

Adhesion Science Short Course Program

May 20-24, 2019

Hilton Garden Inn

Blacksburg, Virginia

(please note: schedule is subject to change)

Monday, May 20

7:30 - 8:00 a.m.	Registration <i>Hilton Garden Inn</i>
8:00 - 8:15 a.m.	Short Course Introduction
8:15 - 9:25 a.m.	Introduction to Adhesion, Mechanical Properties, and Failures <i>D.A. Dillard</i>
9:25 - 9:40 a.m.	Break
9:40 - 10:50 a.m.	Designing Adhesives using the Polymer Parameters <i>T.E. Long</i>
10:50 - 11:05 a.m.	Break
11:05 a.m. - 12:15 p.m.	Surface Energy <i>A.R. Esker</i>
12:15 - 1:15 p.m.	Lunch <i>Hilton Garden Inn</i>
1:15 - 2:25 p.m.	Understanding Stresses in Adhesive Bonds <i>D.A. Dillard</i>
2:25 - 2:40 p.m.	Break
2:40 - 3:50 p.m.	Viscoelasticity: its Importance and its Applications to Adhesives <i>M.J. Bortner</i>
3:50 - 4:05 p.m.	Break
4:05 - 5:15 p.m.	Surface Analysis and Preparation <i>A.R. Esker</i>
5:15 - 7:30 p.m.	Dinner (<i>on your own</i>)
7:30 - 9:00 p.m.	Fracture Mechanics Applications to Adhesives and Adhesion <i>D.A. Dillard</i>



Tuesday, May 21

- 8:00 - 9:10 a.m. **Adhesive Classes and Chemistries**
J.B. Matson
- 9:10 - 9:25 a.m. **Break**
- 9:25 - 10:35 a.m. **Adhesive, Sealant, and Waterborne Rheology I**
R.M. Davis
- 10:35 - 10:55 a.m. **Van shuttle to labs**
- 10:55 a.m. - 12:25 p.m. **Red Lab Team (a) -- Peel Testing of Adhesives**
T.E. Long & J.B. Matson (MMDC, ICTAS II)
- Red Lab Team (b) -- PhotoDSC**
T.E. Long & J.B. Matson (MMDC, ICTAS II)
- Blue Lab Team -- Surface Properties**
A. R. Esker (1002 Hahn South)
- 12:25 - 1:40 p.m. **Lunch**
Hilton Garden Inn
- 1:40 - 2:50 p.m. **Test Methods for Adhesion**
D.A. Dillard
- 2:50 - 3:10 p.m. **Van shuttle to labs**
- 3:10 - 4:40 p.m. **Blue Lab Team (a) -- Peel Testing of Adhesives**
T.E. Long & J.B. Matson (MMDC, ICTAS II)
- Blue Lab Team (b) -- PhotoDSC**
T.E. Long & J.B. Matson (MMDC, ICTAS II)
- Red Lab Team -- Surface Properties**
A. R. Esker (1002 Hahn South)
- 4:40 p.m. **Dinner (on your own)**



Wednesday, May 22

- 8:00 - 9:10 a.m. **Adhesive, Sealant, and Waterborne Rheology II**
R.M. Davis
- 9:10 - 9:25 a.m. **Break**
- 9:25 - 10:35 a.m. **Free Volume, DSC and Intro to Time-Temp Superposition TTS**
M.J. Bortner
- 10:35 - 10:55 a.m. **Van shuttle to labs**
- 10:55 a.m. - 12:25 p.m. **Red Lab Team** -- **Rheological Testing**
R. M. Davis & M.J. Bortner (240 Kelly Hall)
- Blue Lab Team** -- **Adhesive Bond Testing**
D. A. Dillard (125 Norris Hall)
- 12:25 - 1:40 p.m. **Lunch**
Hilton Garden Inn
- 1:40 - 2:50 p.m. **Surface Analysis and Characterization**
A.R. Esker
- 2:50 - 3:10 p.m. **Van shuttle to labs**
- 3:10 - 4:40 p.m. **Blue Lab Team** -- **Rheological Testing**
R. M. Davis & M.J. Bortner (240 Kelly Hall)
- Red Lab Team** -- **Adhesive Bond Testing**
D. A. Dillard (125 Norris Hall)
- 5:00 - 6:30 p.m. **Introduction to Dynamic Mechanical Methodology and Application to Adhesives**
M.J. Bortner
- 6:30 p.m. **Dinner (on your own)**





Thursday, May 23

- 8:00 - 9:10 a.m. **Adhesion Challenges**
D.A. Dillard
- 9:10 - 9:25 a.m. **Break**
- 9:25 - 10:35 a.m. **Demo Interpretation (All)**
Bonding-Failure Analysis -- A. R. Esker
- 10:35 - 10:40 a.m. **Group Picture**
- 10:40 - 10:50 a.m. **Break**
- 10:50 - 11:50 a.m. **Frontiers in Adhesion Science**
MII Faculty
- 11:50 a.m. - 12:50 p.m. **Lunch**
Hilton Garden Inn
- 12:50 - 2:00 p.m. **Adhesive, Sealant, and Waterborne Rheology III**
R.M. Davis
- 2:00 - 2:15 p.m. **Break**
- 2:15 - 3:25 p.m. **Wood: Our Critically Important Human Resource**
C.E. Frazier
- 3:25 - 3:40 p.m. **Break**
- 3:40 - 4:40 p.m. **PSA Performance and Testing**
D.A. Dillard
- 6:30 - 8:00 p.m. **Group Dinner**

Friday, May 24

- 8:00 - 8:55 a.m. **Phase Separation and Interdiffusion**
A.R. Esker
- 8:55 - 10:00 a.m. **Demo Interpretation (All)**
Fracture Analysis -- D.A. Dillard
Master Curves and Superposition -- D.A. Dillard / M.J. Bortner
- 10:00 - 10:25 a.m. **Case Study Overview (All)**
- 10:25 - 10:35 a.m. **Break**
- 10:35 - 11:35 a.m. **Case Study Team Solutions (All)**
- 11:35 - 12:00 noon **Wrap-up; collect evaluations; receive certificates**

