

Supporting Information

A Novel CdS/MOFs Cathodic Photoelectrochemical (PEC) Platform for Detection of Doxorubicin Hydrochloride and Gentamicin Sulfate

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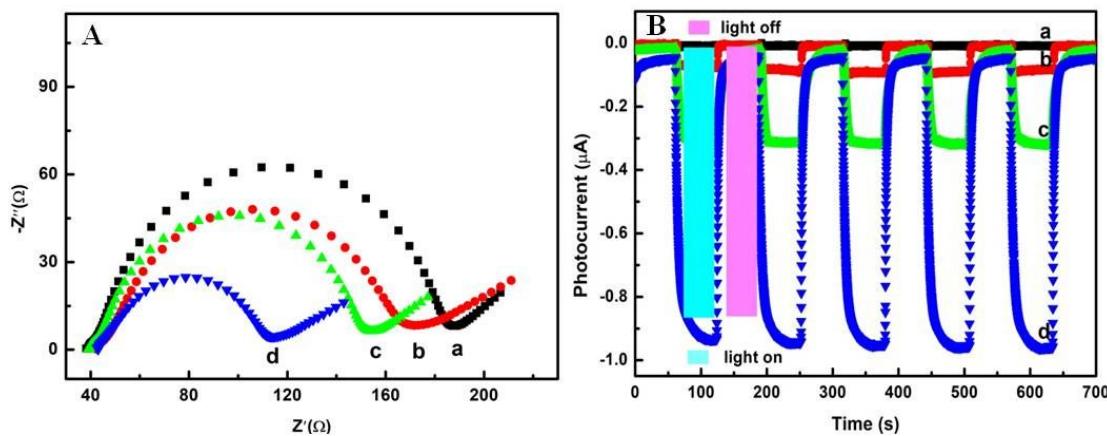


Figure S1A shows (a) bare FTO, (b) CdS/FTO, (c) PCN-224/FTO, and (d) CdS @PCN-224/FTO in a 0.1 M KCl solution containing 5.0 mM $[\text{Fe}(\text{CN})_6]^{3-/4-}$ of EIS diagram. Figure S1B shows the photocurrent response of (a) bare FTO, (b) CdS/FTO, (c) PCN-224/FTO, and (d) CdS@PCN-224/FTO under dark and open light conditions.

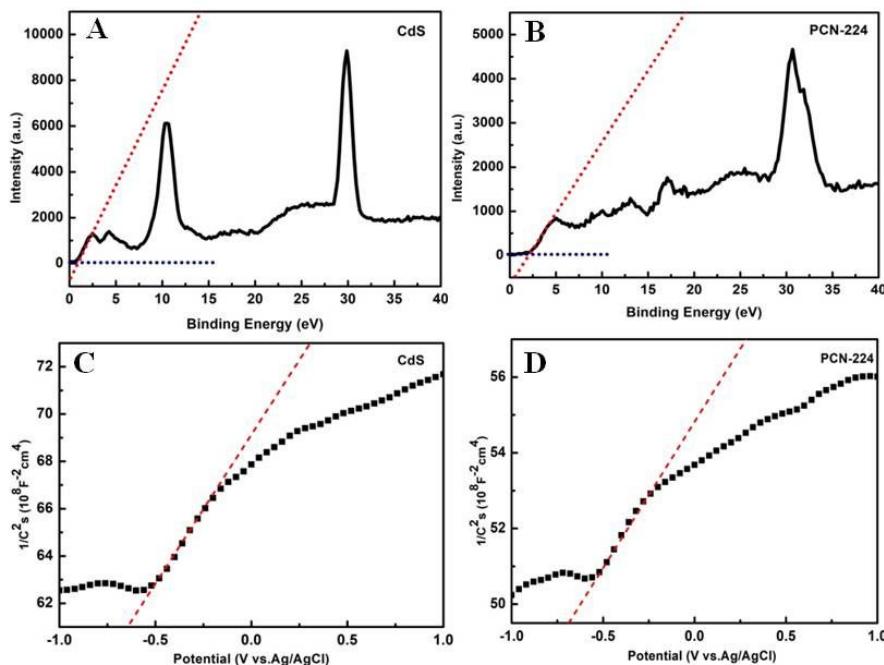


Figure S2 XPS valence band spectrum of (A) CdS (B) PCN-224; Mott–Schottky plots for (C) CdS (D) PCN-224 (0.1 M Na_2SO_4 aqueous solution).

TableS1 Different methods to analyze Dox and CN

Detector	Materials	Methods	Linear range	Detection limit	Refs
Dox	$\text{CuInSe}_2@\text{ZnS}$	fluorescence	2–100 μM	0.05 μM	1
	MWCNTs/Au	electrochemical	10^{-11} – 10^{-6} M	6.5 pM	2
	PEI-CDs	fluorescence	0.1–150 μM	75.2 nM	3
	$\text{CdS}@\text{PCN-224}$	Photoelectrochemistry	10–1000 nM	3.57 nM	This work
CN	MWNTs–PVC	screen printed	10^{-7} – 10^{-2} M	7.5×10^{-8} M	4
	MWCNTs	electrochemical	4.9×10^{-7} – 10^{-2} M	-	5
	MWCNTs	Immunoassays	-	0.048 ng/mL	6
	$\text{CdS}@\text{PCN-224}$	Photoelectrochemistry	1–1000 nM	0.158 nM	This work

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- (4) Khaled, E.; Khalil, M. M.; Abed el Aziz, G. M. Calixarene/Carbon Nanotubes Based Screen Printed Sensors for Potentiometric Determination of Gentamicin Sulphate in Pharmaceutical Preparations and Spiked Surface Water Samples. *Sens. Actuators B Chem.* **2017**, *244*, 876–884. <https://doi.org/10.1016/j.snb.2017.01.033>.
- (5) Khalil, M. M.; Abed El-aziz, G. M. Multiwall Carbon Nanotubes Chemically Modified Carbon Paste Electrodes for Determination of Gentamicin Sulfate in Pharmaceutical Preparations and Biological Fluids. *Mater. Sci. Eng. C* **2016**, *59*, 838–846. <https://doi.org/10.1016/j.msec.2015.10.095>.
- (6) Zeng, K.; Wei, W.; Jiang, L.; Zhu, F.; Du, D. Use of Carbon Nanotubes as a Solid Support To Establish Quantitative (Centrifugation) and Qualitative (Filtration) Immunoassays To Detect Gentamicin Contamination in Commercial Milk. *J. Agric. Food Chem.* **2016**, *64* (41), 7874–7881. <https://doi.org/10.1021/acs.jafc.6b03332>.

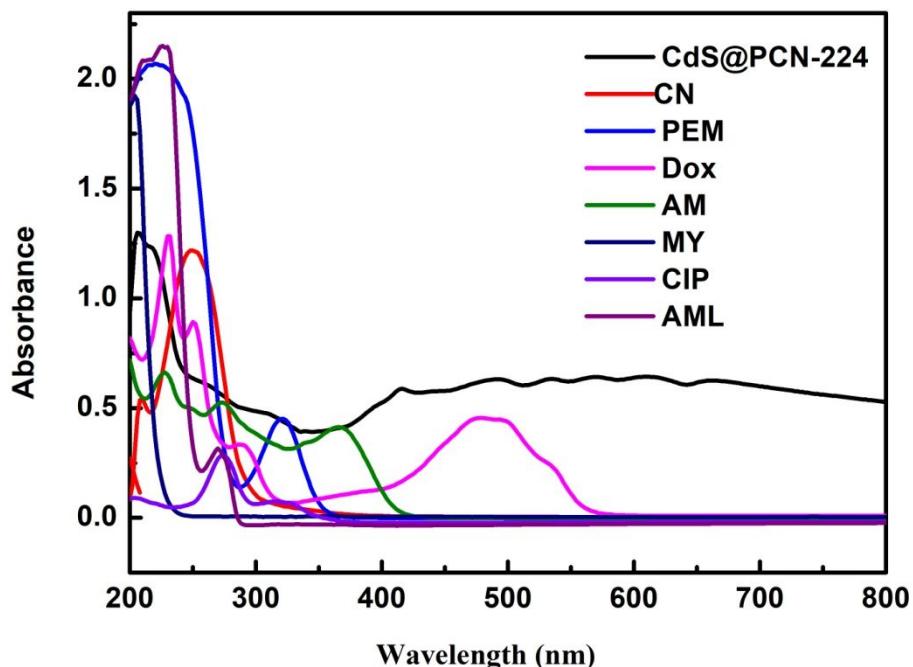


Figure S3 The UV-visible absorption of Dox, CN, AML, CIP, PEN, AM, and MY. The absorption of Dox and CN overlaps with the absorption range of CdS@PCN-224