

Page 9	8:30	Hysteresis of Viscoelastic Spheres in Contact: Simulation Yu-Yun Lin and Chung-Yuen Hui
Page 12	9:00	The Adhesive Contact of Viscoelastic Spheres Guillaume Haiat and Etienne Barthel
Page 15	9:30	Adhesion Hysteresis in Viscoelastic Contacts William N. Unertl, Manish Giri and Douglas B. Bousfield
	10:00	Break
Page 18	10:30	Dynamics of Nanoscale Adhesive Contacts to Polymers S. A. Syed Asif, Brian Cassella, Richard Colton and Kathryn Wahl
Page 19	11:00	Adhesive and Mechanical Properties of Two-Component Latex Films Elizabeth Fabbroni, Kenneth Shull and A. C. I. A. Peters
Page 21	11:30	Viscoelastic Contact Mechanics and Adhesion of Periodically Roughened Surfaces Chung-Yuen Hui, Costantino Creton and Y. Y. Lin

Monday, February 26, 2001

Contact Mechanics in Adhesion Science II

Dominion Room

Session Chairs: William Unertl

Page 23	1:00	Adhesive Contact of Elastic-Plastic Spheres K. L. Johnson
Page 26	1:30	Mechanical Behaviour of Confined Films Martin Strobel, Manfred Buck, Michael Himmelhaus and Michael Grunze
Page 29	2:00	JKR Contact Mechanics as a Practical Tool for Detecting Organic Contamination on Aluminum Dara Woerdeman, John A. Emerson and Rachel K. Giunta
Page 32	2:30	Experimental and Numerical Investigations of Elastica Loop Contact Jia Qi, David Dillard, Raymond Plaut and John G. Dillard
Page 35	3:00	Modeling the Effect of Work of Adhesion on the Contact Area between a Pressurized Blister and a Rigid Substrate Sally White, David Dillard and Raymond Plaut
	3:30	Break
Page 38	4:00	Nanomechanical Characterization of Polymers Using Scanning Probe Microscopes Mark Vanlandingham

Page 41	4:30	Time and Humidity Effect on the Adhesion-Induced Deformation of Submicron PSL Particles John A. Small, Eric Steel, Ahmed A. Busnaina and Jiang-Wei Feng
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5:00 **Business Meeting of the Particle Adhesion Division - *Dominion Room***

Monday, February 26, 2001

100 Years at NIST I

Rooms D-F

Session Chairs: Donald Hunston and Gale Holmes

Page 44	8:00	Standardisation of Fracture Mechanics Tests for Engineering Adhesive Joints Anthony Kinloch, B. R. K. Blackmon, M. Paraschi, H. Hadavinia and J.G. Williams
Page 47	8:30	Research on Sealant at NIST, Past and Present Chris White
Page 50	9:00	Micro and Macro Fiber-Matrix Adhesion Measurement Methods in Composite Materials Lawrence Drzal and Pedro Herrera-Franco
Page 53	9:30	Energy Release Rate for a Crack in a Tilted Block A. N. Gent and M. Razzaghi-Kashani
	10:00	Break
Page 56	10:30	Toughening Mechanisms in Rubber Modified Thermosets F. J. Guild and A. J. Kinloch
Page 59	11:00	Shear Testing of Structural Adhesives R. D. Adams
Page 62	11:30	Using Self-Assembled Monolayer Technology to Probe the Fiber-Matrix Interface G. A. Holmes, E. B. Feresenbet and D. Raghavan
Page 65	12:00	Experimental Results of a Pull-Out Test Performed with Single- and Multi-Fibre Samples A. Hampe and C. Marotzke

Monday, February 26, 2001

100 Years at NIST II

Rooms D-F

Session Chairs: Donald Hunston and Gale Holmes

Page 68	1:00	Characterization of Coating System Interphases With Phase Imaging AFM T. Nguyen, M. Vanlandingham, X. Gu, M. Giraud and R. Ryntz
Page 71	1:30	A Novel Microshear Test to Measure Dental Adhesion Joseph M. Antonucci, Walter G. McDonough, Gary Schumacher and Yasushi Shimada

Monday, February 26, 2001

Non-Destructive Evaluation

Rooms D-F

Session Chairs: Guy Davis and Philip Klemarczyk

- Page 74 2:00 **Imaging of Multi-fiber, Micro-Mechanical Testing Specimens Using Optical Coherence Tomography**
Joy Dunkers, Gale Holmes and Walter G. McDonough
- Page 77 2:30 **Detecting Degradation of Adhesive Bonds With An In-Situ Corrosion Sensor**
Guy Davis, Lorrie Krebs and Chester Dacres
- Page 80 3:00 **Dielectric Non-Destructive Examination of Aging of Adhesively Bonded Structures**
Gerald Doyle, Richard Pethrick and William Banks

3:30 **Break**

Monday, February 26, 2001

Adhesion in Electronics - Packaging and Assemblies I

Auditorium

Session Chairs: Raymond Pearson and Alan Lyons

- Page 83 8:00 **Shadow Curing of UV Adhesives**
George W. Ritter
- Page 86 8:30 **Surface Modification of Polyetheretherketone (PEEK) Films for Flexible Printed Circuit Boards**
Helmut Munstedt and Carsten Weiss
- Page 89 9:00 **Adhesion Studies of Cathode Materials in Lithium Batteries**
Masaru Sugita and Masaki Yoshio
- Page 92 9:30 **Impact Drop Testing and Finite Element Modeling of Printed Circuit Board Joints**
Donatus C. Ohanehi, Jang-Horng Yu, Shuangyan Xu, David Dillard, Didier R. Lefebvre, Rose Ann V. Schultz, Wesley Shaw and Gerry Fredrickson
- 10:00 **Break**
- Page 95 10:30 **Electroless Plating of Polymer Substrates: Interaction of Pd-Based Catalysts With Plasma or VUV-Pretreated Surfaces**
Maurice Romand, M. Charbonnier and Y. Goepfert
- Page 99 11:00 **The Adhesion of Deposited Copper to Dow Cyclotene 3022, as Determined by Microscratch Testing**
A. Sadough-Vanini, D. Q. Yang, Ludvik Martinu and Edward Sacher
- Page 101 11:30 **The Use of the Circular Blister Test in Determining the Interactions of Various Solvents at the Aluminum/Epoxy Interface**
Sean Weaver, Karthik Vaideeswaran, David Graham, and Eric Grulke

- Page 104 12:00 **Adhesion and Deformation at the Epoxy/Polyimide Interface**
Brian McAdams and Raymond Pearson

Monday, February 26, 2001

Adhesion in Electronics - Packaging and Assemblies II

Auditorium

Session Chairs: Raymond Pearson and Alan Lyons

- Page 107 1:30 **Investigations of the Adhesion of Maleic Anhydride/Cyclic Olefin Alternating Copolymers to Silicon Substrates: Improved Materials for 193-nm Lithography.**
Anthony Pasquale, Timothy Long and Robert D. Allen
- Page 110 2:00 **Investigation of A Model Epoxy Containing Silica Fillers and Silane Coupling Agents**
Sandra Henderson and Thomas Ward
- Page 113 2:30 **Characterizing the Adhesion of Pressure Sensitive Adhesive Tapes Using the Shaft Loaded Blister Test**
Emmett O'Brien, Thomas Ward, Shu Guo and David Dillard
- Page 116 3:00 **Characterization of Coefficient of Thermal Expansion (CTE) and Coefficient of Diluent Expansion (CDE) Using a Bimaterial Curvature Technique**
Shu Guo, Jang-horng Yu, Stefan Williams, Yifang Cao and David Dillard
- 3:30 **Break**
- Page 119 4:00 **Structure-Property Relationships for A Series of Partially Aromatic Polyimides**
Amy Eichstadt, Debra Dunson, Melanie Bagwell, James McGrath and Thomas Ward
- Page 122 4:30 **Wetting and Dewetting Behavior of Thin Epoxy Films on Silicon**
Rachel Giunta, Michael Kent, Jessica Hall, David Tallant, Manuel Garcia and John Emerson
- Page 125 5:00 **Development of Spectroscopic Techniques to Assess Molecular Interactions**
Raymond Pearson and Robert K. Oldak
- Page 128 5:30 **Applications of Flow Microcalorimetry to Adhesion Issues in Microelectronics**
Dave Welsh and Ray Pearson

Monday, February 26, 2001

Pressure Sensitive Adhesives I

Rooms A-C

Session Chairs: Krishan Sehgal and Albert Everaerts

- Page 131 8:00 **Synthesis and Structure-Property Studies in Acrylic Pressure Sensitive Adhesives**
Singa Tobing and Andrew Klein
- Page 134 8:30 **Silicon Release Coatings/PSA Adhesive Strength Modulation: How PDMS Based Network Composition and Structure Influence Nanoscale Properties of the Interface**
Maurice Brogly, L Vrevin, G. Castelein and J Schultz

- Page 137 9:00 **Correlations Between Activation Energy for Debonding and That for Self-Diffusion in Pressure-Sensitive Adhesive Hydrogels**
Mikhail Feldstein, Tatyana Borodulina, R. Sh. Vaartapetian, S. V. Kotomin, V. G. Kulichikhin, D. Geschke and A. E. Chalykh
- Page 141 9:30 **Adhesion and Deboning of Pressure Sensitive Adhesives used in Transdermal Drug Delivery**
Marc Taub and Reinhold Dauskardt
- 10:00 **Break**
- Page 144 10:30 **An Examination of How Skin Surfactants Influence A Model Polyisobutylene Pressure Sensitive Adhesive for Transdermal Drug Delivery**
Scott Trenor, Allison Suggs and Brian Love
- Page 147 11:00 **Viscoelasticity of Pressure Sensitive Adhesive and Bioadhesive Hydrogels Under Compressive Load**
Tatyana Borodulina, Mikhail Feldstein, S. V. Kotomin and V. G. Kulichikhin
- Page 150 11:30 **Synthesis and Characterization of Acrylic and Acrylamide Containing Polymers for Adhesive Applications**
Heather Brooks, Jennifer Kelly, Phillip Madison, Craig Thatcher and Timothy Long

Monday, February 26, 2001

Pressure Sensitive Adhesives II

Rooms A-C

Session Chairs: Albert Everaerts and Singa Tobing

- Page 153 1:30 **Factors Affecting Water Resistance of Latex-Based Pressure Sensitive Adhesives**
Chris M. Miller and H. Walt Barnes
- Page 156 2:00 **Bio-Based Pressure Sensitive Adhesives**
Richard P. Wool and Shana Bunker
- Page 157 2:30 **US Postal Service Environmentally Benign PSA Program**
Joseph Y. Peng
- Page 161 3:00 **Pressure Sensitive Adhesive Based on Block Copolymer Ionomer**
Xinya Lu
- 3:30 **Break**
- Page 162 4:00 **The Use of Non-migrating Surfactants in Pressure Sensitive Adhesive Applications**
Alfred Schultz and Nathan Kofira
- Page 165 4:30 **UV-Curable Acrylic-Hotmelts for Pressure Sensitive Adhesives - Raising Hotmelts to A New Level of Performance**
Karl-Heinz Schumacher and Tim Sanborn

- Page 168 5:00 **Adhesive Properties of Model, Filled Elastomeric Adhesives**
Peter Drzal and Kenneth Shull
- Page 171 5:30 **Plasma Polymerization of Fluorocarbon Films on Polymer Substrates**
Jennifer Chase and F. James Boerio

Monday, February 26, 2001

Poster Session

6:00 – 8:00 Virginia Room

Session Chairs: Leo Lopez and David Speth

- Page 174 **P1 Pressure Sensitive Adhesives From Renewable Resources**
Shana Bunker and Richard P. Wool
- Page 177 **P2 Premade vs In-Situ Formed Compatibilizer at the PS/PMMA Interface: Contribution of the Raman Confocal Microscopy to the Fracture Analysis**
C. Koulic, Z. Yin, C. Pagnoulle, B. Gilbert and R. Jerome
- Page 180 **P3 Long-Term Durability of Adhesively Bonded Stainless Steel Joints**
Kati Hakala, Johanna Ruoronen, Taneli Lahtinen and Tuomo Tiainen
- Page 183 **P4 Electroless Plating of Polymer Substrates: Adhesion Testing Through a Tensile Shear Method Using Electrical Measurements**
Maurice Romand, Y. Goepfert and M. Charbonnier
- Page 187 **P5 Strength and Durability of Glass Fiber Composites Treated With Multi-Component Sizing Formulations**
R. L. Gorowara, Matt Quesenberry, Robert Jensen, Steven Mcknight and R.L. McCullough
- Page 190 **P6 The Curing Behavior of Thermosetting Adhesives for Wood**
Hyun-Joong Kim and Young-Kyu Lee
- Page 193 **P7 Puncture Reversal in Thermoplastic Ionomers**
Rebecca Fall, Thomas Ward, John Dillard, Terry St. Clair and Emilie Siochi
- Page 196 **P8 Plasma Surface Modification and Adhesion of Fluorinated Dielectric Resins**
Sumitra Subrahmanyam, Brian Love and John Dillard
- Page 199 **P9 Evaluation of a Vinyl-Diphosphate Monomer as an Acidic Conditioner for Enamel and Dentin**
Peter C. Moon and Gloria Fernandez
- Page 202 **P10 Adsorption Isotherms of Epoxy Resin Molecules on γ -Glycidoxypentyltrimethoxysilane Treated Aluminium: A TOF-SIMS Study**
Acharawan Rattana, Marie-Laure Abel and John Watts

Page 205	P11	The Development of Novel Block Copolymers for the Stabilization of Metal Oxides in Aqueous Systems Jody Streeter, Kevin Van Cott and Richey Davis
Page 208	P12	Ensemble Technique for High-Resolution X-Ray Photoelectron Spectroscopy: Extending What We Can Determine at an Interface Ann Straccia, Larry Haack and Joseph Holubka
Page 211	P13	Using Asymmetric Double Cantilever Beam Configuration to Measure Paint Adhesion Alok Mallick, Jang-Horng Yu, Charles Frazier, Jessie Chen-Yu, David Dillard and Krishan Sehgal
Page 214	P14	Thermally Conductive Polydimethylsiloxane (Silicone) Adhesives Containing Polyurethanes and Polyureas with Phosphine Oxide Hard Segments Jason Rolland, Debra Dunson and James McGrath
Page 217	P15	The Formation of Performance Coatings by Spontaneous Polymerization Nicole Baker and James Bell
Page 221	P16	Switchable Surface Properties and Interfacial Adhesion Control on Novel CFABC Polymer Brush Modified Surfaces Jianli Wang, Thomas Ward and T. E. Long
Page 224	P17	Impact Characterization of Polymeric Adhesives on Printed Circuit Boards Wesley Shaw
Page 225	P18	Adhesive and Elastic Properties of DOPA-Containing Hydrogels Rebecca Webber, Kenneth Shull, Phillip Messersmith and Priti Madhav
Page 227	P19	The Use of Reflectance IR Spectroscopy for Understanding Fundamental Mechanisms in Adhesion Science Maurice Brogly and Jacques Schultz
Page 230	P20	Evaluation of PF/PMDI Hybrid Adhesives by Mode I Fracture Mechanics Carter Fox, Jun Zheng and Charles Frazier
Page 233	P21	Valence Photoelectron Spectra of Adhesives and Adherends: Quantum Mechanical Calculations for a Detailed Interpretation Bernhard Schneider and Wulff Possart
Page 236	P22	Infrared Spectra of Thin Adhesive Films: Quantum Mechanical Calculations for a Detailed Interpretation Bernhard Schneider and Possart Wulff
Page 239	P23	Organic Confined Films for the Strengthening of Glass Jean-Baptiste Denis and Georges Ryschenkow
Page 242	P24	Role of Surface Roughness of the Adherent Surface on the Debonding Mechanisms of PSA Costantino Creton and Arnaud Chiche

Page 245	P25	Comparison of Ultrasonic and Thermal Curing of Epoxy Adhesive Kin-ming Kwan and Avraham Benatar
Page 248	P26	Molecular Aspects of Performance in Crosslinking Poly(Vinyl Acetate) Adhesives Nicole Brown, Charles Frazier and J. R. Loferski
Page 251	P27	Curing Effects on Viscosity and Mechanical Properties of A Commercial Epoxy Resin Adhesive Fabrice Lapique and Keith Redford
Page 254	P28	Analysis of Fuctional Surface Modification of Pre-Treated Polypropylene, Using Multi-Modal XPS and AFM Martyn Green, F. J. Guild and R. D. Adams
Page 257	P29	Effects of Processing on the Surface Chemistry and Adhesion of Acrylic Coatings Larry Haack, Ann Straccia and Joseph Holubka
Page 260	P30	Effect of Stoichiometry and Epoxy Molecular Mass on Wettability and Interfacial Microstructures of Amine-Cured Epoxies M Giraud, T. Nguyen, X Gu and Mark Vanlandingham
Page 263	P31	High Reolution Dynamic Mechanical Analysis (DMA) of Thin Films N. Willenbacher
Page 266	P32	Interaction of Pressure Sensitive Adhesives with Paper Boxin Zhao and Robert Pelton

Tuesday, February 27, 2001

Pressure Sensitive Adhesives III

Rooms A-C

Session Chairs: Singa Tobing and Albert Everaerts

Page 267	8:00	Dynamic Wetting Effects in Pressure Sensitive Adhesives Sjaak Elmendorp, David J. Anderson and H. de Koning
Page 270	8:30	Interfacial Energy and Adhesion between Acrylic Pressure Sensitive Adhesives and Release Coatings Lihua Li, Chris Macosko, Gary Korba, Alphonsus Pocius and Matthew Tirrell
Page 274	9:00	Surface Energy and Adhesion Studies on Acrylic Pressure Sensitive Adhesives Alphonsus Pocius, Lihua Li, Matthew Tirrell and Gary L. Korba
Page 277	9:30	Probe Tack Investigations of Poly(Vinyl-Pyrrolidone)-Poly(Ethylene Glycol) Blends Alexandra Roos, Costantino Creton and Mikhail Feldstein
	10:00	Break
Page 280	10:30	Direct Relation Between Copolymerisation Process and Tack Properties of Model PSA's E. Papon, A. Aymonier, J-J Villenave and P. Tordjeman

- Page 283 11:00 **Meniscus Instability in Thin Elastic Films**
Manoj K. Chaudhury, Animangsu Ghatak, Vijay Shenoy and Ashutosh Sharma
- Page 287 11:30 **Experimental and Theoretical Investigations of Model Adhesives Peeling**
Jean-Michel Piau, G. Ravilly and C. Verdier
- Page 290 12:00 **Forensic Analysis of Pressure Sensitive Adhesive Tape by Infrared ATR Spectroscopy**
Edward Bartick and Rena Merrill

5:00 **Business Meeting of the Pressure Sensitive Adhesive Division** *Dominion Room*

Tuesday, February 27, 2001

Interfacial Fracture - Theory and Experimental I. Fundamentals of Adhesion

Auditorium

Session Chairs: E. David Reedy, Jr. and Neville R. Moody

- Page 291 8:00 **Calculating the Toughness of Adhesive Bonds From Molecular Simulations**
Mark Robbins and Joerg Rottler
- Page 294 8:30 **Simulation of Cohesive and Adhesive Failure in Model Epoxies**
Mark Stevens
- Page 297 9:00 **Polymer-Solid Interfaces: Role of Sticker and Receptor Groups**
Richard P. Wool and Ilsoon Lee
- Page 298 9:30 **Interfacial Force Microscopy Studies of Polymer/Glass Fracture Surfaces**
Kenneth Liechti, K. C. Vajapeyajula, M. Wang, H. Cabibil, H. Celio, J. M. White and R. M. Winter
- 10:00 **Break**
- Page 300 10:30 **Use of Self-Assembled Monolayers to Control Interface Bonding in a Model Study of Interfacial Fracture**
Michael Kent, Hyun Yim, David Reedy, A. Matheson, David Tallant, J. Soreson and Diane Peebles
- Page 303 11:00 **Effects of Straining Rate on the Mechanical Behavior of Adhesive Bonds Under Shear Deformation**
Herzl Chai, Martin Y. M. Chiang and Carl R. Schultheisz
- Page 306 11:30 **Work of Adhesion and Work of Interfacial Fracture for Molecular Adhesives and Solid Substrates**
Lynn S. Penn and Eduardo Defex

Tuesday, February 27, 2001

Interfacial Fracture - Theory and Experimental II. Fundamentals of Fracture

Auditorium

Session Chairs: E. David Reedy, Jr. and Neville R. Moody

- Page 309 1:30 **Thickness Effects on Adhesion of Epoxy Films**
Neville Moody, David Bahr, Michael Kent, John Emerson, and E. David Reedy, Jr.
- Page 312 2:00 **Crack Blunting in a Soft Elastic Material**
Anand Jagota and Chung-Yuen Hui
- Page 315 2:30 **Fracture of Metal/Polymer/Metal Assemblies: Viscoelastic Effects**
Sophie Bistac, J. Guilleminet, and J. Schultz
- Page 318 3:00 **Adhesion Energy of Solar Protective Multilayers to Glass Probed by DCB**
Emmanuel Du Pontavice and Etienne Barthel
- 3:30 **Break**
- Page 321 4:00 **Characterization of Impact Resistance of Electrically Conductive Adhesive**
Shuangyan Xu, Donatus Ohanehi, Jang-Horng Yu, David Dillard, Lefebvre Didier and Rose Ann Schultz
- Page 324 4:30 **Analysis of Stress and Load Transfer in a Single-Lap Adhesive Bond Between Composite Plates and Concrete**
Haftay Hailu and Eyassu Woldesenbet
- Page 325 5:00 **Stresses and Fracture in Bonded Unlike Double Cantilever Beams**
Yajun Guo and Y. J. Weitsman
- Page 328 5:30 **Failure Initiation From A Sharp Corner**
David Reedy and Tommy Guess

Tuesday, February 27, 2001

Particle Adhesion: Interaction Between Surfaces

Dominion Room

Session Chairs: David J. Quesnel

- Page 331 8:00 **Electrostatic Interactions Between Micron - Size Photoconducting Particles and Substrates**
David Schaefer, Matthew Reames, Brian Walsh, Ronald Reifenger, Donald Rimai and J. Robinson
- Page 334 8:30 **The Effect of Semi-Rigid Coatings on Elastomeric Substrates on Particle-Adhesion-Induced Deformations**
David M. Schaefer, David J. Quesnel, Ronald Reifenger and Donald S. Rimai

- Page 337 9:00 **Effects of Surface Roughness on Van Der Waals and Electrostatic Contributions to Particle Adhesion**
John Walz and Ning Sun
- Page 340 9:30 **The Mechanics of Contact and Adhesion of Periodically Rough Surfaces**
C. Y. Hui, Yu-Yun Lin and E. J. Kramer
- 10:00 **Break**
- Page 342 10:30 **Application of Pulsed-Force Atomic Force Microscopy in Liquid Environment**
Xinyong Chen, Martyn Davies, Clive Roberts, Saul Tendler and Phil Williams
- Page 346 11:00 **The Tribology of Hydrocarbon-Containing Lubricants: A Molecular Dynamics Study**
Judith A. Harrison

Tuesday, February 27, 2001

Surface Modification and Analysis

Rooms D-F

Session Chairs: Reddy Raju

- Page 347 8:00 **Contact Angles and Hysteresis of Polyamide Surfaces**
Chuck Extrand
- Page 350 8:30 **Investigation of the Segregation of Minor Coil Coating Formulation Components: A Study by High-Resolution XPS**
Christian Perruchot, Marie-Laure Abel, Chris Lowe, Richard White and John Watts
- Page 353 9:00 **An Investigation of the Chemical, Mechanical and Adhesion Properties of Thin Plasma Polymerized Films**
Ronald Difelice and John Dillard
- Page 356 9:30 **Two-component Surface Energy Characterization as a Predictor of Dispersability for Carbon Blacks in Polymer Matrices**
Christopher Rulison
- 10:00 **Break**
- Page 359 10:30 **An Environmentally-Benign Oxidation Treatment for Bonding Aluminum Alloys**
Gary Critchlow, K. A. Yendall and F. R. Andrews
- Page 362 11:00 **Correlating Pretreatment to Chemical Structure and Corrosion Protection of Plasma-Polymerized Acetylene Films on Aluminum and Steel**
Giles Dillingham, Eric Labonne and F. James Boerio
- Page 363 11:30 **Corrosion Inhibiting Characteristics of Plasma Polymerized Films on Aluminum**
F. J. Boerio, G. Fan and A. Galal

- Page 366 12:00 **Improvement of the Effectiveness of the Halogenation Treatment of Vulcanized Rubber by Modification of Different Experimental Variables**
M. D. Romero-Sánchez, M. M. Pastor-Blas, J. M. Martín-Martínez, A. Torró-Palau and A. C. Orgiles-Barcelo
- Page 369 12:30 **Treatment of Oil-Containing Thermoplastic Rubber With Oxygen, Carbon Dioxide and Argon RF Plasma**
José Miguel Martín-Martínez, A.B. Ortiz-Magán and M. M. Pastor-Blas

Tuesday, February 27, 2001

Current Issues In Silane Coupling Agents

Rooms A-C

Session Chairs: Stephanie L. Nesbitt and Steven H. McKnight

- Page 370 1:30 **The Structure of Alkylsiloxane SAMS and Simulations of Adhesion Between SAMS**
Mark Stevens
- Page 371 2:00 **Probing the Structure and Chemistry of GPS Films by Solvent Swelling and Neutron Reflection**
Hyun Yim, Michael Kent, Jason Benkoski and Edward Kramer
- Page 374 2:30 **Study of the Interaction Between A Commercial Adhesive and Gps Primer: A Study by XPS and TOF-SIMS**
John Hermes, Acharawan Rattana, Marie-Laure Abel and John Watts
- Page 377 3:00 **Oxidizable Coupling Agents: Introduction of Surface Functionality**
Michael Brook and Amro Ragheb
- 3:30 **Break**
- Page 380 4:00 **Viscoelastic Properties of Epoxy-Silane Interpenetrating Networks**
Robert Jensen and Steven Mcknight
- Page 383 4:30 **Effect of Adhesion Promoters on the Wet Adhesive Strength of Epoxy to Glass**
Donna Narsavage-Heald and Raymond Pearson
- Page 386 5:00 **A Review of the ICOSAP Programme - A Combined Mechanical and Surface Science Investigation**
Richard Allington, Nigel Porritt and Stephen Shaw

Tuesday, February 27, 2001

Design and Durability

Rooms D-F

Session Chairs: Rachel Giunta and Robert Jenson

- Page 389 1:30 **Long Term Aging at 177°C of Ti/Ti Tensile Shear Specimen of LaRC™ 8515Polyimide and Phenylethynyl Terminated Versions PETI-4 and PETI-5**
Brian Jensen and Alice Chang

- Page 391 2:00 Dielectric Heating and Curing of Structural Adhesives by Radio Frequency and Microwave
Kin-Ming Kwan and Avraham Benatar
- Page 394 2:30 A Novel Approach for Measuring Bulk Properties of Elastomers and Gels
Jang-Horng Yu, David Dillard and Didier Lefebvre
- Page 397 3:00 Characterization of Aging and Adhesional Strength by Non-Destructive Damping Measurement in Conjunction with Finite Element Simulations
Amnon Azoulay, A Boazon, Alisa Buchman, G. Debotton and M. Perl
- 3:30 Break
- Page 400 4:00 Novel Approach on Strength Degradation of Bonded Joints Using Epoxy Adhesives Due to Water Absorption
Katsumi Tanaka, Kazuya Okubo and Toru Fujii
- Page 403 4:30 Exact and Reproducible Application of Adhesives by Using Contactless Measuring Like Ultrasonice and Different Control Techniques
Dirk Hasenberg and Klaus Dilger
- Page 405 5:00 Toughness and Durability of Structural Adheive Joints
C. F. Korenberg and A. J. Kinloch

Tuesday, February 28, 2001

Composite Materials

Dominion Room

Session Chairs: Dara Woerdeman and Paul Armistead

- Page 408 1:30 A Testing Time for Steel/Polymer Film Laminates.
Jago Snook, Cris Arnold and Brian Bastable
- Page 409 2:00 Fire-Performance of Adhesively Bonded Structures – Metals vs.Composites
Jason Burdette and Kenneth Reifsnider
- Page 412 2:30 The Interphase Chemistry of Carbon Fibre Composite Materials
John Watts, Lynn Boniface, Paul Smith, Andrew Prickett and Phil Vickers
- Page 415 3:00 Localizing Fluorescent Dye to Probe the Buried Interfacial Chemistry
Joseph Lenhart, Joy Dunkers, John Van Zanten, Richard Parnas and Dara Woerdeman
- 3:30 Break
- Page 418 4:00 Surface Modification of Natural Fibers to Improve Adhesion as Reinforcements for Thermoset Composites
Amar Mohanty, Manju Misra and Lawrence Drzal
- Page 421 4:30 Adherence Properties of Sandwich Composites: Influence of the Forming Process
Sophie Bistac, J. Guillemenet and J. Schultz

Tuesday, February 28, 2001

Society's Reception

7:00 – 7:30 North Gallery

Banquet (Groaning Board)

7:30 – 10:00 Virginia Room

Wednesday, February 28, 2001

Pressure Sensitive Adhesives IV

Rooms A-C

Session Chairs: Singa Tobing and Krishan Sehgal

- Page 424 8:00 Mechano-Optical Tack Tester: A new Apparatus to Study the Tack Properties of PSA
Philippe Tordjeman
- Page 427 8:30 Characterization of Pressure Sensitive Adhesives and Thermosets by Controlled Stress Rehology and Thermal Analysis
Steven R. Aubuchon, Russell Ulbrich and Sujana Bin Wadud
- Page 430 9:00 Scanning Probe Microscopy Studies of Pressure Sensitive Adhesives
Seung-Ho Moon, Shijun Jia and Mark D. Foster
- Page 433 9:30 ATR-IR Studies of Strain-Induced Crystallized Natural Rubber Pressure-Sensitive Adhesives
Patrick Hyde and David Yarusso

10:00 Break

Wednesday, February 28, 2001

Adhesion Issues in Biomaterials

Rooms A-C

Session Chairs: Edward Sacher and Jeffrey Koberstein

- Page 436 10:30 Interfacial Tension of Polycaprolactone/Polystyrene Blends by the Imbedded Fiber Retraction Method
Girma Biresaw and Craig Carriere
- Page 439 11:00 The Strength and Failure Behaviour of the Adhesive Bond of the Barnacle, Balanus Improvisus, to Poly(methylmethacrylate) and Fouling-Release Silicone Coatings
Mattias Berglin, Ann Larsson, Per Jonsson and Paul Gatenholm
- Page 442 11:30 Catalytic Reduction Aids Titanium Biocompatibility
Robert Baier

Page 444 12:00 Lysozyme Deposition on Hydrogel Contact Lenses
Anne Meyer and Surbhi Bansal

Wednesday, February 28, 2001

Particle Adhesion: Eclectic Interactions and Particle Removal

Dominion Room

Session Chairs: David Schaefer

Page 447 8:00 Recycling of Vulcanized Rubber: A Study of Cross-Linked Rubber Particle Adhesion
Jeremy Morin and Richard Farris

Page 450 8:30 Collection of Viable BioAerosol Particles
Robert Baier, Todd Cloutier, Forsberg Robert, Brian Wrazen, James Barnes and Edward Fisher

Page 452 9:00 Probing Surface Mechanical Properties with Nanoindentation
Sean G. Corcoran

Page 453 9:30 Adhesion of Silica Surfaces in a Humid Environment
Simon Biggs and Robert Cain

10:00 Break

Page 456 11:00 Physical Cleaning of Submicron Trenches
Hong Lin, Ahmed Busnaina and Ian Suni

Page 459 11:30 Physical Removal of Nano-Scale Particles from Surfaces
Busnaina Ahmed and Hong Lin

Wednesday, February 28, 2001

New Materials for Adhesives and Coatings

Auditorium

Session Chairs: Russell Crook

Page 462 8:00 Contamination Insensitive UV Curable Adhesives II
Russell Crook and Diane Guilfoyle

Page 465 8:30 Synthesis and Properties of Elastomer-Modified Epoxy-Methacrylate Sequential Interpenetrating Networks
James Sands, Robert Jensen, Bruce Fink and Steven Mcknight

Page 468 9:00 Effects of Polymer Composition on the Properties of Fluorinated Spontaneous Polymerized Coatings
Haipeng Zheng, James Bell and Guy Davis

Page 471 9:30 The Development of Resin Systems and Processes for Underwater Bonding and Sealing
Jackie Lane and Malcolm Bowditch

10:00 Break

Page 474 10:30 Polysiloxane Networks With Hydrogen Bonding Pendant Moieties
Jennifer Hoyt and Judy Riffle

Page 477 11:00 Ionic and Hydrogen Bonding in Adhesive Compositions: Low Melt Viscosity Adhesives with Improved Bond Durability and Potential Reversability
Huaiping Kang, Jianli Wang, Thomas Ward and Timothy Long

Page 480 11:30 Adhesion Performance of UV Curable Acrylates to Silicon in Harsh Environments
Susan Krawiec

Page 482 12:00 Hyper Branched Poly(Amidoamines)-Epoxy Adhesives and Primers
L. Moshinsky, S. Kenig, Hanna Dodiuk-Kenig, and Alisa Buchman

Wednesday, February 28, 2001

Chemistry and Mechanics of Interphases

Rooms D-F

Session Chairs: Wulff Possart and Gary W. Critchlow

Page 485 8:00 Adhesion of Maleic Anhydride on Aluminium Oxide - IR Reflection Spectroscopy and Quantum Mechanical Modelling
Schneider Bernhhard, Wulff Possart and Otto-Diedrich Hennemann

Page 488 8:30 Wetting of Oil-contaminated Steel by A Structural Adhesive
Martin E. R. Shanahan and M. Greiveldinger

Page 491 9:00 Interfacial Characterization of Brass/Rubber Systems: Affects on the Physical Properties
Gillian Ross, F. James Boerio and Dong Kim

Page 494 9:30 Polymer-Polymer Welding: Fitting All the Pieces Together
Richard Wool

10:00 Break

Page 495 10:30 The Use of Nanoindentation to Determine the Effects of Fiber Sizings and Environmental Aging on Fiber/Matrix Interfacial Adhesion
David Haeberle, John Lesko and J. G. Swadener

Page 498 11:00 Chemistry and Mechanics of Epoxy/Metal Interphases
Alain Roche and Jérôme Bouchet

Page 502 11:30 The Influence of Silane Coupling Agent Composition on the Fiber-Matrix Interfacial Shear Strength
Gale Holmes, Elias Feresenbet and D. Raghavan

Page 506 12:00 Interphase Design for Controlled Adhesion
Robert Jensen and Steven McKnight