

## Supporting Information

### **Fast curing assisted spray-coating method to fabricate robust core-shell structured evaporator with stable solar vapor generation performance**

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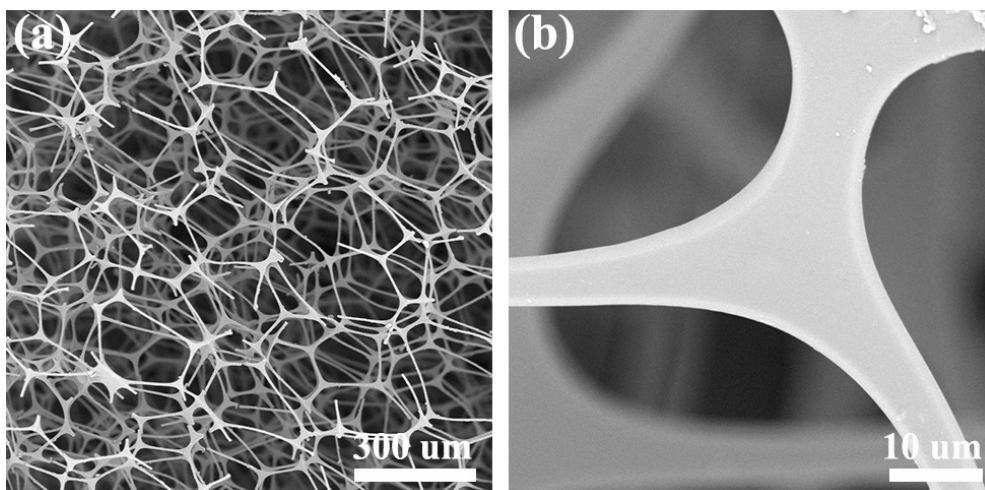


Fig. S1. (a, b) SEM images of the raw MF

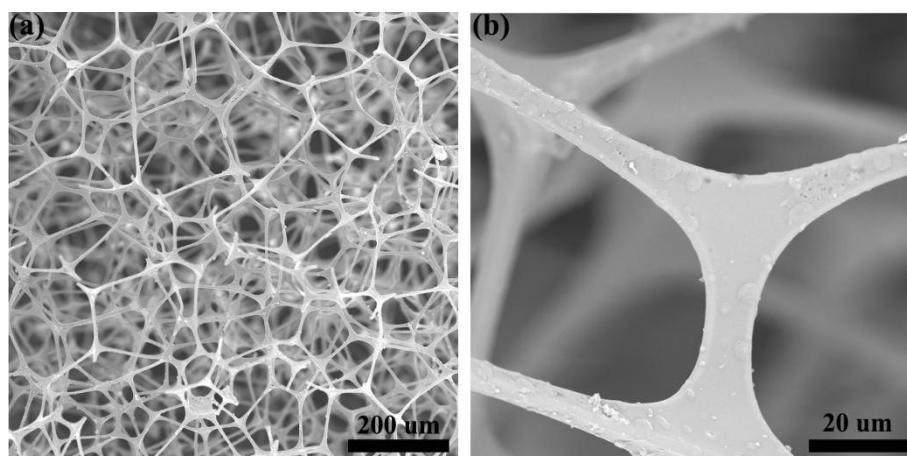


Fig. S2. (a, b) SEM images of the inner part of CB/MF evaporator.

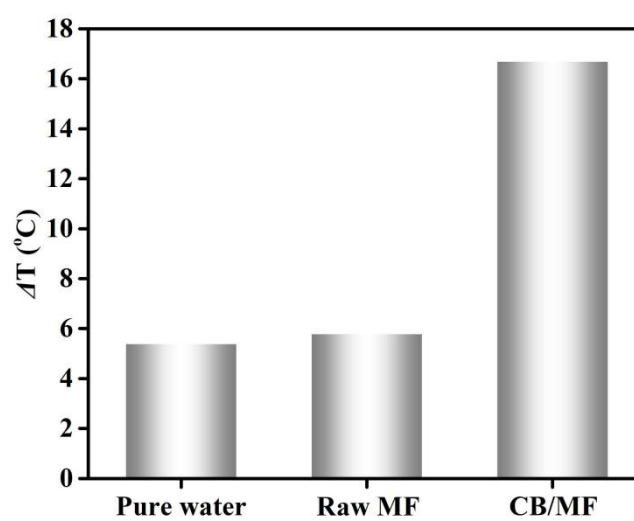


Fig. S3. (a) The heating value of the samples surface after 20 min of irradiation.

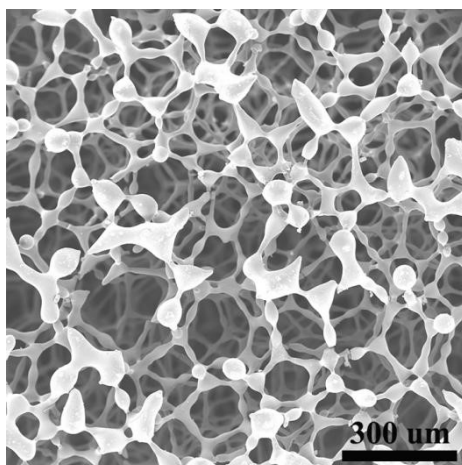


Fig. S4. SEM images of the external surface of CB/MF after 12 h of ultrasonic treatment.

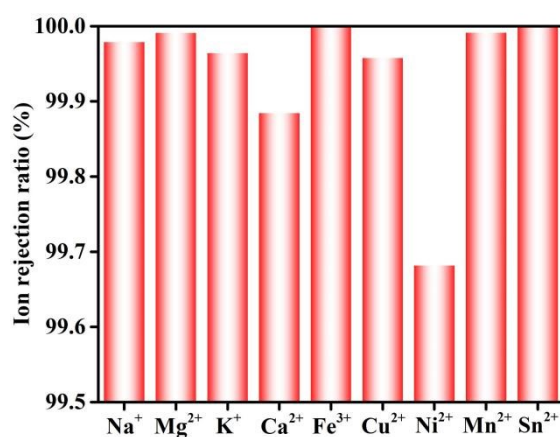


Fig. S5. The ion rejection ratio of simulated seawater and heavy metal wastewater.

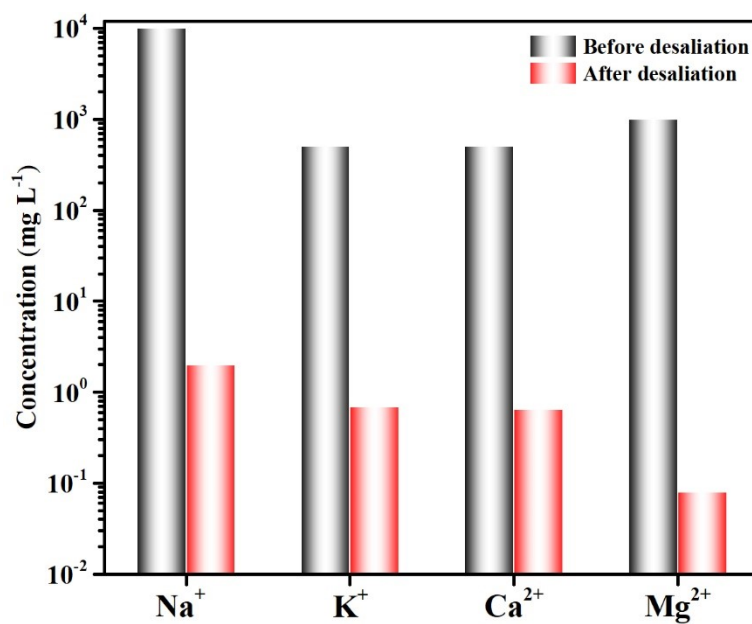


Fig. S6. Purification of simulated seawater in the outdoor environment.

### **Supplementary movie captions**

**Movie S1:** This movie shows the wetting behavior of water on the surface of raw MF.

**Movie S2:** This movie shows the wetting behavior of water on the inner uncoated part of CB/MF.