

Reusable and Recyclable Graphene Masks with Outstanding Superhydrophobic and Photothermal Performances

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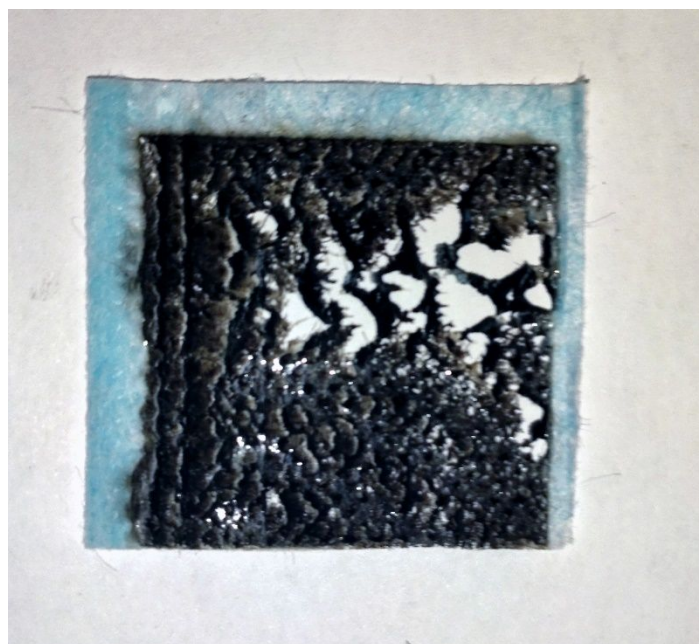


Figure S1. Optical image of the mask after 3rd generation CW-LIFT graphene. Due to the high temperature with the CW laser, the mask was melted.

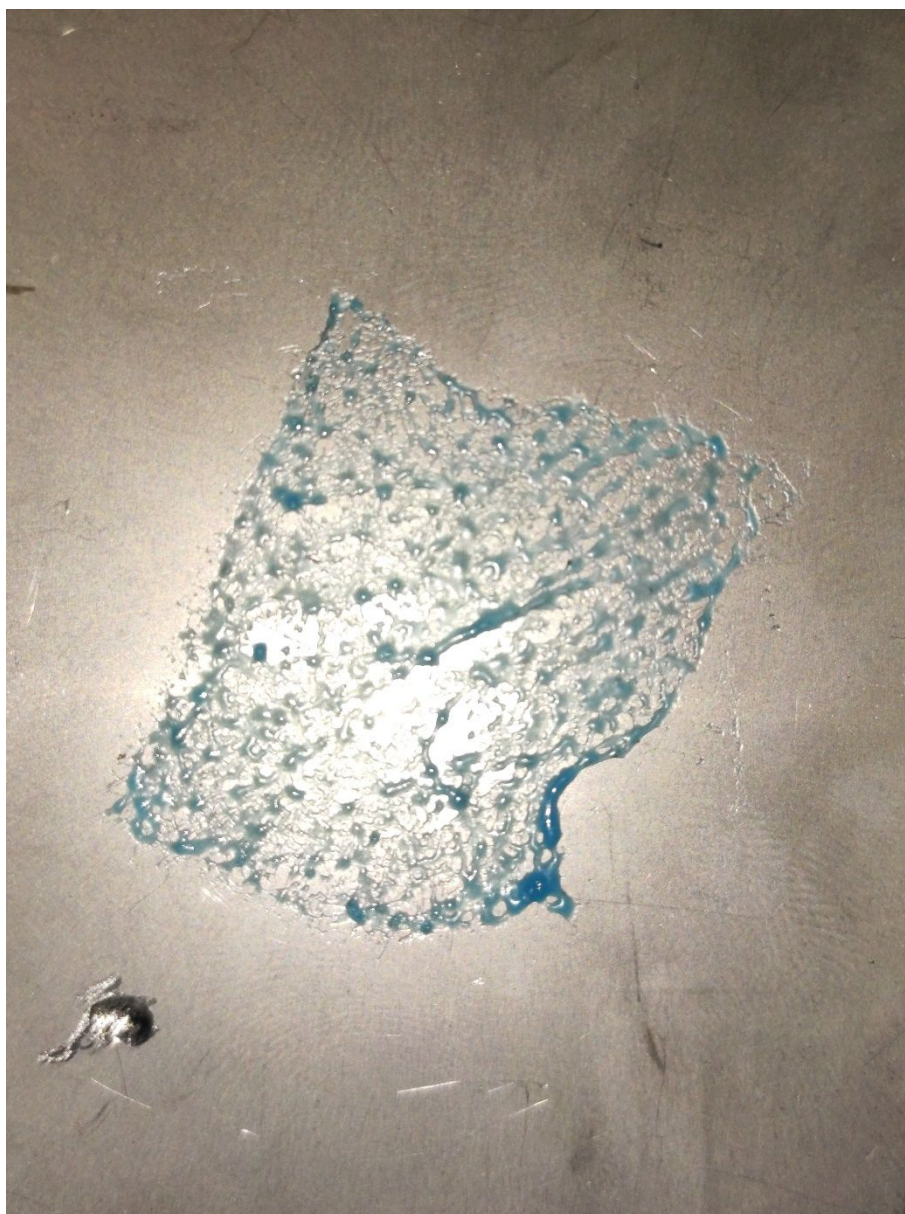


Figure S2. The optical image of the melted mask. After heating at 130 °C using hotplate, the pristine mask had melted.



Figure S3. The experimental setup for measuring the melting point of the pristine mask. The hotplate was set to 150 °C, and the surface temperature of the pristine mask was measured to be 130 °C.

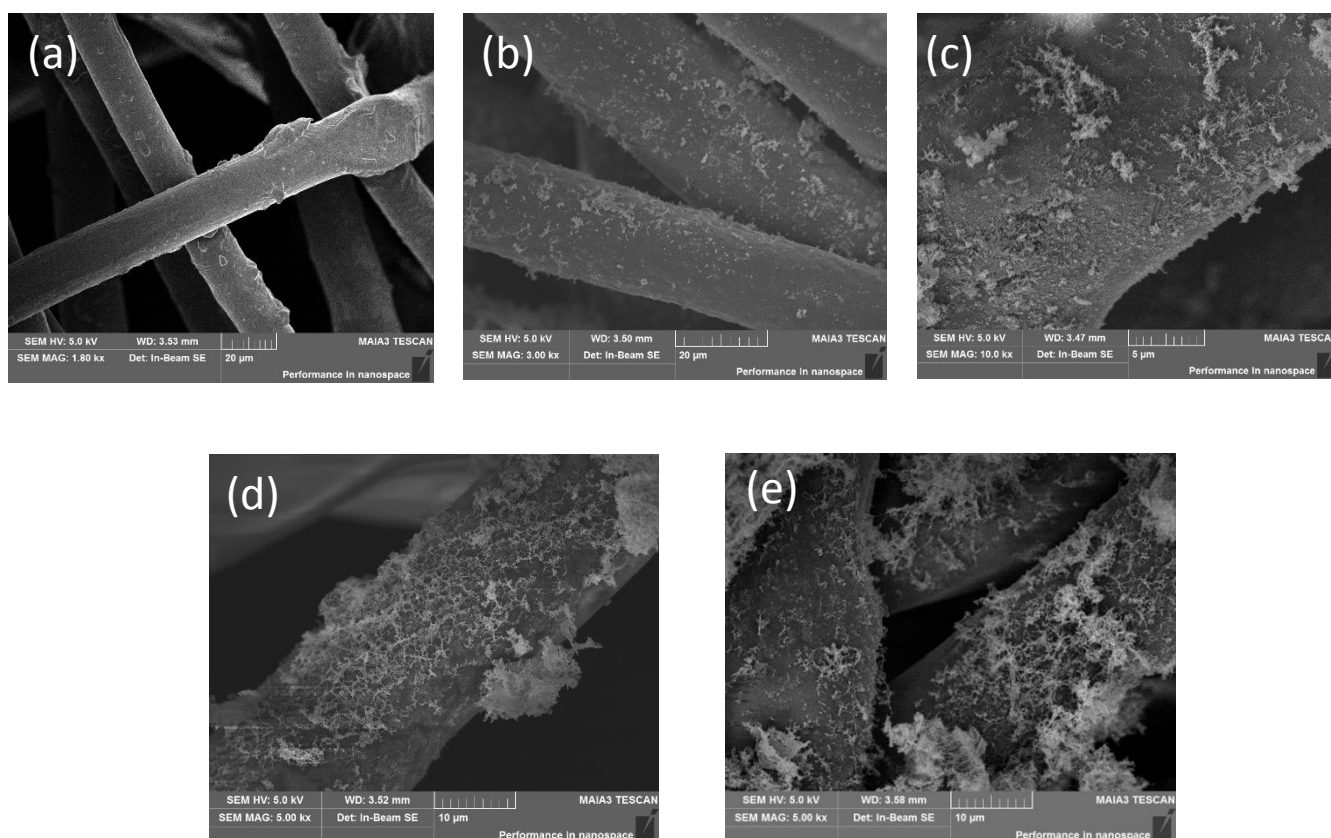


Figure S4. SEM images for (a) Pristine mask. (b) Mask with graphene no aging test. (c) Mask with graphene 24 h aging test. (d) Mask with graphene 48 h aging test. (e) Mask with graphene 72 h aging test.

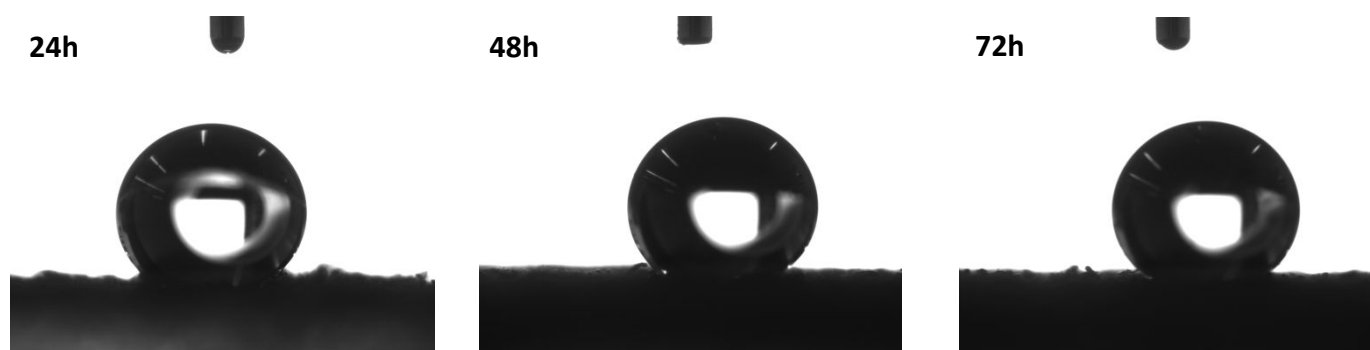


Figure S5. The water contact angles of the masks after solar sterilization after 24 h, 48 h and 72 h with 1 sun intensity.

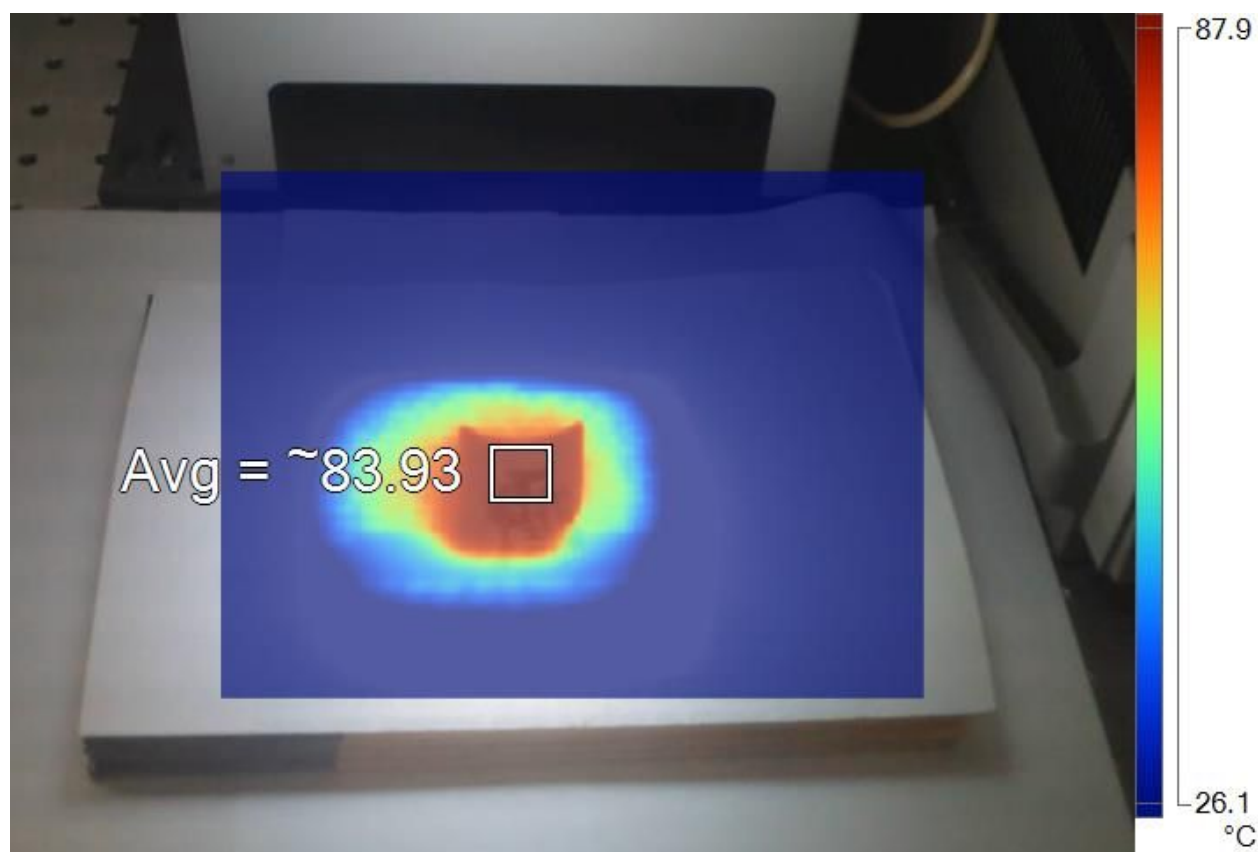


Figure S6. IR image of a 3.7 cm by 3.7 cm graphene coated mask sample after 72 h solar sterilization, under 1 sun intensity.

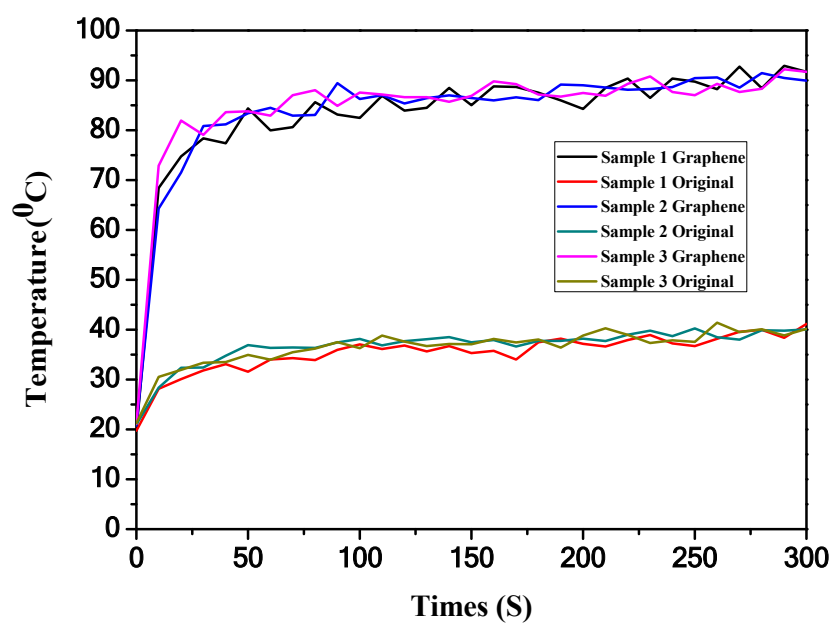


Figure S7. The measured temperature of graphene coated mask and the pristine masks against time.

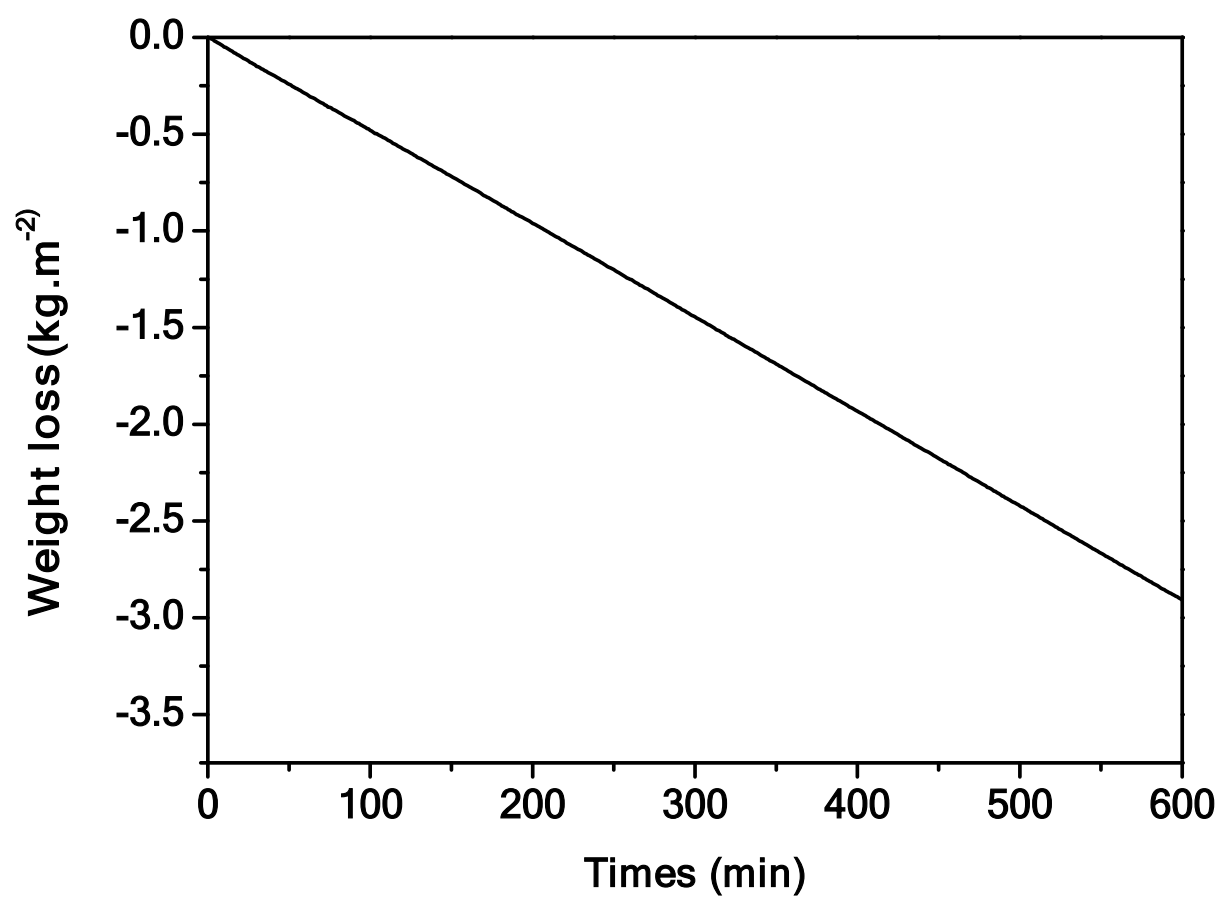


Figure S8. The desalination efficient of original mask, which is 0.29 kg/m²h.

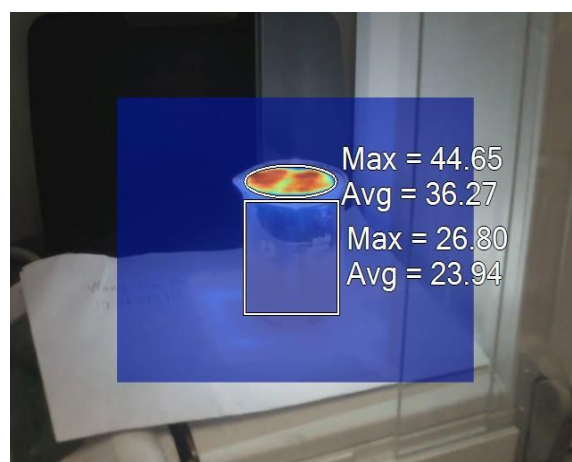
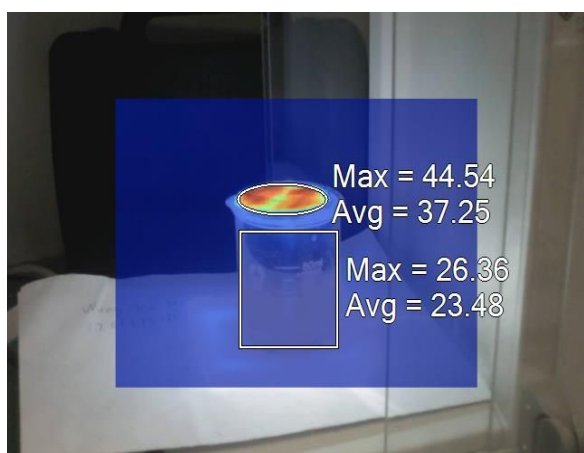
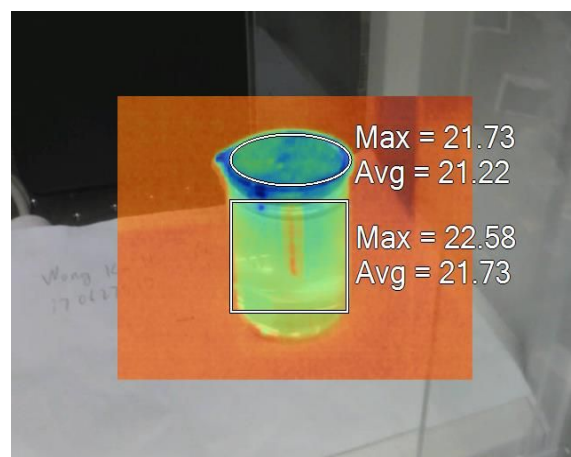


Figure S9. Solar steam generator (upper: before desalination; bottom: during desalination).