

Supporting information

Hierarchical TiO₂ Nanorod Arrays/Carbon Nanofiber Membrane for Oil-in-water

Emulsion Separation

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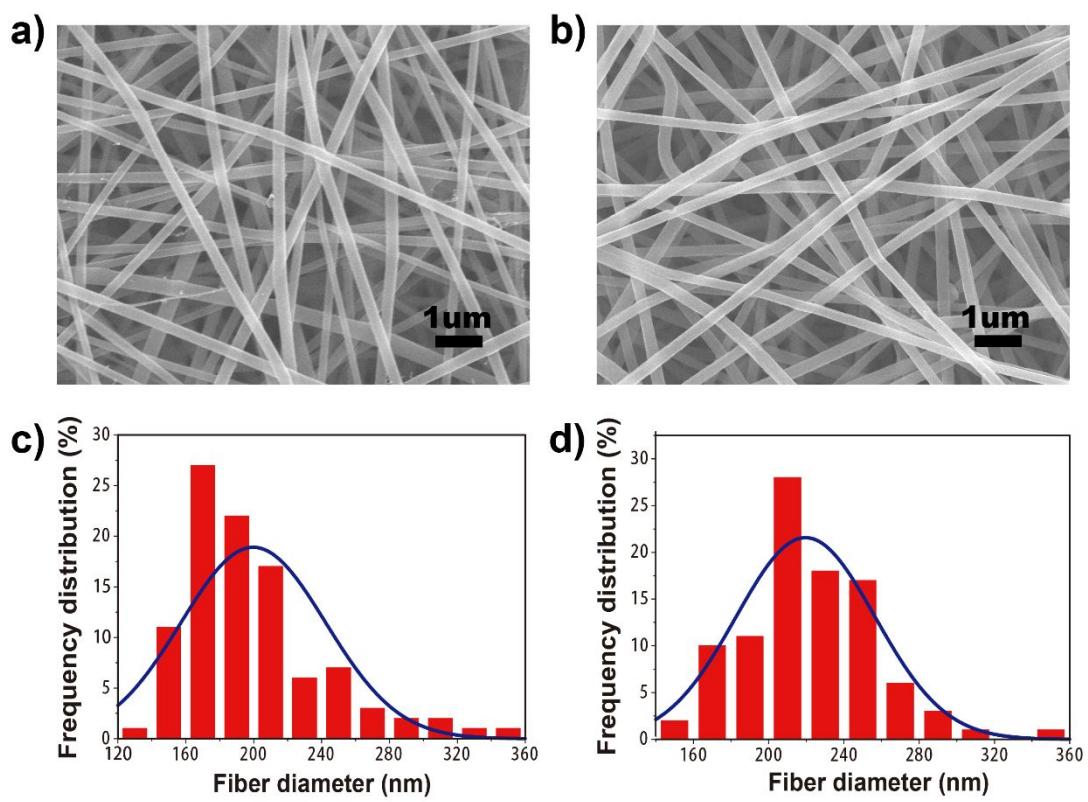


Figure S1. SEM and distribution of fiber diameter before (a, c) and after carbonation (b, d)

Table S1 BET specific surface area of composite membranes.

Samples	Specific surface area ($\text{m}^2 \text{ g}^{-1}$)
A	12.97
B	13.59
C	40.15
D	31.24

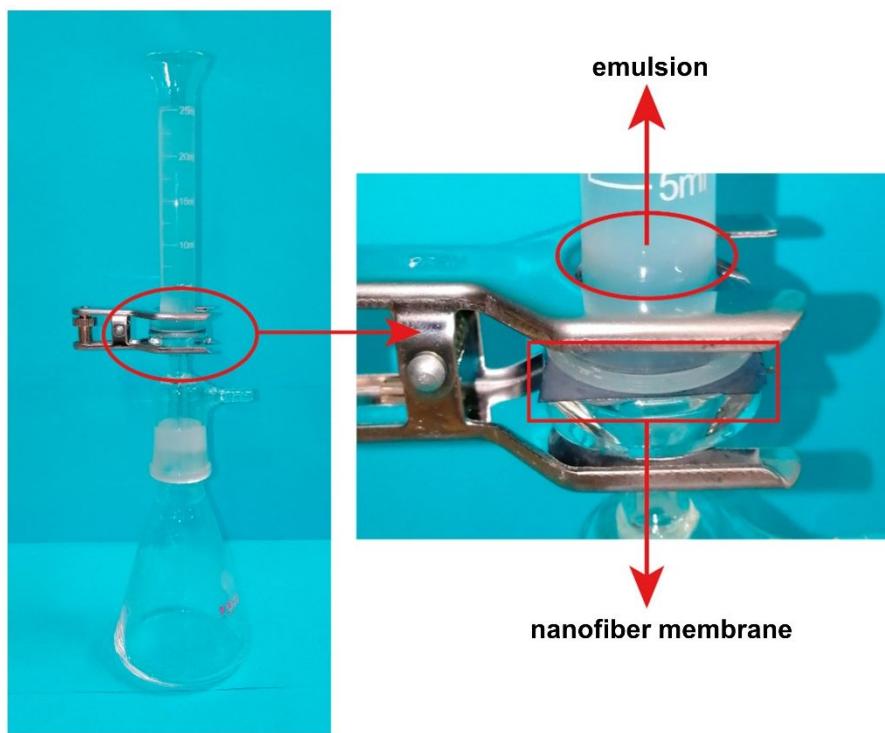


Figure S2. Digital photograph of oil-water emulsion separation device for nanofiber membrane.

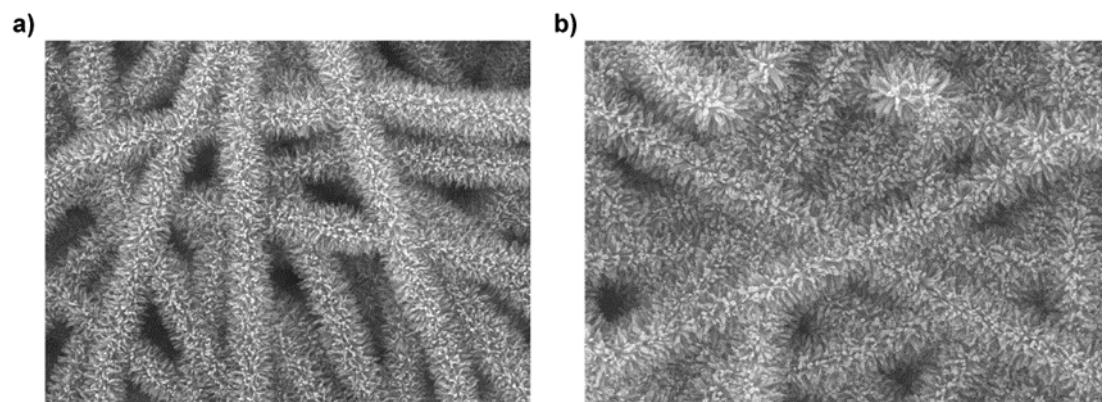


Figure S3. SEM of composite membrane before (a) and after (b) UV radiation, the surface structure and morphology barely changed.

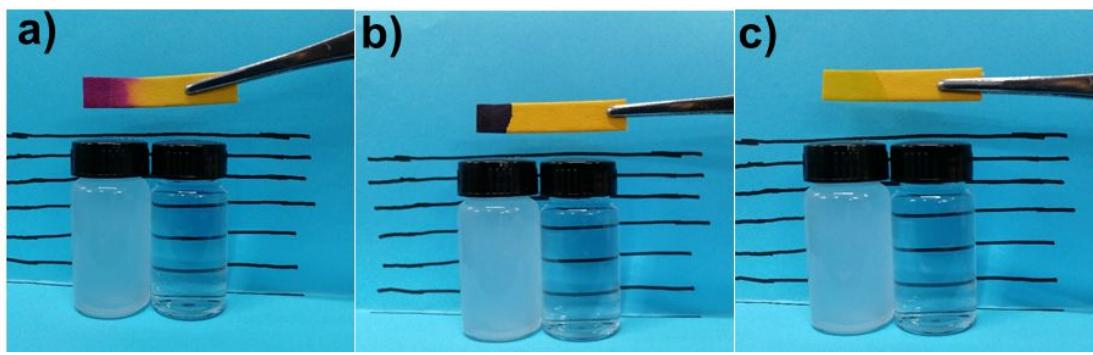


Figure S4. Emulsions and filtrates after membrane separation of HCl, NaOH, and NaCl mixture emulsions respectively.

Table S2. Membranes used for the oil-in-water emulsion separation under gravity

Membranes	Emulsions	Flux ($\text{L m}^{-2} \text{ h}^{-1}$)	Ref.
TiO ₂ /CF	Tween-80-stabilized oil-in-water	1052.8 ± 56	This work
HBPU/F-SiO ₂	toluene-in-water	631 ± 45	[1]
NiCo-LDH/PVDF	petroleum ether-in-water	600	[2]
PAN@ZIF-8	toluene-in-water	900-1050	[3]
NFM	hexane-in-water	1100	[4]
Co ₃ O ₄ NNM	petroleum ether-in-water	340	[5]
Ag/EGCG-PVDF	diesel oil-in-water	735	[6]
PES/SPES/TA-Fe ³⁺	pump oil-in-water	2021	[7]
Kaolin-coated meshes	soybean oil-in-water	190	[8]
J-CGPAs	gasoline-in-water	857	[9]
PVDF/PDA	n-hexane-in-water	729	[10]
PAN/HPEI/PDA	SDS-stabilized oil-in-water	1600	[11]

Reference.

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