

Multifunction ZnO/carbon hybrid nanofiber mats for organic dyes treatment via photocatalysis with enhanced solar-driven evaporation

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Supplementary materials

Table S1 Photocatalytic efficiency and solar water evaporation comparison of the different multifunctional materials

Material	Dye solution		Lamp source	Photocatalytic efficiency		Solar water evaporation		Ref.
	Dye	$c/(\text{mol}\cdot\text{L}^{-1})$		$q/(\text{mg}\cdot\text{g}^{-1})$	$\delta/\%$	$R/(\text{kg}\cdot\text{m}^{-2}\cdot\text{h}^{-1})$	$\eta/\%$	
Au@TiO ₂ core-shell NPs	RhB	20 mg·L ⁻¹	5 sun illumination	–	53.7	4.64	46.34	[S1]
Ag ₃ PO ₄ -rGO	–	–	1 sun illumination	–	–	1.31	86.8	[S2]
ZnO/CPAN	MO	20 mg·L ⁻¹	visible-light	–	95	–	–	[S3]
ZnO/PAN@NFM _s	MO	1×10 ⁻⁵	5 UV lamps, UV-light	–	95	–	–	[S4]
	RhB	1×10 ⁻⁵		–	96	–	–	
	MB	1×10 ⁻⁵		–	95	–	–	
SiC@CNFM _s	MO	1×10 ⁻⁵	5 UV lamps, UV-light	1.66	92	–	–	[S5]
	RhB	1×10 ⁻⁵		2.23	96	–	–	
	MB	1×10 ⁻⁵		1.32	90	–	–	
ZnO@CNM _s -3	MO	1×10 ⁻⁵	5 UV lamps, UV-light	2.18	98	1.46	91.9	this work
	RhB	1×10 ⁻⁵		3.64	> 95	–	–	
	MB	1×10 ⁻⁵		2.91	> 95	–	–	

Notes: c , concentration of dye; q , adsorption capacity; δ , degradation rate; R , water evaporation rate; η , photothelmal conversion efficiency.

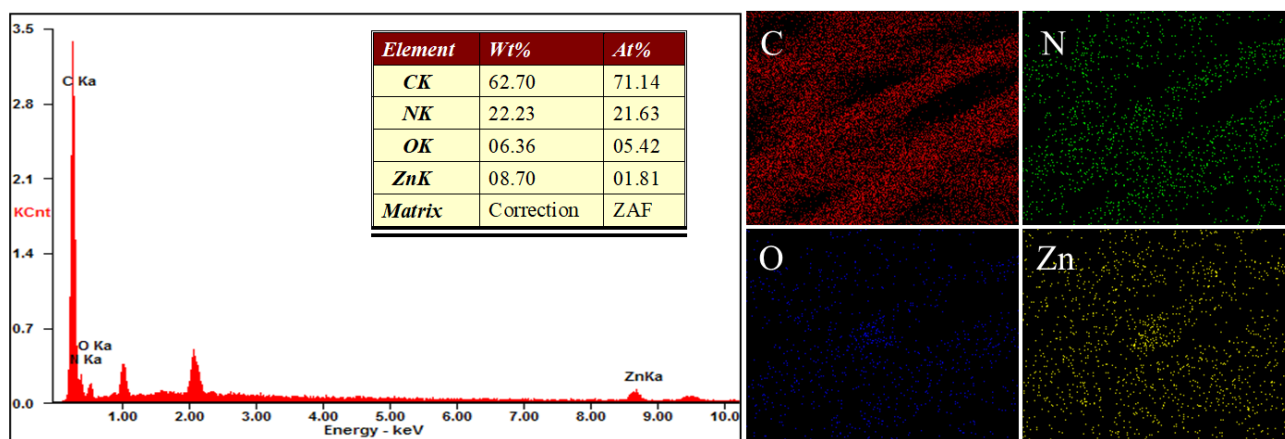


Fig. S1 EDS spectrum and mapping scanning of ZnO/PAN@NFMs-3.

As shown in the EDS spectrum and mapping scanning (Fig. S1), ZnO nanoparticles are uniformly distributed in nanofiber mats.

References

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