Table S1. Textural properties of the pristine g-C_3N_4 and O,F-C_3N_4 samples.

Sample	S_{BET}($m^2 \cdot g^{-1}$)	Pore volume ($cm^3 \cdot g^{-1}$)	Average pore size (nm)
g-C_3N_4	3.72	0.011	11
O,F-g-CN	22.22	0.095	50

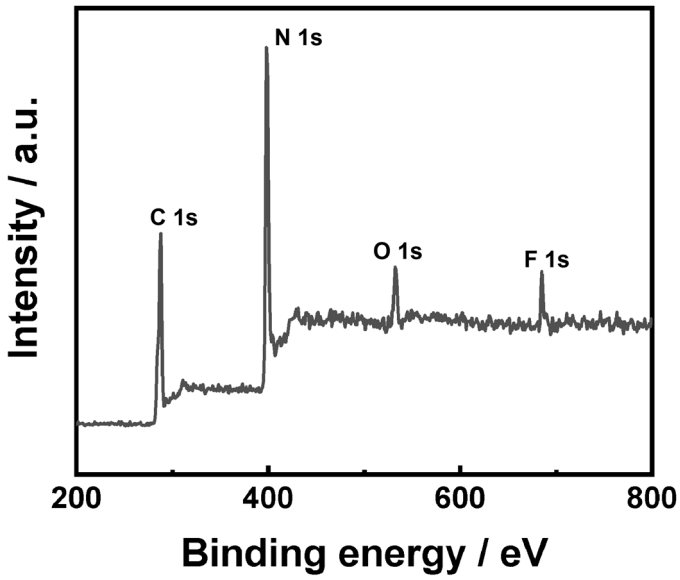


Figure S1. Survey XPS spectra of O,F-C_3N_4 sample.

Table S2. Potentiodynamic polarization parameters of different coatings before and after four weeks of immersion in 3.5% NaCl.

Sample	E_{corr} (V, vs, SCE)	$LogI_{corr}$ (A/cm^2)	η (%)
Q235 carbon steel	-0.9610	-3.5887	—
Pure WPU coating	-0.8230	-4.3605	83.08
g-C_3N_4@WPU	-0.7471	-4.5516	89.72
O,F-g-C_3N_4@WPU	-0.7571	-4.6265	90.23