

Supplementary Information

Ultrafast conversion of carcinogenic 4-nitrophenol into 4-aminophenol in dark catalyzed by surface interaction on BiPO₄/g-C₃N₄ nanostructures in the presence of NaBH₄

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Experimental

Materials

Bismuth nitrate pentahydrate [Bi(NO₃)₃·5H₂O, 99.99%], diammonium hydrogen phosphate [(NH₄)₂HPO₄>99.0%], Dimethyl sulfoxide (DMSO>99.9%) urea [(NH₂)₂CO>99.0%], [melamine>99.0%], and cetyltrimethylammonium bromide (CTAB, 98%) were obtained from Sigma-Aldrich. All the chemicals were used without any purification as they were received.

Characterization

The crystallinity of the as-prepared samples was measured on X-ray diffraction (XRD) on Bruker (Axs D8- advance diffractometer using Cu-K α radiation (λ = 1.5406 Å) with 2 θ ranging from 10° to 70° and scan rate of 2° min⁻¹, Germany). Quanta FEG-250 scanning electron microscopy (SEM) with 30 kV accelerated

voltage was used to acquire the surface morphology of catalysts. Transmission electron microscopy (TEM) images are recorded on (TEM, JEOLJEM-1230, Japan). X-ray photoelectron spectroscopic (XPS) measurements were performed using a Thermo Scientific K α system employing monochromatic Al K α radiation. The vibration spectrum of samples were taken with a Fourier Infrared absorption spectrometer (FT-IR) using PerkinElmer Spectrum (200–4,000 cm⁻¹).

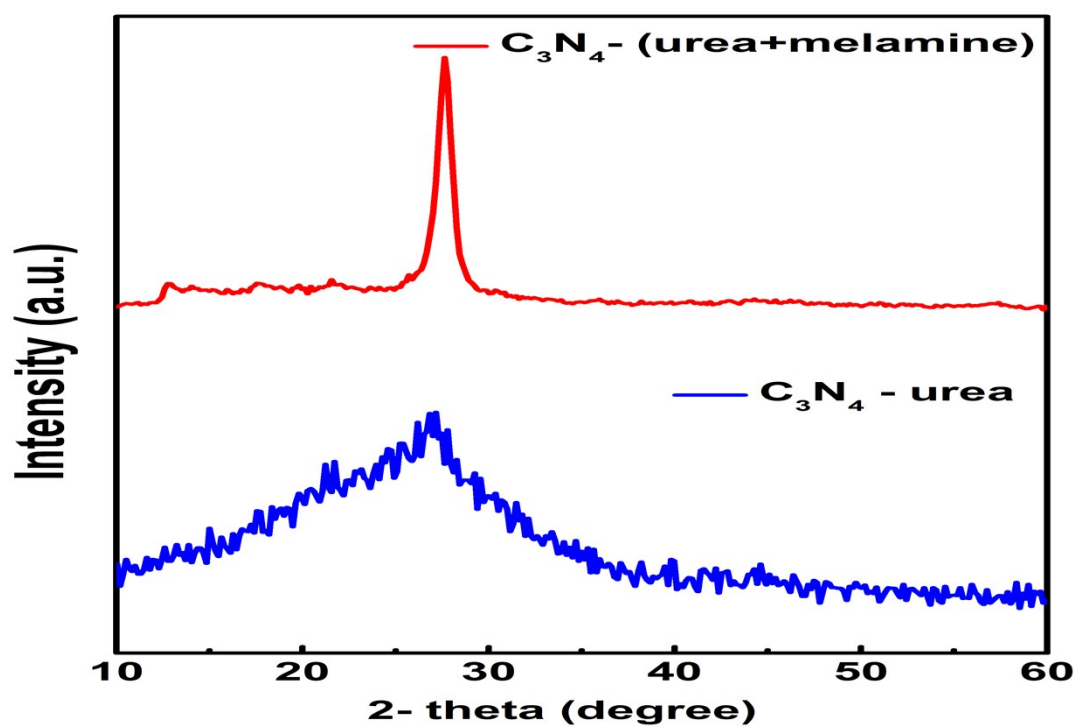


Fig. S1 X-ray diffraction patterns of C_3N_4 -urea, and C_3N_4 - (urea + melamine)