World of Composites

News articles and announcements of interest to the composites technical community

Symposium on Advances in Thermoplastic Matrix Composite Materials

ASTM Committee D-30 on High Modulus Fibers and Their Composites is sponsoring the Symposium on Advances in Thermoplastic Matrix Composite Materials to be held at Bal Harbour, FL, on 19–20 October 1987. The chairman of the symposium is Golam M. Newaz, Mechanics Section, Battelle, Columbus Division, 505 King Ave., Columbus, OH 43201-2693, (614)-424-4670.

The program for symposium is as follows:

Monday, Oct. 19
8:20 a.m.: Welcome and Introduction
Golam M. Newaz
Symposium Chairman

Session I—Processing

CHAIRMAN: C. J. Wolf
McDonnell Douglas Research Laboratories
St. Louis, MO

8:30 a.m.: Process Modeling of Thermoplastic Matrix Composites—Chuk-ling Leung and T. T. Liao, Rockwell International Science Center, Thousand Oaks, CA
9:00 a.m.: Resin Flow and Fiber Movement During the Manufacturing of Thermoplastic Matrix Composite Materials—J. P. Coulter and S. I. Guerci, Center for Composite Materials, University of Delaware, Newark, DE
9:30 a.m.: The Effect of Processing on Interfacial Strength Development of Thermoplastic Matrix Composites—J. C. Howes and A. C. Loos, Virginia Polytechnic Institute and State University, Blacksburg, VA

10:00 a.m.: Break

10:15 a.m.: Thermoplastic Coating of Carbon Fibers—B. W. Gantt, D. D. Edie, G. C. Lickfield, M. J. Drews, and M. S. Ellison, Clemson University, Clemson, SC
10:45 a.m.: Squeeze Flow of Concentrated Short-Fiber Suspension—C. Altan and S. I. Guerci, Center for Composite Materials, University of Delaware, Newark, DE
11:15 a.m.: Pulltrusion Process Modeling—S. N. Prasad and R. M. Hackett, University of Mississippi, University, MS

11:45 a.m.: Lunch

Session II—Thermal and Mechanical Behavior I

CHAIRMAN: H. Thomas Hahn
The Pennsylvania State University
University Park, PA

1:15 p.m.: Matrix Dominated Deformations and Failure in Thermoplastic Matrix Composites—C. Buhrmaster, K. Srinivasan, and S. S. Sternstein, Rensselaer Polytechnic Institute, Troy, NY
1:45 p.m.: High Temperature Semi-Crystalline Matrix Composites—M. Davies, D. C. Leach, D. R. Moore, and R. M. Turner, ICI Advanced Materials, Middlesbrough, United Kingdom
2:15 p.m.: A Study of Graphite/PEEK Under High Temperatures—A. Palazotto and J. Ramey, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH

2:45 p.m.: Break

3:00 p.m.: Effects of Temperature and Moisture Content on the Mechanical Properties of Polyphenylene Sulfide Composite Materials—S. V. Hoa, S. Lin, and J. R. Chen, Concordia University, Montreal, Canada
3:30 p.m.: Response of Notched T300/PEEK Laminates to Tension/Compression Loading—Robert A. Simonds and W. W. Stinchcomb, Virginia Polytechnic Institute and State University, Blacksburg, VA
4:00 p.m.: Investigation into Thermal Conductivity of Composite Materials for Electronic Packaging—R. R. Hoffman, Magnavox G & I Electronics Company, Fort Wayne, IN; R. P. Tye, Dynatech R/D Company, Cambridge, MA
4:30 p.m.: Effects of Moisture Absorption on Fracture Toughness of Thermoplastic Composites—J. P. Lucas and D. C. Odgaard, Sandia National Laboratory, Albuquerque, NM

Tuesday, Oct. 20

Session III—Thermal and Mechanical Behavior II

CHAIRMAN: N. J. Johnston
NASA Langley Research Center
Hampton, VA

8:00 a.m.: Effect of Stress State on the Viscoelastic Analysis of Thermoplastic Composites—F. A. Myers, Armco Research Center, Middletown, OH
8:30 a.m.: Fiber Orientation and Fracture Morphology in Short-Fiber Reinforced Thermoplastics—H. T. Hahn, The Pennsylvania-
nia State University, University Park, PA; K. L. Jerina and P. Burrett, Washington University, St. Louis, MO
9:00 a.m.: Finite Element Modeling of Thermoplastic Composites-Constitutive Relation for Matrix Material—R. J. Bankert, S. S. Sternstein, N. D. Lambropoulos, and M. S. Shephard, Rensselaer Polytechnic Institute, Troy, NY
9:30 a.m.: Mechanical Properties of PEEK/Carbon Fiber Composites (APC-2) for Structural Applications—D. R. Carll, D. C. Leach, D. R. Moore, and N. Zahlan, ICI Advanced Materials, Middlesbrough, United Kingdom
10:00 a.m.: Break
10:15 a.m.: Interface Behavior in Polymer Matrix Composites—N. R. Sottos, R. McCullough, and R. B. Pipes, Center for Composite Materials, University of Delaware, Newark, DE
10:45 a.m.: Load-Frequency Effect on Fatigue Life of a Thermoplastic Composite—E. Dan-Jumbo, W. Jackson, S. G. Zhou, General Dynamics, Fort Worth, TX; C. T. Sun, Purdue University, West Lafayette, IN
11:15 a.m.: Damping in Continuous-Fiber Thermoplastic Composites Subjected to Torsion and Bending—E. K. Bartkus and J. A. Collins, The Ohio State University, Columbus, OH
11:45 a.m.: Break

Session IV—Delamination and Other Topics

CHAIRMAN: G. P. Sendeckyj
Air Force Wright Aeronautical Laboratories
Wright-Patterson Air Force Base, OH
1:45 p.m.: Mode III Interlaminar Fracture of Composite Materials—G. Becht and J. W. Gillespie, Center for Composite Materials, University of Delaware, Newark, DE
2:15 p.m.: Delamination Growth Under Cyclic Loading at Elevated Temperature in Thermoplastic Composites—J.-Y. Yung, Battelle Columbus Division, Columbus, OH; A. Lustiger, Bell Laboratories, Murray Hill, NJ; G. M. Newaz, Battelle Columbus Division, Columbus, OH
2:45 p.m.: Break
3:00 p.m.: Delamination Resistance of Interstitched Thermoplastic Matrix Composite Laminates—K. Benjamin Su, E.I. du Pont de Nemours & Co, Wilmington, DE
3:30 p.m.: Delamination Assessment of Thermoplastic Composite by Acoustic Emission—K. Ono, J. M. Yang and J. S. Jeng, University of California, Los Angeles, CA
4:00 p.m.: Testing and Evaluation of Thermoplastic Composite Belly Skin for the C-130 Transport Aircraft—F. F. Christian, Jr., Air Logistics Center, Robins Air Force Base, Georgia; L. P. Beckerman, Warner Robins, Lockheed-Georgia, Marietta, GA

Symposium on Performance of Composites in Severe Environments

This symposium is sponsored by American Society of Mechanical Engineers (ASME) Applied Mechanics Division, Composite Committee, and also Materials Division, and it consists of several sessions in the area of performance of composites in severe environments. It will be held 13–18 Dec. 1987 at Boston, MA. The papers of the symposium will be published as a bound volume by ASME. The topics include:

- Performance of Composites (polymer, metal and ceramic matrix composites) in various severe environments, where the severe environments are high temperature, high vacuum, radiation, hygrothermal, high-velocity impact, oxidation, and corrosive environment, etc.
- New testing methods to evaluate the performance in these severe environments
- Evaluation techniques to assess the damages caused in composites
- Micromechanical modeling to account for the above damages

Center for Cement Composite Materials

The U.S. Air Force recently awarded the University of Illinois at Urbana-Champaign a grant to establish a Center of Excellence in Cement Composite Materials. The grant, which is part of the DOD-URI program, is for $1.12 million for the first two years, with a $650,000 for a third year. The grant is administered through the Air Force Office of Scientific Research through the Directorate of Electronic and Materials Science. The Center will be directed by J. Francis Young and Richard L. Berger, who hold appointments as Professor of Civil Engineering and Ceramic Engineering.

The overall objective of the new center is to develop a multidisciplinary effort to explore the potential for developing new materials based on cementitious matrices. Research projects will be concentrated in the following areas: (1) optimization of properties through control of composition microstructure and processing; (2) creation of ductile materials by fiber reinforcement; (3) development of new cement chemistries; and (4) synthesis of novel cement-polymer composites.

A total of 14 faculty members are participating in the Center programs. They represent eight different departments: civil engineering, ceramic engineering, metallurgy and mining, chemical engineering, chemistry, mechanical engineering, geology, and theoretical and applied mechanics.

For further information contact Prof. J. Francis Young, Director, Center for Cement Composite Materials, University of Illinois, 105 S. Goodwin Ave., Urbana, IL.
Composites Contents

Listing of current literature of interest to the composite community as a service to our readers.

Introduction

In this new section, the relevant portions of the tables of contents of current journals which publish composites articles will be reproduced. The entire tables of contents will be reproduced for dedicated composites journals, but in order to conserve space and reduce printing costs, only the composites-related contents of nondedicated journals will be reproduced. At this time, permission to reproduce tables of contents has been granted by the following journals:

- Journal of Composite Materials
- Journal of Reinforced Plastics and Composites
- Composites
- Composites Science and Technology
- Polymer Composites
- Composite Structures
- Journal of Materials Science
- Mechanics of Composite Materials (USSR)
- Experimental Mechanics
- Experimental Techniques
- Journal of Engineering Materials and Technology
- International Journal of Cement Composites
- Journal of Sound and Vibration
- International Journal of Solids and Structures
- Shock and Vibration Digest
- AIAA Journal
- SAMPE Journal
- SAMPE Quarterly
- Journal of Applied Mechanics
- International Journal of Fracture
- Engineering Fracture Mechanics
- Computers and Structures
- Journal of Adhesion
- Advanced Composites

The editor welcomes suggestions for improvements to “Composite Contents,” although library acquisition and accessibility may prevent some additions to the list of journals surveyed.

Dr. Ronald F. Gibson, Contents Editor
Mechanical Engineering Department
University of Idaho
Moscow, ID 83843

Advanced Composites

Vol. 1, No. 1, May/June 1986

The Future of Composites in Advanced Applications—M. Friedman, pp. 28-37

Growth Patterns in Carbon-Fiber Markets—pp. 38-51
Understanding Standards and Specifications—S. Witzler, pp. 52-53
Near-Net-Shape Processing for Structural Parts—p. 54
The Promise of Acoustic-Emission Testing—T. Leonard, p. 58

Vol. 1, No. 2, Sept./Oct. 1986

BMI: Mid-Range Matrix in Action—L. White, pp. 36-42
Composites Cutting Comes of Age—L. Leonard, pp. 43-48
Composites Research—Air Force Style—L. Leonard, pp. 49-53
Defense Dictates Sources of PAN-Based Carbon Fiber—S. Barlas, p. 54

Vol. 1, No. 3, Nov./Dec. 1986

Composite Failure Analysis—S. Witzler, pp. 28-34
Composites in Space—Durability is a major concern—L. Leonard, pp. 35-40
Tooling in Graphite, for Graphite—L. White, pp. 41-44
Putting the Best Foot Forward—L. White, pp. 45-48

AIAA Journal

Vol. 24, No. 7, July 1986

Stress Analysis of a Mode I Edge Delamination Specimen for Composite Materials—J. M. Whitney, pp. 1163-1168

Vol. 24, No. 8, Aug. 1986

Comment on “Buckling of Composite Plates with a Free Edge in Edgewise Bending and Compression”—G. A. Cohen, p. 1405

Vol. 24, No. 9, Sept. 1986

Nonlinear Theory for Plates and Shells Including the Effects of Transverse Shearing—M. Stein, pp. 1537-1544
Nonlinear Analysis of Anisotropic Panels—A. K. Noor and J. M. Peters, pp. 1545-1567

Vol. 17, No. 4, Oct. 1986
Matric Fractography of Fibre-Reinforced Epoxy Composites—D. Purslow, pp. 289-303
Mechanical Properties and Design of Sandwich Materials—A. F. Johnson and G. D. Sims, pp. 321-328

Composites Science and Technology
Vol. 26, No. 1, 1986
Calculation of Fracture Work of Short-Glass Reinforced Polyethylene for Static and Dynamic Loading Rates—B. Lauke and B. Schultrich, pp. 1-6
Compressive Failure in Two Types of Carbon Fibre-Epoxy Laminates—E. Wilkinson, T. V. Parry, and A. S. Wronska, pp. 17-30
On the Determination of Laminate and Lamina Shear Response by Tension Tests—S. W. Fowser, R. B. Pipes, and D. W. Wilson, pp. 31-36
Fracture Toughness of Short-Fibre Reinforced Thermoplastics—B. Lauke and W. Pompe, pp. 37-58
Transverse Cracking and Delamination Interaction in the Failure Process of Composite Laminates—E. Altsz and O. Ishai, pp. 59-78

Vol. 26, No. 2, 1986
Notch Sensitivity of Graphite/Epoxy Fabric Laminates—P. A. Lagaice, pp. 95-118
Effect of Biomodularity on Mechanical Properties of Planar-Random Fiber Composites—C. W. Bert, pp. 119-128

Vol. 26, No. 3, 1986
A New Theory of Laminated Plate—J. G. Ren, pp. 225-240
Vol. 26, No. 4, 1986

The Potential for Composites in Structural Automotive Applications—P. Beardmore and C. F. Johnson, pp. 251-282

Vol. 27, No. 1, 1986

Buckling of a Fiber Bundle Embedded in Epoxy—H. T. Hahn and M. M. Sohi, pp. 25-42
A Computer Model of the Tensile Failure Process in Unidirectional Fibre Composites—P. T. Curtis, pp. 63-86
The Transverse Moduli of Fibre-Composite Material—A. Spencer, pp. 93-110
Average Stress in the Matrix and Effective Moduli of Randomly Oriented Composites—G. P. Tandon and G. J. Weng, pp. 111-132
An Elasticity Analysis for the Generally and Specially Orthotropic Beams Subjected to Concentrated Loads—J. L. Sullivan and H. Van Oene, pp. 133-156
Mechanical and Structural Characterisation of Nicalon SiC Fibres up to 1300°C—A. R. Bunsell and G. Simon, pp. 157-172

Vol. 27, No. 3, 1986

Finite Element Analysis of the End Notched Flexure Specimen for Measuring Mode II Fracture Toughness—J. W. Gillespie, Jr., L. A. Carlton, and R. B. Pipes, pp. 177-198
The Crush Behavior of Glass Fiber Reinforced Plastic Sections—P. H. Thornton, pp. 199-224
Bending Theory of Laminated Plate—J. G. Ren, pp. 225-248

Composite Structures

Vol. 5, No. 4, 1986

A New Variational Approach to the Delamination Problem—T. S. Vong, pp. 245-250
Computer Sizing of Sandwich Constructions—U. Ringertz, B. Esping, and J. Backlund, pp. 251-280
The Vibration and Stability of Symmetrically-Laminated Composite Rectangular Plates Subjected to In-Plane Stresses—D. J. Dawe and T. J. Craig, pp. 281-308
Macromechanical Behaviour of Composite Laminates—K. Kamal and S. Durvasula, pp. 309-318

Vol. 6, Nos. 1-3, 1986

The Effect of Stacking Sequence on the Bearing Strengths of Quasi-Isotropic Composite Laminates—P. A. Smith and K. J. Pascoe, pp. 1-20
Combined Bearing and Bypass Loading on a Graphite/Epoxy Laminate—J. H. Crews, Jr. and R. A. Naik, pp. 21-40
Contact Stresses in Bolted Joints of Composite Laminates—L. I. Eriksson, pp. 57-76
Investigation of Non-Linear Contact for a Clearance-fit Bolt in a Graphite/Epoxy Laminate—R. Prabha-karan and R. A. Naik, pp. 77-86
Joining Methods for Advanced Braided Composites—D. S. Brookstein, pp. 87-94
The Performance of a Bonded Composite Fastener Under Static and Fatigue Loading Conditions—M. S. Found, pp. 95-106
Mechanical Properties for Durability Predictions of FRP Bonded Joint—H. F. Brinson and J. W. Grant, pp. 107-122
Some Effects of Moisture on Adhesive-Bonded CFRP-CFRP Joints—B. M. Parker, pp. 123-134
Prediction of the Fatigue Strength of Bonded Joints Between Multi-Directional Laminates of CFRP—R. H. Martin and G. N. Sage, pp. 141-164
The Importance of Preparation and Control in the Repair of Fibre Reinforced Plastics—J. S. Rogger, pp. 165-182
An Elastic and an Elasto-Plastic Analysis of a Unique Joint for Pultrusion Composites—A. Romhl, L. Hollaway, and M. Gunn, pp. 197

Vol. 6, No. 4, 1986

Conditions for Laminated Plates to Remain Flat Under Implane Loading—A. W. Leissa, pp. 261-270
A Large Orthotropic Plate with Misfit Pin Under Arbitrarily Oriented Biaxial Loading—P. D. Mangalgiri and B. Dattaguru, pp. 271-282
Yield and Ultimate Strengths of Fibre Composite Laminates—M. N. Nahas, pp. 283-294
The Damage Tolerance of Carbon Fiber Reinforced Composites—A Workshop Summary—K. D. Challenger, pp. 295-318

Computers & Structures

Vol. 23, No. 1, 1986

Vibration of Annular Plates Partially Treated with Unconstrained Damping Layer—N. Ganesan and S. N. Rao, pp. 87-94

Vol. 23, No. 2, 1986

Equivalent Orthotropic Properties of Corrugated Sheets—D. Briassoulis, pp. 129-138
An Equilibrium Method for Prediction of Transverse Shear Stresses in a Thick Laminated Plate—R. A. Chaudhuri, pp. 139-146

Vol. 23, No. 3, 1986


Vol. 23, No. 4, 1986

Post-Buckling Behaviour of Cylindrically Orthotropic Annular Plates—K. K. Raju, G. V. Rao, and R. Neetha, pp. 503-508

Vol. 24, No. 2, 1986

Dynamic Stability of Rectangular Laminated Composite Plates—R. S. Srinivasan and P. Chellapandi, pp. 233-238

Vol. 24, No. 3, 1986

Progressive Failure Analysis of Orthotropic Bridges—I. S. El-Sebakhy and J. B. Kennedy, pp. 401-413

Vol. 24, No. 4, 1986

New Approach in the Determination of Interlaminar Shear Stresses from the Results of MSC/NASTRAN—M. R. Lajczok, pp. 651-656

Engineering Fracture Mechanics

Vol. 23, No. 6, 1986

Impact Response of a Strip Composite with a Finite Crack—H. Nozaki, Y. Shindo, and A. Atsumi

Two Moving Cracks in a Layered Composite—B. M. Singh, A. P. S. Selvadurai, and H. T. Dany luk, pp. 991-1004

Interlaminar and Intralaminar Fracture Surface Morphology in Graphite/Epoxy Laminates—A. C. Garg, pp. 1031-1050

Vol. 24, No. 2, 1986

A Central Crack at the Interface Between Two Different Media for the Opening Mode—X. S. Zhang, pp. 177-186

0° Split Initiation in Fiber Reinforced Composites—A. C. Grag, pp. 255-262

Vol. 24, No. 3, 1986

On the Correlation Between the Mode I Failure of Adhesive Joints and Laminated Composites—H. Chai, pp. 413-432

Vol. 24, No. 5, 1986


Tensile Fracture Toughness and Fatigue Crack Growth Rate Properties of Silicon Carbide Whisker and Particulate Reinforced Aluminum Metal Matrix Composites—W. A. Logsdon and P. K. Liaw, pp. 737-752

Vol. 25, No. 1, 1986

Fracture Criteria for Orthogonally Reinforced Composites—A. Kreis, H. Kolsky, and A. C. Pipkin, pp. 47-52

Nonlinear Adhesive Behavior Effects in a Cracked Orthotropic Sheet Stiffened by a Semi-Infinite Orthotropic Sheet—C. A. Bigelow, pp. 79-90

Stress Intensity Factors in Anisotropic Bodies Using Singular Isoparametric Elements—V. E. Saouma and E. S. Sikiotis, pp. 115-122

Vol. 25, No. 2, 1986

An Integrated Micromechanical and Macromechanical Approach to Fracture Behavior of Fiber-Reinforced Composites—J. M. Mahishi, pp. 197-228

Experimental Mechanics

Vol. 26, No. 2, June 1986

Investigation of the Pin Joints in Composites by the Moiré Method—S. Koshide, pp. 113-118


Cumulative Creep Damage for Polycarbonate and Polysulfone—M. J. Zhang and H. F. Brinson, pp. 155-162

Experimental Observation of Stress Waves Propagating in Laminated Composites—T. Hayashi, R. Ugo, and Y. Morimoto, pp. 169-174


Vol. 26, No. 3, Sept. 1986

Crack Growth Unidirectional Graphite-Epoxy Under Biaxial Loading—J. L. Beuth, Jr., M. A. Gregory, and C. T. Herakovich, pp. 245-253

Experimental and Analytical Characterization of Multidimensionally Braided Graphite/Epoxy Composites—R. M. Crane and E. T. Camponeschi, Jr., pp. 259-266

An Engineering Failure Envelope for Adhesive Joints—E. Altus, O. Habur, and J. Tirosh, pp. 267-274


Experimental Techniques

Vol. 10, No. 6, June 1986

Photogrammetry as a Means of Mapping Postbuckled Composite Surfaces—T. S. Gates, pp. 18-22

Vol. 10, No. 11, Nov. 1986

Strain Analysis Along the Curved Boundary of Composites by the Birefringent-Coating Method—S. Koshide, pp. 20-23
International Journal of Cement Composites and Lightweight Concrete

Vol. 8, No. 2, May 1986

Utilisation of Saudi Sands for Aerated Concrete Production—W. H. Mirza and S. I. Al-Noury, pp. 81-86
The Influence of Processing Parameters on the Strength and Toughness of Asbestos Cement Composites—S. A. S. Akers and G. G. Garrett, pp. 93-100
Effect of Specimen and Aggregate Sizes Upon the Fracture Characteristics of Concrete—B. L. G. Barr, E. B. D. Hasso, and V. J. Weiss, pp. 109-120
Fracture Properties of Ferrocement Using Double Cantilever Beam Specimens—P. Desai and N. Ganesan, pp. 121-132

Vol. 8, No. 3, Aug. 1986

Influence of Reinforcement on Fatigue of Ferrocement—G. Singh, E. W. Bennett, and N. A. Fakhri, pp. 151-164
The Response of Reinforced Concrete Beams with a Fibre Concrete Matrix to Impact Loading—S. Mindess, N. Banthia, and A. Bentur, pp. 165-170
Lightweight Insulating Concrete with Rice Husk—J. Salas, M. Alvarez, and J. Veras—pp. 171-180
Effect of Pressure After Casting on High Strength Fibre Reinforced Mortar—S. Delvasto, A. E. Naaman and J. L. Thorne, pp. 181-190
Manufacturing Processes of Artificial Lightweight Aggregates from Fly Ash—J. M. M. Bijen, pp. 191-199

Vol. 8, No. 4, Nov. 1986

Effect of Aging of Glass Fibre Reinforced Cement on the Response of an Advancing Crack on Intersecting a Glass Fibre Strand—A. Bentur and S. Diamond, pp. 213-222
Resistance to Acid Attack of Concrete with Different Admixtures or Coatings—N. L. Fattahi and B. P. Hughes, pp. 223-230
Shear-Bond Capacity of Composite Slabs Made with Profiled Sheet—K. C. G. Ong and M. A. Mansur, pp. 231-238
Bond of Deformed Bars in Steel Fibre Reinforced Concrete Under Cyclic Loading—A. K. Panda, R. A. Spencer, and S. Mindess, pp. 239-250
Fracture Toughness of Plain Concrete from Compression Splitting Tests—B. L. Karihaloo, pp. 251-259

International Journal of Fracture

Vol. 30, No. 3, 1986


Vol. 31, No. 1, May 1986


Vol. 31, No. 3, July 1986

Microcrack Interaction with a Main Crack—L. R. F. Rose, p. 233

International Journal of Solids and Structures

Vol. 22, No. 2, 1986

Flexural Vibration of Symmetrically Laminated Composite Rectangular Plates Including Transverse Shear Effects—T. J. Craig and D. J. Dawe, pp. 155-170
Bimaterial Interface Instabilities in Plastic Solids—P. S. Steif, pp. 195-208

Vol. 22, No. 3, 1986

Nonlinear Free Vibration of Heated Orthotropic Rectangular Plates—W. P. Chang and S-C. Jen, pp. 267-282
Effective Elastic Properties of Materials with High Concentration of Aligned Spheroidal Pores—M. Hlavaček, pp. 315-332

Vol. 22, No. 4, 1986

Mechanical Response of Metallic, Fiber-Reinforced Beams to Transverse Impacts—J. M. Mosquera and H. Kolsky, pp. 397-408

Vol. 22, No. 5, 1986

Nonlinear Axisymmetric Static and Transient Analysis of Orthotropic Thin Tapered Annular Plates—P. C. Dumir and K. N. Khatri, pp. 467-484

Vol. 22, No. 9, 1986

Explicit Solution and Invariance of the Singularities at an Interface Crack in Anisotropic Composites—T. C. T. Ting, pp. 965-984
Smooth Indentation of a Transversely Isotropic Cantilever Beam—L. M. Keer and W. P. Schonberg, pp. 1033-1054

Journal of Adhesion

Vol. 19, Nos. 3/4, 1986

Stress Transfer in Single Fiber/Resin Tensile Tests—W. D. Bascom and R. M. Jensen, pp. 219-240
An XPS Study of the Locus of Failure Between PMDA-ODS Polymide and SiO₂ Surface—L. P. Buchwalter and J. Greenblatt, pp. 257-266
The Effects of Molecular Weight on the Single Lap Shear Creep and Constant Strain Rate Behavior of Thermoplastic Polyimide-sulfone Adhesives—E. Sancaktar and S. K. Dembosky, pp. 287-308

Vol. 20, No. 1, 1986

Chain Conformation and Surface Characteristics of Polymers—R. Bogue, D. Gamet, and H. P. Schreiber, pp. 15-28
Study of Adherence of Elastomers by Cyclic Unloading Experiments—M. Barquins and D. Wehbi, pp. 55-74

Vol. 20, No. 2, 1986

Influence of the Bonding Solvent on the Structure and Strength of Solvent Welded Joints—C. Y. Yue, pp. 99-128

Journal of Applied Mechanics, Transactions of the ASME

Vol. 53, No. 2, June 1986

Linear Analysis of Uniformly Stressed, Orthotropic Cylindrical Shells—J. F. Wilson and G. Orgill, pp. 249-256
Finite Deformations of Nonlinear, Orthotropic Cylindrical Shells—G. Orgill and J. F. Wilson, pp. 257-265

Vol. 53, No. 3, Sept. 1986

A Finite Element Approach to Interface Cracks—H. D. van der Zande and H. J. Grootenboer, pp. 573-578
Transient Response of an Interface-Crack in a Layered Plate—T. Kundu, pp. 579-586
Flat-Crush Failure Mechanism of Corrugated Fiberboard—J. Y. Liu, pp. 602-608
Stress Analysis of Sandwich Plates with Unidirectional Thickness Variation—N. Paydar and C. Libove, pp. 609-613
Laminated Composite Plate Theory with Improved In-Plane Responses—H. Murakami, pp. 661-666
Thermal Stress in a Coated Short Fibre Composite—Y. Mikata and M. Taya, pp. 681-689

Journal of Composite Materials

Vol. 20, No. 3, May 1986

Elasto-Plastic Failure Analysis of Composite Bolted Joints—Y. Tsujimoto and D. Wilson, pp. 236-252
The Fracture Energy of Pultruded Rods—J. O. Outwater, pp. 253-258
Tensile Fracture of Laminates with Holes—J. Backlund and C-G. Aronsson, pp. 259-286
Tensile Fracture of Laminates with Cracks—C-G. Aronsson and J. Backlund, pp. 287-307

Vol. 20, No. 4, July 1986

Modeling Surface Deformation of Glass Fiber Reinforced Composites—H. G. Kia, pp. 335-346
Stress Singularity in Composite Laminates by Finite Element Method—J. R. Yeh and I. G. Tadjbaksh, pp. 347-364
The Dynamic Response of Graphite Fiber-Epoxy Laminates at High Shear Strain Rates—S. M. Werner and C. K. H. Dharan, pp. 365-374
Boundary Element Study of a Loaded Hole in an Orthotropic Plate—E. Mahajerin and D. L. Sikarskie, pp. 375-389
The Effect of Pin Load Distribution on the Strength of Pin Loaded Holes in Laminated Composites—F-K. Chang, p. 401

Vol. 20, No. 5, Sept. 1986

Interlaminar Fatigue Crack Growth in Random Short-Fiber SMC Composite—S. S. Wang and A. Miyase, pp. 439-456
Response of Quasi-Isotropic Carbon/Epoxy Laminates at Biaxial Stress—S. R. Swanson and A. P. Christoforou, pp. 457-471
Fiber Inclination Model of Three-Dimensional Textile Structural Composites—J-M. Yang, C-L. Ma, and T-W. Chou, pp. 472-484
The Optimal Design of Symmetric Laminated Beams Considering Damping—D. X. Liao, C. K. Sung, and B. S. Thompson, p. 485

Vol. 20, No. 6, Nov. 1986

Asbestos-Brucite-Polyphenylene Sulfide Composites, Part I: Chemical and Electrochemical Degradation in Hot Alkali—E. Montoneri, G. Modica, and S. Maffi, pp. 504-519
Role of Matrix Resin on Fracture Strengths of Unidirectional CFRP—Y. Miyano, M. Kanemitsu, T. Kunio, and H. A. Kuhn, pp. 520–538

Predicting the Orientation of Short Fibers in Thin Compression Moldings—W. C. Jackson, S. G. Advani, and C. L. Tucker, pp. 539–557

The Influence of Quality of Adhesion on the Damping Characteristics of a Two-Layer Compound Beam—P. S. Theocaris, pp. 558–578


Journal of Engineering Materials and Technology, Transactions of the ASME

Vol. 108, No. 2, April 1986


Solid Phase Sheet Forming of Thermoplastics—Part II: Large Deformation Post-Yield Behavior of Plastics—H. F. Nied and V. K. Stokes, pp. 113–118


Vol. 108, No. 3, July 1986


Journal of Materials Science

Vol. 21, No. 5, May 1986


Fretting Fatigue Failure of Polyester Resin and its Glass Fibre Mat Composites—K. Friedrich, pp. 1700–1706

Mechanical Properties and Microstructure of High Toughness Fe-Based Filaments Produced by Glass-Coated Melt Spinning—T. Goto and A. Yoshino, p. 1809

Vol. 21, No. 6, June 1986


Work of Fracture of Undirectional Metal Matrix Composites Subjected to Isothermal Exposure—T. Kyono, I. W. Hall, and M. Taya, pp. 1879–1887

The Microstructure of Nb3Sn in Modified Jelly Roll Superconducting Composites—N. J. Pugh, J. E. Evetts, and E. R. Wallach, pp. 1914–1918

Linear Stress Relations for a Metal Matrix Composite Sandwich Beam with any Core Material—J. E. Schoutens and D. I. Higa, pp. 1943–1946


Influence of Carbide Formation on the Strength of Carbon Fibres on Which Silicon and Titanium Have been Deposited—K. Honjo and A. Shindo, pp. 2043–2048


Vol. 21, No. 7, July 1986

The Formation of β-SiC Fibres with SiO2-C-NaF(AlF₃) Components—M. Kajiwara, pp. 2254–2258

Theory of Electrical Resistivity of Metal-Matrix Composites at Cryogenic and Higher Temperatures—F. S. Roig and J. E. Schoutens, pp. 2409–2417


The Stress-Strain Relations of a Metal-Matrix Composite with any Core Material—J. E. Schoutens and D. I. Higa, pp. 2462–2474


Vol. 21, No. 8, Aug. 1986


A Study of Multiple Fracture Phenomenon of a Coating Film on a Mental Fibre by Means of Computer Simulation—S. Ochiai and K. Osamura, pp. 2735–2743
Stress Distribution in a Segmented Coating Film on Metal Fibre Under Tensile Loading—S. Ochiai and K. Osamura, pp. 2744-2752


Remarks on the Use of Boltzmann’s Equation for Electrical Conduction Calculations in Metal Matrix and In Situ Composites—F. S. Roig and J. E. Schoutens, pp. 2767-2770

Mechanical Property Anisotropy in Superalloy El-929 Directionally Solidified by an Exothermic Technique—D. C. Pradhan, K. K. Sharma, and S. N. Tewari, pp. 2871-2875

Effect of Simple Stress on the Glass Transition of Polymers at High Pressures—K. D. Pae, C. L. Tang, and K. Vijayan, pp. 2901-2907

Hot-Working and Strengthening in Metal Carbide-Graphite Composites—D. John and G. M. Jenkins, pp. 2941-2958

Wood-Fibre Reinforced Plaster—R. S. P. Coutts, pp. 2959-2964

Vol. 21, No. 9, Sept. 1986

Technological Applications of Functionalized Polymers—A. Akeelah, pp. 2977-3001


Electrical Conductivity of Random Silver-Potassium Chloride Composites—I.-G. Chen and W. B. Johnson, pp. 3162-3166


Yield Strength and Anelastic Limit of Amorphous Ductile Polymers: Part 1 Amorphous Structure and Deformation—Z. H. Stachurski, pp. 3231-3236

Yield Strength and Anelastic Limit of Amorphous Ductile Polymers: Part 2 The Model of Yield—Z. H. Stachurski, pp. 3237-3242

Distortion of Short-Fibre Reinforced Thermoplastics Structural Foam Injection Mouldings—P. R. Hornsby and D. A. M. Russell, pp. 3274-3278

The Effects of Moulding Geometry on the Structure and Mechanical Properties of Fibre-Reinforced Polypropylene Structural Foam Mouldings—P. R. Hornsby, I. R. Head, and D. A. M. Russell, pp. 3279-3286

Vol. 21, No. 10, Oct. 1986


Stress Induced Twinning of Polydiacetylene Single Crystal Fibres in Composites—I. M. Robinson, P. H. J. Yeung, C. Galiotis, R. J. Young, and D. N. Batchelder, pp. 3440-3444


Effect of Hardness on Erosion of WC-Co Composites—M. T. Laugier, pp. 3548-3550

Temperature-Dependent Mechanical Behaviour of PI and PES Resins Used as Matrices for Short-Fibre Reinforced Laminates—K. Schulte, K. Friedrich, and G. Horstenkamp, pp. 3561-3570

Tension and Flexural Strength of Silicon Carbide Fibre-Reinforced Glass Ceramics—K. M. Prewo, pp. 3590-3600

Static Fatigue and Time to Failure Predictions of Particulate Filled Epoxy Resin Composites—H. R. Beer, T. Kaiser, A. C. Moloney, and H. H. Kausch, pp. 3661-3667


Vol. 21, No. 11, Nov. 1986

A Microstructural Approach to the Mechanical Response of Composite Systems with Randomly Oriented, Short Fibres: Part I Theoretical Analysis—Y. M. Haddad, pp. 3767-3776


Interface Strength Effects on the Compressive-Flexural/Shear Failure Mode Transition of Composites Subjected to Four-Point Bending—G. C. Shih and L. J. Ebert, pp. 3957-3965

Journal of Reinforced Plastics and Composites

Vol. 5, No. 2, April 1986

Design of Laminated Composites with Stress Concentrations by the Ranking Method—S. C. Tan, pp. 78-89


Quantitative Optical Microscopy Fiber Volume Methods for Composites—C. P. Jock, pp. 110-119


Moisture Absorption Characteristics of Natural Fibre Composites—J. Giridhar, Kishore, and R. M. V. G. K. Rao, p. 141

Vol. 5, No. 3, July 1986


Deflection of Plastic Beams at Elevated Temperatures—P. G. Good and J. Burwasser, pp. 188-199
Tension-Tension Fatigue Behavior and Life Distribution of Unidirectional Graphite/Epoxy Composite—Y. Naibin and F. Huimin, p. 209

Vol. 5, Oct. 1986

Stress Analysis of Wooden Structures Exposed to Elevated Temperatures—F-K. Chang, pp. 218-238
The Strength Analysis of Wooden Bends—F-K. Chang, pp. 239-252
Thermal-Mechanical Loading Interaction Effect on Strength and Failure Time of Wooden Structures Exposed to Elevated Temperature—F-K. Chang, pp. 253-271
The Strength of Wooden Bends and Joints Exposed to Elevated Temperatures—F-K. Chang, P. Homer, and J. Burwasser, pp. 272-291

Journal of Sound and Vibration

Vol. 106, No. 3, 8 May 1986

Vol. 107, No. 1, 22 May 1986
Free Vibration and Buckling Analysis of Clamped Skew Sandwich Plates by the Galerkin Method—S. S. F. Ng and B. Das, pp. 97-106

Vol. 107, No. 2, 8 June 1986
Non-Linear Vibration and Postbuckling of Isotropic Thin Circular Plates on Elastic Foundations—P. C. Dumir, pp. 253-264

Vol. 108, No. 1, 7 July 1986
Free Vibration Analysis of Orthotropic Elliptical Plates Resting on Arbitrarily Distributed Point Supports—Y. Narita, pp. 1-10


Vol. 109, No. 3, 22 Sept. 1986

Vol. 110, No. 1, 8 Oct. 1986
Flexural Waves in Fibre-Reinforced Laminated Plates—E. R. Baylis and W. A. Green, pp. 1-26


Vol. 111, No. 2, 8 Dec. 1986
Flexural Waves in Fibre-Reinforced Laminated Plates, Part II—E. R. Bayliss and W. A. Green, pp. 181-190

Mechanics of Composite Materials

Vol. 22, No. 1, Jan./Feb. 1986
Microstructure of Epoxy Matrices—I. S. Deev and L. P. Kobets, pp. 1-6
Viscoelastic and Acoustic Properties of Partially Crystalline Polymers on Hydrostatic Compression—V. S. Khanarin, A. Y. Gol'dman, and I. V. Sysoev, pp. 7-11
Experimental Study of the Effect of Heating Rate and Environment on the Young's Modulus of Carbon-Fiber Plastics in a Broad Temperature Range—N. V. Skvortsova, pp. 19-22
Damping by Dry Friction of Dynamic Loads in a Fiber-Reinforced Composite—L. V. Nikitin and A. N. Tyurekhodzhaev, pp. 23-30
Scale Effect of Strength in Tensile Loading Unidirectional Reinforcing Elements—A. F. Ermolenko, pp. 31-35
Analysis of Failure of a Granular Composite in the Conditions of an Adverse Medium—D. G. Keiru, Y. V. Osetinskii, and A. M. Podval'nyi, pp. 36-40
Thermoelasticity of Layered Composite Shells—V. S. Sipetov, pp. 41-45
Energy Capacity of Rotating Composite Designs (Review)—G. G. Portnov and Y. M. Tarnopol'skii, pp. 53-64
Use of Laminated Metals in Compressed Elements—A. A. Belous and I. B. Mishulin, pp. 65-71
Phase Transitions in Elastic and Viscoelastic Bodies—N. K. Arutyunyan and A. D. Drozdov, pp. 79-85
Optimization Problems in the Control of Technological Processes of Heat Treatment of Products Made of Composite Materials—Y. A. Afanas'ev and V. I. Murav'ev, pp. 86-98

Production Stresses During the Solidification of Cylindrical Articles Formed from Polymer Composite Materials—V. N. Korotkov, R. A. Turusov, É. A. Dzhavadyan, and B. A. Rozenberg, pp. 99-102


Dynamic Properties of Polymeric Composites in Wide Temperature Frequency Ranges—P. M. Khachatryan, É. B. Slobodnik, Y. V. Zeleny, and A. B. Aivazov, pp. 108-111

Alteration of the State of the Human Tibia During Antiorthostatic Hypokineses—A. M. Tatarinov, A. I. Grigor'ev, V. V. Dzenis, K. A. Yanson, V. S. Oganov, and A. S. Rakhmanov, pp. 112-119

Full-Scale and Computational Experiment in an Investigation of the Effect of Longitudinal Impact Loads on Man—Y. V. Mazurin and G. P. Stupakov, pp. 120-124

Relationships of the Relative Volumes of Structural Elements and Biochemical Components of Aortic Value Tissues—B. A. Purinya, B. O. Ozola, and V. P. Ose, pp. 125-127

Nondestructive Measurement of the Dielectric Permeability of Nonsteady Frequency-Phase Method—V. I. Alekseenki, V. I. Krylovich, and P. N. Logvinovich, p. 128

Residual Stresses and Properties of Epoxy-Polymers in Tension and Compression—G. A. Voloskov, V. N. Morozov, and V. V. Kovriga, pp. 133-137

Determination of Properties of Polymeric Materials from Chemical Structure of Monomers—T. P. Matveeva, Y. I. Matveev, and A. A. Askadskii, pp. 138-141


Numerical Investigation of the Edge Effect in Composite Laminates—A. N. Guz, Y. V. Kokhanenko, and V. M. Brystrov, pp. 150-153

Manifestation of Relaxation Properties of the Polymer Base of Tough Foam Plastics in Compression with a View to Their Macrostructure—G. S. Brandman, V. S. Savin, and O. G. Taranakan, pp. 154-157


Ineffective Fiber Length in a Composite with a Linear Visco-Elastic Matrix—V. V. Moskvitin, pp. 165-168

Discrete Spectrum of the Strength Levels of Polycaprolactam Fibers and Composites Based on Them—A. V. Danilov and A. G. Barteneval, pp. 169-173

Bending of a Multilayered Cylindrical Shell with an Elastic Filler by Local Moments—A. D. Gruskov, pp. 174-178


Rods of Composites for Beam Structures (Review)—Y. M. Tarnopol'skii and V. V. Khitrov, pp. 184-193

Failure of the Element of the Composite-Metal Joint in Stress Concentration Conditions—V. A. Krysan' and L. V. Nikitin, pp. 194-199


Stress-Strain State of Structure with Local Surface Cylindrical Damage—N. G. Moroz, S. V. Romanov, and V. I. Gudov, pp. 204-207

Contact Interaction of Pin-Jointed Metal-Composite—O. S. Sirotkin, G. P. Zaitsev, K. V. Kaikov, and V. B. Litvinov, pp. 208-215


Optimization of the Mass of a Layered Sphere from a Finite Set of Materials—V. V. Alekhin and M. A. Kanibolotskii, pp. 224-228


Control of Residual Stresses in the Manufacture of Winding Bars for Stators of Large Electrical Machines—S. N. Kostrilskii, A. A. Zhitomirskii, A. G. Isaeva, and T. M. Shikova, pp. 234-239

Modeling of the Reinforcement of Unwoven Fabrics with a Skeleton Thermoplastic Binder in the Presence of a Temperature Gradient—A. A. Bújikis, and Y. Y. Tekhts, pp. 240-245


Interaction Between a Resistance-Type Strain Gauge and the Surface of the Article Being Tested—V. A. Zhiklin and V. B. Zinov'ev, p. 260

Polymer Composites

Vol. 7, No. 3, June 1986

Thermally Conductive Polymer Compositions—D. M. Bigg, pp. 125-140

Experimental Verification of an Optimal Thermal Design in a Compression Mold—M. R. Barone, D. A. Caulk, and M. R. Panter, pp. 141-151
The Effect of Molding Time and Temperature on the Modulus and Glass Transition of Phenolics—V. R. Landi, J. M. Mersereau, and S. E. Dorman, pp. 152-157


Properties of Cellulose-Polyester Composites—P. Zadorecki and P. Flodin, pp. 170-175

Tensile Behavior of Clay-Filled Polyester Composites—G. M. Nawaz, pp. 176-181

Fiber Composites with Internal Stresses Under Control—M. R. Piggott and M. S. Woo, pp. 182-185

Macrocomposites Made by Injecting Molding—J. L. Hecht, p. 186

Vol. 7, No. 4, Aug. 1986

Melt Rheology of Highly Loaded Ferrite-Filled Polymer Composites—D. R. Saini, A. V. Shenoy, and V. M. Nadkarni, pp. 193-200

Electrodeposition of a Polymer Interphase in Carbon-Fiber Composites—R. V. Subramanian and A. S. Crasto, pp. 201-218


The Silane Interphase of Composites: Effect of Process Conditions on γ-Aminopropyltriethoxysilane—S. R. Culler, H. Ishida, and J. L. Koenig, pp. 231-238


Optimization of Polyester Sheet Molding Compound, Part II: Theoretical Modeling—J. D. Fan and L. J. Lee, p. 250

Vol. 7, No. 5, Oct. 1986

Optimization of Phenolic Resins for Friction Materials—M. Lamba and V. C. Vo, pp. 262-273

Flow and Flow Orientation of Composites Containing Anisometric Particles—L. A. Utracki, pp. 274-282

Characterization of the Rheological Behavior of Fiber-Filled Polypropylene Melts Under Steady and Oscillatory Shear Using Cone-and-Plate and Rotational Parallel Plate Rheometry—A. T. Mutel and M. R. Kamal, pp. 283-294

Interfacial Interactions and the Properties of Filled Polymers: I. Dynamic-Mechanical Responses—M. Y. Boluk and H. P. Schreiber, pp. 295-301

Characteristics of Thermoplastics Containing Electrically Conducting Asymmetric Particles: Anisotropic Electrical Conductivity of Injection Molded Parts and Extrusion Behavior—J. Martinsson and J. L. White, pp. 302-314

Determination of the Orientation of Mica in Composites—T. M. Malik, R. E. Prud'homme, and B. Rémillard, pp. 315-322


Use of Grafted Aspen Fibers in Thermoplastic Composites: IV. Effect of Extreme Conditions on Mechanical Properties of Polyethylene Composites—B. V. Kotka, C. Daneault, and A. D. Beuny, pp. 337-348


Buckling of Composite Cylinders Under External Pressure—P. Quellette, S. V. Hoa, and T. S. Sankar, pp. 363-374


Mechanical Performance of Various Nylon 6 Composites Formed by In-Situ Polymerization of Caprolactam—L. A. Goettler and W. J. Neff, pp. 383-394


SAMPE Journal

Vol. 22, No. 4, July/Aug. 1986

The Effect of Stress on Ultrasonic Pulses in Fiber Reinforced Composites—J. H. Hemann and G. Y. Baaklini, pp. 9-13

Hydroburst Tests of Carbon/Epoxy Pressure Vessels Subjected to Uniform and Simulated Aeroheat Gradient Temperatures—N. R. Dajani, pp. 14-17

The Standard Test and Evaluation Bottle (STEB) Five years Later—W. D. Humphrey and N. L. Newhouse, pp. 18-25

Impact Behavior of 2-D and 3-D Glass/Epoxy Composites—F. K. Ko and D. Hartman, pp. 26-32

A Test for Allowable Stress on Face Bonds to Aluminum Honeycomb Core in Hostile Fluid Environments—R. B. Krieger, Jr., pp. 33-37

Determining the Transverse Modulus of Carbon Fibers—I. M. Kowalski, pp. 38-43

Vol. 22, No. 5, Sept./Oct. 1986

Materials and Process Requirements for Advanced Aerospace Systems—Near Term and Far Term—W. P. Johnson, pp. 9-13


Modeling the Cure Process of Composites—G. S. Springer, pp. 22-29

Carbon Fibers Grown from the Vapor Phase: A Novel Material—G. G. Tibbetts, M. Endo, and C. P. Beetz, Jr., pp. 30-36

Statistical Process Control of Plating Solutions with Regression Control Charts—B. F. Rothschild and S. R. Roth, pp. 37-47

The Correlations of Processing Variables for Optimizing the Mechanical Performance of Various Nylon 6 Composites Formed by In-Situ Polymerization of Caprolactam—L. A. Goettler and W. J. Neff, pp. 383-394


Vol. 22, No. 6, Nov./Dec. 1986

Static and Impact Performance of Polyethylene Fiber/Graphite Fiber Hybrid Composites—D. F. Adams and R. S. Zimmerman, pp. 10-20
A Comparison of the Structural Behavior of Laminates Made of Knitted Nonwoven Fabric and Laminates Made of Conventional Unidirectional Tapes—W. S. Chan and E. Dan-Jumbo, pp. 21-29

Interpretation of Toughness in Aromatic Polymer Composites Using a Fracture Mechanics Approach—R. A. Crick, D. C. Leach, and D. R. Moore, pp. 30-37


A Parametric Study of Composite Performance in Compression-After-Impact Testing—P. W. Manders and W. C. Harris, pp. 47-52

Delamination in Composites: Is Toughness the Key—P. A. Lagrace, pp. 53-61

Stress Concentrations in Composites?—G. Kardos, p. 62

SAMPE Quarterly

Vol. 17, No. 4, July 1986

Development of Space Station Strut Design—R. R. Johnson, R. M. Bluck, A. M. C. Holmes, and M. H. Kural, pp. 1-8

Automatically Woven Three-Directional Composite Structures—P. S. Bruno, D. O. Keith, and A. A. Vicario, Jr., pp. 10-17


Accelerated Environmental Conditioning of Composites—W. I. Lee, P. R. Ciriscioli, and G. S. Springer, pp. 27-31

FTIR Characterization of Advanced Materials—P. R. Young and A. C. Chang, pp. 32-38


Impact Resistant Hybrid Composite for Aircraft Leading Edges—S. C. Nolet and P. M. Sandusky, pp. 46-53

Resin Flow/Fiber Deformation Experiments—T. G. Gutowski, Z. Cai, J. Kingerly, and S. J. Wineman, pp. 54-58

Theories of Failure of Filament Wound Case Composites Materials—G. Lewis, pp. 59-63

Vol. 18, No. 1, Oct. 1986


Properties and Potential Applications of Brominated P-100 Carbon Fibers—D. A. Jaworske, J. R. Gaier, C. C. Hung, and B. A. Banks, pp. 9-14

Curing Acceleration of a Hindered Aromatic Diamine-Epoxy System—P. L. Wiggins, pp. 15-21

Applications of Azidosilane Coupling Agents in Reinforced Thermoplastic Composites—F. J. Kolpak, pp. 22-28

Performance of Organosilicon Chemicals in Fiberglass Reinforced Homopolymers and Copolymer Polypropylene—R. E. Godlewski, pp. 29-33

Methods for Fusion Bonding Thermoplastic Composites—A. Benatar and T. G. Gutowski, pp. 35-42

Effect of the Automation of Advanced Composite Fabrication Process on Part Cost—S. Krolevski and T. Gutowski, p. 43

Shock and Vibration Digest

Vol. 18, No. 6, June 1986

Feature Article—A Review of Dynamic Behavior of Stiffened Plates—A. Mukherjee and M. Mukhopadhyay, pp. 3-8

Vol. 18, No. 7, July 1986

Wave Propagation in Random Composite Materials—A. I. Beltzer, pp. 11-15
Calendar on Composites

13–15 July 1987
EUROMECH 225: The Aerodynamics of Spacecraft
Cranfield, United Kingdom
Contact: Prof. J. St offshore, College of Aeronautics, Cranfield Institute of Technology, Cranfield, Bedford MK43 OA1, United Kingdom

20–25 July 1987
ICCM-VI 6th International Conference on Composite Materials
London, England
Contact: Mr. F. L. Matthews, Director, Centre for Composite Materials, Imperial College, Prince Consort Rd., London SW7 2BY, England
Telephone: 441-589-511 X4003

23–27 August 1987
International Symposium on Computational Fluid Mechanics
Sydney, Australia
Contact: Dr. C. A. J. Fletcher, CTAC-87, Dept. of Mechanical Engineering, University of Sydney, NSW 2006, Australia

24–28 August 1987
ICA/IUTAM Symposium on Nonlinear Acoustics
Novosibirsk, USSR
Contact: Dr. S. Kinelovsky, Labrentyev Institute of Hydrodynamics, Siberian Academy of Sciences, Novosibirsk 630090 USSR

25–28 August 1987
IUTAM Symposium on Nonlinear Water Waves
Tokyo, Japan
Contact: Prof. H. Maruo, Yokohama National University, 156 Tukiwa-Dai, Hodogaya-ku, Yokohama 240, Japan

25–28 August 1987
IUTAM/ICM Symposium on Yielding, Damage and Failure on Anisotropic Solids
Grenoble, France
Contact: J.-P. Boehler, Institut De Mecanique De Grenoble, BP No. 68, 38042 St. Martin's D'Heres Cedex, France

26–28 August 1987
International Conference on Analysis and Test Methods for Design with Advanced Materials
Montreal, Quebec, Canada
Contact: Dr. Jerzy T. Pindera, Faculty of Engineering, University of Waterloo, Waterloo, Ontario, Canada N2L 3H1
Telephone: 519-885-1211

31 August–2 September 1987
Midwestern Mechanics Conference
West Lafayette, IN
Contact: Prof. W. Soedel, School of Mechanical Engineering, Purdue University, W. Lafayette, IN 47907

31 August–3 September 1987
EURMECH 227: Mechanical Behavior of Adhesive Joints
St.-Etienne, France
Contact: Prof. G. Verchery, EMSE, 158 Cours Famiel, 42023 Saint-Etienne Cedex, France

31 August–4 September 1987
9th International Conference on Boundary Element Methods in Engineering
Stuttgart, West Germany
Contact: Liz Newman, Computational Mechanics Institute, 52 Hempstead Rd., Southampton S01 2DD, United Kingdom
Telephone: (0703) 221398

31 August–4 September 1987
Symposium on Fundamental Aspects of Vortex Motion
Tokyo, Japan

Contact: Prof H. Hasimoto, Dept. of Physics, University of Tokyo, Bunkyo-ku, Tokyo 113, Japan

September 1987
Second Conference on Composite Materials—American Society for Composites
Newark, DE
Contact: Dr. Charles Browning, Materials Laboratory, Wright-Patterson Air Force Base, OH 45433

1-4 September 1987
Boundary Element Methods in Engineering
Germany
Contact: Liz Newman, Conference Secretary, Computational Mechanics Institute, 52 Hempstead Rd., Southampton, SO1 2DD, United Kingdom

2-5 September 1987
EUROMECH 226: Nonlinear/Nonclassical Effects in Surface Acoustic Waves
Nottingham, United Kingdom
Contact: Dr. D. F. Parker, Dept. of Theoretical Mechanics, Nottingham University, Nottingham, NG7 2RD, United Kingdom

7-9 September 1987
Symposium on Turbulent Shear Flow
Toulouse, France
Contact: F. W. Schmitt, Dept. of Mechanical Engineering, Pennsylvania State University, University Park, PA 16802

7-11 September 1987
From Materials Science to Materials Engineering
Versailles, France
Contact: AFREM Secretariat General, 12 Rue Brancion, 75737 Paris, Cedex 15, France
Telephone: 45 39 22 33

8-11 September 1987
International Conference on Composite Methods for Predicting Material Processing Effects
Cachan, France
Contact: Prof. M. Predelaneau, Laboratoire De Mecanique Et Technologie, 61 Avenue Du President Wilson, 94230 Cachan, France
Telephone: 46 64 99 55

14-25 September 1987
Instrumentation for Combustion and Flow Engines
Vimeiro, Portugal
Contact: Prof. D. F. G. Durao, Instituto Superior Technico, Mechanical Engineering Dept., 1096 Lisbon Codex Portugal

15-19 September 1987
EUROMECH 215: Mechanics of Sediment Transport in Fluvial and Marine Environments, Genova, Italy
Contact: Prof. G. Seminara, Instituto Di Idraulica, Universita Di Genova, Via Montallegro, 1, 16145 Genova, Italy

17-22 Sept. 1987
7th World Congress on the Theory of Machines and Mechanisms
Sevilla, Spain
Contact: Prof. Jaime Dominguez, Dept. of Mechanical Engineering, E.T.S.I.I., AVDA, Reina Mercedes S/N, 41012 Sevilla, Spain

21-23 Sept. 1987
24th Annual Meeting of the Society of Engineering Science
Salt Lake City, UT
Contact: Prof. S. R. Swanson, Dept. of Mechanical Engineering, University of Utah, Salt Lake City, UT 84112
Telephone: 801-581-6407

21-25 Sept. 1987
EUROMECH 228: Boundary Layer Instability and Transition
Exeter, United Kingdom
Contact: Dr. P. W. Carpenter, Dept. of Engineering Science, University of Exeter, North Park Rd., Exeter, Devonshire, United Kingdom
Telephone: 0483 31261

22-24 September 1987
Second International Conference on Testing, Evaluation and Quality Control of Composites
Contact: Stephen Snook, Butterworth Scientific Ltd., P.O. Box 63, Westbury House, Bury St., Guildford, Surrey GU2 5BH, United Kingdom
Telephone: 0483 31261

Oct. 1987
EUROMECH 230: Asymptotic Modelling of Compressible Fluids
Lille, France
Contact: R. Zeytounian, Laboratoire De Mecanique De Lille, U F R De Mathematics, B P 36, 59655 Villeneuve D'Ascq, Cedex, France

6-9 Oct. 1987
EUROMECH 231: Constitutive Equations in Viscoelasticity
Smolenice, Czechoslovakia
Contact: Prof. J. Brilla, Institute of Applied Math and Computing Techniques Comenius University, Mlynska Dolina, 852 15 Bratislava, Czechoslovakia

13-15 October 1987
19th International SAMPE Technical Conference
Washington, DC
Contact: Marge Smith, SAMPE, P.O. Box 2459, Covina, CA 91722
Telephone: 818-331-0616

18-22 Oct. 1986
19th International SAMPE Technical Conference
Washington, DC
Contact: Marge Smith, SAMPE, P.O. Box 2459, Covina, CA 91722
Telephone: 215-299-5413

25-28 Oct. 1987
1987 SEM Fall Conference on Experimental Mechanics, Dynamic Failure
Savannah, GA
Contact: Kathy Ramsay, Society for Experimental Mechanics, 7 School St., Bethel, CT 06801
Telephone: 203-790-6373

15-20 November 1987
ASME Winter Annual Meeting
New York, NY
Contact: ASME, United Engineering Center, 345 E. 45th St., New York, NY 10017

13-18 Dec. 1987
ASME Winter Annual Meeting
Boston, MA
Contact: American Society of Mechanical Engineering, United Engineering Center, 345 E. 47th St., New York, NY 10017

6-9 Jan. 1988
*International Conference on Composite Materials and Structures*
Madras, India
Contact: George Springer, Aeronautics and Astronautics, Stanford University, Standford, CA 94305

24-29 April 1988
*Composite Materials—Testing and Design (9th Symposium)*
Las Vegas, NV
Contact: Matt Lieff, ASTM, 1916 Race St., Philadelphia, PA 19103
Telephone: 215-299-5516

4-10 June 1988
*1988 SEM Spring Conference on Experimental Mechanics*
Portland, OR
Contact: Kathy Ramsay, Society for Experimental Mechanics, 7 School St., Bethel, CT 06801
Telephone: 203-790-6373

5-10 June 1988
*6th International Congress on Experimental Mechanics*
Portland, OR
Contact: Society for Experimental Mechanics,

7 School St., Bethel, CT 06801
Telephone: 203-790-6373

13-17 June 1988
*7th International Conference on Computational Methods in Water Resources*
Cambridge, MA
Contact: Michael A. Celia, Parsons Lab, Room 48-207, Dept. of Civil Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139

21-27 August 1988
*17th International Congress of Theoretical and Applied Mechanics*
Grenoble, France
Contact: Prof. Germanine, Ecole Polytechnic, Paris, France

27-30 Sept. 1988
*20th International SAMPE Technical Conference*
Minneapolis, MN
Contact: Marge Smith, SAMPE, P.O. Box 2459, Covina, CA 91722
Telephone: 818-331-0616

Calendar prepared by Prof. Michael W. Hyer, Department of Mechanical Engineering, The University of Maryland, College Park, MD 20732.
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