ON THE COVER: Demonstrating how surface chemistry and self-assembled monolayers (SAMs) can control macroscopic properties of materials is challenging, often necessitating use of specialized instrumentation. In “The Molecular Boat: A Hands-On Experiment To Demonstrate the Forces Applied to Self-Assembled Monolayers at Interfaces” (DOI: 10.1021/ed200832h), Charlene J. Chan and Khalid Salaita describe a straightforward and facile experiment that allows students to generate monomolecular layers on glass substrates and to observe these layers' effect on the macroscopic flotation of a glass coverslip. The cover shows indentations formed at the water—substrate interface for coverslips varied according to terminal surface functional groups: SAM formed from (top) 1-octadecltrimethoxysilane (ODTS); (middle) 3-aminopropyltrimethoxysilane (APTM); and (bottom) hydroxy-terminated bare glass. The inset schematic depicts these various surface modifications and the corresponding side-view of the water—substrate contact interface.

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