

## Supplementary Information

### Uniform Carbon-Coated CdS Core-shell Nanostructures: Synthesis, Ultrafast Charge Carriers Dynamics, and Photoelectrochemical Water Splitting

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Figure S1. TEM images of pure carbon materials by the pyrolysis of ascorbic acid during hydrothermal reaction.

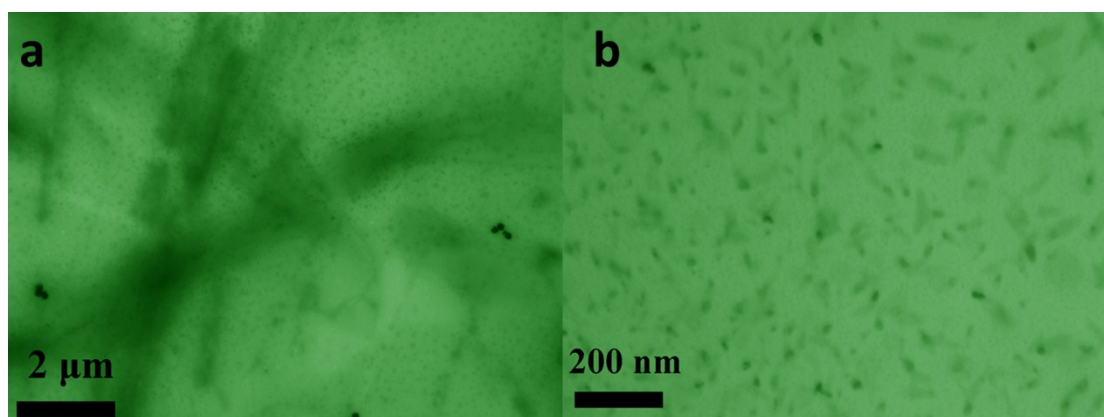


Table S1. Chemical composites of pure carbon materials and CdS/ C composites determined by high-resolution XPS.

Peaks	Position (eV)		%	
	Pure C	C/CdS	Pure C	C/CdS
C-C	284.5	284.5	81.4%	81%
C-O	286.6	286.6	1.8%	8.5%
C=O	287.7	288.4	16.8%	10.6%