Proposal for Master thesis:
The physics of soap films: birth, dynamics and popping

Soap films in confined environments

Soap films are fascinating objects with extraordinary properties, which may be exploited in a variety of technological applications and inspire new engineering design [1]. In this view, understanding the phenomena regulating their generation from soapy solutions and their dynamics is key for engineering design. This thesis focuses on the proper understanding of the physical-chemical aspects regulating soap film formation, and on the set-up of an **experimental** apparatus for film generation and dynamics inside channels [2]. Experimental tests will be performed in different conditions, to understand how different parameters affect their behaviour. The results will finally allow a better understanding and control of the soap films towards engineering exploitation.

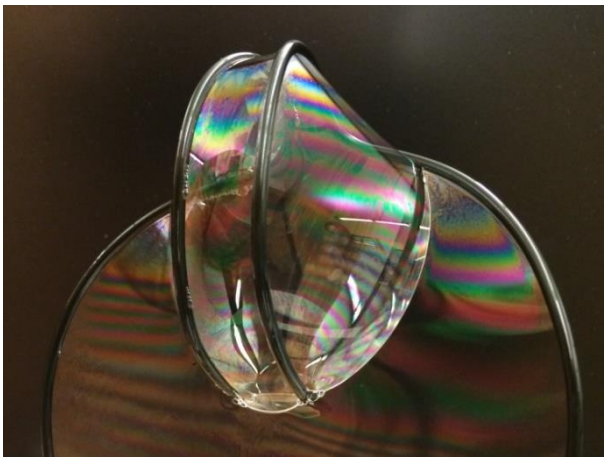

Figure 1: Soap films in a metal rod. Figure taken from [2].

References

[1] Sofia project: https://sofiaproject.eu/
[2] Figure taken from: Phys.org

Keywords

Experimental activity; Soap films; Fluid dynamics

Supervisor

Luca Bergamasco, Politecnico di Torino (DENERG) - luca.bergamasco@polito.it
Eliodoro Chiavazzo, Politecnico di Torino (DENERG) - eliodoro.chiavazzo@polito.it

Host laboratory

Multi-Scale Modeling Laboratory - http://www.polito.it/small/

Requirements

Interest for the topic and attitude to experimental work is required.
Friendliness with MATLAB / Excel for post-processing of the experimental results.