The Department of Civil and Environmental Engineering at the University of Houston presents...

The CIVE 6111 Graduate Seminar Series

Normal and Lateral Adhesion

Dr. Rafael Tadmor
Mechanical Eng., Ben Gurion University, Beer Sheva, Israel
Chemical Eng., Lamar University, Beaumont, Texas

Friday, January 25, 2019
2:45PM-3:45PM
Classroom Business Building (CBB) Room 118

Abstract
In this talk, we establish a tool for direct measurements of the work needed to separate a liquid from a solid. This method mimics a pendant drop that is subjected to a gravitational force that is slowly increasing until the solid–liquid contact area starts to shrink spontaneously. The work of separation is then calculated in analogy to Tate's law. The values obtained for the work of separation are independent of drop size and are in agreement with Dupré's theory, showing that they are equal to the work of adhesion. We then move to describe the principles for measuring the lateral adhesion as opposed to the normal one.

Bio
Dr. Rafael Tadmor earned his B.Sc. (1992) and M.Sc. (1994) in Chemical Engineering from the Technion (Israel) and his Ph.D. (2000) from the department of Materials and Interfaces, at the Weizmann Institute of Science (Israel). He then moved to UC Santa Barbara where he was a post doc with Prof. Jacob Israelachvili at the department of Chemical Engineering, following which he joined (2003) the department of Chemical Engineering (now the Dan F. Smith Department of Chemical Engineering) at Lamar University. Rafael won a number of awards and recognitions throughout his career. Most notable include his 2009 PRL paper (103, 266101) which was recommended for reading across disciplines by the PRL editorial; in 2010 he won the Distinguished Faculty Lecturer Award of Lamar University. This was the first (and so far, the only) time that an engineering professor receives this award. In 2011 he won the University Scholar Award (Lamar University); in 2015 he was named: Simmons Distinguished Faculty Fellow; in 2016 he was awarded the Lady Davis Visiting Professor, at the Technion, Israel Institute of Technology; in 2017 he was named Jack Gill Faculty Fellow (Lamar University); In January 2019 his 2017 Langmuir paper (33, 3594) was recognized as "highly cited" by the Web of Science. In 2017 he joined the Mechanical Engineering department at Ben Gurion University (Israel), where he is a full professor.