

Droplet spreading on reactive substrates

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Droplet spreading on reactive substrates is different from spreading on non-reactive substrates. We review the non-trivial spatio-temporal patterns observed for spreading of metal on metal-on-glass in room and high temperatures and discuss their universal features. The spreading exhibits two main regimes, bulk propagation regime followed by kinetic roughening of the advancing interface. The bulk propagating dynamics is qualitatively different from classical wetting characteristics. The rich spatio-temporal patterns observed in the kinetic roughening regime are studied and characterized using statistical physics tools, such as the growth, roughness and persistence exponents, as well as relevant Ising models. We also discuss recent results of structural instability of the reactive substrate due to the spreading, resulting in DLA-like finger patterns.

References

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