Electronical Supporting Information

Drop/Bubble Transportation and controllable Manipulation on Patterned Slippery Lubricant Infused Surfaces with tunable wettability

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Video description:

Water droplet's movement behavior on various paraffin infused films. **(Movie S1)**

The sliding process of water droplet on the slippery PIHPHCF recorded by contact angle tester. **(Movie S2)**

Liquid droplets slide on patterned slippery surface. **(Movie S3)**

Multiple droplets manipulation on patterned slippery surfaces. **(Movie S4)**

Gas bubbles transportation on patterned slippery surfaces under warm-water environment. **(Movie S5)**

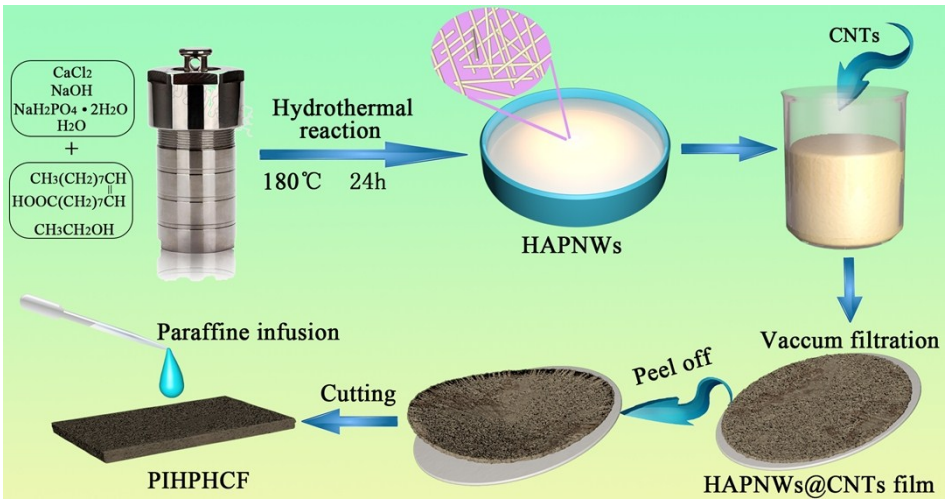

Fig. S1 Schematic representation of the preparation procedure of PIHPHCF via the hydrothermal process and vacuum-assisted suction filtration.

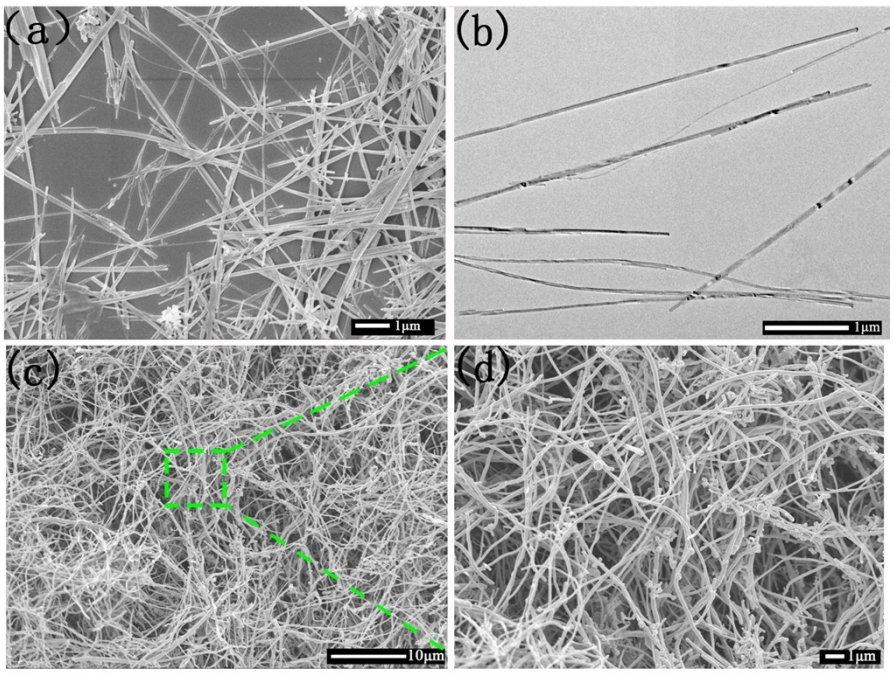

Fig. S2 (a) FESEM image of HAPNWs; (b) TEM image of HAPNWs; (c) FESEM image of CNTs and (d) large magnification of (c).

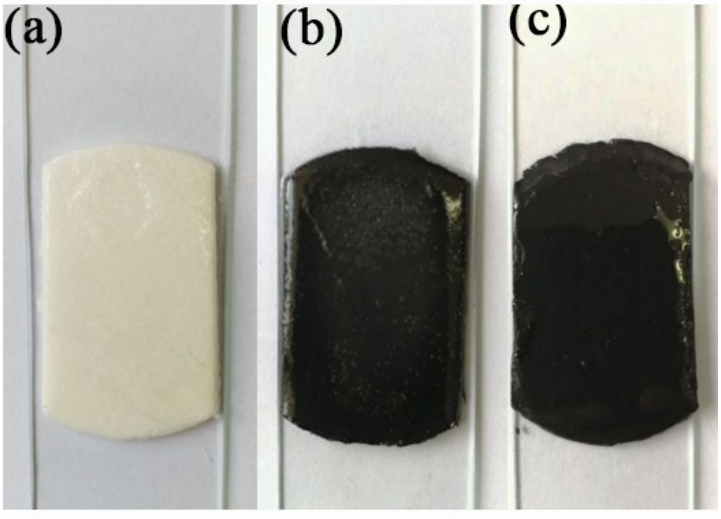

Fig. S3 Physical mapping of (a) pure HAPNWs film, (b)PIHPHCF and (c) PIHPHCF treated with NIRLI.

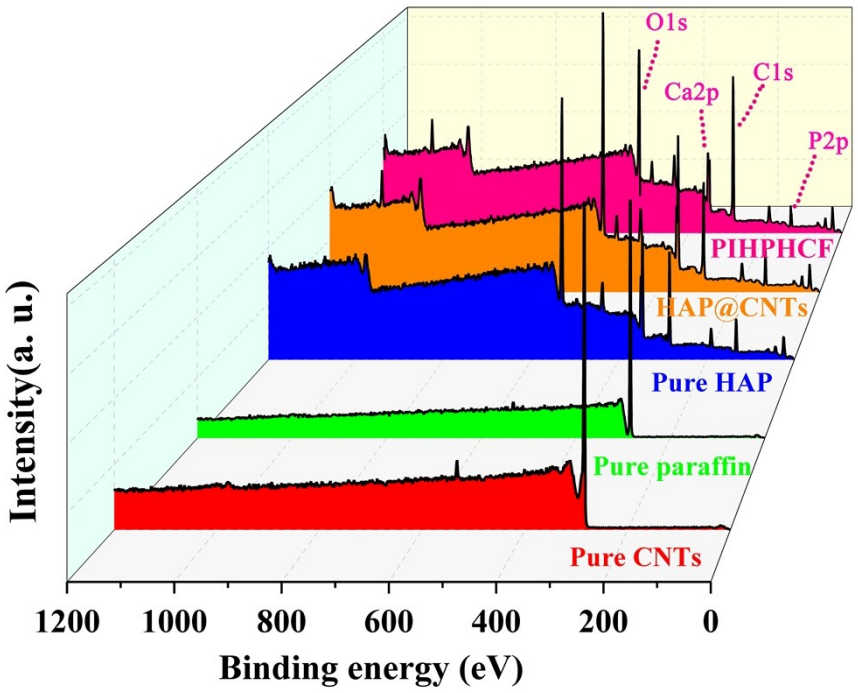

Fig. S4 XPS spectra of pure CNTs, pure paraffin, pure HAPNWs, HAP@CNTs film and PIHPHCF, respectively.

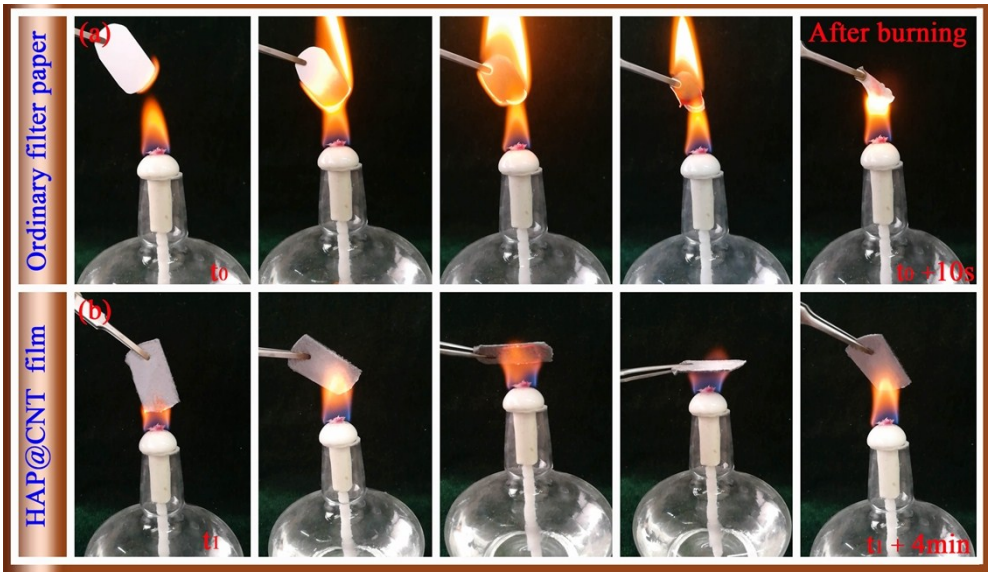

Fig. S5 Thermal stability tests of (a) ordinary filter paper and (b) HAP@CNT film. Here, the HAP@CNT film shows excellent thermal resistance even it's exposed to fire for 4 minutes at 400-500℃. In the contrary, the ordinary filter paper severing as contrast experiments is burned to ashes within 10 seconds.

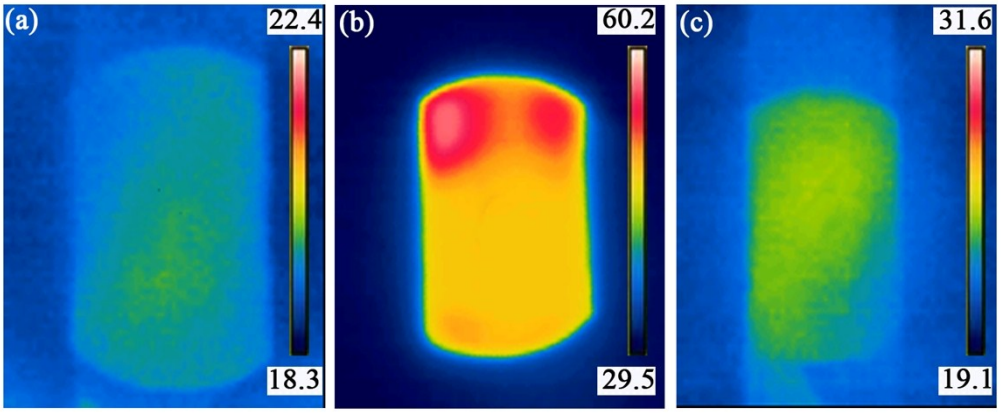

Fig. S6 Infrared thermal image of PIHPHCF. (a) and (b) represent before and after the near-infrared light irradiation; (c) the melted surface cools to room temperature.

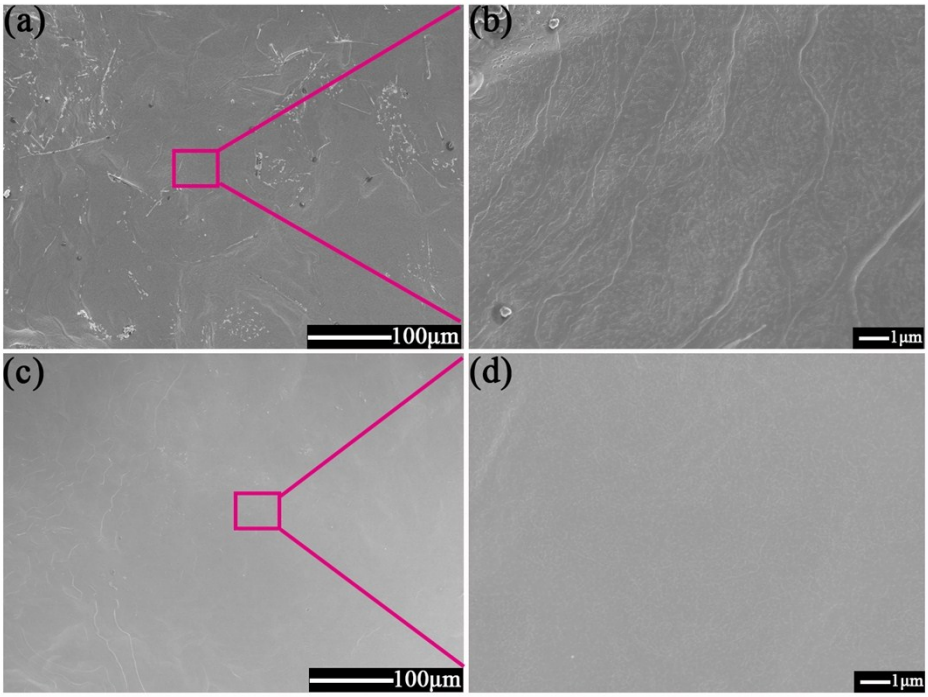

Fig. S7 (a) and (c) represent the FESEM of PIHPHCF with the paraffin volume of 60 and 140μl/cm2, respectively; (b) and (d) represent the large magnification of (a) and (c), respectively. Obviously, the more dosage of paraffin, the film surface will be more smoother.

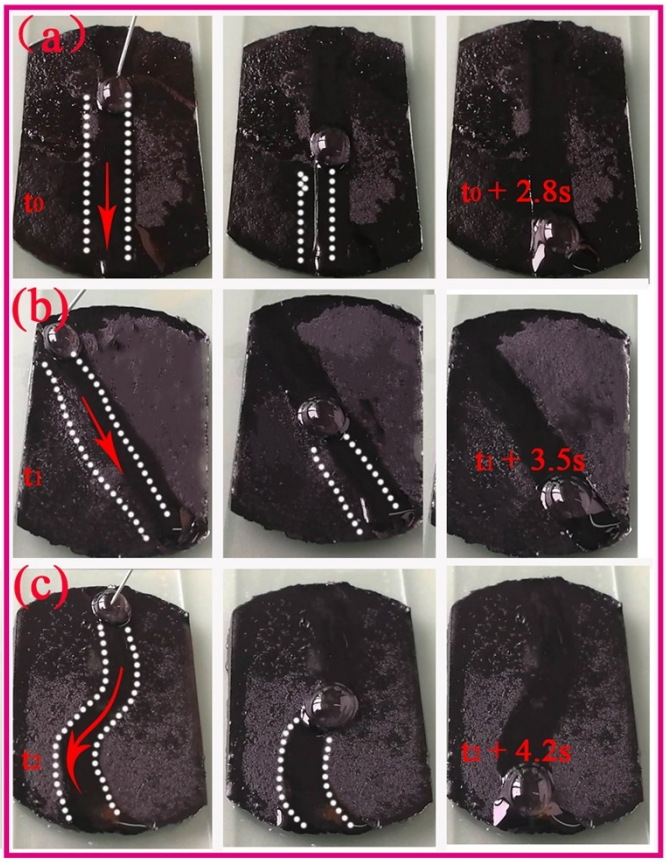

Fig. S8 Optical photographs of NaOH liquid (PH=12, 20μl) sliding on patterned slippery surface of

straight, slant and Y-shaped pathway, titled angle: 10°.