



Adhesion Science Short Course

May 15 - 19, 2023 in Blacksburg, Virginia

A lecture plus hands-on laboratory short course taught by Virginia Tech professors, for all those with interests in adhesion or producing or utilizing adhesives and sealants

mii.vt.edu/outreach/short-courses/adhesion-science.html

Explore, Understand, Apply



Review adhesion basics: relevant polymer, adhesion, and characterization terminology and concepts

Understand significance of surfaces for good adhesion: surface energies; adsorption on surfaces; surface preparation methods; analysis of failure surfaces; applications

Learn how polymer properties affect adhesion: adhesive chemistries; polymer parameters that control behavior; elastomers, glasses, and semi-crystalline polymers; time-temperature dependence; free volume and physical aging

Gain understanding of polymer characterization methods: DSC; DMA; adhesive, sealant, and waterborne rheology; TTSP and accelerated characterization applications

Understand importance of stresses, strength, and fracture: shear and peel stresses in common joints; strength and fracture; basic design concepts

Explore appropriate test methods for adhesive joint characterization: methods for strength and fracture resistance; interpreting results; durability characterization

Gain insights about special applications: PSAs; wood adhesives; soft matter adhesion

Apply concepts by exploring case studies: Bring your own adhesion challenge to share or participate in discussing case studies raised by attendees



Standard registration fee: \$1,950
Location: The Inn at Virginia Tech
with lab sessions on the Virginia Tech
Campus in Blacksburg, VA