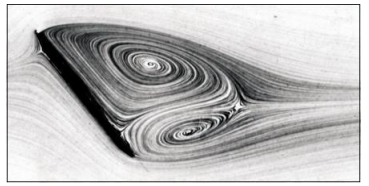
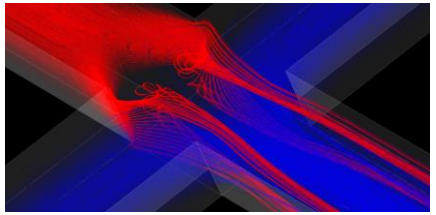
REOROM LABORATORY
UNIVERSITY POLITEHNICA OF BUCHAREST
Corneliu Balan & REOROM Team

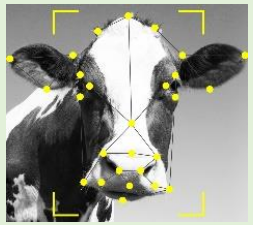
DYNAMICS OF THE INTERFACE

or

How many details do you need to characterize an object?







MUCCA – Multi-disciplinary Use Case for Convergent new Approaches to AI explainability

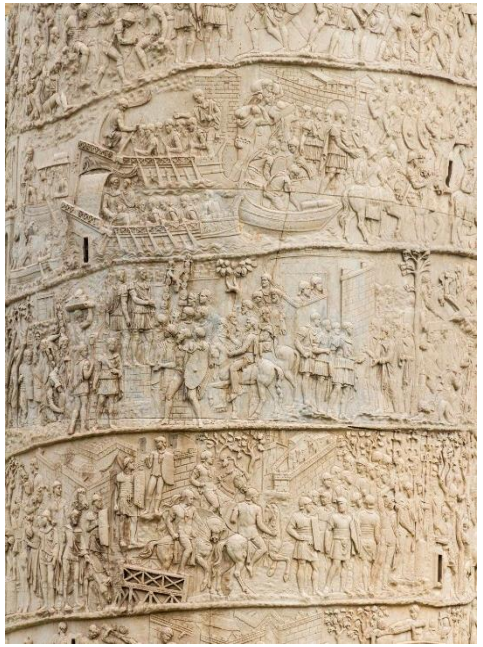
CHIST-ERA – 19 – XAI – 009 MUCCA project, by the founding of EC and UEFISCDI, grant COFUND-CHIST-ERA

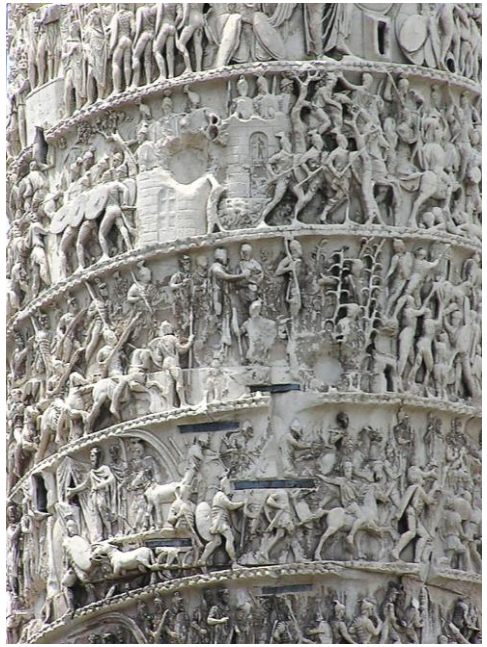
1st meeting, Rome, 11-13 April, 2022

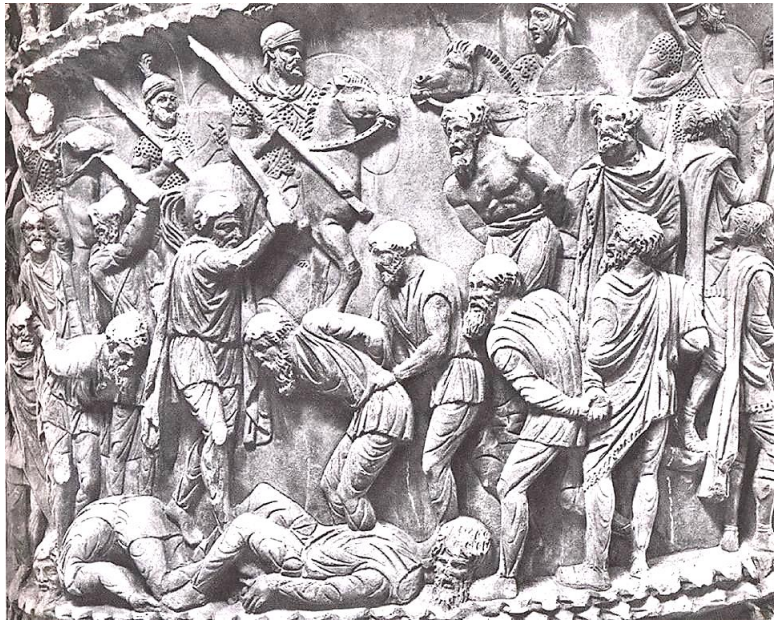
COLUMNS

Traian

Aurelian

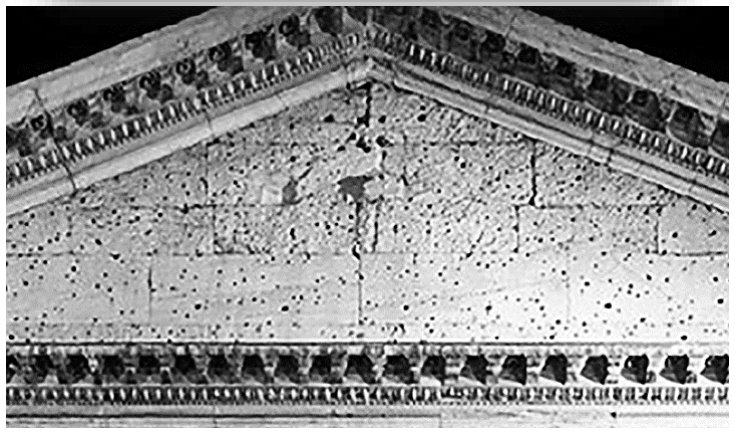


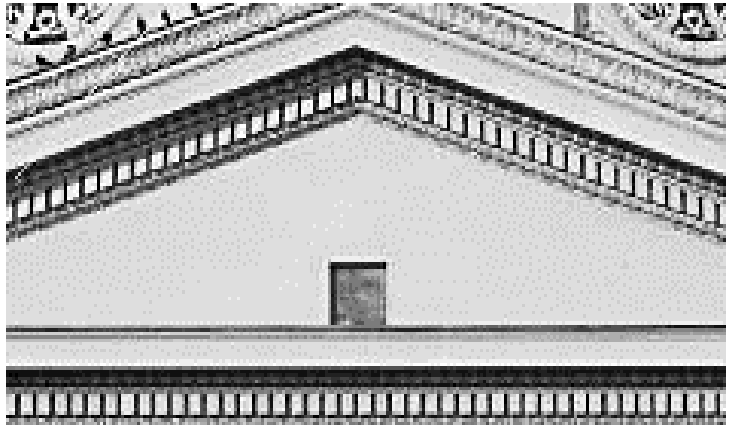


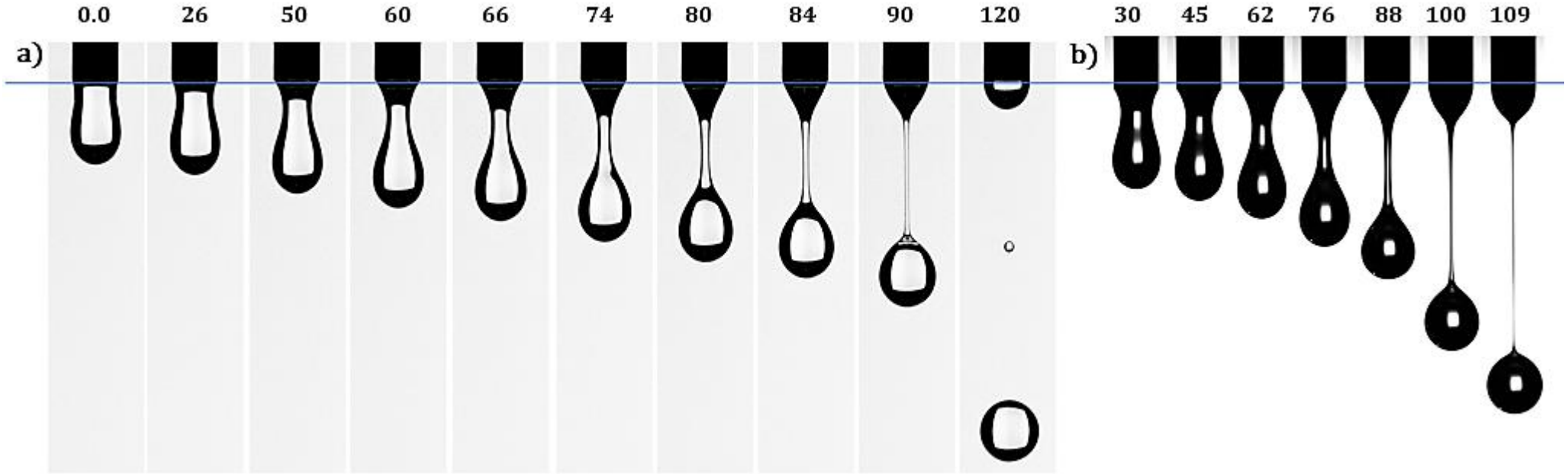



M·AGRIPPA·L·F·COS·TERTIVM·FECIT

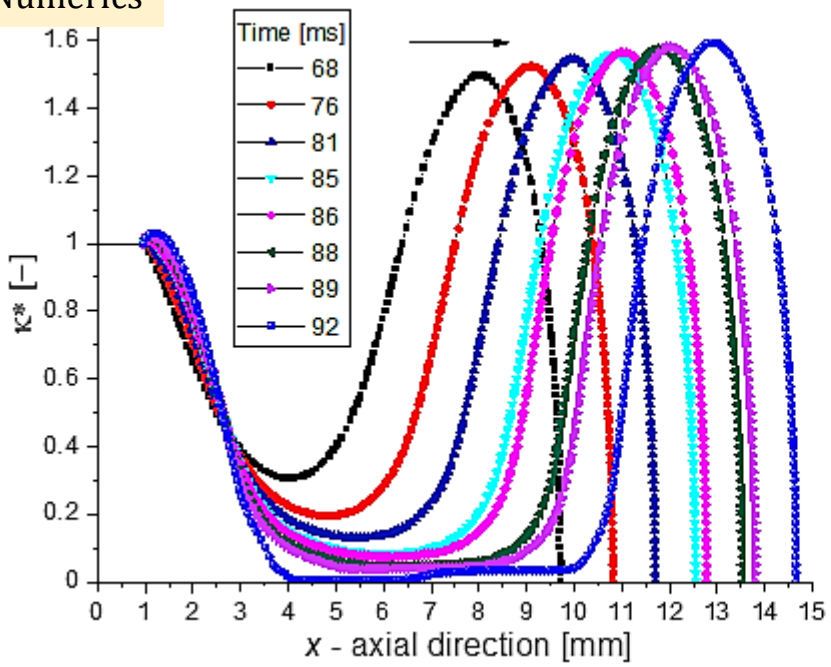

M·AGRIPPA·L·F·COS·TERTIVM·FECIT



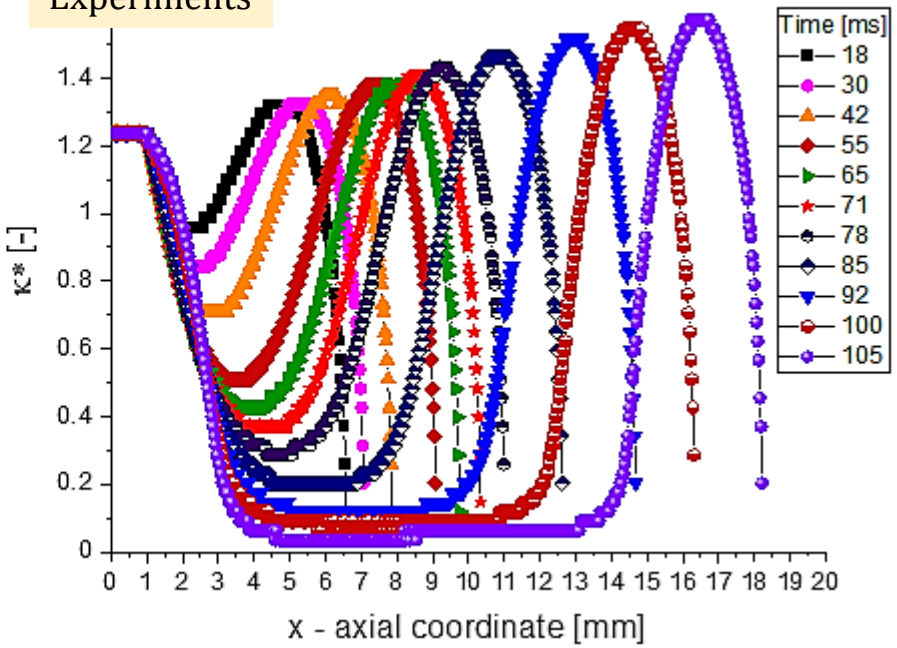


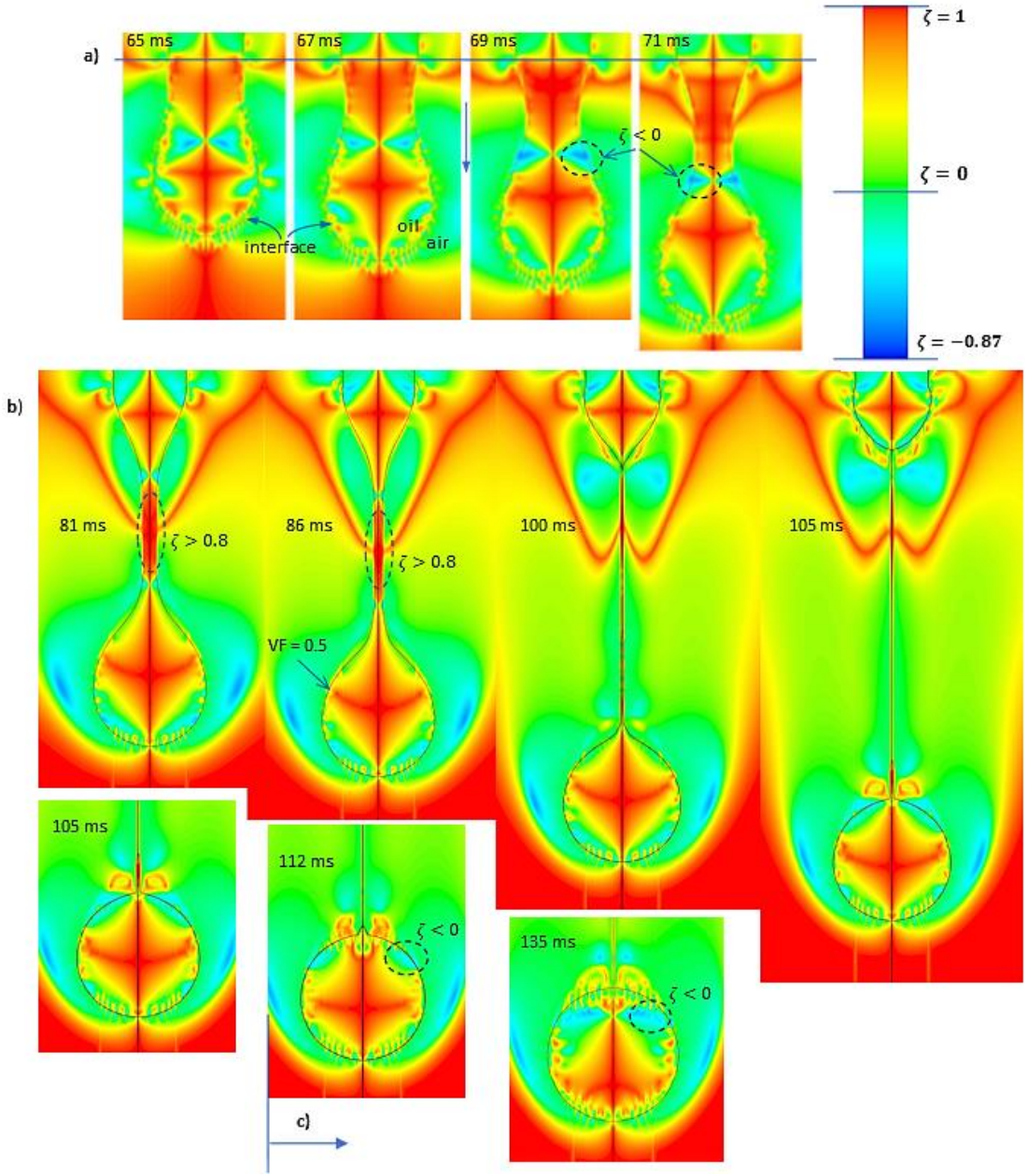


Numerics



Experiments

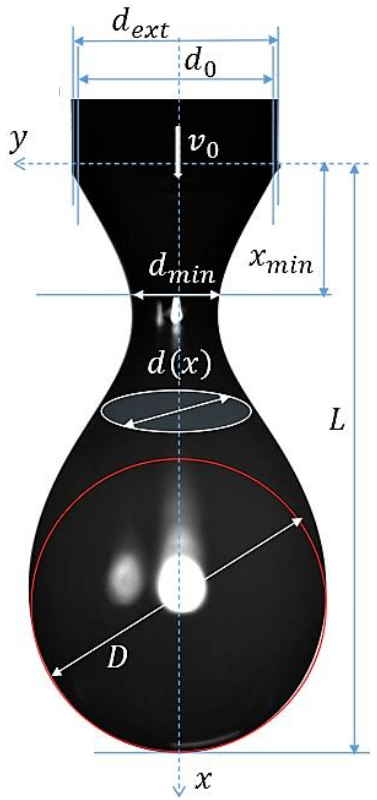




$\kappa = d_{min}/d_0$

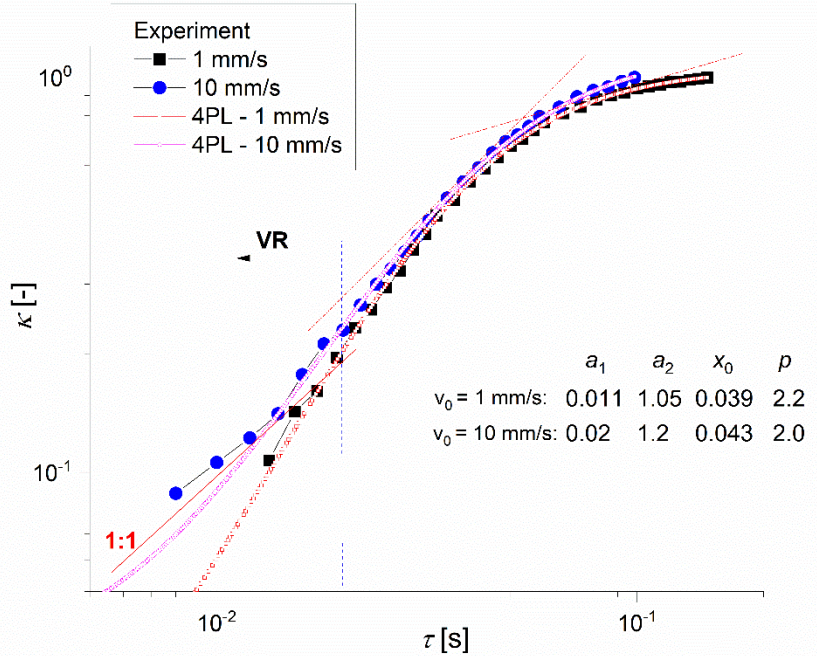
τ – relative time

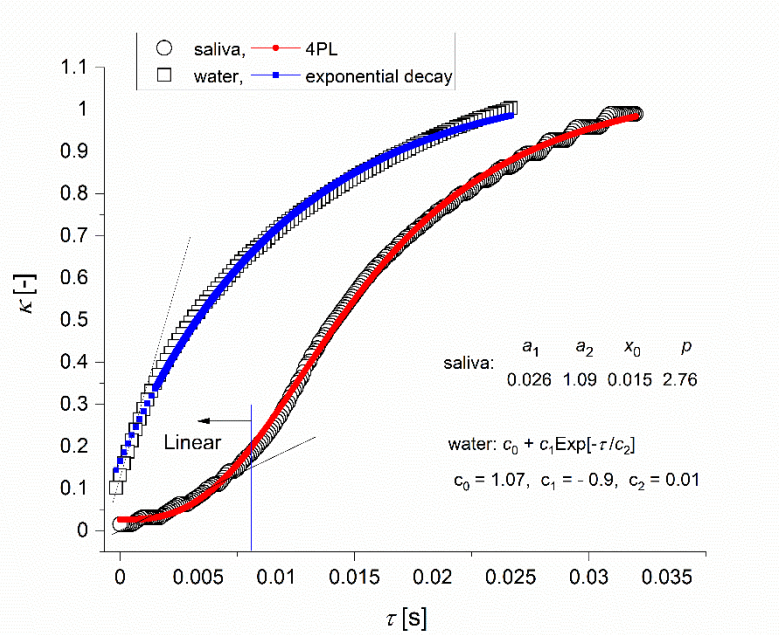
$\tau = 0$ detachment

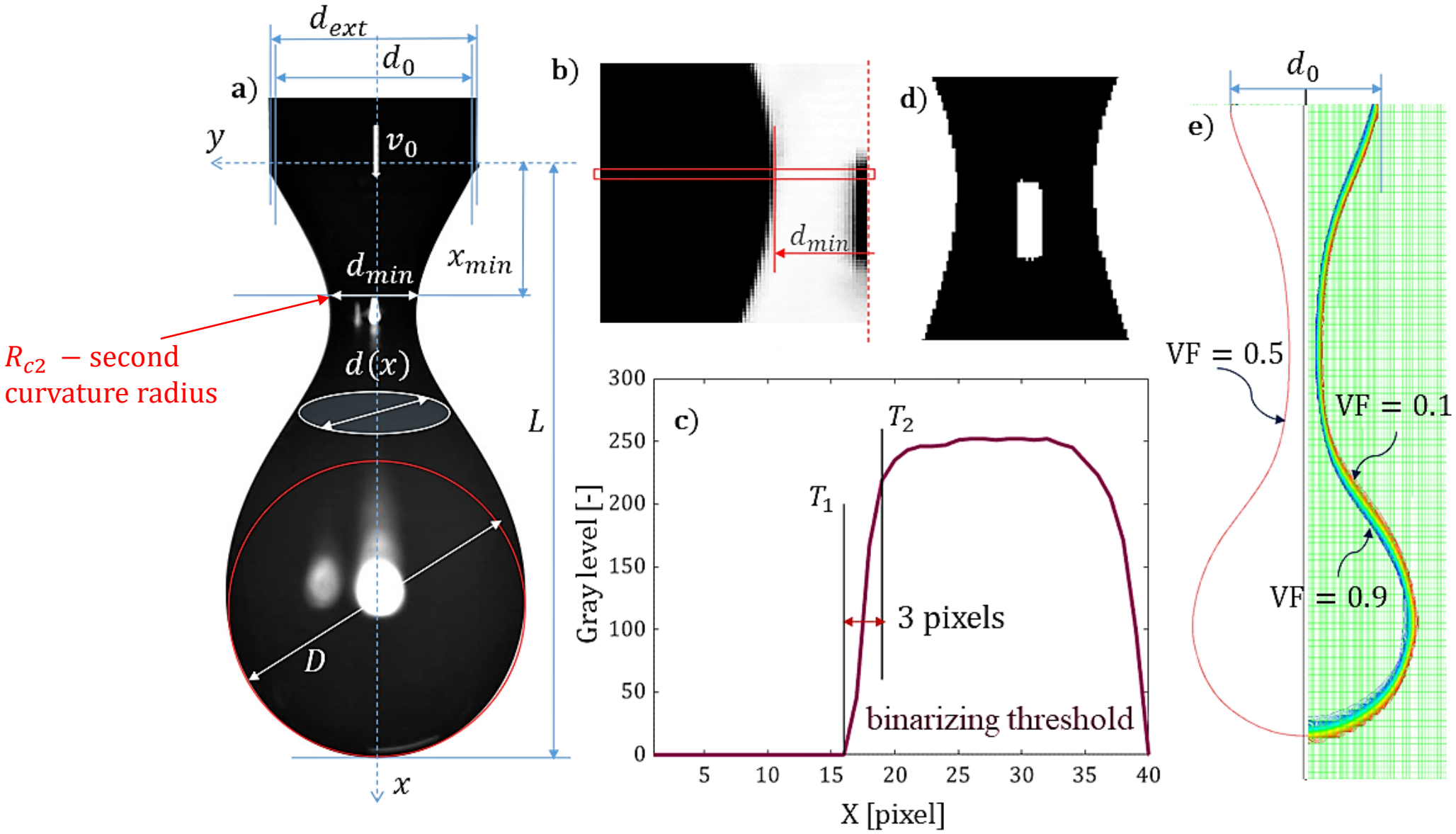


Main dimension

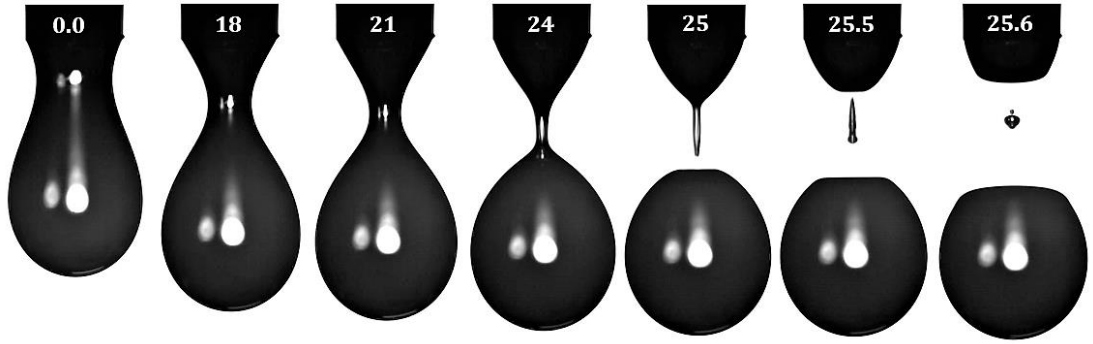
$d_{min}(\tau)$

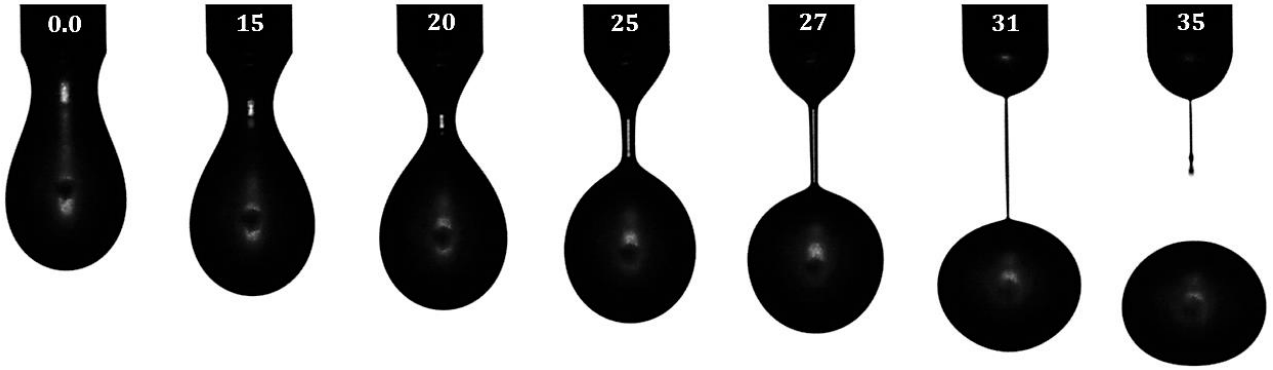


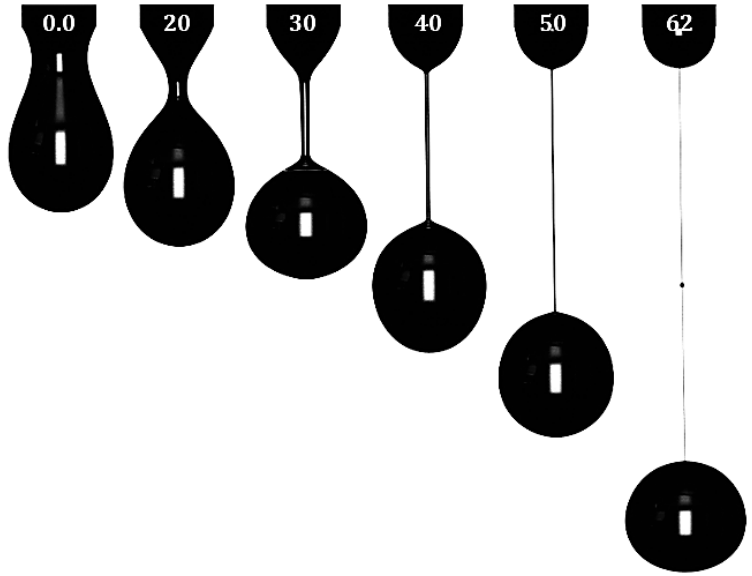


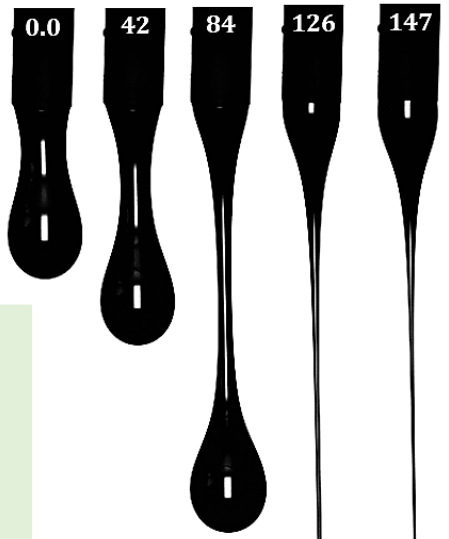


Parameters: curvature radii dependence in time



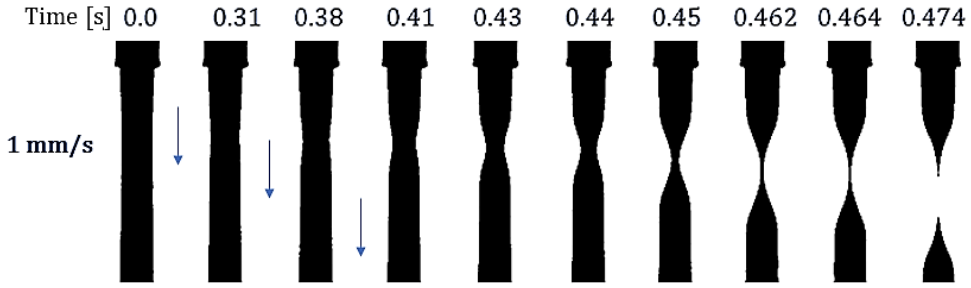


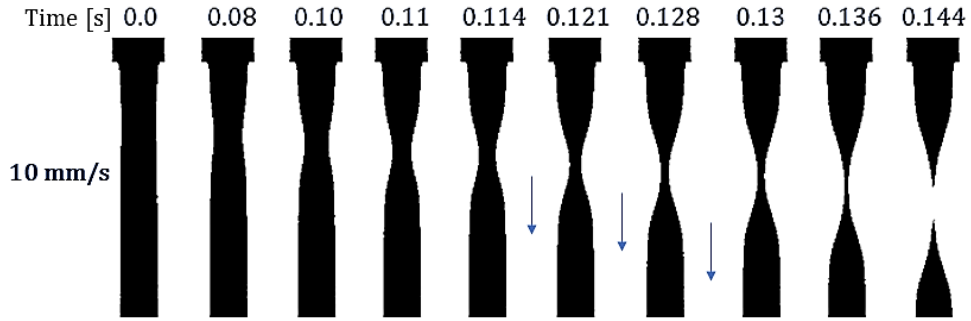




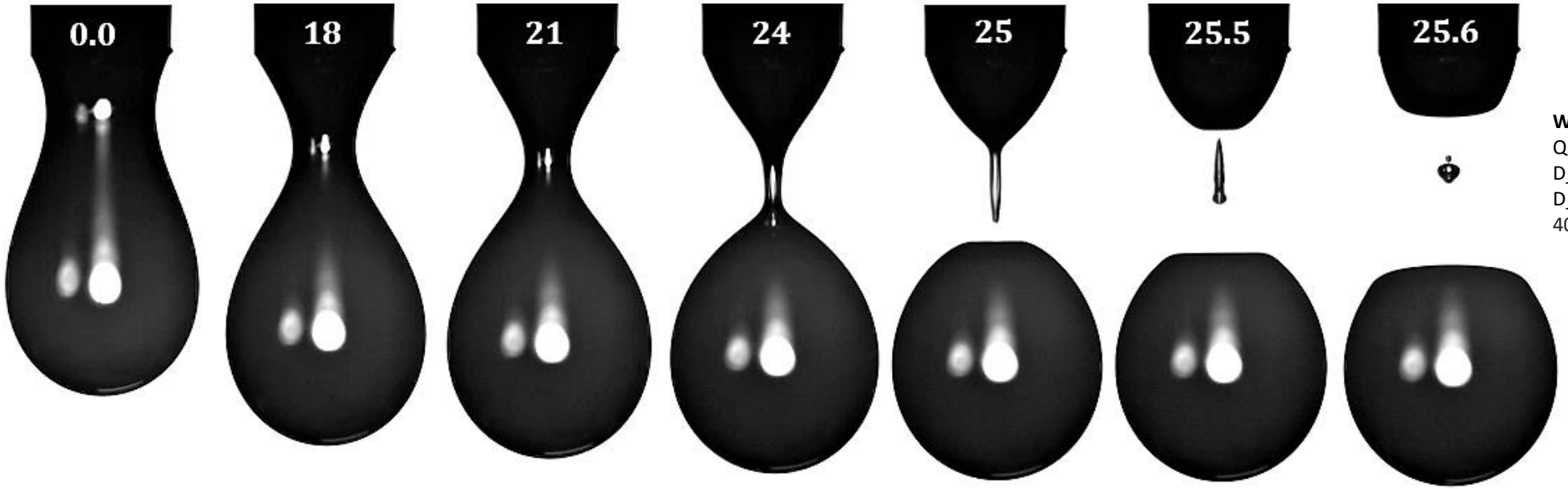
Goal of the study

To relate a series of images with pinch-off/detachment droplets with the fluid properties

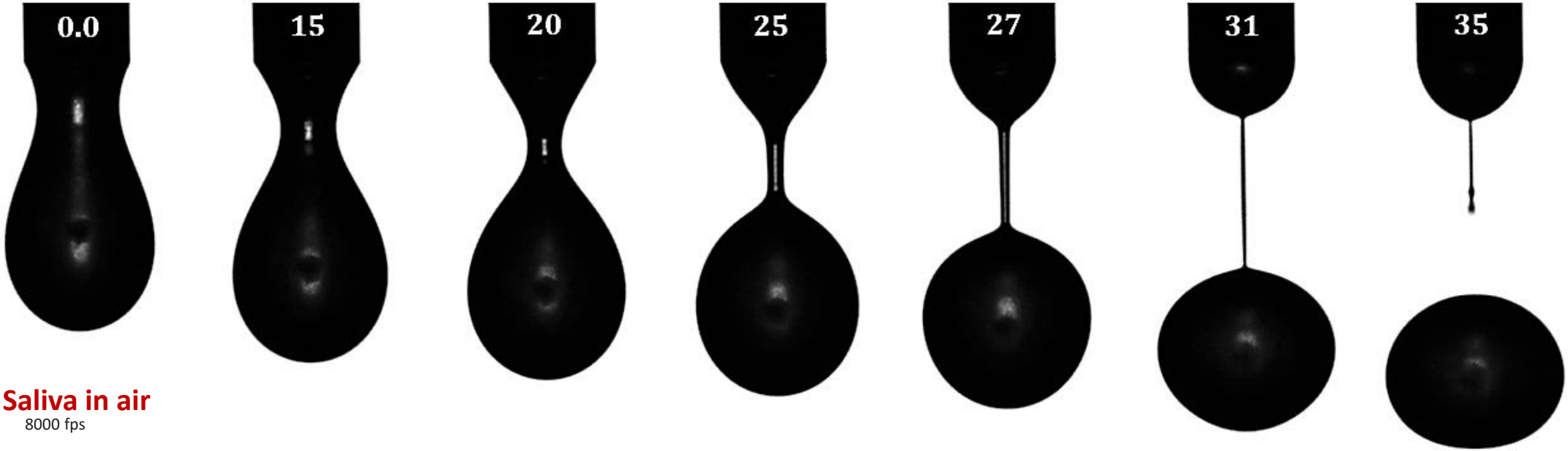




Water in air



Water in air 0.001 Pas
Q = 5 ml/min
D_ext = 2.769 ± 0.025 mm
D_int = 2.159 ± 0.076 mm
4000 fps

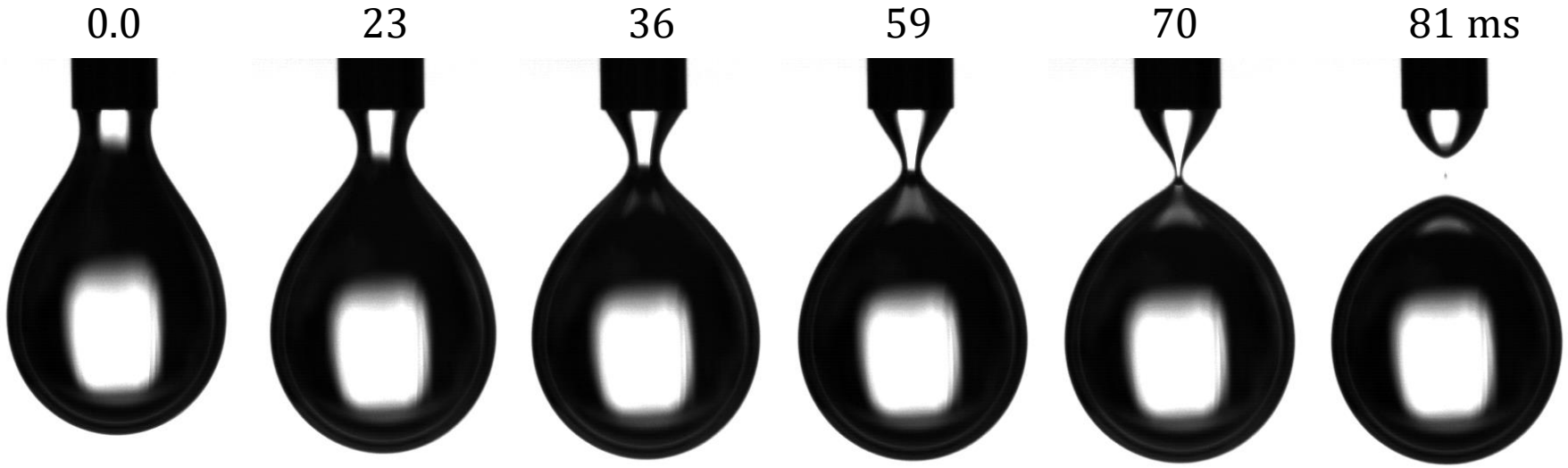


Saliva in air

8000 fps

Water in mineral oil
(0.04 Pas)
Q = 5 ml/min

D_ext = 2.769 ± 0.025 mm
D_int = 2.159 ± 0.076 mm
4000 fps



Water in silicone oil
(0.2 Pas)
Q = 15 ml/min

D_ext = 2.769 ± 0.025 mm
D_int = 2.159 ± 0.076 mm
2000 fps