

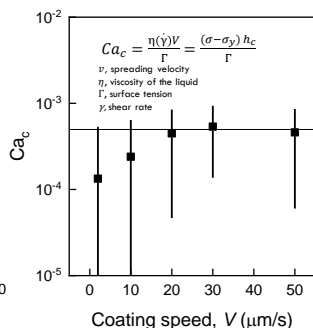
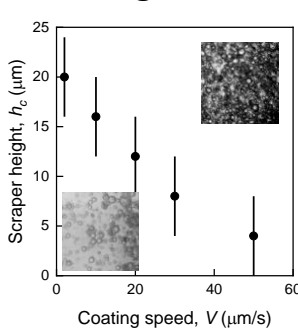
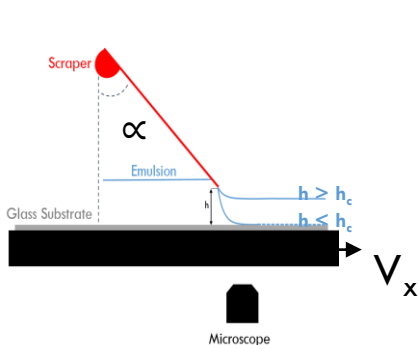
# On making a coating of Pickering emulsions

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There has been widespread scientific interest in the use of colloidal particles to effectively stabilize emulsions, referred to as Pickering emulsions. The coating of solid surfaces (e.g. the skin) with such Pickering emulsions is being considered for a variety of applications, so it is necessary to consider both the stability of these fluids under such conditions as well as the conditions for depositing a homogeneous layer. In sum, spreading emulsions on solid substrates will necessarily require a good knowledge of a variety of aspects. It is a subset of these considerations which will be examined here.

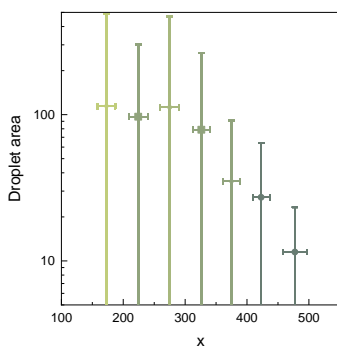
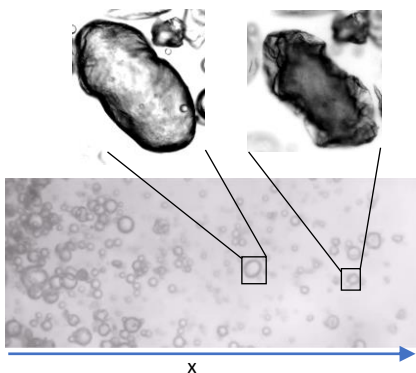
## When is a coating formed?



Experimental set-up

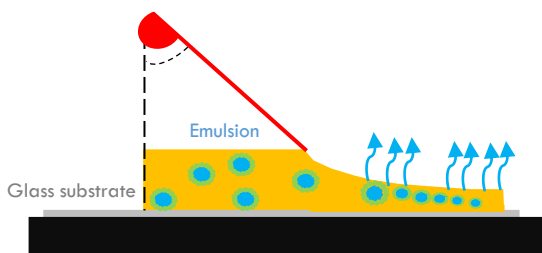
(a) In the experiment two variables can be modified ( $h$ ,  $V$ ). The formation of a coating (or no coating) can be plotted as a function of these two variables. (b) The transition to a coating can be defined by the capillary number

## How does a coating destabilize?



Droplets wrinkle and become smaller upon spreading/destabilization (instead of coalescence what happens for traditional emulsions) and then merge with the liquid on the substrate.

## Hypothesis



The transition to a coating can be defined by the capillary number. The destabilization of the droplets in the coating seems to be induced by evaporation of the water phase, which causes wrinkling of the surface of the droplets leading to a decrease in droplet size.