The Materials Science behind Sticky Tape

Pressure sensitive adhesives (PSAs) are well known to most people who use them daily in forms of tapes, labels, and the ubiquitous Post-It(TM) Note! However, these materials also have numerous industrial applications not widely known by the general public. The design of such materials to meet rigorous performance criteria is an area that benefits from fundamental understanding of the viscoelastic properties of these materials, the polymer science behind the control of such properties, and the fracture mechanics relating the properties of the interface and the material to the debonding process. In this seminar, the essential characteristics of PSAs as identified by Carl Dahlquist and developed by many others will be described as well as attempts to model the peel performance as a function of speed and temperature from the rheological master curves of the adhesives. We will conclude with some of the newer applications and unsolved problems in this area.

Tuesday, Oct. 8, 2019
Lecture at 4:00 p.m.
Room 1610, Engineering Hall