Manipulating and probing thin liquid films at nanometric scales

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Abstract

At small scales, the behavior of liquid films cannot be described by hydrodynamics alone: molecular organisation in the vicinity of the interfaces has to be accounted for. I will focus on thin liquid films supported by a solid substrate, and detail how their thickness can be controlled down to the nanometric scale. I will show that thermal agitation can be used to measure both their flow properties and interactions, revealing their structure at the molecular scale.