31st I²plus Seminar

Schedule: 16:00-17:30, Mar. 26th (Tue) , 2019
Place: ME Meeting Room,. 2F, Bldg #2, Noda Campus, TUS
Speaker: Prof. Ranga Narayanan
(Department of Chemical Engineering, University of Florida)

Faraday Instability at Liquid-Fluid Interfaces- Physical Phenomena, Mathematical Modeling, Experimental Evaluation

Resonance driven instability or Faraday instability occurs when vertically stacked fluid bilayers are subject to periodic forcing in a direction that is normal to their common interface. The forcing can arise from several means, for example, by mechanical motion, by acoustic means, or even via electrostatic fields. The instability at the interface, which is manifested by ordered patterns, has its origins in the resonance between the imposed frequency and the system's natural frequency. Our talk will focus on a comparison between theory and experiments showing remarkable agreement between the two.

We also show how and why electrostatic forced resonance is an excellent candidate to determine interfacial tension between fluids such as liquid semi-conductors and encapsulants.

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