

Abstract Submitted
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Photoinduced Contact Angle Hysteresis on a Single Microsphere¹

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An atomic force microscope (AFM) is used to measure the meniscus force on individual microspheres as they contact and are retracted from an air/liquid interface. The glass microspheres, whose radii ranged from 20 to 50 micrometers, had organic or inorganic coatings on their surfaces. By exposing the microspheres to light, the contact angle and thus the meniscus force could be dramatically altered. The measured force-distance curves are fitted to macroscopic wetting theory. From these measurements, the contact angle, contact angle hysteresis, position of the contact line pinning, and surface tension were simultaneously determined.

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