



Faraday wave as bottom to top approach to pattern liquid crystal network

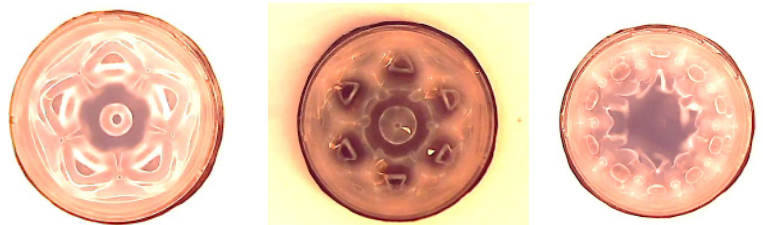
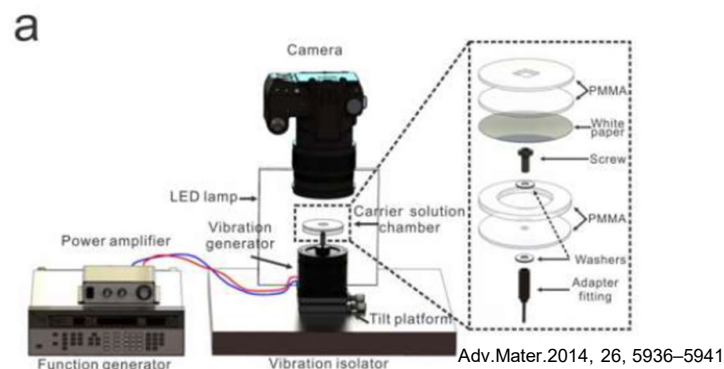
Jacques Peixoto

Introduction

The anisotropic response of liquid crystal is one of the main features to achieve a broad range of applications. Multiple approaches exist to obtain controllable patterns. Unfortunately, the scaling up or the lack of reproducibility makes the further step complex to reach. Following this idea, a simple bottom-to-top approach could be an interesting candidate to overcome that problem.

Project summary

Study the non-linear behavior of liquid crystal upon mechanical vibration. Distinguish different phases and the range of stability. The chemistry of the mixture combined with the nature of the wave will be studied in order to optimize the overall system. Post photopolymerization the system will be studied for its mechanical properties.



Project goals

- Obtention of 2D standing waves. (Variables: Frequency, Amplitude, Viscosity, Container geometry)
- Freezing the dynamic system by photopolymerization.
- Study of the dynamic of the coating after polymerization upon stimulus.

Contact information

Jacques Azevedo Peixoto, j.a.peixoto@tue.nl, STO 0.27.