Electronic Supplementary Information

Bi-functional reduced graphene oxide/AgCo composite nanosheets: an efficient catalyst and SERS substrate for monitoring of the catalytic reaction

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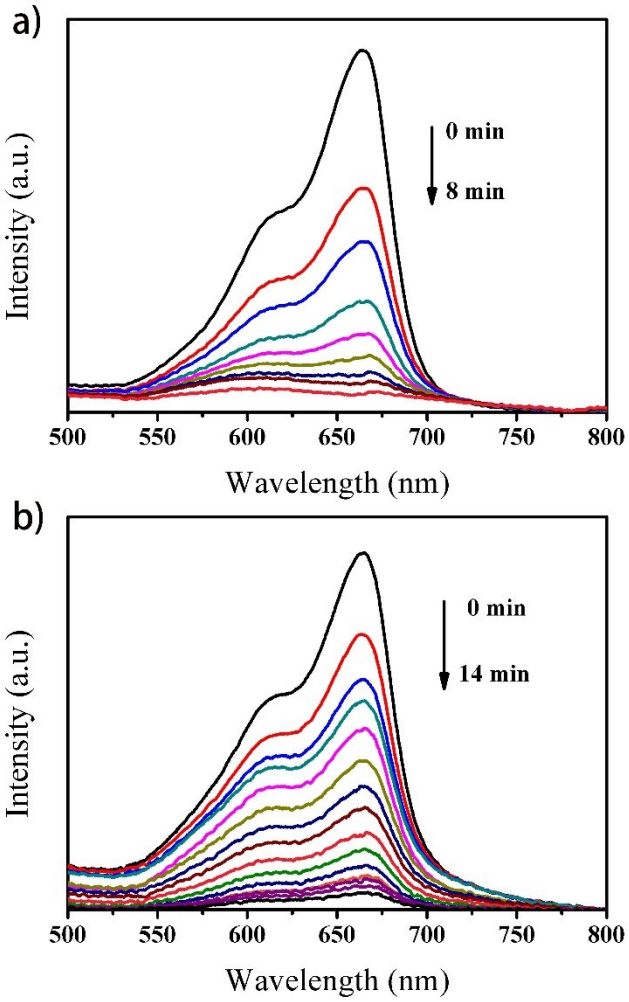

Fig. S1 a) UV-Vis absorption spectra for the reduction of MB by $NaBH_4$ in the presence of rGO/AgCo catalyst; b) UV-Vis absorption spectra for the degradation of MB under UV light in the presence of rGO/AgCo catalyst.

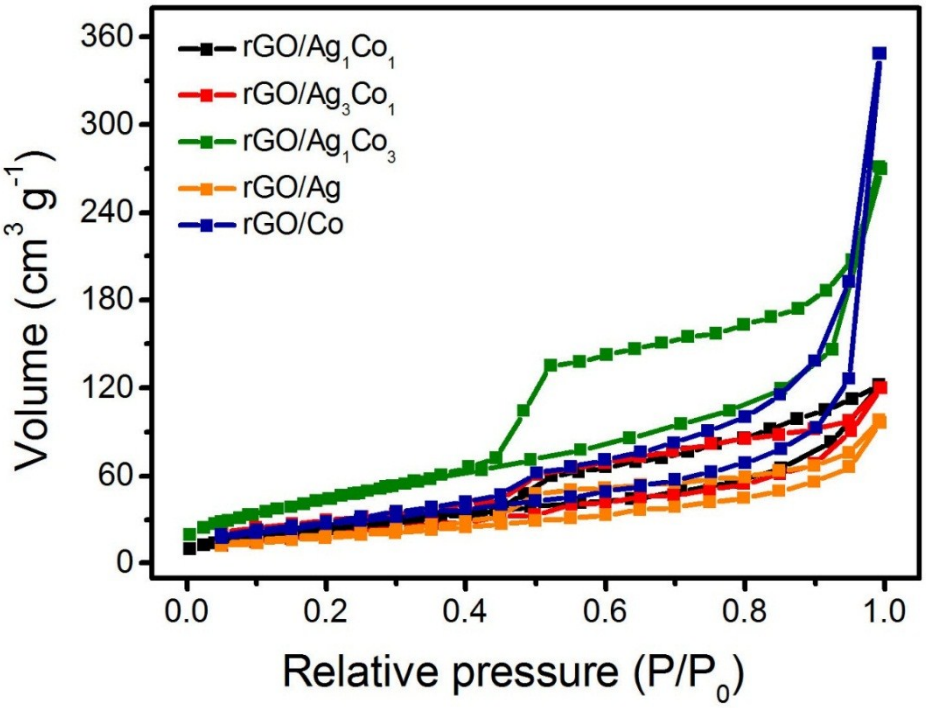

Fig. S2 Nitrogen adsorption–desorption isotherms of the prepared catalysts including rGO/Ag_1Co_1, rGO/Ag_3Co_1, rGO/Ag_1Co_3, rGO/Ag and rGO/Co composite nanosheets.

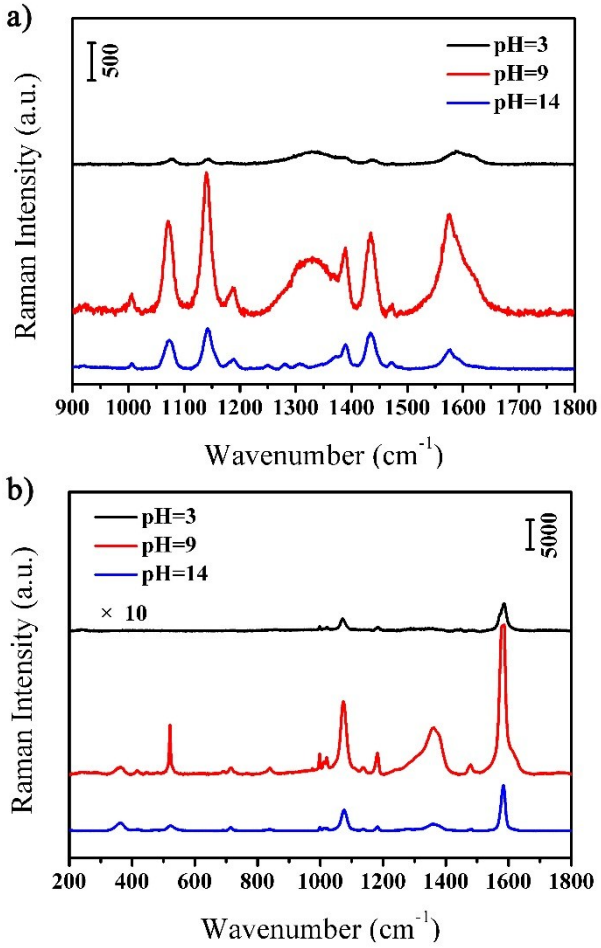

Fig. S3 SERS spectra of a) PATP molecules and b) MBA molecules with a concentration of 10^{-5} M on the surface of rGO/AgCo composite nanosheets that synthesized in a mixing solution with different pH values after the addition of the reducing agent.

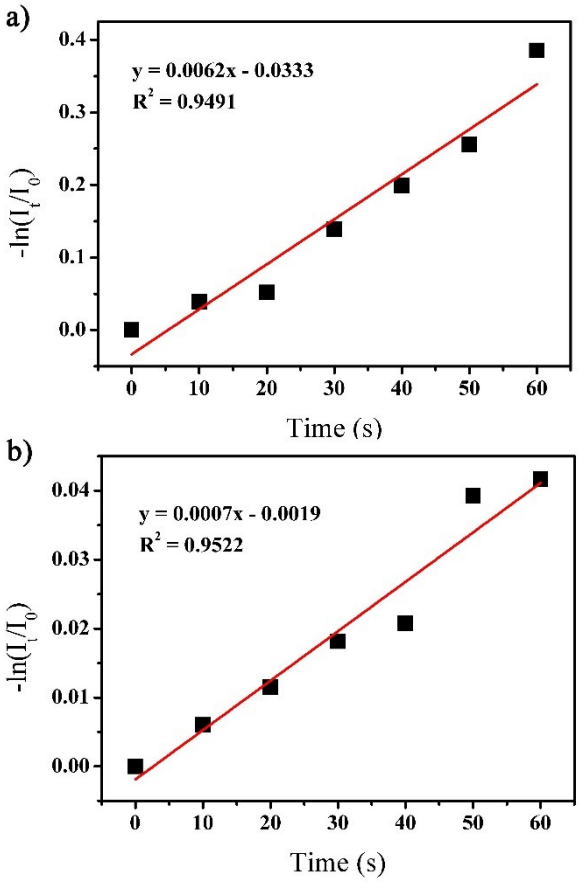

Fig. S4 a) The curve of the linear relationship between $Ln(I_t/I_0)$ and the beginning reaction time according to the bands at 1623 cm^{-1} for the catalytic reduction of MB by $NaBH_4$ on the surface of rGO/AgCo composite nanosheets; b) The curve of the linear relationship between $Ln(I_t/I_0)$ and the beginning reaction time according to the bands at 1623 cm^{-1} for the catalytic degradation of MB under ultraviolet light on the surface of rGO/AgCo composite nanosheets.

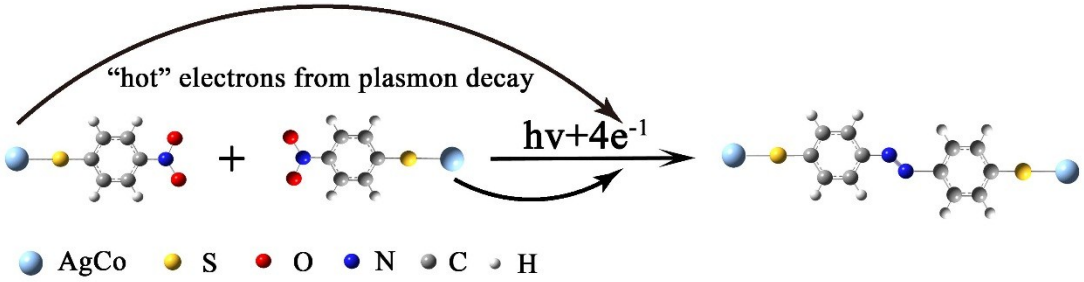

Fig. S5 Mechanism of the Plasmon-driven surface-catalyzed reaction on the surface of AgCo alloy nanoparticles supported on the rGO nanosheets.