Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Highly efficient visible-light-driven catalytic hydrogen evolution from ammonia borane using non-precious metal nanoparticles supported by graphitic carbon nitride

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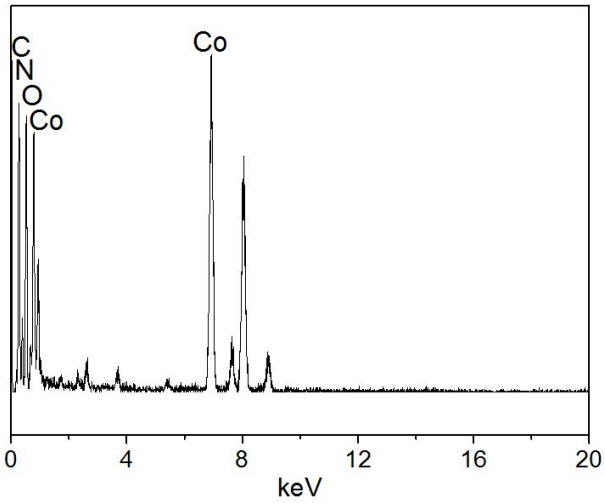

Fig. S1 EDS pattern of Co/C_3N_4-1.

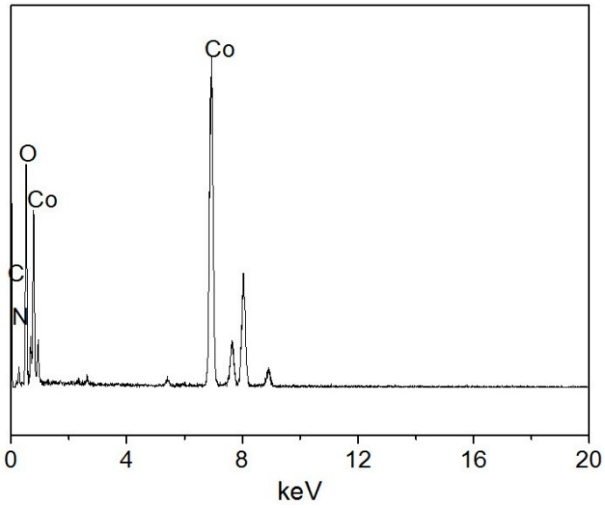

Fig. S2 EDS pattern of Co/C_3N_4-2.

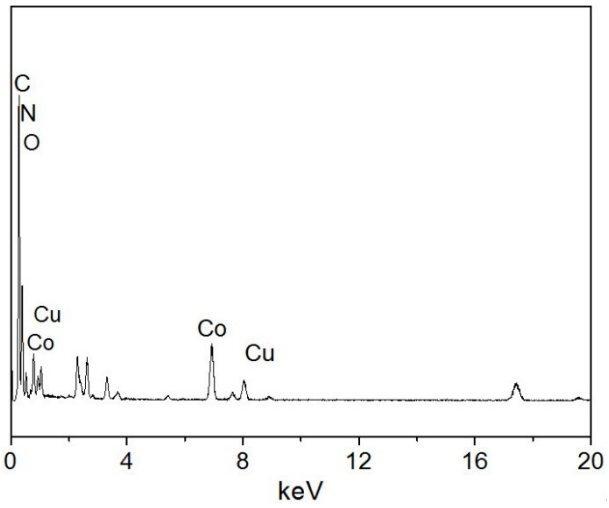

Fig. S3 EDS pattern of (c) $CuCo/C_3N_4$-1.

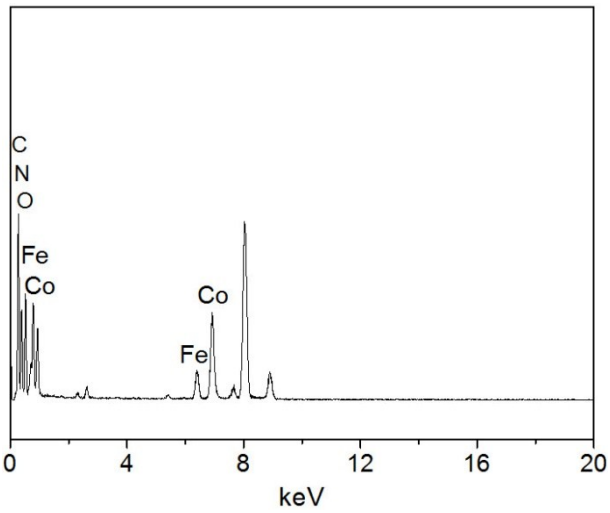

Fig. S4 EDS pattern of $FeCo/C_3N_4$-1.

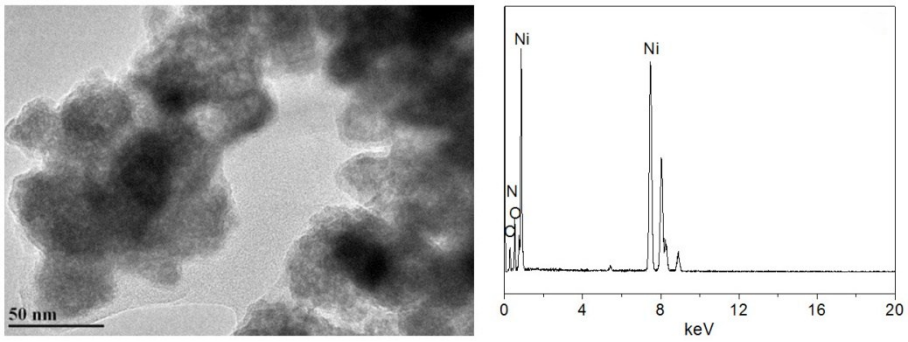

Fig. S5 TEM image and EDS pattern of Ni/g-C_3N_4-1.

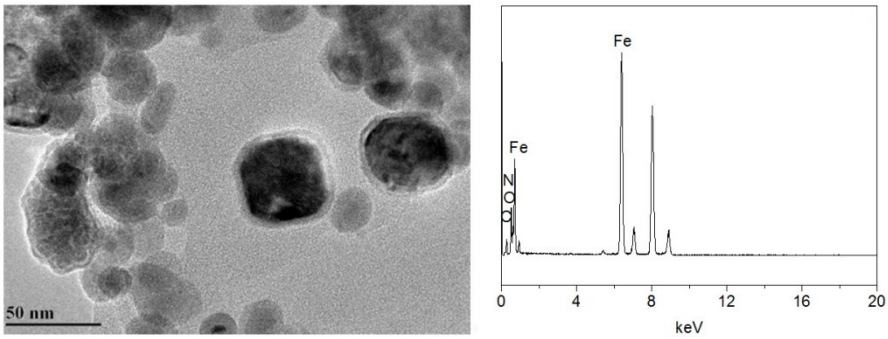

Fig. S6 TEM image and EDS pattern of Fe/g-C_3N_4-1.

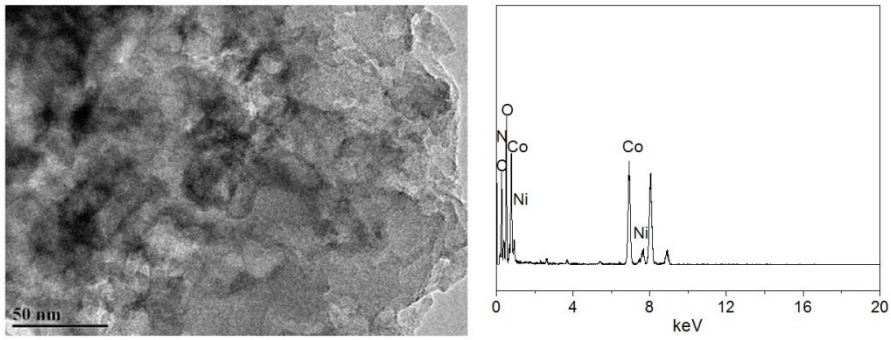

Fig. S7 TEM image and EDS pattern of NiCo/g-C_3N_4-1.

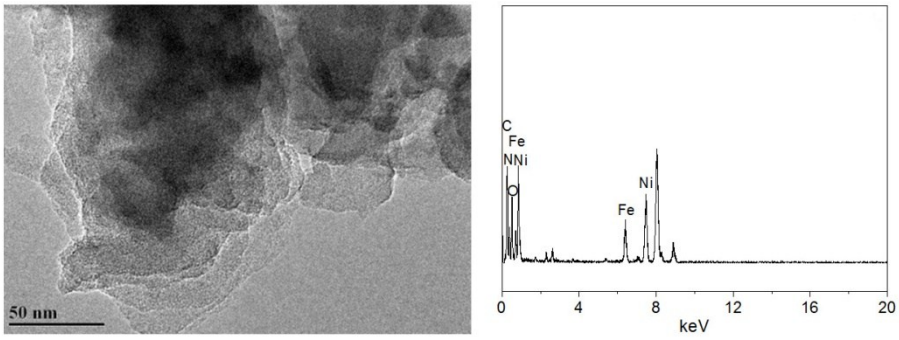

Fig. S8 TEM image and EDS pattern of FeNi/g-C_3N_4-1.

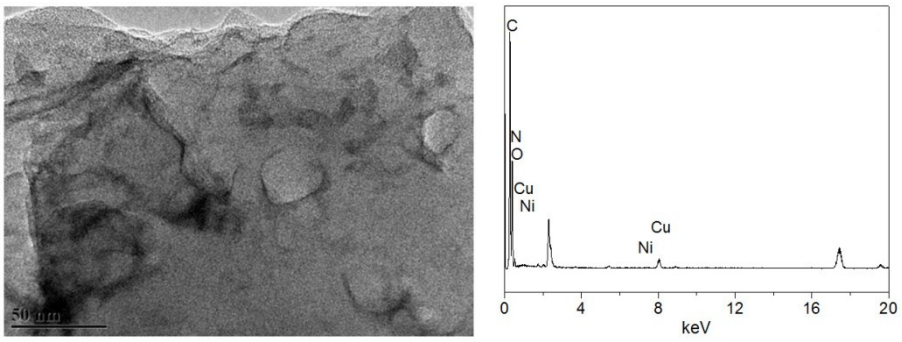

Fig. S9 TEM image and EDS pattern of CuNi/g-C_3N_4-1.

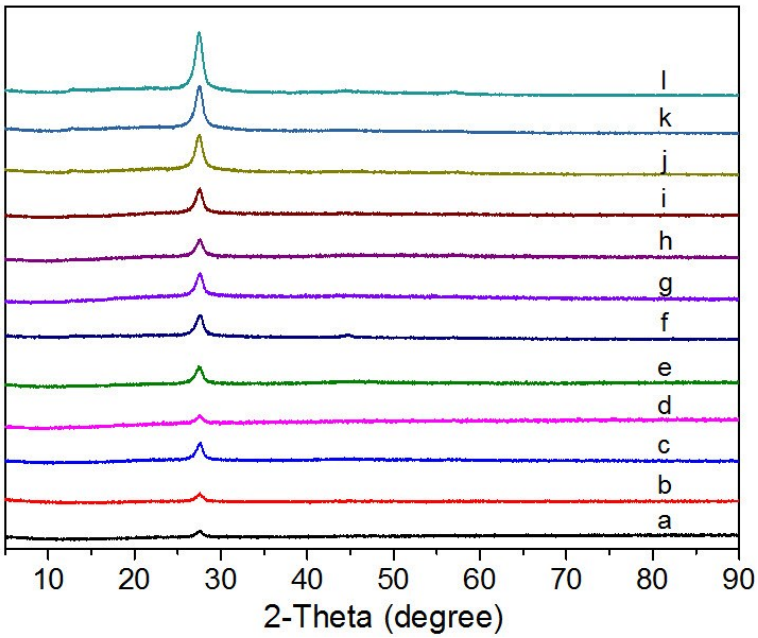

Fig. S10 PXRD patterns of (a) Co/g-C_3N_4-1, (b) Ni/g-C_3N_4-1, (c) Fe/g-C_3N_4-1, (d) Co/g-C_3N4-$_2$, (e) Ni/g-C_3N_4-2, (f) Fe/g-C_3N_4-2, (g) CuCo/g-C_3N_4-1, (h) NiCo/g-C_3N_4-1, (i) FeCo/g-C_3N_4-1, (j) CuNi/g-C_3N_4-1, (k) FeNi/g-C_3N_4-1 and (l) g-C_3N_4.

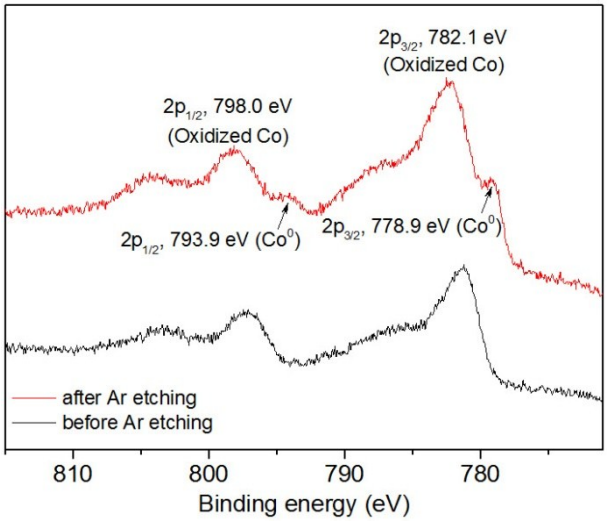

Fig. S11 XPS patterns for Co/g-C_3N_4-1 before and after Ar etching.

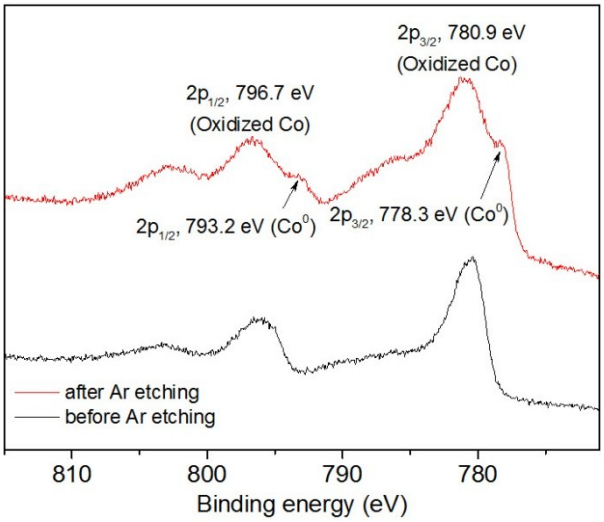

Fig. S12 XPS patterns for Co/g-C_3N_4-2 before and after Ar etching.

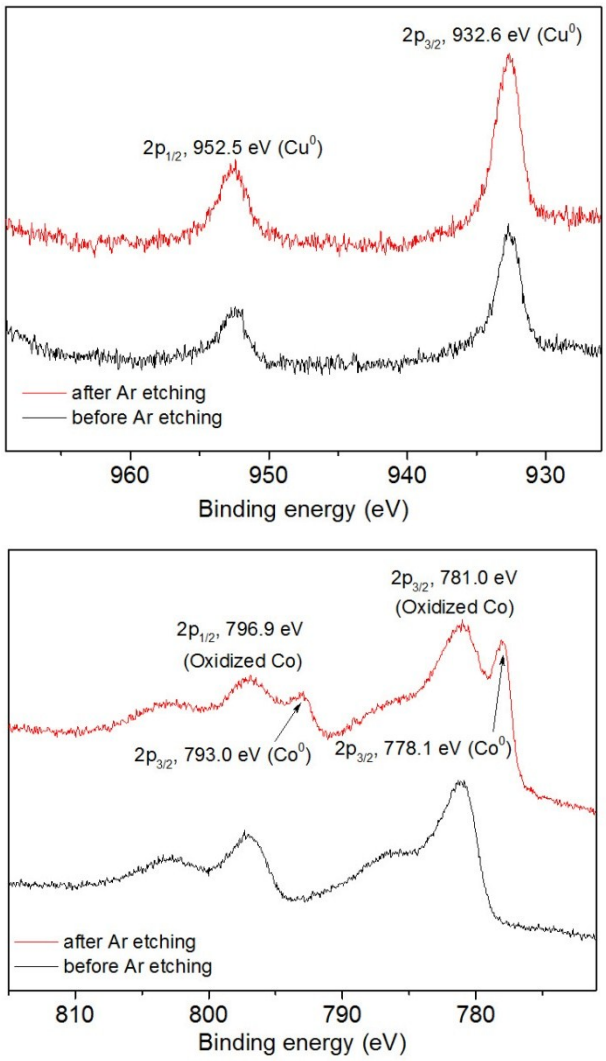

Fig. S13 XPS patterns for CuCo/g-C_3N_4-1 before and after Ar etching.

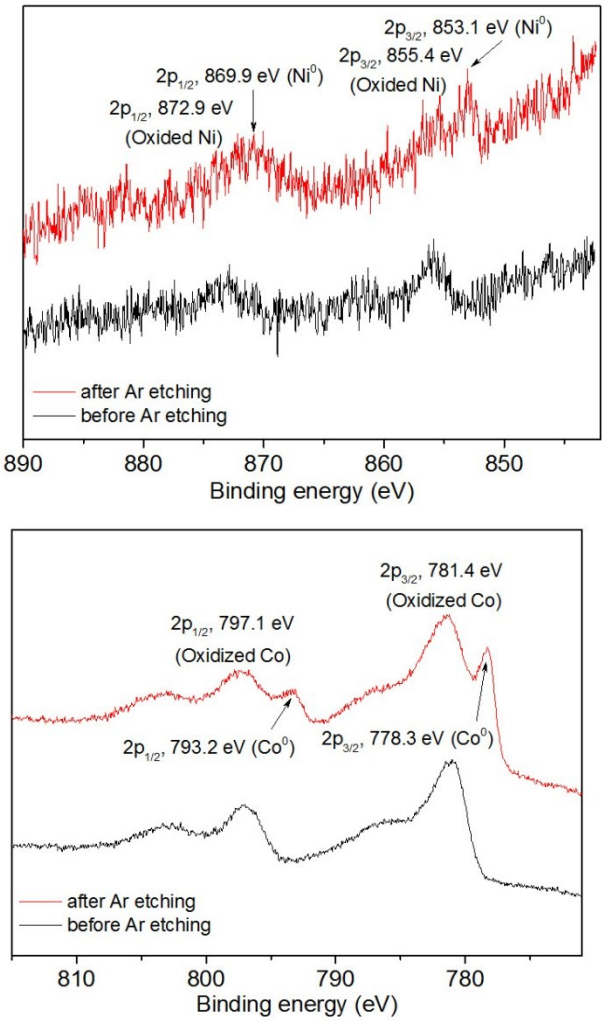

Fig. S14 XPS patterns for NiCo/g-C_3N_4-1-Co before and after Ar etching.

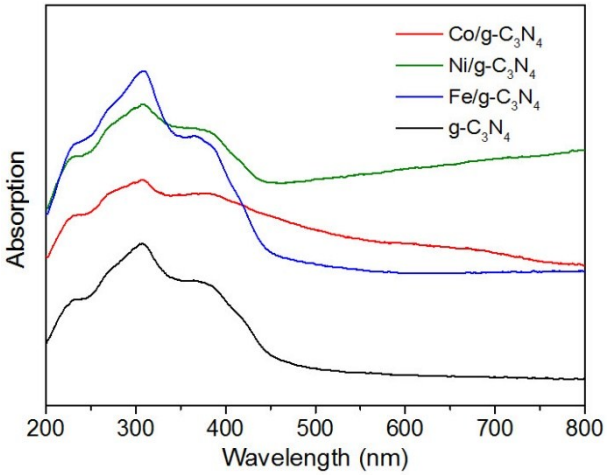

Fig. S15 UV-Vis adsorption spectra of g-C_3N_4 and the ex situ-synthesized catalysts.

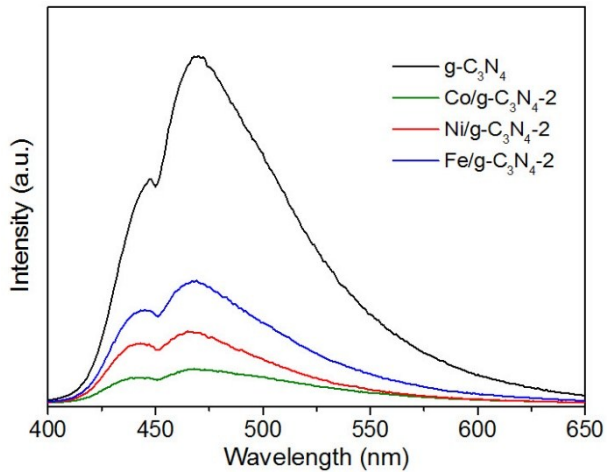

Fig. S16 Photoluminescence spectra of g-C_3N_4 and the ex situ-synthesized catalysts.

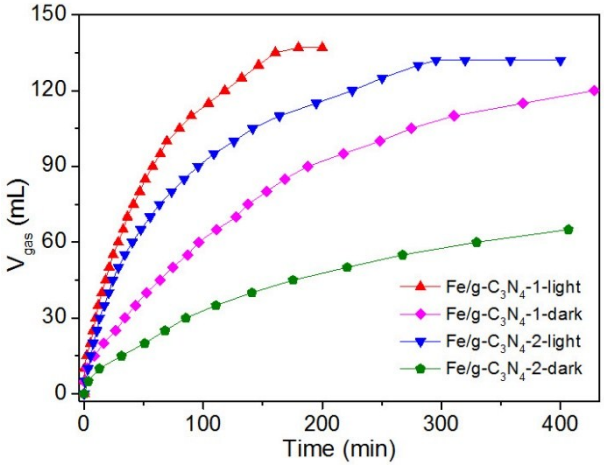

Fig. S17 Plots of time versus volume of generated H_2 from NH_3BH_3 aqueous solution over Fe/g-C_3N_4-1 and Fe/g-C_3N_4-2 under visible light irradiation and in the dark at 298 K.

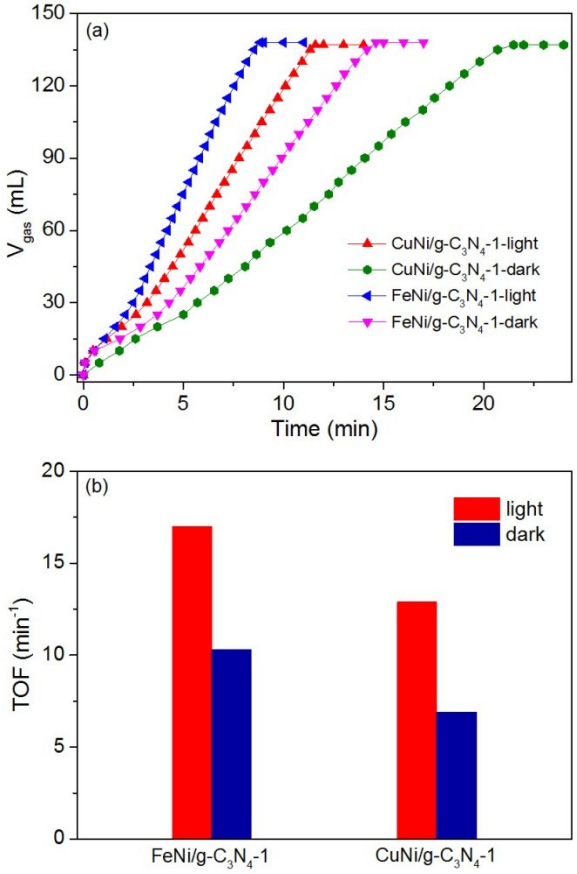

Fig. S18 (a) Plots of time versus volume of generated H_2 from NH_3BH_3 aqueous solution over different bimetallic catalysts under visible light irradiation and in the dark at 298 K and (b) the corresponding total TOF values of the above two catalysts under two different conditions.

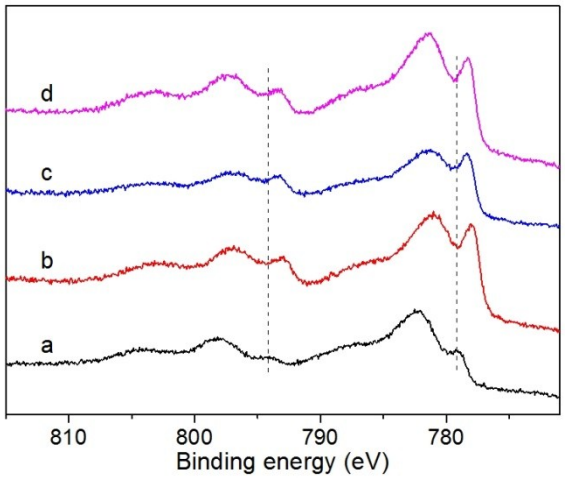

Fig. S19 XPS patterns for (a) Co/g-C_3N_4-1, (b) CuCo/g-C_3N_4-1-Co, (c) FeCo/g-C_3N_4-1-Co and (d) NiCo/g-C_3N_4-1-Co after Ar etching.