Advances in Adhesives, Adhesion Science, and Testing

Dennis Damico, editor

ASTM Stock Number: STP1463

ASTM International
100 Barr Harbor Drive
PO Box C700
West Conshohocken, PA 19428-2959

Printed in the U.S.A.
Foreword

The Symposium on Advances in Adhesives, Adhesion Science, and Testing was held in Washington, DC on October 4, 2004. The Symposium was sponsored by ASTM Committee D14 on Adhesives. The chairman was Dennis Damico. He also served as editor for this publication.
## Contents

Overview ................................................................. viii

Adhesive Bonding and Performance Testing of Bonded Wood Products—C. R. FRIHART ..... 1


SED Method of Measuring Yield Strength of Adhesives and Other Materials—A. LENWARI, P. ALBRECHT, AND M. ALBRECHT ........................... 35

Characterizing Dynamic Fracture Behavior of Adhesive Joints Under Quasi-Static and Impact loading—J. C. SIMÓN, E. JOHNSON, AND D. A. DILLARD ........ 53

Interfacial Diffusion of Fluids in Pressure Sensitive Adhesives—E. P. O'BRIEN, T. C. WARD . . . 72

Advanced Methods of Coating Adhesion Testing—N. V. GITIS, J. XIAO, AND M. VINOGRAĐOV ................................................................. 80


The Study of Bond Strength and Bond Durability of Reactive Powder Concrete—M-G LEE, C-T CHIU, AND Y-C WANG ................................................. 104


New Technique for Measuring Extended Viscosity Ranges—Gel Times, Pot Life, or Cure Monitoring—with Programmable Rotational Viscometers or Rheometers—D. F. MOONNAY ................................................................. 129
Overview

This symposium focused on new adhesives particularly from the perspective of newer test methods emerging to better determine adhesive reliability. Areas of particular interest included:

- Test methods and specifications that improve the ability to determine long-term bond durability,
- Bonding and debonding of wood products
- Test methods that generate more meaningful material information on adhesive reliability
- Method of measuring viscoelastic behavior of adhesives
- Accurate method of measuring yield strength of adhesives and other materials,
- Characterizing fracture properties of adhesive joints under impact loading conditions,
- Fracture mechanics applied to adhesives joints,
- Coating adhesion testing,
- Diffusion of fluids in pressure sensitive adhesives.

Information presented is of value to design engineers and those with interest in advanced test methods for adhesive validation.

The symposium also had a global focus more than ever before in bringing speakers from the U.S., Taiwan, and Republic of China.

Dennis Damico
Lord Corporation
Erie, Pennsylvania
Symposium Chairman and Editor