Supporting Information

$Ni(OH)_2$-modified Ti-doped α-Fe_2O_3 photoanode for improved photoelectrochemical oxidation of urea: the role of $Ni(OH)_2$ as a cocatalyst

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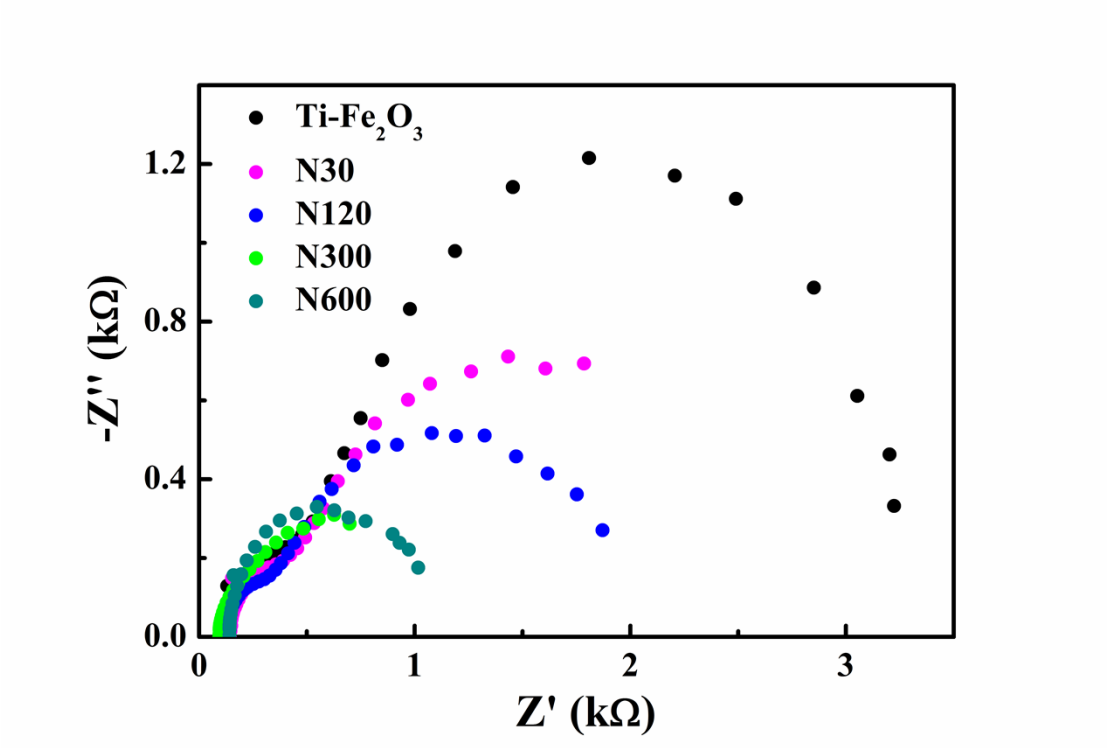

Fig. S1 Nyquist plots of PEIS measurements on Ti-Fe_2O_3 and $Ni(OH)_2$/Ti-Fe_2O_3 with different electrodeposition time . The electrolyte is 1 M KOH with 0.1 M urea and the intensity of light is 100 mW/cm^2.

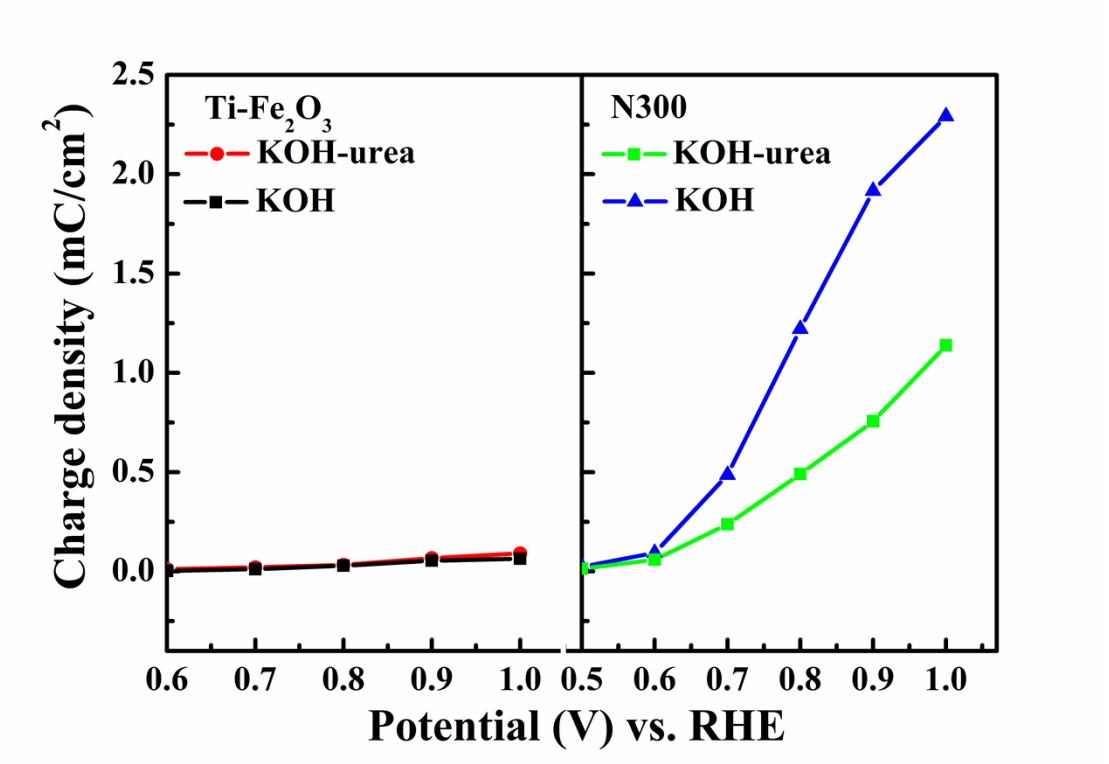

Fig. S2 Accumulated charge density at different applied potentials of Ti-Fe_2O_3 and N300 in 1 M KOH and 1 M KOH with 0.1 M urea electrolytes under an illumination of 100 mW/ cm^2.

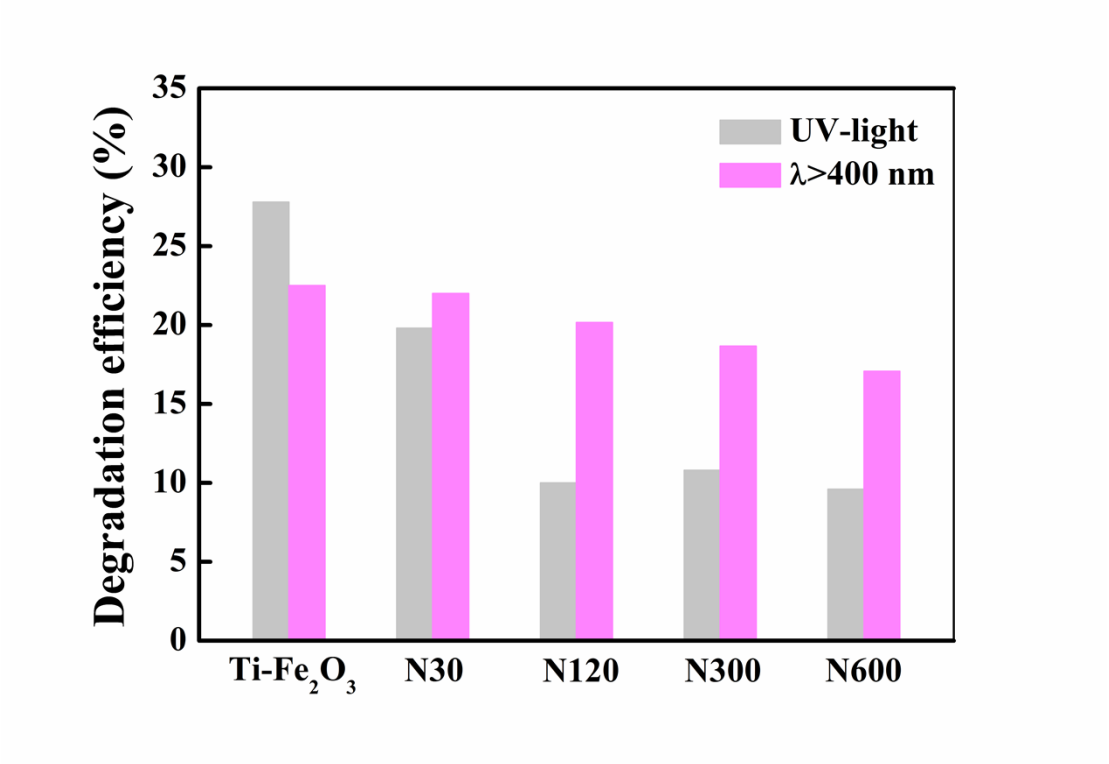

Fig. S3. Photoelectrodegradation efficiencies of Ti-Fe_2O_3 and $Ni(OH)_2$/Ti-Fe_2O_3 with different electro-deposition time under UV-light irradiation for 2 h (gray) and λ>400 nm irradiation 1h (magenta). We used a three electrode configuration with Ag/AgCl reference electrode, Pt wire counter electrode and the as-obtained films working electrode with an active area of 0.675 cm^2 in photoelectrodegradation measurements. The degradation solution volume is 9 mL with RhB (2.5 mg/L) and $NaSO_4$ (0.1 M) and the potential is 0.3 V vs. Ag/AgCl.