

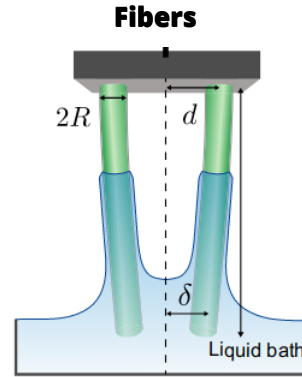
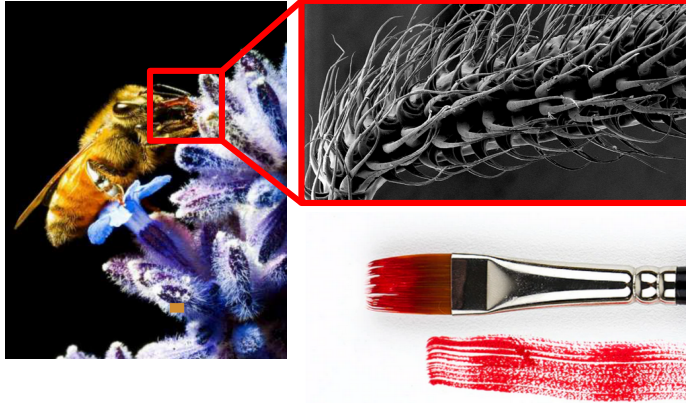
# Attraction-repulsion of elastic structures that are withdrawn from a viscous bath

Basile Radisson<sup>1</sup>, Emmanuel Siéfert<sup>1</sup>, Fabian Brau<sup>2</sup>

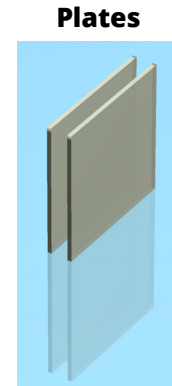
<sup>1</sup>LIPhy, Université Grenoble Alpes, CNRS, 38400 Saint-Martin-d'Hères

<sup>2</sup>Université libre de Bruxelles (ULB), Nonlinear Physical Chemistry Unit, CP231, 1050 Bruxelles, Belgium

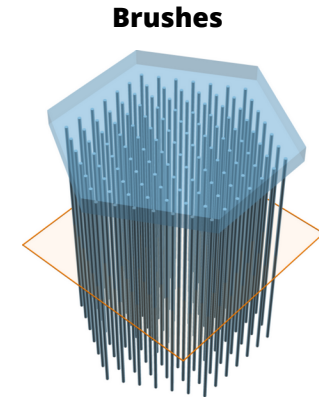
## Viscous entrainment using flexible structure assemblies



Siéfert et al. (2022)  
Bense et al. (2023)

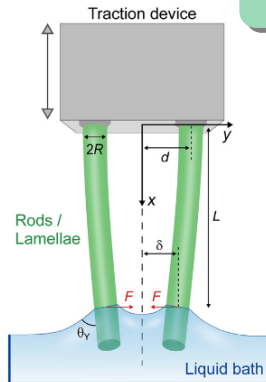


Siéfert et al. (2022)  
Radisson et al. (2025)



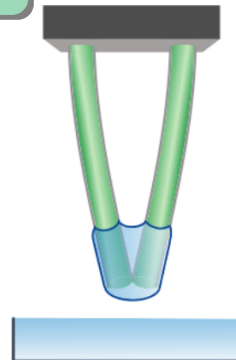
Radisson et al. (2025)

## Elastocapillarity



**Collapse**

$$L > L_C$$



## Dynamic withdrawal

Dynamic meniscus

Stronger capillary force

Fibers



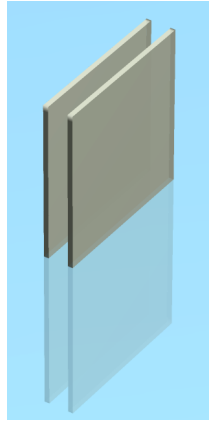
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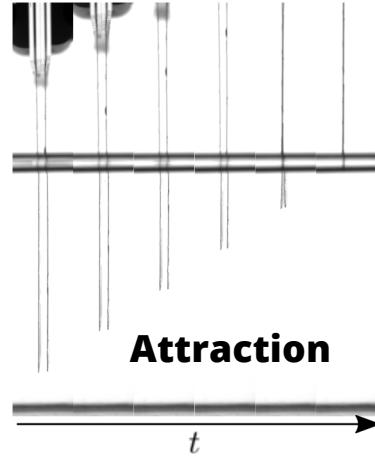
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Plates

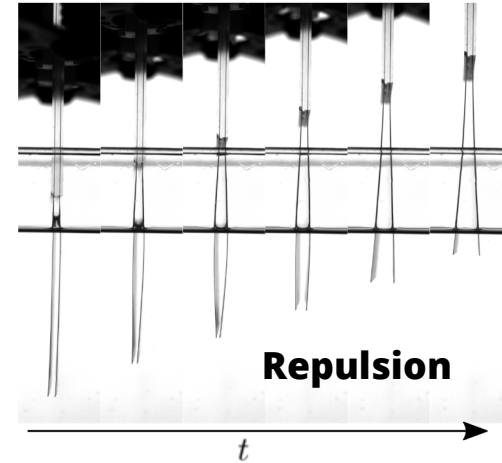


Quasistatic



Attraction

Dynamic



Repulsion

Elastocapillarity

Elastohydrodynamic

Elasto-capillaro-hydrodynamic model

2 non-linear coupled ODEs  
(see poster)



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