Supporting Information

Flower Like Ag decked non-stoichiometric Bi_2O_{3-x}/rGO hybrid nano composites SERS substrate for an effective detection of Rhodamine 6G Dye molecules

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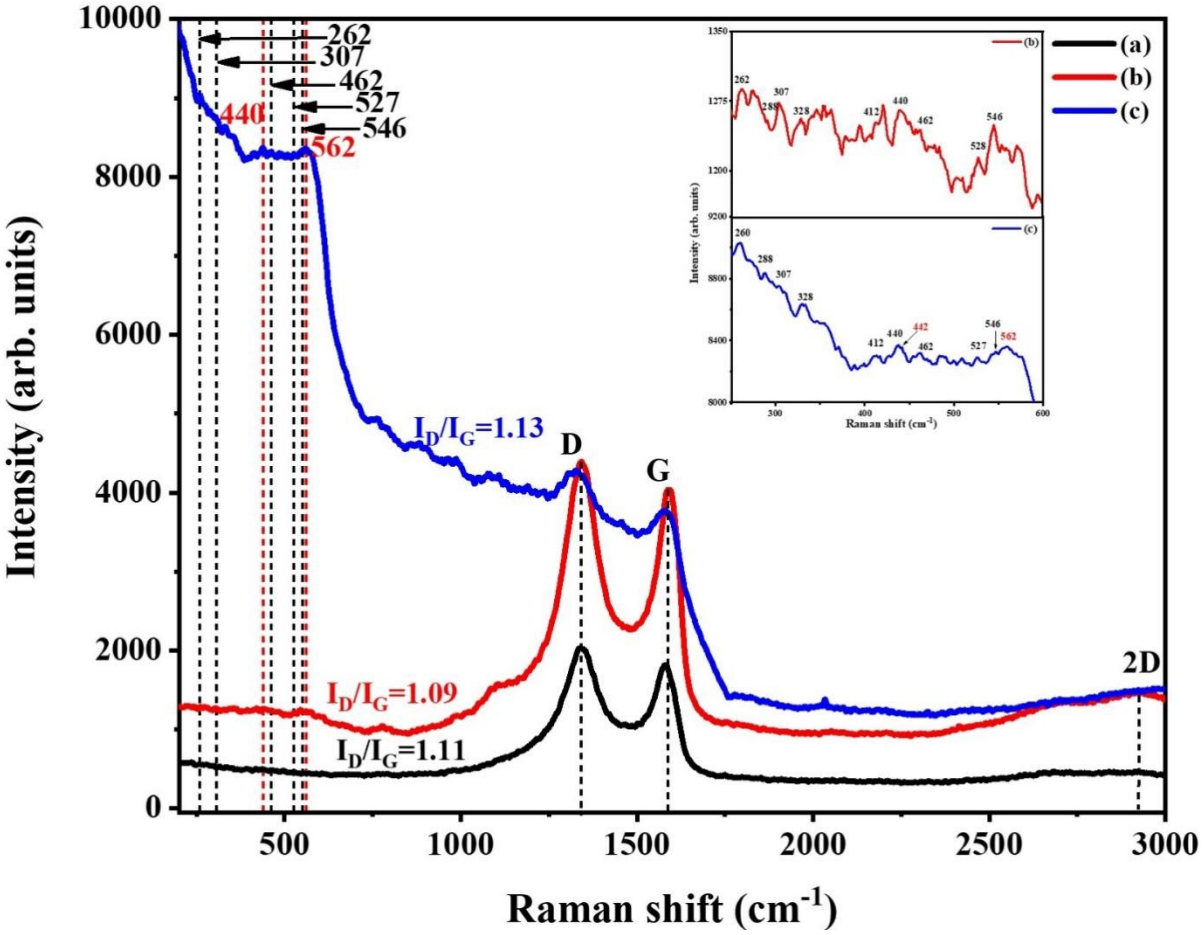

Figure S1. Raman spectra of bare (a) rGO, (b) rGO-Bi_2O_3/$Bi_2O_{2.75}$ hybrid thin film nano composite and (c) rGO-Ag-Bi_2O_3/$Bi_2O_{2.75}$ hybrid thin film nano composite. The inset shows an enlarged view of the characteristic Raman peaks at lower wave number.

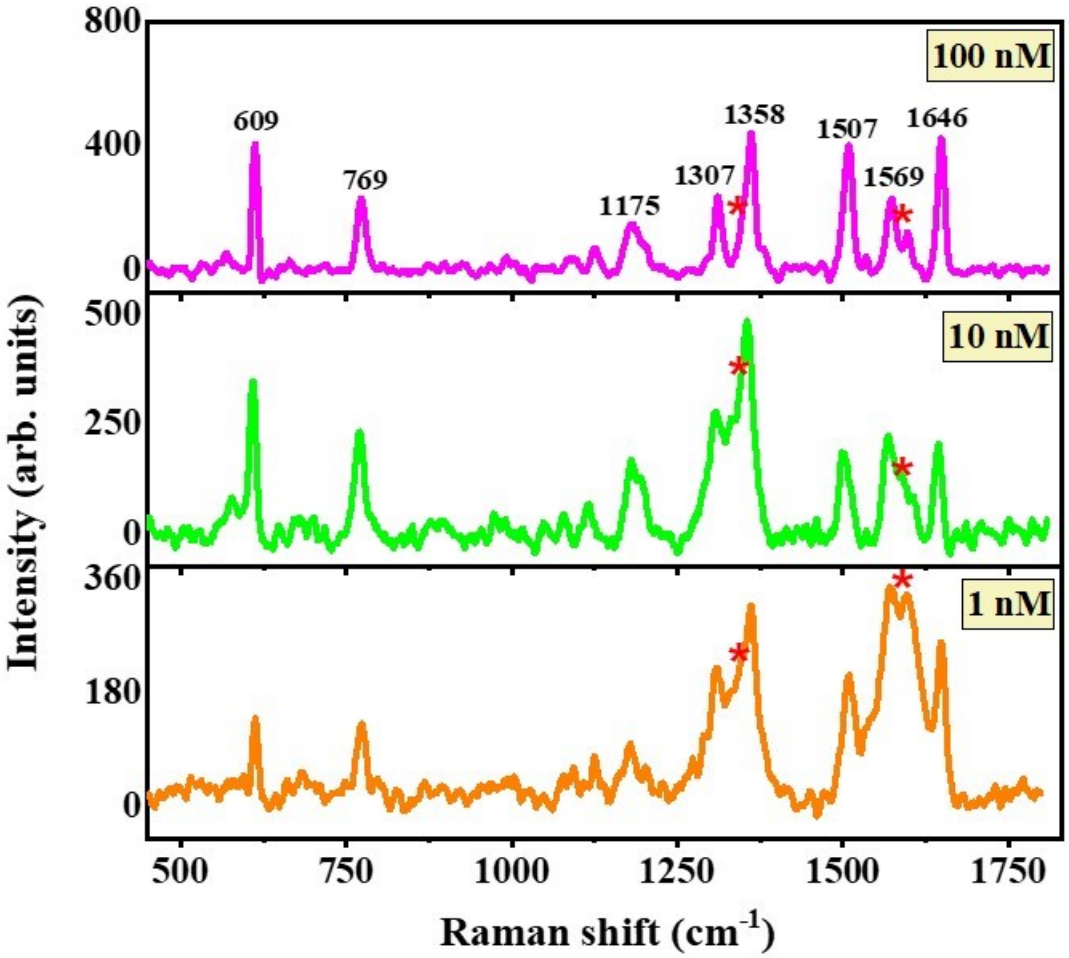

Figure S2. SERS spectra for a set of nano molar concentrations of R6G loaded on rGO-Ag-Bi_2O_3/$Bi_2O_{2.75}$ hybrid thin film nano composite.

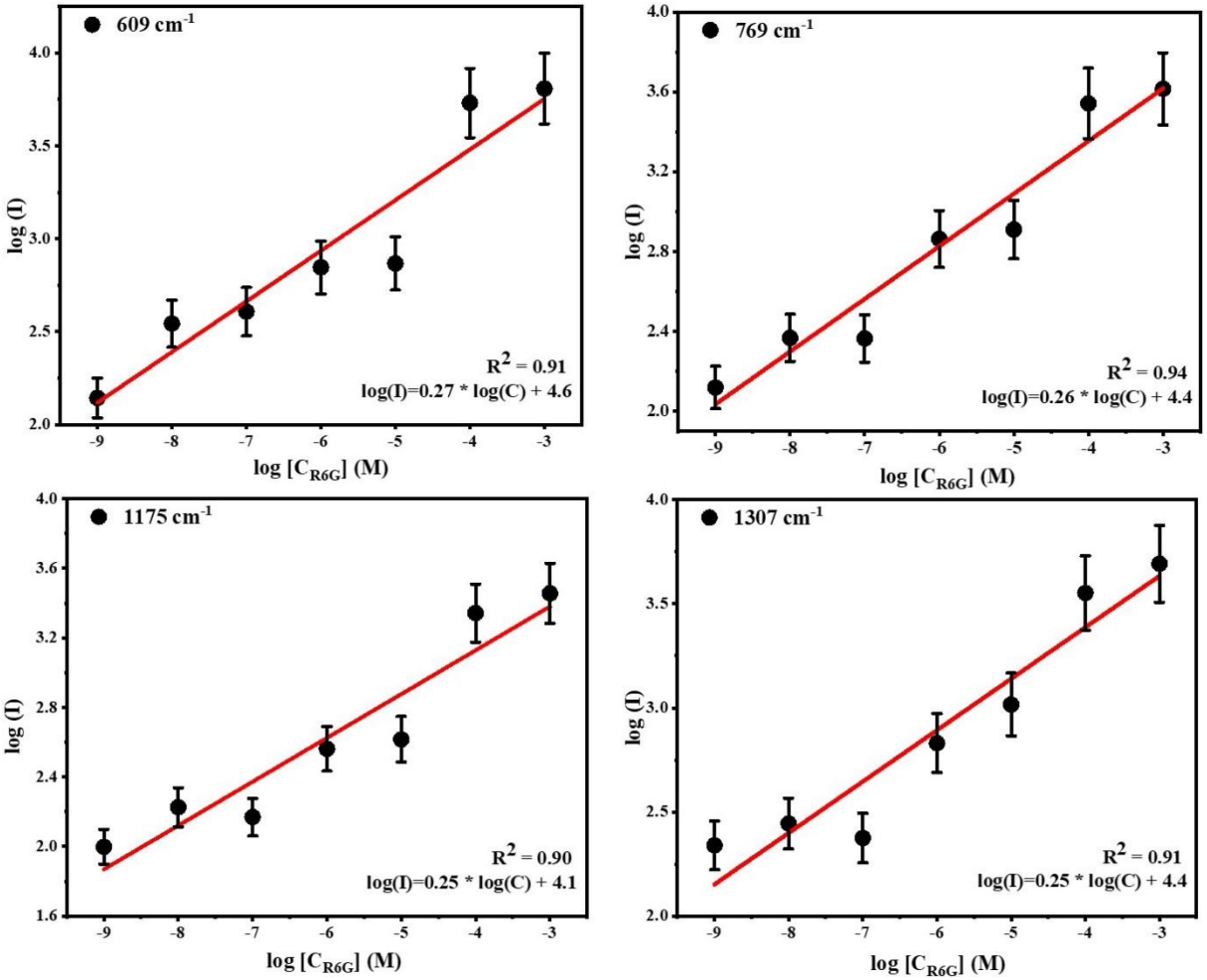

Figure S3. Plots presenting linearity correlation of SERS intensity with logarithmic values of R6G molar concentrations ranging from mM to nM adsorbed on rGO-Ag-Bi_2O_3/$Bi_2O_{2.75}$ substrate.

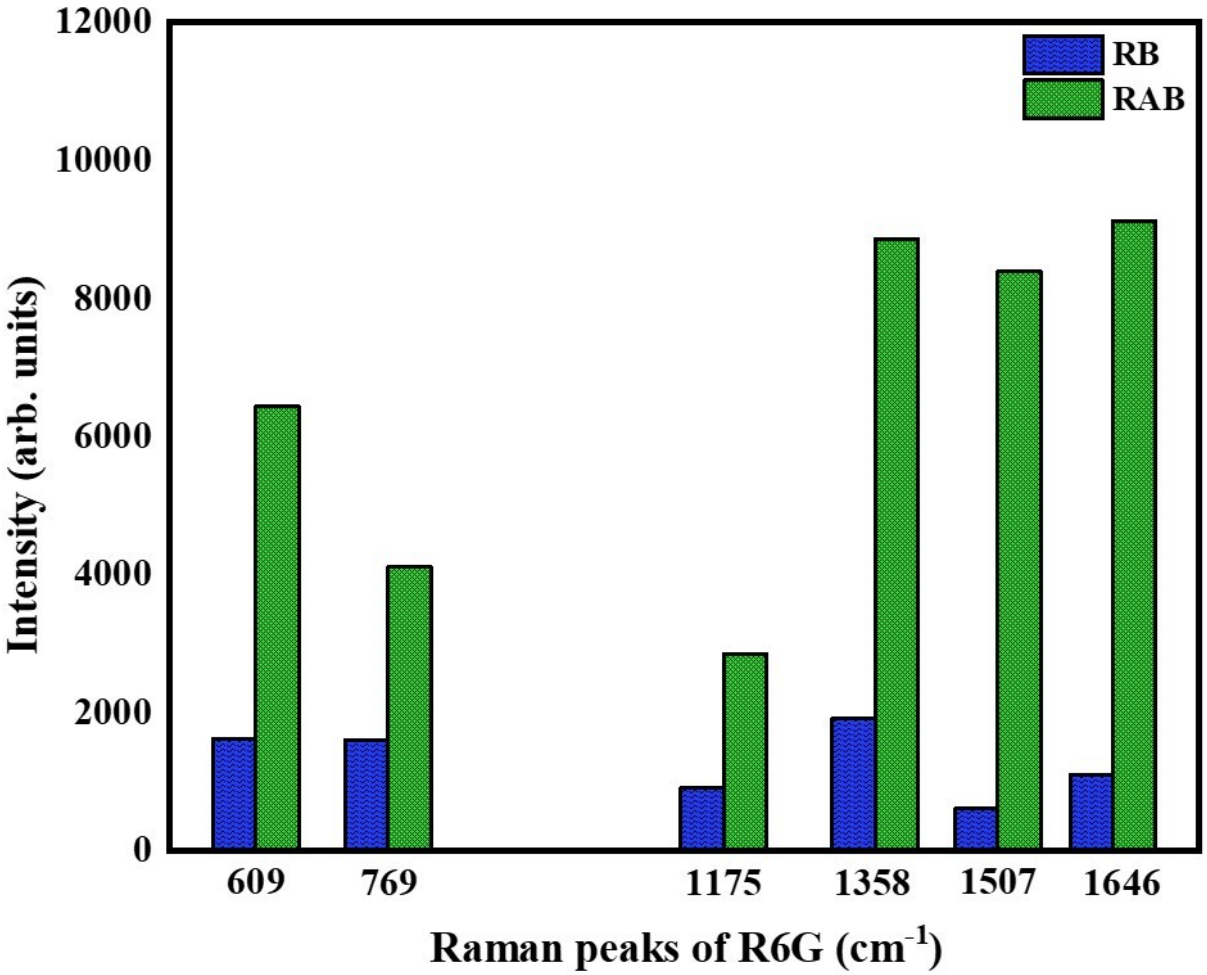

Figure S4. Comparative representation of the characteristic peak intensities of 1 mM R6G adsorbed on rGO-Ag-$Bi_2O_3/Bi_2O_{2.75}$ (RAB-Green bar) and rGO-$Bi_2O_3/Bi_2O_{2.75}$ (RB-Blue bar) respectively.

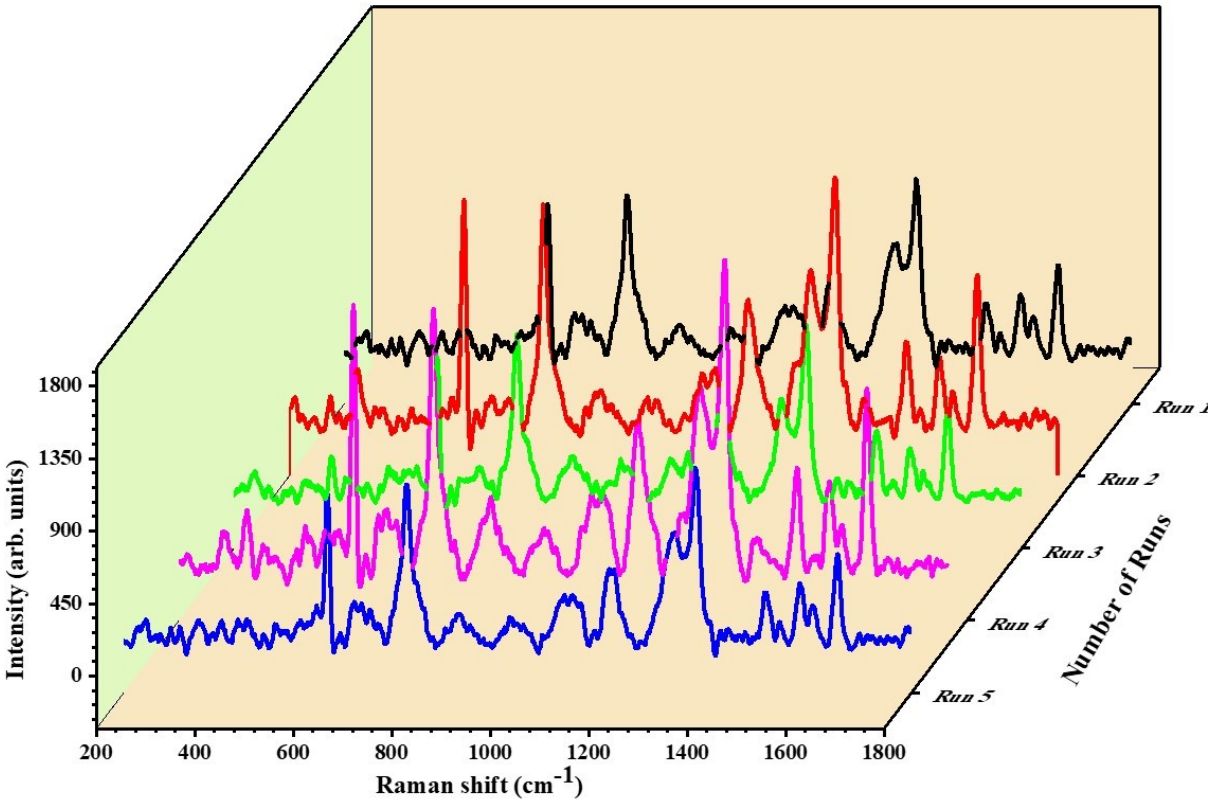

Figure S5. Stable and Reproducible SERS spectra of 20 µL of 1mM R6G adsorbed on rGO-Ag-Bi_2O_3/$Bi_2O_{2.75}$ hybrid thin films prepared 4 to 5 times under identical condition. The spectra of Run 3 and Run 5 were recorded for three weeks aged substrate.

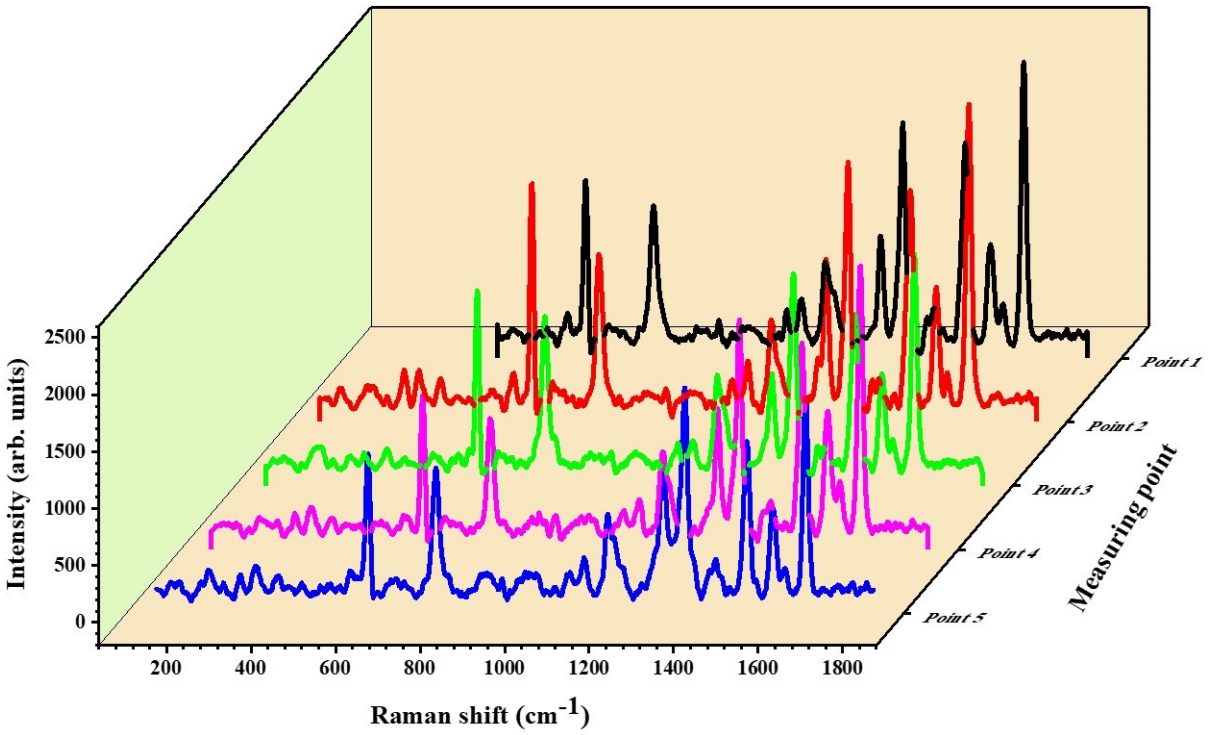

Figure S6. Uniform and Repeatable SERS spectra recorded at 5 different points of rGO-Ag-Bi_2O_3/$Bi_2O_{2.75}$ hybrid thin film nano composite substrate loaded with 20 μL of 1mM R6G.