



Elastocapillary effects in double dynamic networks

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Supervisors:
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My background

Rotary Youth Exchange Program

Yuma Arizona

Bachelor degree in engineering science

**Major in applied chemistry and physics,
minor in mechanics,**

Université Catholique de Louvain

**Master degree in chemical and material
science engineering, specialization in
polymers and macro-molecules,**

Université Catholique de Louvain



Objectives and methodology

Objectives:

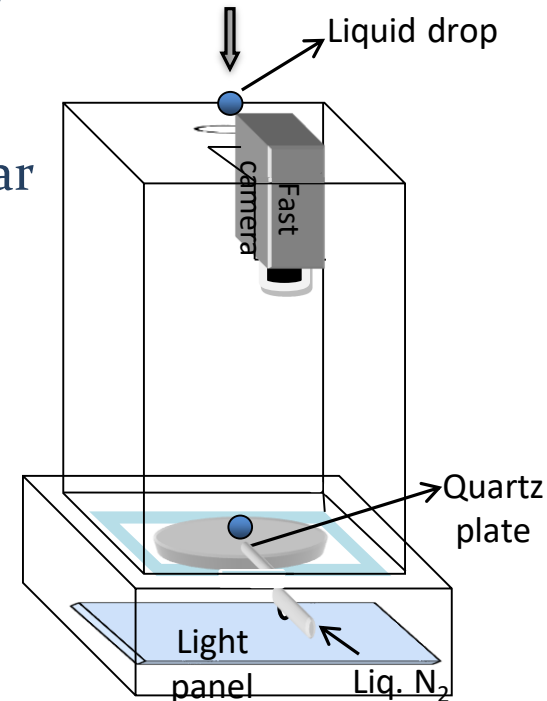
- Study of the **double dynamic networks behavior** as a function of the lifetime and elastic modulus of the networks constituting the latter.
- Understand and rationalize the impact of the double dynamic on the **elasto-capillary effect** in said networks.
- **Relate** these effects to the **nonlinear response** in shear or other flows of the double dynamic networks and to **the adhesive properties**.

Methodology:

Sample preparation

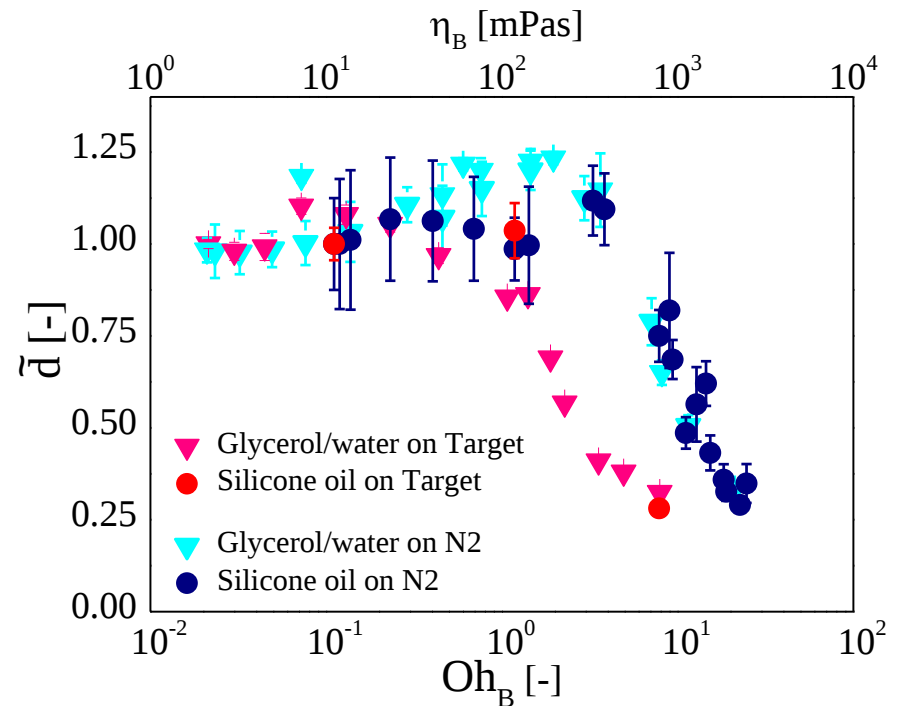
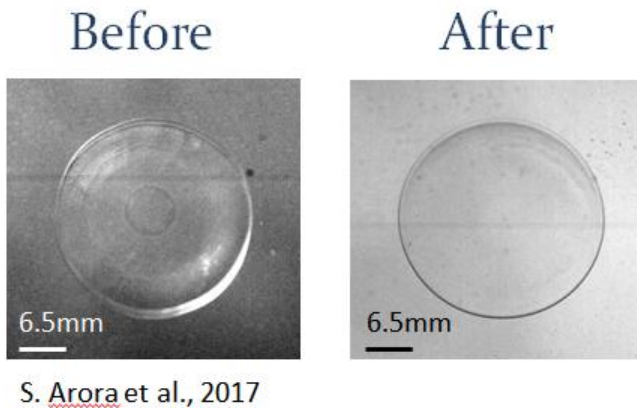
Rheological characterization

Drop impact using the inverse of Leidenfrost effect



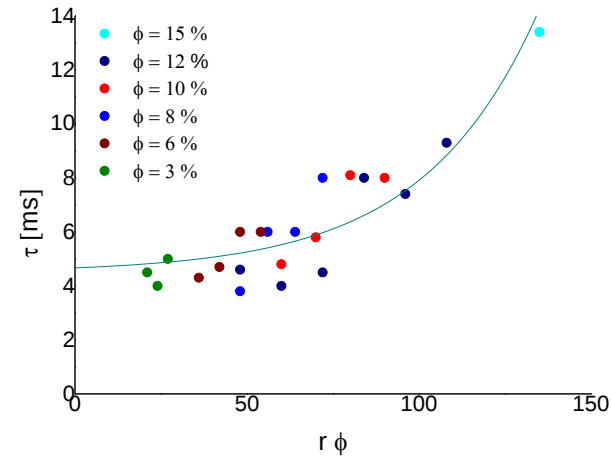
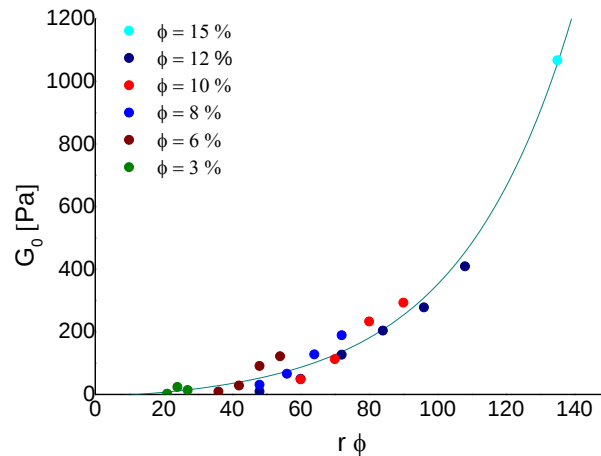
Results

Improvement and characterization of our setup allowing the study of drop impact dynamic with minimized shear dissipation.

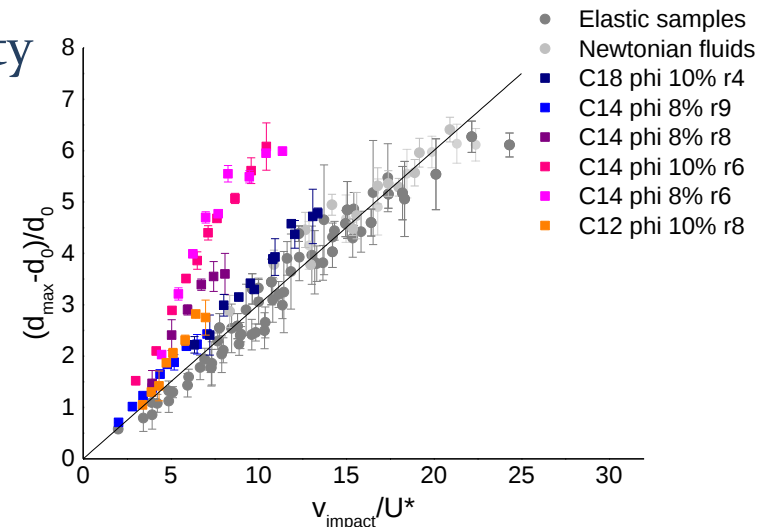


Results

Formulation and test of several transient networks to identify the best samples that could exhibit transient elastocapillary effects.



Study of the effect of the impact velocity on the dynamic of the impact of these transient Networks.



Training and secondment

Training:

- Safety in work environment
- Rheology measurement
- Data analysis
- Course on the Basics of ImageJ (Image treatment software)

Secondment:

Industrial secondment at DSM, Geleen, Netherlands

Academic secondment at FORTH, Heraklion, Crete

Dissemination and Outreach activities



esr.dodynet

- Participation to Barcelona and Montpellier days in Montpellier, July 2018
- Part of the organisation of the Laboratoire Charles Coulomb PhD day, November 2018
- Seminar for the soft matter team of the Laboratoire Charles Coulomb, November 2018

To come

- Soft matter and Glass days of the laboratoire Charles Coulomb, Montpellier May 2019
- Annual Congress GFR, Montpellier October 2019
- International Congress on Rheology, Rio de Janeiro August 2020 7



Thank you for your
attention

