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Electronic Supplementary Information

Super-floatable Multidimensional Porous Metal Foam Integrated with a Bionic Superhydrophobic Surface

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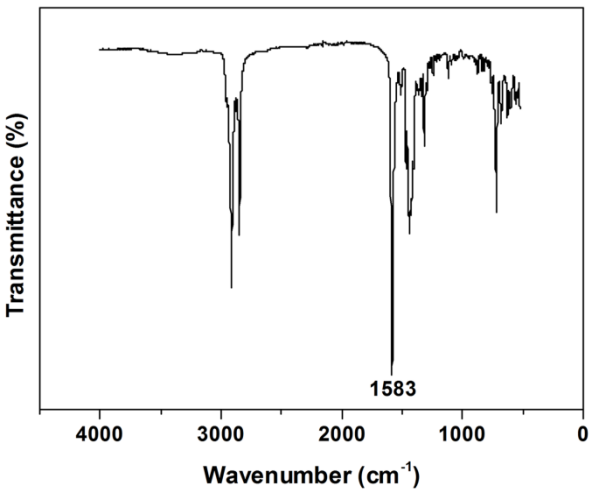

Fig. S1 FTIR spectra of the blue aggregates making up the superhydrophobic surface. The film contains coordinated $CH_3(CH_2)_{12}COO^-$.

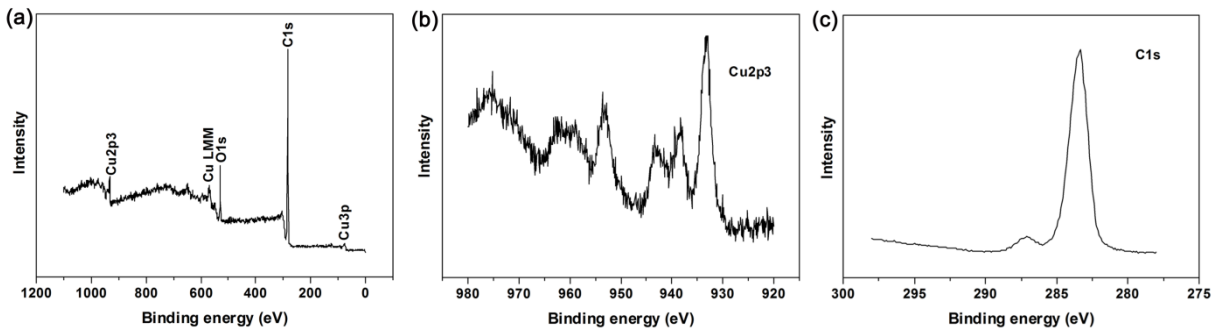

Fig. S2 XPS spectra of the blue aggregates making up the superhydrophobic surface. (a) Wide-scan spectrum. The superhydrophobic surface mainly contains three elements: Cu, O, and C. (b) Cu spectrum. The Cu is in the form of Cu^{2+}, and the atomic ratio of Cu^{2+} to C from COO is about 1/2. (c) C spectrum. The two types of signals from C bonds are from C belonging to the long-chain alkanes and from C belonging to the -COO group.

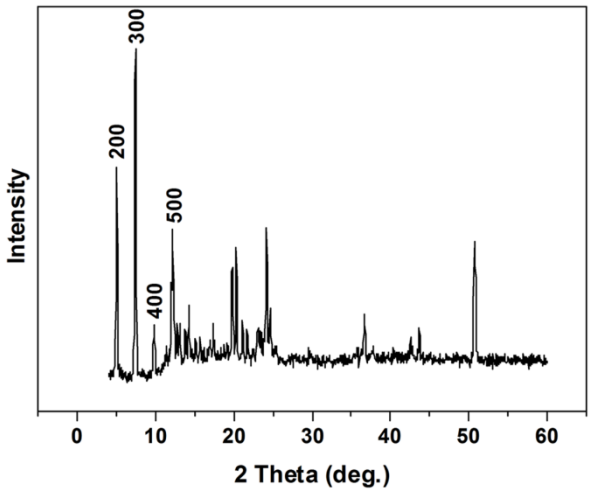

Fig. S3 XRD spectrum of the blue aggregates making up the superhydrophobic surface. The microclusters on the copper surface have a laminated structure.

Video S1. Floating and sinking phenomena of the pristine and the superhydrophobic copper foam with 40 PPI. The pristine sample cannot float over the surface of the water and sinks quickly.

Video S2. Sinking and floating process for the superhydrophobic copper foam with 40 PPI.

Video S3. Floating test for the superhydrophobic copper foam with 10 PPI. The 10 PPI sample sinks in the first cycle and fails to float just as its upper surface is immersed in water.