

## Supporting Information

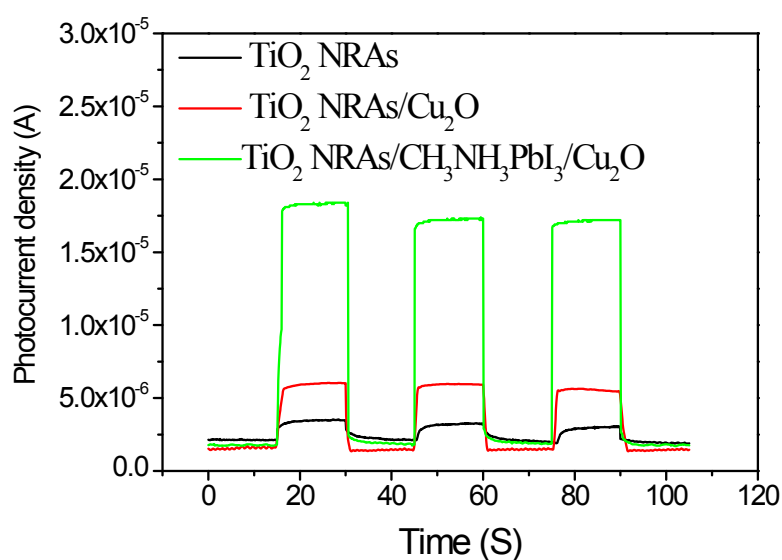
### Hybrid nanostructure of TiO<sub>2</sub> nanorod arrays/Cu<sub>2</sub>O with a CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> interlayer for enhanced photocatalytic activity and photoelectrochemical performance

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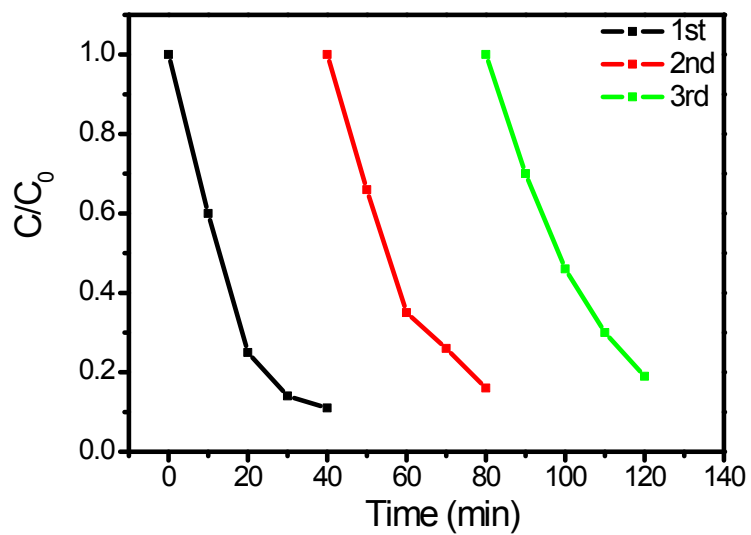
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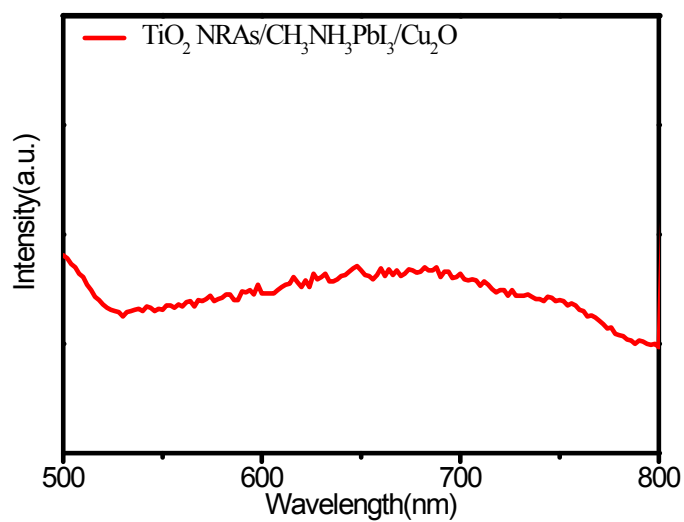
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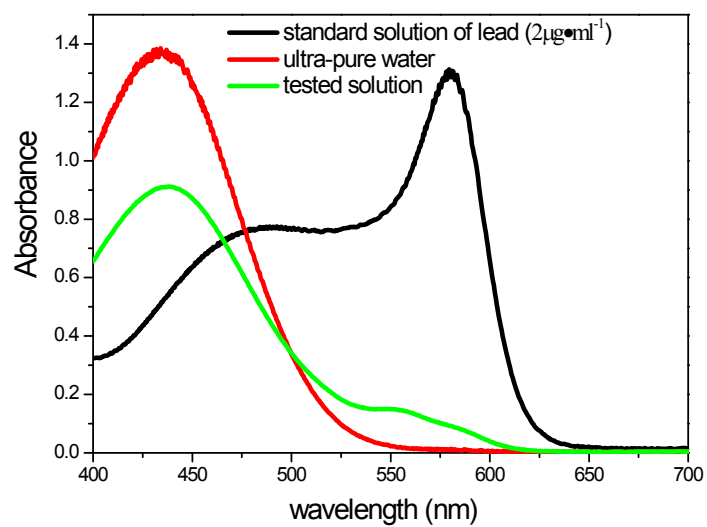
**Fig.S1** Photocurrent density curves of the samples under Xe lamp irradiation



**Fig. S2** Recycle of TiO<sub>2</sub> NRAs/CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub>/Cu<sub>2</sub>O under Xe lamp irradiation



**Fig. S3** UV-vis absorbance spectra of TiO<sub>2</sub> NRAs/CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub>/Cu<sub>2</sub>O (after the repeated photodegradation experiment)



**Fig. S4** UV-vis absorbance spectra of tested solution (after the repeated photodegradation experiment)