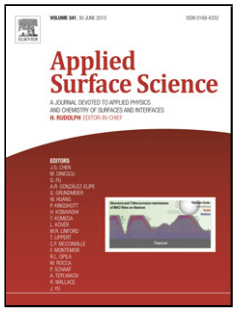

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A superhydrophobic copper mesh as an advanced platform for oil-water separation

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Highlights

- We developed a facile approach to create a superhydrophobic copper mesh.
- The obtained mesh can be used to construct novel devices for oil-water separation.
- The obtained mesh can be applied for removing tiny water droplets in oil.
- High separation efficiency was retained after 10 cycles of oil-water separation.

Abstract

Improving the separation efficiency and simplifying the separation process would be highly desired for oil-water separation yet still challenging. Herein, to address this challenge, we fabricated a superhydrophobic copper mesh by an immersion process and exploited it as an advanced platform for oil-water separation. To realize oil-water separation efficiently, the obtained mesh was enfolded directly to form a boat-like device, and it could also be mounted on an open end of a glass barrel to form the oil skimmer device. For these devices, they can collect the floating oils through the pores of the copper mesh while repelling water completely, and the oil collection efficiency

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