Synthetic model microswimmers near walls

Ketzetzi, S.

SYNTHETIC MODEL MICROSWIMMERS NEAR WALLS

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Stefania Ketzetzi

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The cover shows a Janus colloid, a microscopic particle whose surface consists of two distinct hemispheres. One hemisphere is nonmetalic while the other is covered with the metal platinum. The name *Janus* comes from the two-faced god of Roman mythology. This work studies the self-propelled motion of these colloids near walls. Special thanks goes to Rachel Doherty for scanning electron microscopy imaging and to Ruben Verweij for help with cover preparation.

''A friend of mine (Albert R. Hibbs) suggests a very interesting possibility for relatively small machines. He says that, although it is a very wild idea, it would be interesting in surgery if you could swallow the surgeon. You put the mechanical surgeon inside the blood vessel and it goes into the heart and "looks" around. It finds out which valve is the faulty one and takes a little knife and slices it out."

Richard Feynman, *Plenty of Room at the Bottom*, Pasadena, 1959

To my brother.

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