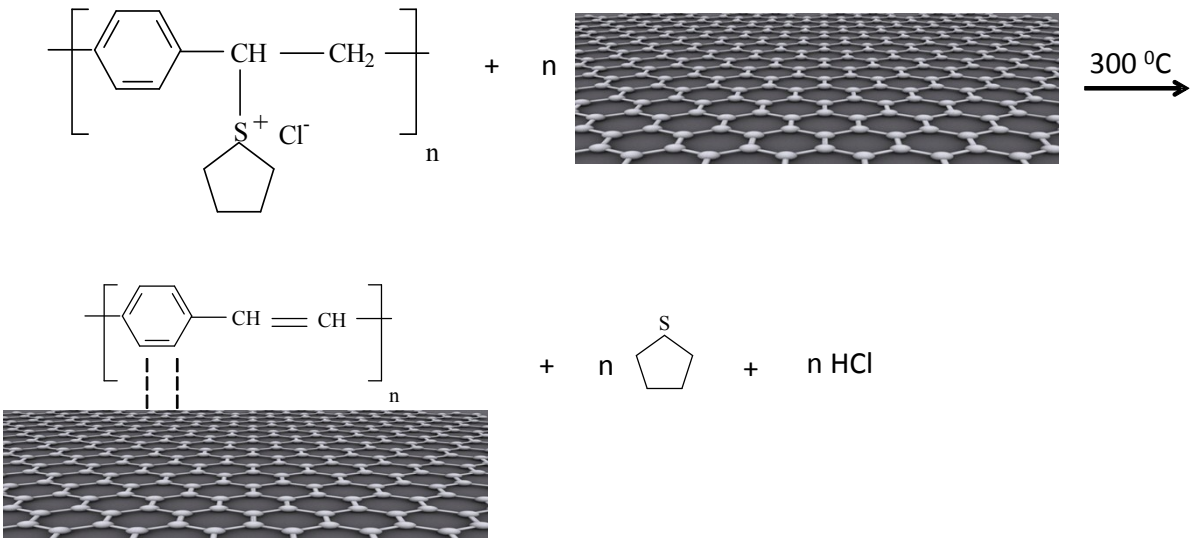
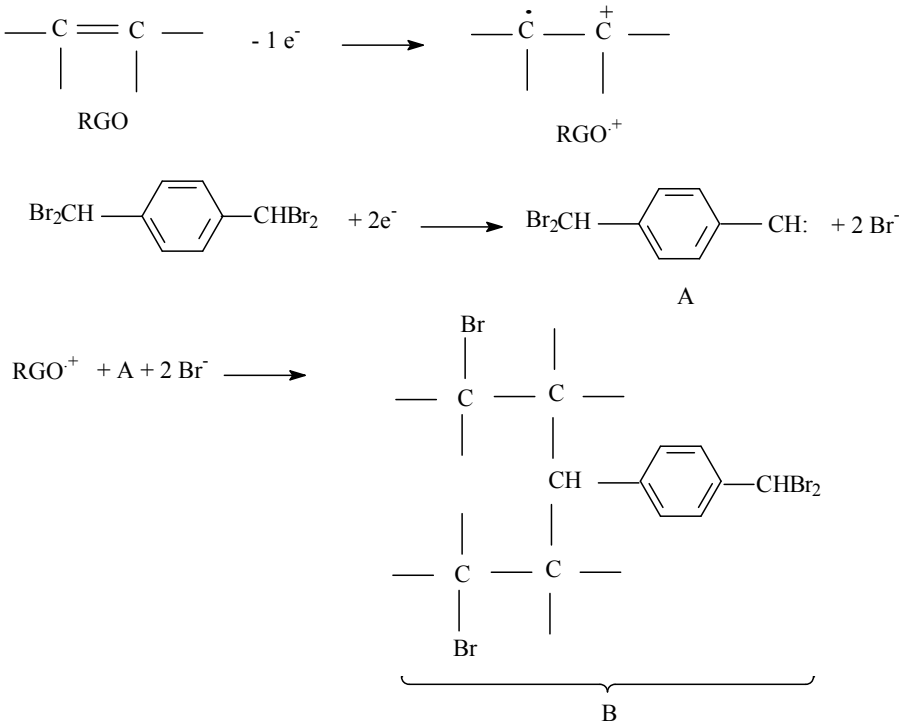


Figure 1S Spectral components of the PL spectra (λ_{exc} = 440 nm) of the films deposited on Au supports, resulting from the AC at 300 °C of the PPV PS with different weight percentage concentrations of RGO: 0 wt.% (a), 0.05 wt.% (b), and 0.5 wt.% (c).



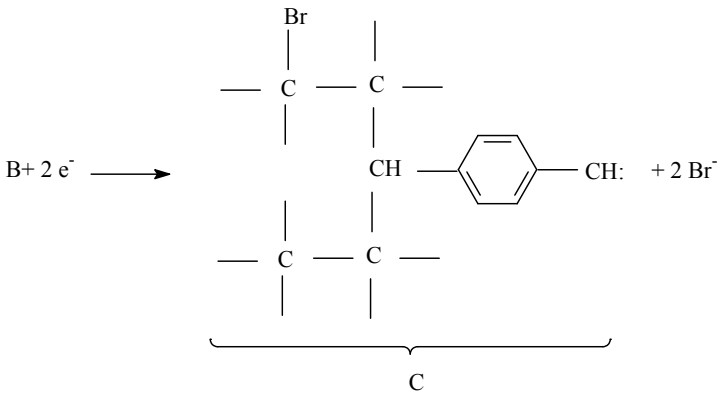
Scheme 1S The AC reaction of PPV PS with the RGO sheets

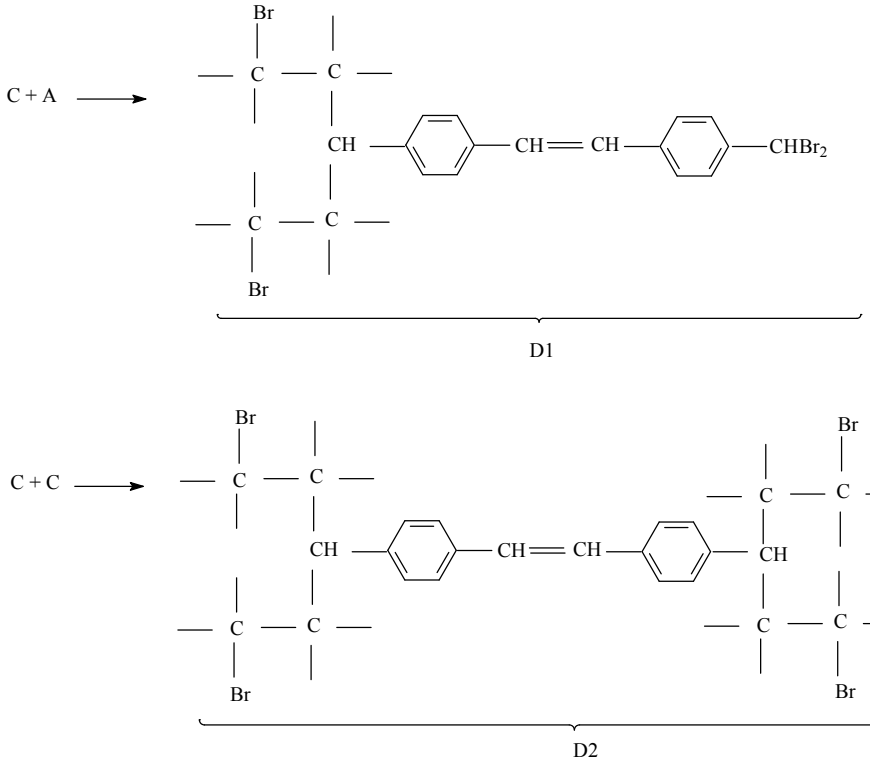
Stage 1



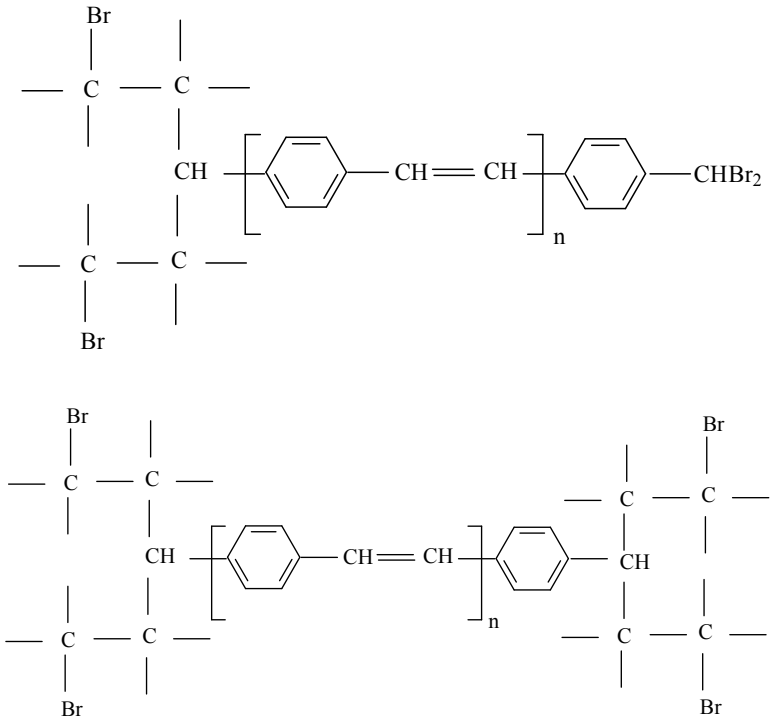
RGO covalent functionalized with α, α-dibromo-p-xylene

Stage 2





..... : RGO covalent functionalized with PPV in un-doped state



Scheme 2S The electrochemical mechanism of the covalent functionalization of the RGO sheets with PPV MCs.