Electronic Supplementary Material (ESI) for Analyst.

Supplementary Information

Label-free and highly sensitive detection of DNA adenine methylation methyltransferase through cathodic photoelectrochemistry

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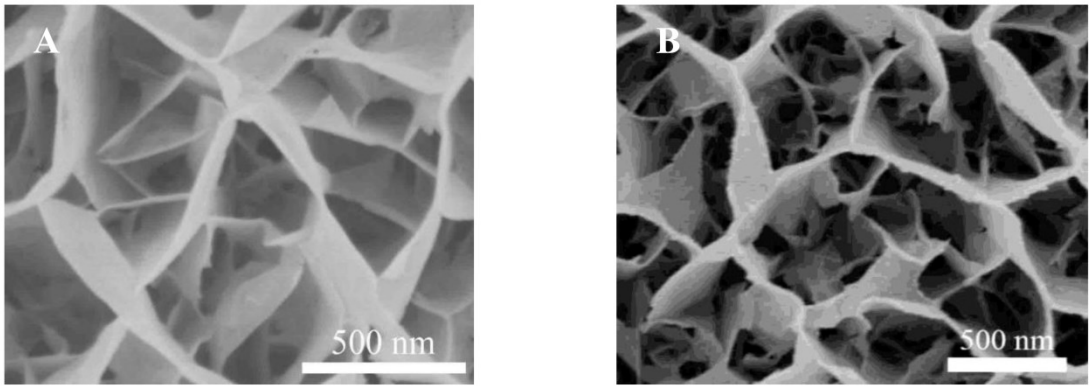

Fig. S1 SEM images of NiO (A) and NiO/CdS (B) modified ITO electrode.

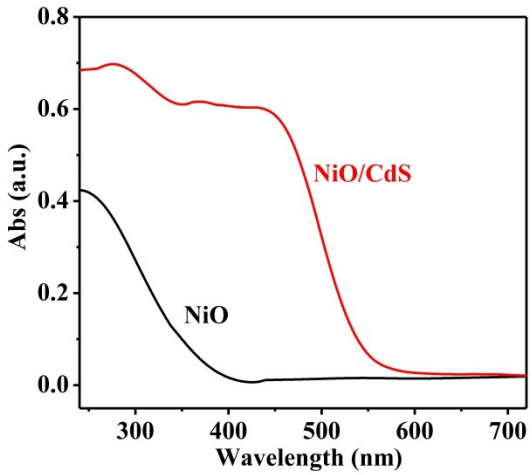

Fig. S2 UV-Vis-DRS spectra of NiO and NiO/CdS.

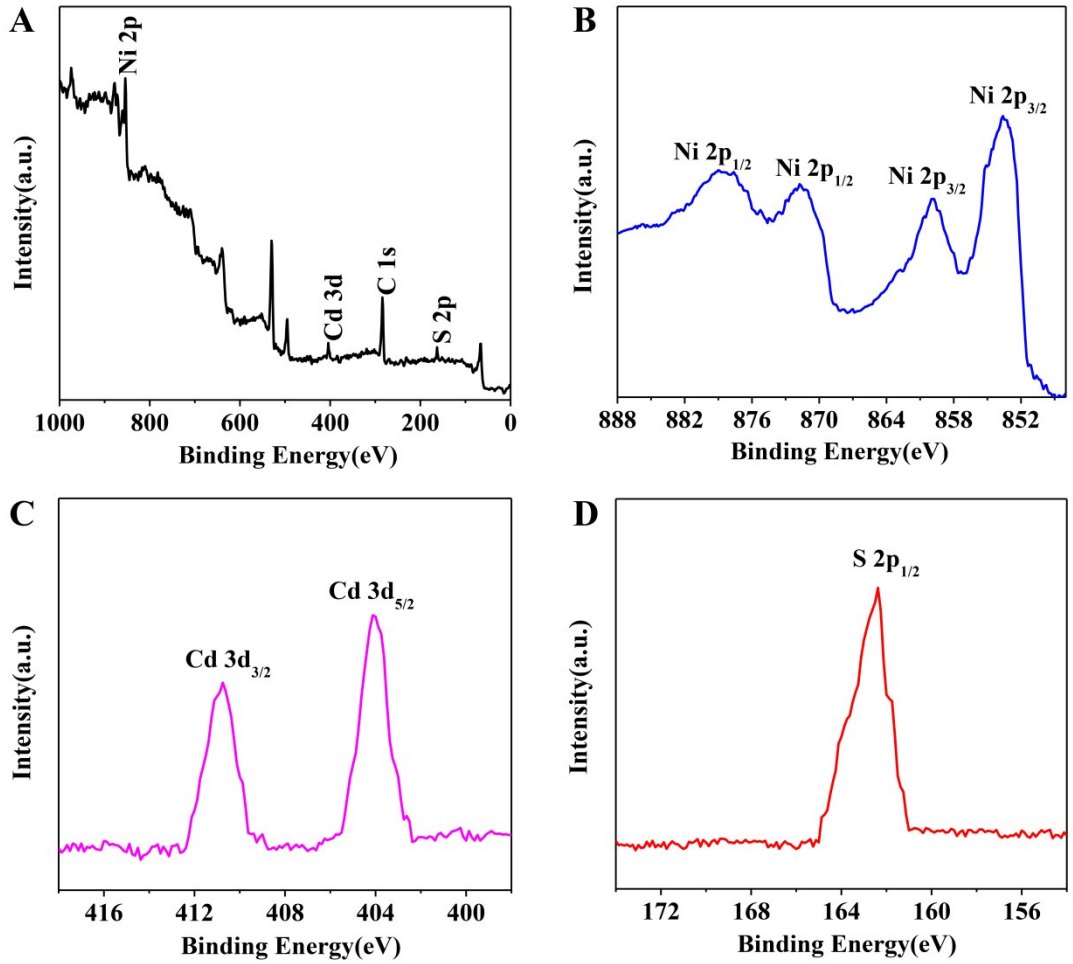

Fig. S3 (A)The full-scan XPS spectrum of the modified NiO/CdS, and (B-D) high-resolution XPS spectra of Ni 2p, Cd 3d, and S 2p.

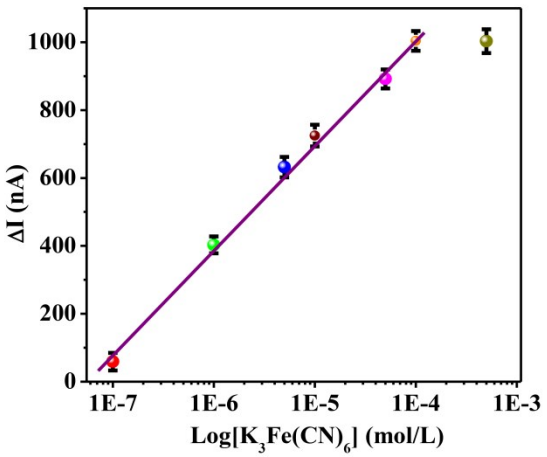

Fig. S4 The effect of different $[Fe(CN)_6]^{3-}$ concentration on the photocurrent of the ITO/NiO/CdS electrode. The PEC assay was conducted at -0.1 V (vs. saturated Ag/AgCl).

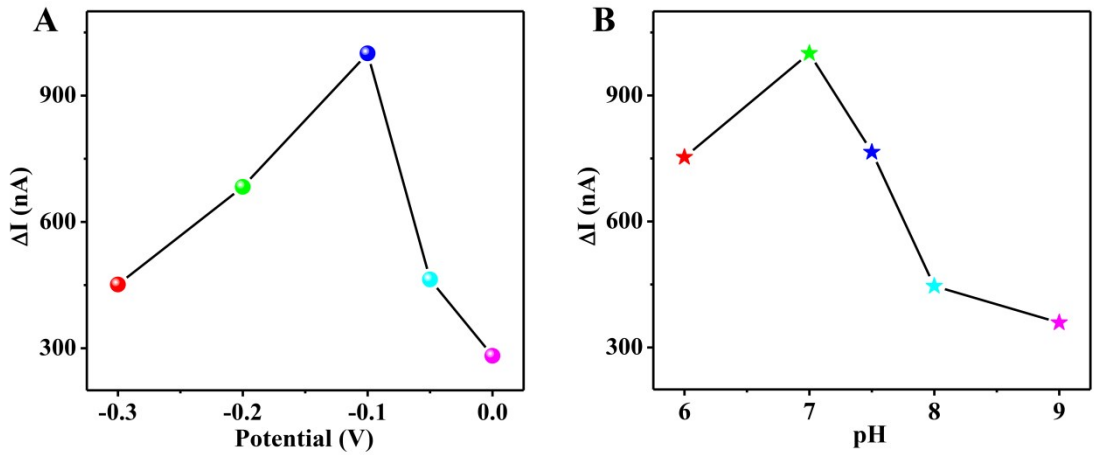

Fig. S5 Effects of (A) applied potential and (B) pH on photocurrent responses of the ITO/NiO/CdS electrode in 0.1 M Tris–HCl solution containing 1.0×10^{-4} M $K_3Fe(CN)_6$.

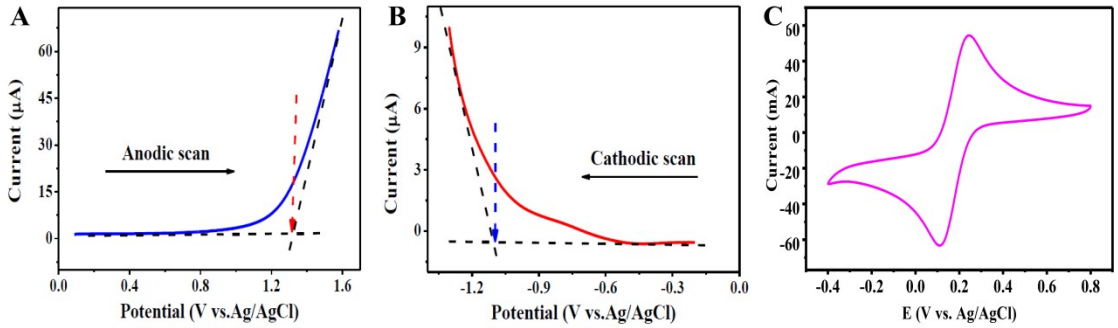

Fig. S6 (A) Anodic and (B) cathodic linear potential scan for determining the VB and CB edge of the CdS QDs on the ITO electrode in deaerated 0.2 mol/L Na_2SO_4 solution. (C) CVs of the $K_3Fe(CN)_6$ on bare ITO electrode conducted in the Tris−HCl solution (0.1 mol/L, pH 7.0).

Table S1. **Dam MTase detected by the proposed PEC technique in 20% serum samples**

Sample	Added (U mL^{-1})	Detected (U mL^{-1})	Relative error (%)	Recovery (%)
1	0.10	0.097	3.3	98.8
2	1.0	0.91	8.6	95.1
3	10	10.75	7.5	102.6