

New super-bouyant material: Life preserver might float a horse

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Here's a story that might float your boat: Researchers in China are reporting the development of miniature super-bouyant boats that float so well that an ordinary life preserver made from the same material might support a horse without sinking.

The advance, they say, might be difficult to apply to full-size craft. However, it could lead to a new generation of aquatic robots for spy missions and other futuristic devices, the scientists add. Their study is reported in *ACS Applied [Materials](#) & Interfaces*, a monthly journal.

In the new study, Qinmin Pan and Min Wang note that researchers have studied the chemistry of surfaces for years in an effort to design novel drag-reducing and fast-moving aquatic and air devices, such as boats and planes. Scientists have often turned to nature for inspiration. One source: The [water](#) strider, whose highly water-repellant (superhydrophobic) legs allow this insect to literally scoot across water surfaces at high speeds. But researchers still have not found a practical way to apply this phenomenon to technology.

Pan and Wang made several miniature boats about the size of a postage stamp. They used copper mesh treated with silver nitrate and other substances to make the boats' surfaces superhydrophobic. When compared to similar copper boats made without the novel surfaces, the water repellent boats floated more smoothly and also showed a surprisingly large loading capacity. The best performing mini-boat floated with up to two times its maximum projected loading-capacity,

the scientists say. “Interestingly, the [boat](#) is able to keep floating even if its upper edges are below the water [surface](#),” the scientists note.

More information: "Miniature Boats with Striking Loading Capacity Fabricated from Superhydrophobic Copper Meshes" *Applied Materials & Interfaces*

Provided by ACS

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