

Liquid contact line on gels: How wetting is like on soft and diffusive gel surfaces?

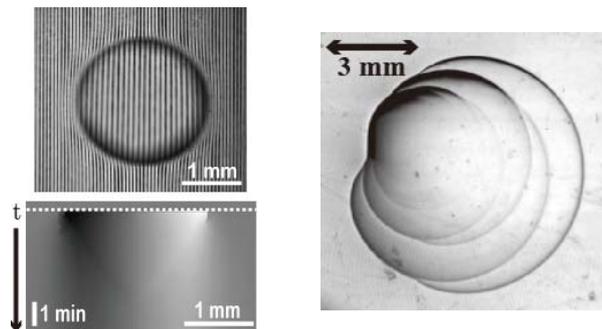
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Gels are materials of great interest as they are intriguing state of matter and they also have promising potentials for applications such as food processing, medical science, and soft electronics [1]. One of the key issues is to understand their interfacial properties, as they determine adhesion, friction, and wetting. Here we are focusing on the wetting problem on gel surfaces.

From the fundamental wetting science, gels are interesting model systems to study how singular the contact line behaviour is, compared to that on ideal hard solids., i.e., gels are very soft and swell with liquid [2, 3]. We explored dynamics of the contact line of a water sessile drop and meniscus on two different types of gel substrates: hydrophilic (PAMPS-PAAM) gels and hydrophobic (SBS-Paraffin) gels. In each situation, the contact line exhibits a behavior which is largely different from the general wetting situation. We understood that the two characteristics, i.e., gel rheology and swelling effect, play crucial roles [4-6].

In this seminar, I will present our latest experimental results and propose simple physical models explaining the present phenomena.



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