Connecting monotonic and oscillatory motions of the meniscus of a volatile polymer solution to the transport of polymer coils and deposit morphology

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Supporting Information

Video 1: Slip motion of the contact line inside the micro-chamber

The contact line recedes continuously from the open end (at the bottom) toward the interior while the polymer being deposited. The experiment was conducted in a chamber of an inner thickness of $H = 75$ μm, at a temperature of $T = 25$°C, and at concentration of $C = 3$

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mg/ml and the molecular mass of the polymer was M_w=50,000 Da. The scale bar is 100 μm.

Video 2: Oscillatory motion of the contact line inside the micro-chamber

Initially the three phase contact line recedes for a finite time while the solution dewets the silicon-oxide substrate due to evaporation. The accumulation of the polymer near the contact line is then followed by the motion of the contact line at the opposite direction, where the solution wet the solid substrate. The polymer is deposited on the substrate at the end of the wetting stage. Then the contact line recedes again due to evaporation... The experiment was conducted under the same conditiond as in Video.1, albeit the molecular mass was M_w=350,000 Da. The scale bar is 100 μm.

Video 3: Transition from oscillatory to slip motion inside the micro-chamber

The experiment was conducted under the same conditions as in Video.1, albeit the molecular mass was M_w=100,000 Da. The scale bar is 100 μm.

Video 4: An oscillatory motion of a drop

The experiment was conducted in a large chamber to control the evaporation rate of the unbounded drop inside and at a temperature of $T = 25^{o}$C, and a concentration of $C = 3$ mg/ml. The polymer molecular mass was M_w=350,000 Da, and the scale bar is 100 μm.