

Wetting and Swelling of soft fibres

Donnerstag, 8. Dezember 2022 09:00 (45 Minuten)

We consider the morphologies adopted by liquid in fibrous assemblies, and in particular the coupled effects of geometry, elasticity and swelling on the liquid distribution. For favorable solvents that are absorbed by the fibers, the induced swelling strongly affects the liquid distribution, for example inducing transient motions or even coalescence of the drops. When the fibers are flexible, the force exerted by the drop may deform them. Swelling can induce a spontaneous collapse of the fibers and a forced imbibition, which we rationalize with a model coupling poroelasticity and elasto-capillarity.

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