

Electronic Supplementary Information (ESI):

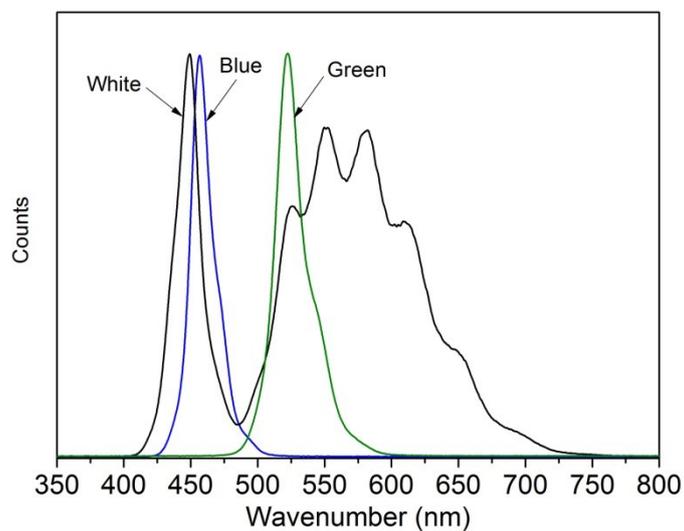


Fig. S1 The output spectra of incandescent lights used for the reaction: 100 W LED light (white and coloured).

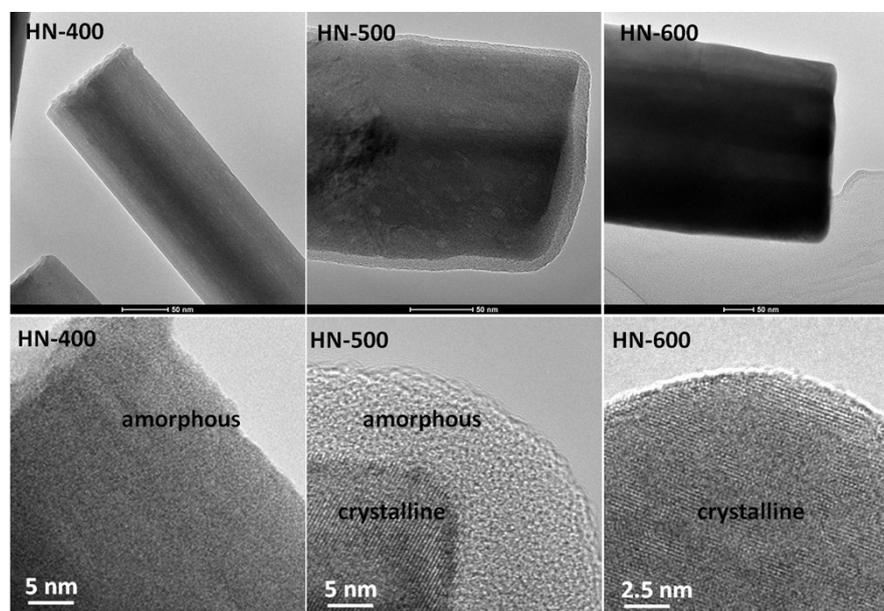


Fig. S2 TEM and HRTEM images of HN-400, HN-500 and HN-600.

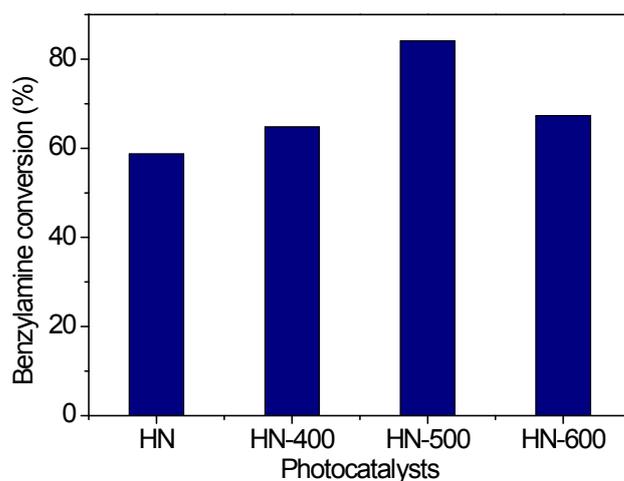


Fig. S3 Performance of for the selective oxidation of benzylamine under visible light: HN, HN-400, HN-500 and HN-600. The surface area of the samples are normalised to $5.8 \text{ m}^2/\text{g}$ and the conversion rate is supposed to be in a linear relationship with the surface area.

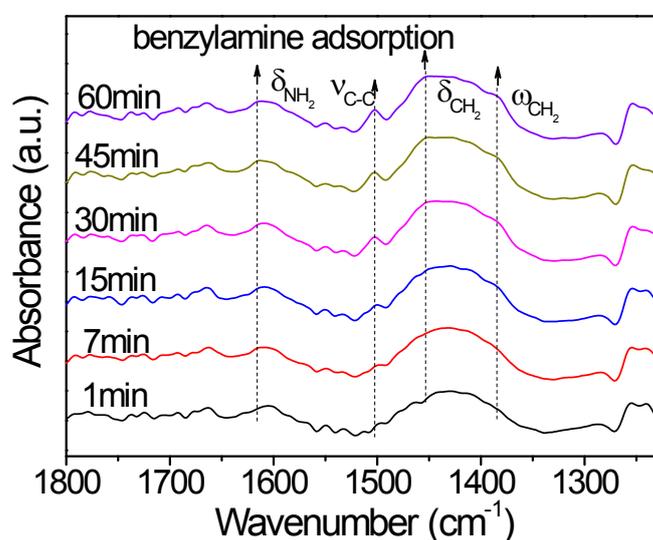


Fig. S4 Time course in-situ FT-IR spectra of HN-500 after expose to benzylamine vapour at 25 Pa.

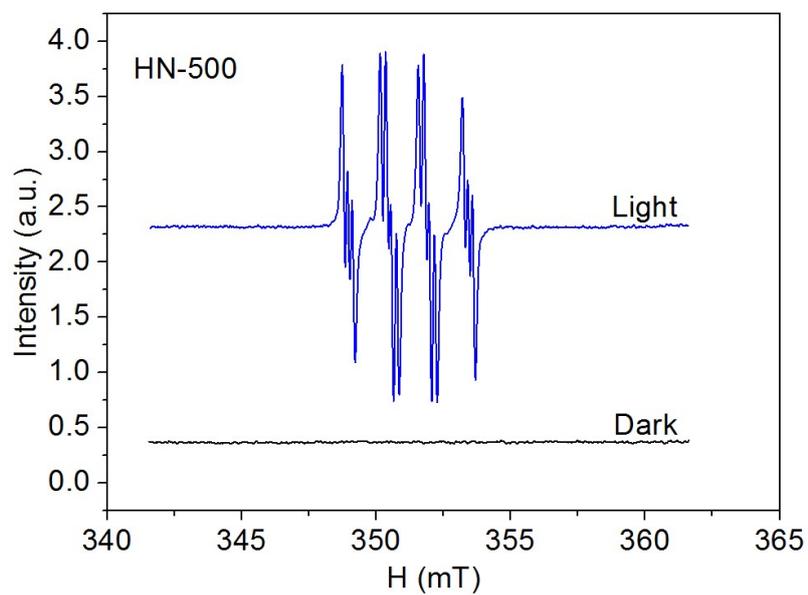


Fig. S5 DMPO spin-trapped ESR spectra in the presence of HN-500 and O₂. Spin signals due to DMPO-OO(H) exhibit a much higher intensity under light than in the dark and are the predominant signals.