

Supporting Information

N-doped cotton-based porous carbon/ZnO NRs arrays: highly efficient hybrid photocatalysts

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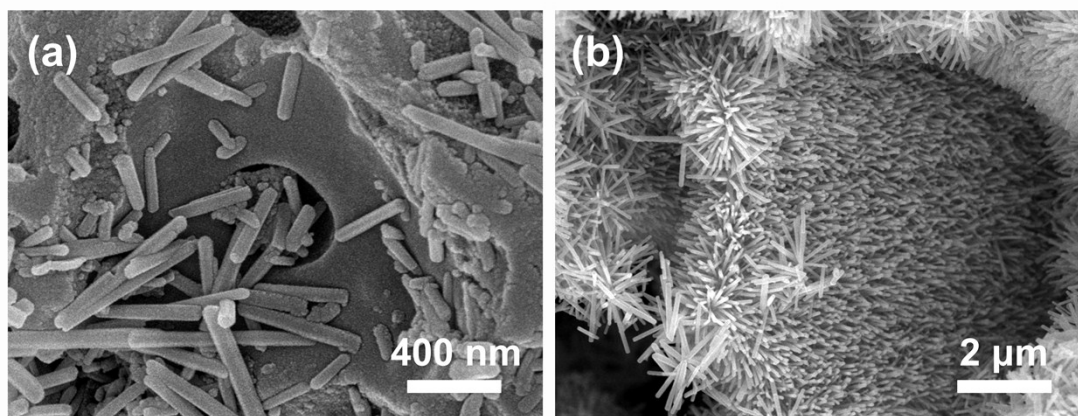


Fig. S1. SEM images of ZnO NRs grown on porous carbon (a) without seed immersion and (b) with seed immersion. It is clear that ZnO NRs randomly grew on bare porous carbon pieces, whereas, aligned ZnO arrays grew on ZnO crystallites seeded porous carbon pieces.

Table S1. Surface area and pore structure information of ZnO NRs and PCx/ZnO NRs.

Samples	S_{BET} ($\text{m}^2 \cdot \text{g}^{-1}$)	Pore Size (nm)	Pore Volume (cm^3/g)
ZnO NRs	3.4145	20.0718	0.0171
PC400/ZnO NRs	23.7185	15.4190	0.0914
PC500/ZnO NRs	30.1048	11.2636	0.0848
PC600/ZnO NRs	31.6382	25.0722	0.1983

Table S2. Comparison of the photocatalytic activity among various materials. (The following are high-pressure Xe lamp as the exciting light source to simulate solar light.)

Catalysts	Catalyst loading (g · L ⁻¹)	time	Degradation Efficiency	Ref.
lignin-based carbon/ZnO	0.5	50min	79.2%-RhB (15 mg · L ⁻¹)	1
ZnO-Bi ₂ O ₃	1.0	180min	100%-RhB (10 mg · L ⁻¹)	2
AgI/ZnO	0.3	90min	98.2%-RhB (4.8 mg · L ⁻¹)	3
Mn-ZnO/RGO	0.8	140min	99%-RhB (20 mg · L ⁻¹)	4
Chitosan-ZnO	0.3	180 min	90%-RhB (4.8 mg · L ⁻¹)	5
ZnO/rGO foam	0.2	150min	>95%-RhB (5 mg · L ⁻¹)	6
Ga/ZnO	—	120min	~90%-RhB(2.4 mg · L ⁻¹)	7
ZnO/rGO	0.2	100min	99%-RhB (10 mg · L ⁻¹)	8
ZnO-3%rGO	0.5	180min	89.78% and 97% of photocatalytic MO and MB (10 mg · L ⁻¹)	9
ZnO- carbon nanotube	0.2	120min	90.0%-RhB (20 mg · L ⁻¹)	10
PC500/ZnO NRs	0.2	20min	96.5%-RhB (10 mg · L⁻¹)	This work

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