



Chemical Engineering Special Seminar

Conference room 108, Wolfson Department of Chemical Engineering

January 19th 2016, Tuesday, 11:30

Prof. Rafael Tadmor

Dept. of Chemical Engineering, Lamar University
Lady Davis Visiting Professor, Technion, Israel Institute of Technology

Adhesion at the Solid-Liquid Interface

Fields that require knowledge about adhesion interactions at the solid-liquid interface span over a wide spectrum from biotechnological issues such as liquid adhesion to skin tissues, insect feet adhesion to solids, or contact lenses to tear fluid adhesion; filtration issues such as membrane fouling and membrane affinity to different liquids; oil and gas extraction where one needs knowledge of the adhesion of the oil and brine to the rock; fuel cells in which droplets are formed on the electrodes and need to be considered in the system's design; classic chemical engineering industry such as drop adhesion to the mist eliminators in flash drums, or to heat exchangers; and classic surface science such as nano-structured surfaces, self cleaning surfaces, and general wetting phenomena.

In this talk we will present a novel tool, the Centrifugal Adhesion Balance, that allows for the first time to measure the adhesion between a liquid drop and a solid substrate. We will demonstrate both lateral and normal adhesions as well as the way they influence each other.

If time allows, we will proceed to compare drops that resist motion with drops that move spontaneously, on their own accord, increasing their gravitational potential energy.

Refreshment served since 11:15