



**Figure A.** Topographic image of latex spheres, showing no changes before and after modifying the tip with 1-dodecylamine. Height bars are  $0.1 \mu\text{m}$ . (A) Recorded with an unmodified tip. (B) Recorded with the same tip coated with 1-dodecylamine. After this experiment, the modified tip still exhibited a lower capillary effect than an unmodified tip as determined by our friction measurements.