

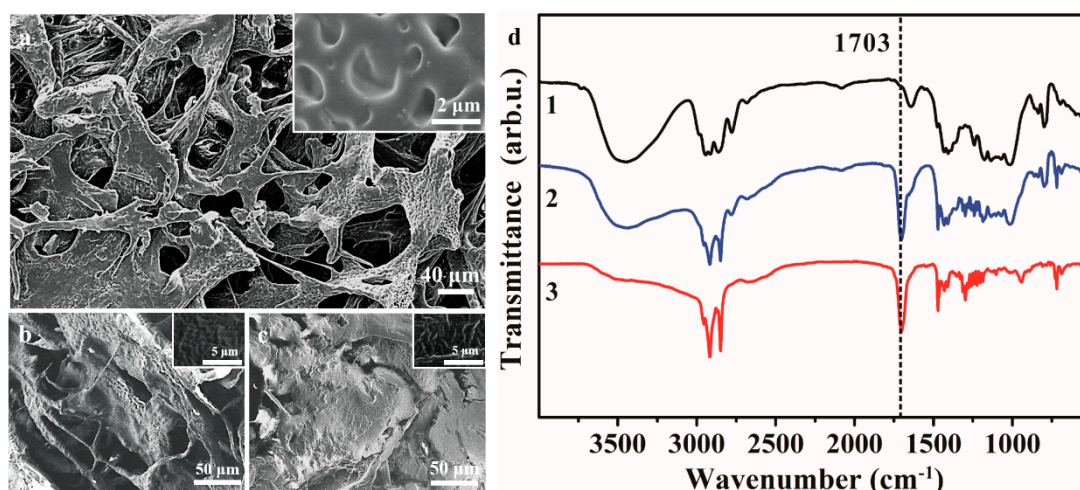
# Hydrophobic Janus Foam Motors: Self-Propulsion and On-The-Fly Oil Absorption

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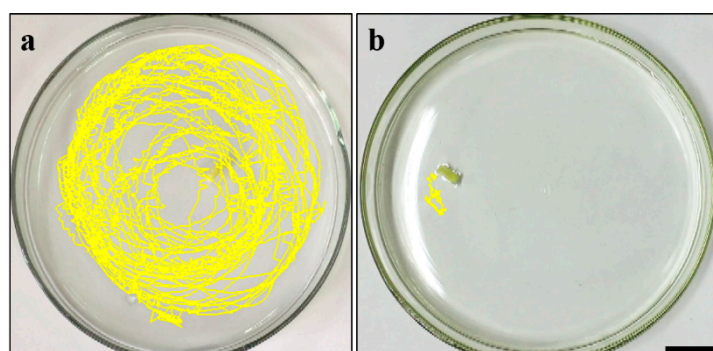
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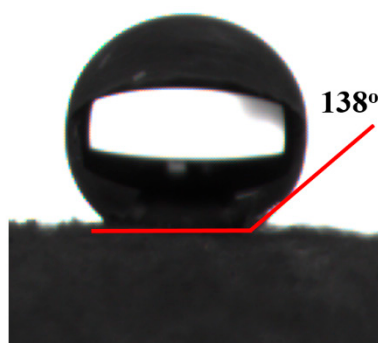
## Supporting Figures



**Figure S1.** (a–c) SEM images and (d) FTIR spectra of the (a) pristine PVA foam, (b) PVA foam modified with SA, and (c) the Janus foam motor loaded with camphor, respectively.



**Figure S2.** Trajectories of (a) a typical Janus foam motor and (b) a SA-PVA foam in 10 min. Scale bar: 20 mm.



**Figure S3.** The contact angle of water on the surface of the SA end of the Janus foam motor.



**Figure S4.** The oil/water separation by the Janus foam motor. When a mixed oil (colored with blue dye) and water drop (a) is dropped on the SA end of the motor, the oil is immediately absorbed (b), leaving a water droplet on the motor surface (c). Scale bar: 5 mm.

## Supporting Videos

**Supporting video 1:** Self-propulsion of a Janus foam motor on water.

**Supporting video 2:** On-the-fly Oil capture and absorption by a Janus foam motor.

**Supporting video 3:** Oil capture and absorption by a Janus foam motor and an immobile SA-PVA foam.

**Supporting video 4:** Self-assembly of Janus foam motors.

**Supporting video 5:** Self-assembly process of two SA-PVA foams before and after oil absorption.