

# A Robust Photothermal Coating Strategy for Efficient Ice Removal

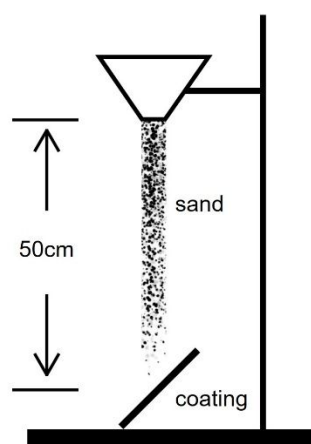
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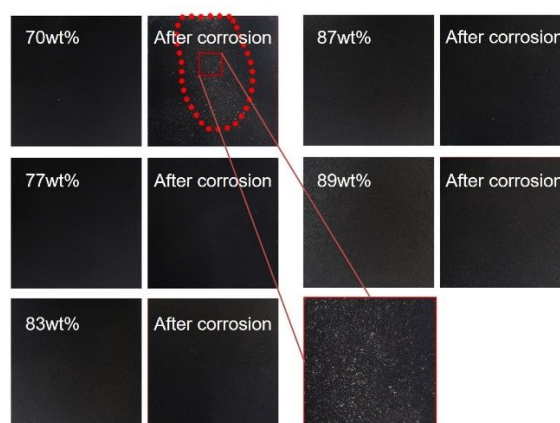
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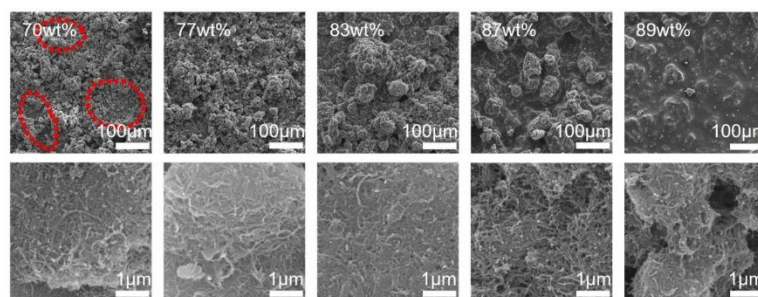
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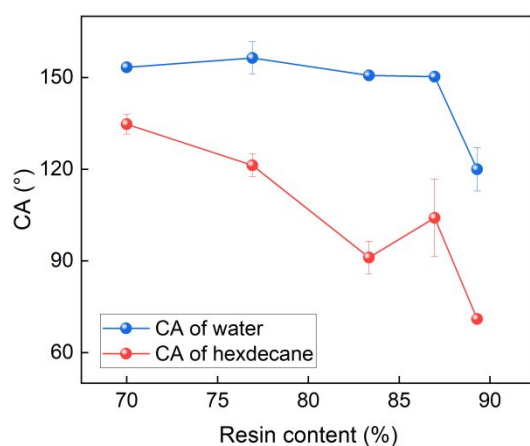
**Figure S1** Schematic of sand corrosion test.



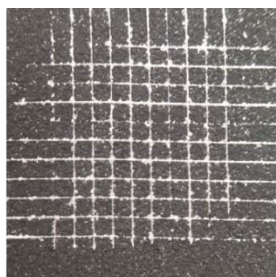
**Figure S2** Photo images of coating surfaces after sand abrasion test.



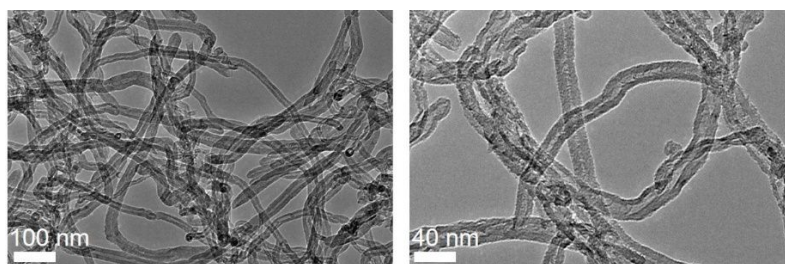
**Figure S3** SEM images of coating surfaces after sand abrasion.



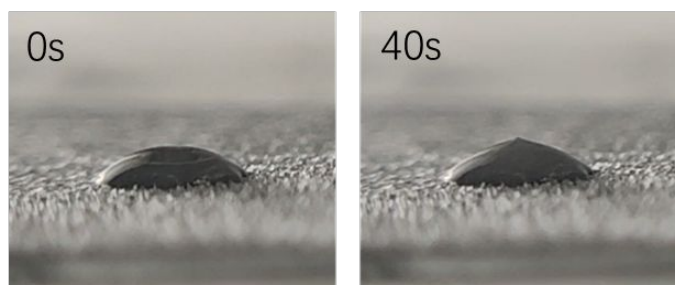
**Figure S4** Contact angles of water and hexadecane on amphiphobic coating surface after sand abrasion.



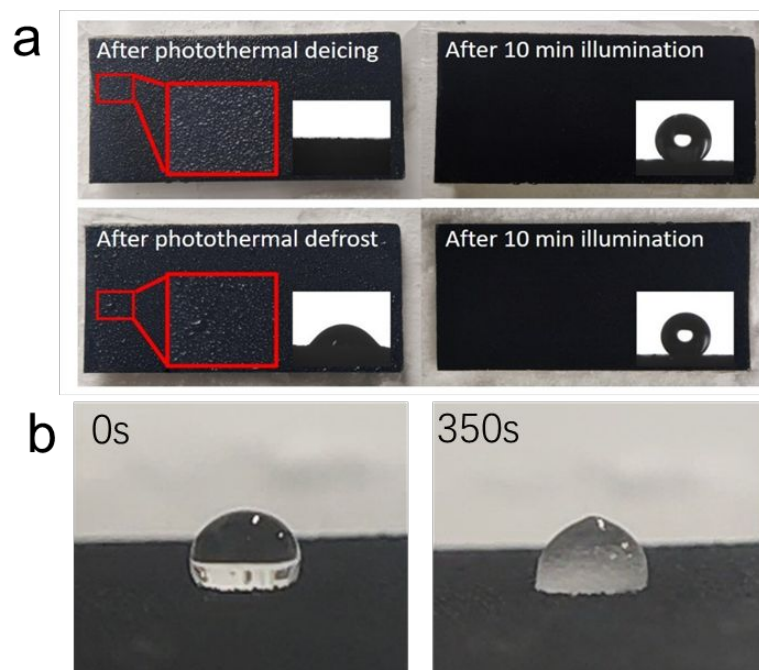
**Figure S5** Photographs of coating surfaces after blades slashing.



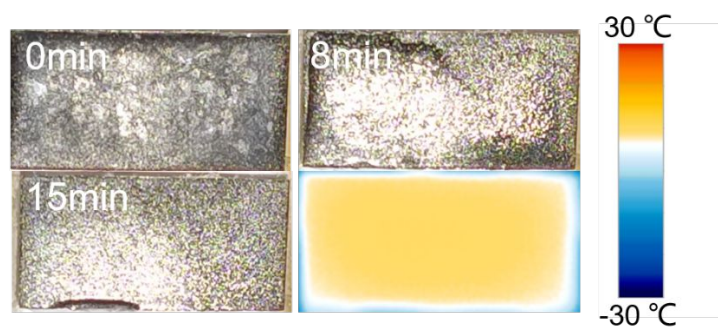
**Figure S6** TEM images of raw MWCNTs at various amplification.



**Figure S7** Water droplet freeze on hydrophilic photothermal coating after plasma etching within 40s, which means the disappearance of anti-icing performance.



**Figure S8** (a) Photo images and contact angles on surfaces after photothermal deicing/defrosting and after irradiation healing. (b) Droplet freeze on the coating surface after sunlight irradiation healing.



**Figure S9** Photographs and infrared image of photothermal deicing process on self-healed CNTs photothermal coating.