

Proceedings of the American Society for Composites 17th Technical Conference

Table of Contents

PLENARY LECTURES

Composite Materials for Commercial Transport - Issues and Future Research

P. STICKLER

Damage and Health Monitoring of Composite Structures in Smart Material and Structures System Program in Japan

N. TAKEDA

SESSION MA1: JOINING

Application of the Shell/3D Modeling Technique for the Analysis of Skin Stiffener DeBond Specimens

R. KRUEGER, T. K. O'BRIEN AND P. J. MINGUET

Pull-off Tests and Analysis of Composite Skin and Frame T-Joint.

J. LI

The Prediction of Failure in In-Plane Shear Loaded Composite Bonded Joints

J. LEE AND H. KIM

A Hygrothermal Sensitivity Evaluation on the Clamp-up Torque of Bolted Composite Joint

HUNG-SHYONG CHEN AND HUANG-KUANG KUNG

SESSION MA2: PROCESSING/MANUFACTURING—2

Monitoring the History of Shrinkage of Thermosetting Resins

HOA S.V. AND P. OUELLETTE

A Study on Similarity Analysis of Resin Flow in Liquid Molding Process

M.-K. UM, J.-H. BYUN AND I. M. DANIEL

Statistical Characterization of Permeability Values of Reinforcement Materials for the RTM Process—Why and How?.

K. HOES, D. DINESCU, M. VANHEULE, A. CARDON AND H. SOL

“Migration” of Voids in Thermal De-consolidation of Thermoplastic Matrix Composites

M. LU AND L. YE

SESSION MB2: PROCESSING/MANUFACTURING—2

VARTM Process Modeling of Aerospace Composite Structures

X. SONG, B. W. GRIMSLEY, P. HUBERT, R. J. CANO AND A. C. LOOS

Numerical Investigation of Mold Filling of a Composite Part with Impermeable Core.

B. MARKICEVIC, D. HEIDER, S. T. HOLMES, P. HANDEL, P. MINGUET, J. W. GILLESPIE, JR. AND S. G. ADVANI

Uninterrupted Hoop- and Polar Fibre Paths on Cylindrical Pressure Vessels Using Non-Geodesic Trajectories

S. KOUSSIOS AND O. K. BERGSMA

The Fast Manufacturing Process of 4 Directional Reinforced Carbon-Carbon Composites for Plasma Facing Component.

W. CHOI, S. PARK AND K. KIM

SESSION MC2: PROCESSING/MANUFACTURING—3

A New Instrument for Measuring Isotropic Stress Development and Reaction Kinetics for Thermosetting Resins.

M. MERZLYAKOV, Y. MENG, S. L. SIMON, G. B. MCKENNA

Cost-Effective Manufacture of Particulate Reinforced Titanium Matrix Composites

X. ZHANG

Design of Filament Wound Composite Pressure Tanks Using Finite Element Analyses.

C.-U. KIM, J.-S. PARK, C.-S. HONG, C.-G. KIM

SESSION MA3: MICROMECHANICS

Fracture Toughness of Carbon Foam

S. CHOI AND B. V. SANKAR

Micromechanics Model for Open-Cell Foams Using an Energy Method Based on Castigliano's Second Theorem

K. LI, X.-L. GAO AND A. K. ROY

Microstress Prediction in Composite Laminate

P. HUTAPEA, F.-G. YUAN AND N. J. PAGANO

Micromechanical Models for Discontinuous Fiber Composites

J. N. CRADDOCK AND E. SCHULTZ

On a Unique Linkage Between Micro and Macro Fields 140

A. S. D. WANG AND C. YAN

SESSION MB3: TEXTILES

Exploiting Periodicity and Symmetries in Micromechanics

Analysis of Textile Composites

X. TANG AND J. D. WHITCOMB

Multi-scale Analysis of Transient Moisture Diffusion Behavior in Woven Composites

X. TANG, J. D. WHITCOMB, Y. LI AND H.-J. SUE

Mechanical Characterization of Woven Composites with Different Parameters

H. WANG, N. KIKUCHI AND F. ROSTAM-ABADI

Micromechanical Model of Woven Fabric Composites under Large Deformation

P. XUE, J. CAO AND J. CHEN

SESSION MC3: PROGRESSIVE DAMAGE

Modelling and Experimental Investigation of Progressive Damage in Notched Composites

S. R. HALLETT AND M. R. WISNOM

Damage Evolution and Analysis of a Unidirectional Composite Under Tensile Loading

G. P. TANDON AND R. Y. KIM

Progressive Damage in Mixed-Tow Hybrid Center-Notched Composite Tension Panels

C. J. OSBORN AND J. M. KENNEDY

Microcrack Progression in Internally Pressurized Elliptical Composite Cylinders

M. W. HYER AND G. F. WOLFORD

SESSION MA4: SANDWICH STRUCTURES—1

Analysis of Sandwich Panels with a Web-Reinforced Foam Core Subjected to Transverse Pressure.

S. CARGILL AND V. BIRMAN

Joining of Straight and Curved Sandwich Panels—High Order Analysis.

A. LYCKEGAARD AND O. T. THOMSEN

Modeling and Analysis of Tapered Sandwich Beams

S. S. VEL, V. CACCESE AND H. ZHAO

Numerical Simulation of the Impact Progressive Collapse of Polymer Composite Sandwich Beams Using LS-DYNA

S. MCKOWN AND R. MINES

Consideration of Through the Thickness Strains for a Sandwich Panel

V. Y. PEREL AND A. N. PALAZOTTO

SESSION MB4: SANDWICH STRUCTURES—2

Shear and Bending Stiffness of Single and Stacked Sandwich Beams.

J. N. CRADDOCK AND M. EKENEL

A Modified Analytical Model for Damage Propagation of A Low-Velocity Impacted Sandwich Panel

Z.-H. XIE AND A. J. VIZZINI

Cyclic Debonding of Composite Sandwich Structure

C. K. BERKOWITZ, W. S. JOHNSON AND A. MAKEEV

Study of Facesheet-from-Core Delamination for Honeycomb FRP Sandwich Panels

W. WANG, J. F. DAVALOS AND P. QIAO

SESSION MC4: SANDWICH STRUCTURES—3

Local Effects at the Junctions between Straight and Curved Sandwich Panels

O. T. THOMSEN, E. BOZHEVOLNAYA, V. SKVORTSOV AND J. R. VINSON

Compression Strength of Honeycomb FRP Core with Sinusoidal Geometry

A. CHEN, J. F. DAVALOS AND J. D. PLUNKETT

Honeycomb Fiber-Reinforced Polymer Sandwich Construction for Development and Implementation of Fish Raceway Systems

A. VANTARAM, J. F. DAVALOS, J. ROBINSON AND J. D. PLUNKETT

Face/Core Debond Toughness in Mid-Plane Asymmetric Sandwich Composites

D. R. VEAZIE AND K. HILLMAN

SESSION MA5: OFFSHORE STRUCTURES

Development of Thick-Wall APC-2/AS4 Thermoplastic Composite Pressure Vessels for Deep Ocean Applications by In-Situ Thermoplastic Composite Filament Winding/Tape Laying.

A. YOUSEFPOUR AND M. N. GHASEMI NEJHAD

Composites for Deepwater Applications

M. M. SALAMA

Static and Dynamic Characterization of Polymer Foams Under Shear Loads.

K. KANNY, H. MAHFUZ, T. THOMAS AND S. JEELANI

SESSION MB5: NIST/ATP HIGH RISK RESEARCH PROGRAMS—1

High-Risk Composites Research in The NIST Advanced Technology Program

H. F. WU

Nanocomposites from Carbon Nanofiber.

M. L. LAKE, D. G. GLASGOW AND C. KWAG

Development of Structural Health Monitoring Systems using SMART Layer® Technology

M. LIN, S. J. BEARD, A. KUMAR AND X. QING

SESSION MC5: NIST/ATP HIGH RISK RESEARCH PROGRAMS—2

Acoustic Model Calibration

A. ROCK AND R. ZHANG

Continuously Extruded Large Core Optical Fiber.

J. M. DAVENPORT, B. DOUCET AND C. H. JENSON

Mechanical Properties Testing for Database and Constitutive Modeling of CMC Composites

M. A. BURKE, D. G. THOMPSON, J. MORRISON AND J. E. LANE

SESSION MA6: SYMPOSIUM IN HONOR OF J. M. WHITNEY—1

Effect of Specimen Thickness on the Shear Behavior of Carbon Foam using Hollow Circular Specimen Configurations

A. K. ROY

SESSION MA5: OFFSHORE STRUCTURES

Development of Thick-Wall APC-2/AS4 Thermoplastic Composite Pressure Vessels for Deep Ocean Applications by In-Situ Thermoplastic Composite Filament Winding/Tape Laying.

A. YOUSEFPOUR AND M. N. GHASEMI NEJHAD

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M. M. SALAMA

Static and Dynamic Characterization of Polymer Foams Under Shear Loads.

K. KANNY, H. MAHFUZ, T. THOMAS AND S. JEELANI

SESSION MB5: NIST/ATP HIGH RISK RESEARCH PROGRAMS—1

High-Risk Composites Research in The NIST Advanced Technology Program

H. F. WU

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M. L. LAKE, D. G. GLASGOW AND C. KWAG

Development of Structural Health Monitoring Systems using SMART Layer® Technology

M. LIN, S. J. BEARD, A. KUMAR AND X. QING

SESSION MC5: NIST/ATP HIGH RISK RESEARCH PROGRAMS—2

Acoustic Model Calibration

A. ROCK AND R. ZHANG

Continuously Extruded Large Core Optical Fiber.

J. M. DAVENPORT, B. DOUCET AND C. H. JENSON

Mechanical Properties Testing for Database and Constitutive Modeling of CMC Composites

M. A. BURKE, D. G. THOMPSON, J. MORRISON, J. E. LANE, S. C. BUTNER, A. SZWEDA AND E. LARA-CURZIO

SESSION MA6: SYMPOSIUM IN HONOR OF J.M. WHITNEY—1

Effect of Specimen Thickness on the Shear Behavior of Carbon Foam using Hollow Circular Specimen Configurations

A. K. ROY

Characterization of Compressive and Shear Properties of Carbon Foam and Its Core Application in Sandwich Construction

S. SIHN AND B. P. RICE

Three-Dimensional Spline-Based Stress Analysis of Bolted Composite Joints with Clamping

T. J. WHITNEY AND E. V. IARVE

Prediction and Measurement of Residual Strains for a Composite Bonded Joint

G. A. SCHOEPPNER, D. H. MOLLENHAUER, E.V IARVE

SESSION MB6: SYMPOSIUM IN HONOR OF J. M. WHITNEY—2

Deformations of Flat Unsymmetric Laminates Subjected to Inplane Loads.

M. W. HYER, T. T. OCHINERO AND M. MAJEED

Analysis of Cylindrically Orthotropic Plates

J. CHO AND C. T. SUN

Strength Prediction and Measurement in Model Multilayered Discontinuous Tow Reinforced Composites

E. V. IARVE AND R. KIM

SESSION MC6: SYMPOSIUM IN HONOR OF J. M. WHITNEY—3

Analysis of Mid-Plane Asymmetric Sandwich Truck Tanks Under Hydraulic Head Loadings

S. XIAO AND J. R. VINSON

Influence of Vapor-Grown Carbon Nanofibers on Thermomechanical Properties of Graphite-Epoxy Composites

G. P. TANDON, R. Y. KIM AND B. P. RICE

Compact Carbon/Carbon Single Flow Channel Heat Transfer Characteristics for Aerospace Vehicle Applications

R. WATTS AND K. LAFDI

SESSION TA1: NANOMATERIALS & NANOCOMPOSITES—1

Nanofiber Reinforcement of PMMA—The Hope and the Reality

B. SALTYSIAK, W. S. JOHNSON, S. KUMAR AND J. ZENG

Processing, Structure and Properties of Carbon Nanotube-Based Polymer Composites.

E. T. THOSTENSON AND T.-W. CHOU

Characterization of the Fracture Behavior of Epoxy Nanocomposites

H. LU, S. ROY, P. SAMPATHKUMAR AND J. MA

Graphite Nanoplatelet Based Nanocomposites by the Electrospinning Process

J. MACK, L. VICULIS, A. ALI, R. LUOH, G. YANG, R. KANER, T. HAHN AND F. KO

SESSION TB1: NANOMATERIALS & NANOCOMPOSITES—2

Self-Consistent Geometry, Density and Stiffness of Carbon Nanotubes.

R. B. PIPES AND P. HUBERT

Electrical Conductivity of PMMA/Expanded Graphite Nanocomposites

S.-C. WONG AND W. ZHENG

SESSION TC1: NANOMATERIALS & NANOCOMPOSITES—3

Thermal Properties of Epoxy/Clay Nanocomposites

H. MIYAGAWA, M. J. RICH AND L.T. DRZAL

Graphite Nanoplatelets as Reinforcements for Polymers: Structural and Electrical Properties

H. FUKUSHIMA AND L. T. DRZAL

Alumina/SiC Nanocomposites for Improved Surface Finish and Wear Resistance

J. L. ORTIZ MERINO AND R. I. TODD

S2-Glass/Vinyl ester Polymer Nanocomposites: Manufacturing, Structures, Thermal and Mechanical Properties

A. HAQUE, F. HOSSAIN, D. DEAN AND M. SHAMSUZZOHA

SESSION TA2: MECHANICAL BEHAVIOR—1

On and Off Axis High Strain Rate Compression Characterization of Affordable Woven Carbon/Epoxy Composites

M. V. HOSUR, J. ALEXANDER, U. K. VAIDYA, A. MAYER AND S. JEELANI

Low Temperature Effects on the Ultimate Compressive Strength of IM7/977-3 Unidirectional Composites at High Strain Rates.

S. SONG AND J. R. VINSON

Dynamic Properties of Balanced Angle-Ply Composites

A. JADHAV, E. WOLDESENBET AND L. CLARK

Thermoplastic Materials for Rigidizable Space Systems

A. PAESANO, G. R. PALMESE AND D. R. COHEE

Deformation Theory In The Mechanics Of Granular Media.

I. V. SHIRKO, D. S. KONDRATYEV AND P. V. STETSENKO

SESSION TC2: MECHANICAL BEHAVIOR—3

Influence of Processing Methods on the Tensile Properties of Advanced Polymer Matrix Composites

M. RAMULU, P. B. STICKLER AND I. P. DATAR

Effect of Radius Ratio Parameter of Cenospheres on the Compressive Properties of the Syntactic Foams.

N. GUPTA AND E. WOLDESENBET

The Effect of Fiber Waviness on Elastic Behavior of Composite Materials.

H. G. RAI, E. V. HONEIN, M. I. NAJJAR AND S. N. ABU ANTOUN

Compression Testing of High-Strength Composite Laminates

Z. C. XI, A. PAESANO, T. A. BOGETTI, C. P. R. HOPPEL, A. YIOURNAS, I. W. HALL, J. W. GILLESPIE, JR.

SESSION TB2: MECHANICAL BEHAVIOR—2

Evaluation of Interfacial Degradation in GFRP under Acid Condition.

M. MIZOGUCHI, M. SHIBAYA AND H. HAMADA

A Strategy for the Life Prediction of Polymer Matrix

Construction Components: Strain–Stiffness Evolution or Strength-Damage Development?

A. H. CARDON AND P. J. P. BOUQUET

Mechanical Behavior of Triax Composites using Special Finite Elements

S. V. HOA, Q. ZHAO AND P. OUELLETTE

Stiffness and Failure Behavior of Model Hybrid Composites

D. HUNSTON AND W. MCDONOUGH

SESSION TA3: TEST METHODS—1

The Use of Doublers in Delamination Toughness Testing.

J. R. REEDER, K. DEMARCO AND K. S. WHITLEY

Peel Testing of Thermoplastic Composite/Steel Bolted Joints

J. R. BOWEN, I. MISKIOGLU, J. B. LIGON AND R. L. WHIPPLE

Thermoplastic Materials for Rigidizable Space Systems

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SESSION TC2: MECHANICAL BEHAVIOR—3

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The Use of Doublers in Delamination Toughness Testing.

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Peel Testing of Thermoplastic Composite/Steel Bolted Joints

J. R. BOWEN, I. MISKIOGLU, J. B. LIGON AND R. L. WHIPPLE

DCB and ELS Tests for Interlaminar Fracture Toughness of

Carbon Fiber Composites by Electric Resistance Method

K. KUNOO, N. UDA, K. ONO AND T. NAGAYASU

Effect of Crack Length Measurement Technique and Data

Reduction Procedures on the Perceived Toughness from

Four-Point Bend End-Notched Flexure Tests

A. J. VINCIQUERRA AND B. D. DAVIDSON

Round Robin Assessment Of The Single Fiber

Fragmentation Test

M. J. RICH, L. T. DRZAL, D. HUNSTON, G. HOLMES

AND W. MCDONOUGH

SESSION TB3: TEST METHODS—2

A Novel Creep Rupture Fixture for Testing Automotive Composite Materials.

V. LOMBART, J. HENSHAW AND D. HOUSTON

Crushing of Flat Graphite/Epoxy Laminates using a Column Specimen

D. C. FLEMING AND F. NICOT

Static and Dynamic Strength of Brittle Materials Under

Self-induced Confining Stress Produced Using FilamentWound

Advanced Composites

D. S. ADAMS AND C. T. SUN

SESSION TC3: DELAMINATION

Delamination in Tapered Laminates under Tension with Ply Drops Skewed at an Angle to the Load

M. R. WISNOM AND M. GUSTAFSSON

Interlaminar Fracture Behavior of Internally Tapered Composite Laminates

R. GANESAN, K. HE AND S. V. HOA

Delamination Behavior in Composite Structures with Consideration for Residual Thermal Stress Effects

T. E. TAY, F. SHEN AND K. H. LEE

Strain Energy Release Rate Associated with Off-axis Ply Cracking in Unbalanced Laminates

C. SOUTIS AND M. KASHTALYAN

Fracture Mechanics Approach to Forecast

Delamination Life-time

A. AL KHANBASHI, A. E. HAMDY, A. MOET AND C. PETIAU

SESSION TA4: FATIGUE

Damage Mechanisms in Notched Graphite/Epoxy Laminates

F. AYMERICH, M. MANNU AND P. PRIOLO

Fiber Composite Thermomechanical Fatigue Damage Evolution Via Progressive Ply Decomposition and Analysis Software.

L. MINNETYAN AND C. C. CHAMIS

Waveform, Load Ratio and Frequency Effects on Fatigue Crack Propagation Rate of FRP-Wood Bonded Interfaces.

J. F. DAVALOS AND J. JIA

The Effect of Stitching on Damage Tolerance of Stiffened Composite Panel

S. S. SUH, N. HAN, J.-M. YANG AND H. T. HAHN

Analysis and Design Study of Piezoelectric Twist Actuation of Smart Fins.

O. RABINOVITCH AND J. R. VINSON

SESSION TB4: STRUCTURAL ANALYSIS—1

Vibration Analysis of Variable-Thickness Composite Beams Using Hierarchical Finite Elements

R. GANESAN AND A. K. NIGAM

Exact Solution for the Cylindrical Bending Vibration of Functionally Graded Plates

S. S. VEL AND R. C. BATRA

Evaluation of Transverse Stresses in Geometrically Nonlinear Composite Panels under Dynamic Loadings.

H. PARK, K. LEE AND S. W. LEE

A Radial Point Interpolation Method for Static and Free Vibration Analysis of Shear-deformable Thick Laminated Composite Plates.

K. Y. DAI, G. R. LIU AND K. M. LIM

SESSION TC4: STRUCTURAL ANALYSIS—2

Composite Skin-Stringer Assembly: Innovative Manufacturing and Stability Analysis

P. MAJUMDAR, H. MAHFUZ, M. SAHA, F. SHAMERY, S. JEELANI AND M. M. THOMAS

Unit Cell Approach to a Grid Stiffened Composite Cylinder Buckling Problem

S. KIDANE AND E. WOLDESENBET

Buckling Analysis of Delaminated Rectangular Composite Laminates under In-Plane Shear Load.

M. A. KOUCHAKZADEH

Homogenization Modeling for Mechanical Properties of Composite Conductor with Cooling Channels.

W. SUN AND J. T. TZENG

A Simple Analytical Method for Analyzing Laminated Composites Elliptical Tubes.
C. Y. LIN AND W. S. CHAN

SESSION TA5: COMPOSITES FOR MARINE STRUCTURES—1

Failure Plane Orientations for Fiber Composites

R. M. CHRISTENSEN AND S. J. DETERESA

Dynamic Behavior of S2-Glass/Epoxy Fiber Reinforced Composites.

M. VURAL AND G. RAVICHANDRAN

Measurement of Through-the-Thickness Mechanical Properties of Woven Fabric Composites

J. L. ABOT AND I. M. DANIEL

Dynamics Materials Characterization of Marine Composites

M. L. PETERSON, M. SUN, A. SENAN, K. HORTON, D. RADFORD AND L. THOMPSON

SESSION TB5: COMPOSITES FOR MARINE STRUCTURES—2

Fabrication and Characterization of Graphite Particle Reinforced Epoxy Composites

A. YASMIN AND I. M. DANIEL

The Effect of Platelet Dispersion on The Load Transfer Efficiency in Nanoclay Composites

J. TSAI AND C. T. SUN

Electromagnetic Propagation and Radative Transport in Fibrous Composites: Dependent Scattering Effects

B.-C. CHERN, T. J. MOON, AND J. R. HOWELL

Effects of Sea Water on Foam Cored Composite Sandwich Structure

Y. J. WEITSMAN AND X. LI

SESSION TC5: COMPOSITES FOR MARINE STRUCTURES—3

Characterization of Constitutive Behavior of Satin-Weave Fabric Composite.

A. J. JACOBSEN, J. J. LUO AND I. M. DANIEL

Fatigue Analysis of Sandwich Beams Using a Wear-Out Model

J. DAI AND H. T. HAHN

Influence of Core Density and Facesheet Properties on Debond Fracture Strength of Foam Core Sandwich Composites.

K. N. SHIVAKUMAR AND S. A. SMITH

On the Use of Composite Material Sandwich Structures for Naval Double-Hull Construction

J. R. VINSON

Static and Dynamic Characterization of Polymer Foams Under Shear Loads.

K. KANNY, H. MAHFUZ, T. THOMAS AND S. JEELANI

SESSION TA6: COMPOSITES IN RECREATION

Thermoplastic Composite Materials: Their Design & Use in Golf Shafts

M. BUCK, D. PARK AND D. STUBBS

Development of a Carbon Composite Driver for Golf

S. M. EHLERS

Benchmarking Composite Golf Shafts for Design Purposes.

T. MASE

Increased Composite Performance in Production Boatbuilding.

J. PARKER

Electromagnetic Propagation and Radiative Transport in Fibrous Composites: Dependent Scattering Effects

BIH-CHERNG CHERN, TESS J. MOON, AND JOHN R. HOWELL

Effects of Sea Water on Foam Cored Composite

Sandwich Structure

Y. J. WEITSMAN AND X. LI

SESSION TC5: COMPOSITES FOR MARINE STRUCTURES—3

Characterization of Constitutive Behavior of Satin-Weave Fabric Composite.

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Influence of Core Density and Facesheet Properties on Debond Fracture Strength of Foam Core Sandwich Composites.

K. N. SHIVAKUMAR AND S. A. SMITH

On the Use of Composite Material Sandwich Structures for Naval Double-Hull Construction

J. R. VINSON

High Strain Compression of Cellular Foam Core Sandwich Composites at Sub-ambient Temperatures

T. THOMAS, H. MAHFUZ, K. KANNY AND S. JEELANI

SESSION TA6: COMPOSITES IN RECREATION

Thermoplastic Composite Materials: Their Design & Use in Golf Shafts

M. BUCK, D. PARK AND D. STUBBS

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S. M. EHLERS

Benchmarking Composite Golf Shafts for Design Purposes.

T. MASE

Increased Composite Performance in

Production Boatbuilding.
J. PARKER

SESSION TB6: EDUCATION IN COMPOSITES—1

**An Undergraduate Curriculum in Composite
Materials Engineering**

B. ABDEL-MAGID, K. DENNEHY, M. GRAMI AND F. PARSI

**The Use of Composites in Radio-Controlled Cargo Airplanes
Designed for Student SAE Aero Design Competitions.**

J. H. LUMKES, JR. AND V. C. CESAREO

**Rationale for Bio-Composite Materials Education For the
New Millennium**

A. K. MOHANTY, L. T. DRZAL AND M. MISRA

WorldWideWeb Resources for Composite Materials.

S. ABRATE

SESSION TC6: EDUCATION IN COMPOSITES—2

**An Introductory Composites Course for Undergraduate
Engineering Students.**

W. E. HOWARD

**Active Learning of Composite Materials of
Civil Engineering.**

J. F. DAVALOS AND P. QIAO

**Applications of Spreadsheet Programs in Impact
Dynamics Analyses.**

S. ABRATE

SESSION WA1: FRACTURE/FAILURE—1

**Modeling of Opening Displacement of Transverse Cracks in
Graphite-Epoxy Laminates Using Shear Lag Analysis**

S. ROY AND M. BENJAMIN

Propellant Leakage through Laminated Structures.

T. AOKI, H. KUMAZAWA AND I. SUSUKI

**Microcapsule Induced Toughening in a Self-Healing
Polymer Composite**

E. N. BROWN, N. R. SOTTOS AND S. R. WHITE

**Damage Mechanism of Rubber-Toughened Epoxy Resin
Around a Crack in Thin adhesive Layer Constrained**

by Hard Adherends

T. IKEDA, D.-B. LEE, J. MANO, N. MIYAZAKI AND N.-S. CHOI

**Crack Propagation Behavior in glass Cloth Reinforced Vinylester
Composite with Functional Interphase.**

M. MIZOGUCHI, M. YAMANOUCI, M. SHIBAYA AND H. HAMADA

SESSION WB1: FRACTURE/FAILURE—2

Failure of Tapered Composite Beams Loaded in Torsion,

Experimental Results

P. VALSGAARD, A. J. VIZZINI AND O. T. THOMSEN

Effect of Fiber Orientation on Fracture Toughness of CFRP.

H. MIYAGAWA, C. SATO AND K. IKEGAMI

Statistical Strength Prediction of Cross-ply Laminates of Glass and Carbon Fiber Reinforced Plastics

J. NODA, T. OKABE, N. TAKEDA AND M. SHIMIZU

Probabilistic Failure Issues in Creep Buckling and Delaminations of Viscoelastic Composite Columns and Plates with Piezoelectric Controls

H. H. HILTON

Modeling the Boundary Effects on the Dynamic Failure on Deep Ceramic Beam.

G. MA, B. A. GAMA AND J. W. GILLESPIE, JR.

SESSION WA2: STRESS ANALYSIS/MODELING—1

Mechanisms and Structural Parameters Affecting the Interlaminar Stress Field in Laminates with Ply Dropoffs

D.-J. SHIM AND P. A. LAGACE

Probabilistic Teleopic/Tunneling Mechanics for Composites

C. C. CHAMIS

Fuzzy Set Approach to FPF and Fracture Analysis of Axially Compressed Cylindrical Panels.

A. MUC

Matrix Cracking in Cross Ply Laminates under Bending

S. KURIAKOSE AND R. TALREJA

Stiffness Reduction Factors for Laminates Containing Ply Cracks

J. M. WHITNEY

SESSION WB2: STRESS ANALYSIS/MODELING—2

Sheet Hydroforming for Woven FRT Composites: Non-Orthogonal Constitutive Equation Considering Undulation of Woven Structure

W. R. YU, M. ZAMPALONI, F. POURBOGHRAAT, K. CHUNG AND T. J. KANG

Discrete Optimization of 2-D Composite Structures

A. MUC

Material Property Investigation of a Bio-Inspired Composite

P. A. SARMA, R. M. PIDAPARTI AND R. A. MEISS

Computer-Aided Design Modeling for Heterogeneous Bone Structure

W. SUN, B. STARLY, A. LAU, D. LIM, R. SELIKTAR, W. LAU, A. YOUSSEF, T. BRADBURY AND C. GAYLO

SESSION WA3: IMPACT—1

Effects of Thickness and Temperature on the Residual Compressive Strength of Polyester S2 Glass Laminates Subjected to Low Energy Impact

E. J. RIGAS AND S. PETRIE

A Multiscale/Cohesive Zone Model for Composite Laminate Impact Damage

T. TIPPETTS, I. J. BEYERLEIN AND T. O. WILLIAMS

Low Velocity Impact and Vibration Response of Multi-Functional Sandwich Plates

U. VAIDYA, S. PILLAY, C. ULVEN, G. JANOWSKI AND M. HOSUR

Analysis of Delamination in Composite Laminates under Impact Loading

K. MINNAAR AND M. ZHOU

Ballistic Impact Resistance of Monolithic, Hybrid and Nano Composites of PC and PMMA

J. W. SONG AND A. J. HSIEH

SESSION WB3: IMPACT—2

Load-Displacement Curves of Glass/Epoxy Laminates Subjected to Low-Velocity Impact

D. LIU AND B. B. RAJU

Material and Low-Velocity Impact Characterizations of Textile Composite Plates.

S. J. KIM AND K. H. JI

Tailoring of Wave Propagation Characteristics in Periodic Structures with Multilayer Unit Cells

M. I. HUSSEIN, G. M. HULBERT AND R. A. SCOTT

Modeling of Ballistic Impact on Composite Laminates using a Meshless Method.

Q. ZENG AND C. T. SUN

SESSION WA4: HEALTH MONITORING/NDE—1

Embedded MEMS Sensors for Structural Health Monitoring of Composite Materials

M. UL HOQUE AND A. TAYEBI

Non-Destructive Evaluation of Armor Inserts.

K. JUZENAS, A. DOMINAUSKAS, D. HEIDER AND J. W. GILLESPIE, JR.

A Smart Patch for Monitoring Crack Growth in Metallic Structures Underneath Bonded Composite Repair Patches

J.-B. IHN AND F.-K. CHANG

Damage Detection of CFRP Composites Using the Anisotropy of the Electrical Conductivity

J. B. PARK, T. OKABE, A. YOSHIMURA AND N. TAKEDA

Phased Transducer Arrays for Structural Diagnostics through Beamforming.

S. SUNDARARAMAN AND D. E. ADAMS

Mechanics of Failure of Embedded Fiber Optic Sensor Composite Laminates Under Tension And Compression Loads
K. SHIVAKUMAR AND L. EMMANWORI

SESSION WB4: HEALTH MONITORING/NDE—2

Acousto-Ultrasonics: A Tool for Nondestructive Evaluation of Multi-layer Composites

V. F. GODÍNEZ-AZCUAGA, R. D. FINLAYSON AND R. K. MILLER
LambWave Evaluation and Localization of Ply Cracks in Composite Laminates

T. OKABE, N. TOYAMA AND N. TAKEDA

A Polymer-Metal Composite Surface Stress Sensor

J. THAYSEN, O. HANSEN AND A. MENON

Characteristics of Vibration Suppression for SMA/CF and SMA/GF Hybrid Composites

Y. AOKI AND G. BEN (O. BYON)

SESSION WA5: CARBON-CARBON COMPOSITES

Manufacture of Functionally Gradient Carbon-Carbon Composites.

A. FATZ, T. CORDELL, F. DILLON, M. LA FOREST, P. BRAUNISCH, T. SIEGMUND, R. CIPRA, J. LIAKUS, W. STRIEDER, S. UPADHYAYULA AND S. SADDAWI

A Combined Experimental-Numerical Investigation of Crack Growth in C-C Composites

J. HAN AND T. SIEGMUND

A Thermomechanical Crack Bridging Model

A. HATTIANGADI AND T. SIEGMUND

Friction and Wear Behavior of Carbon-Carbon Composites.

H. K. SHIN, W. C. CHOI, S. H. PARK, J. H. PARK AND K. S. KIM

SESSION WB5: INFRASTRUCTURE

Experimental and Analytical Evaluation of Shear Stud Type Connectors for FRP Bridge Decks to Steel Stringers

J. RIGHMAN, K. BARTH AND J. DAVALOS

Stress-Strain Relationship of Compressed Elements from Polymer Concrete with Polybutadiene Matrix.

O. FIGOVSKY, Y. POTAPOV, Y. BORISOV AND D. BEILIN

Modeling of Debond Growth at FRP-Concrete Interface in Aggressive Environments

S. ROY, F.-W. SHIUE, S. PARK AND K. M. LIECHTI

The CFRP-Concrete Interface Subjected to Sodium -Sulfate and -Hydroxide Attack

D. M. BOYAJIAN, J. F. DAVALOS, I. RAY AND S. KODKANI

SESSION WA6: AUTOMOTIVE/APPLICATIONS—1

Effect of Impact Damage on the Specific Energy Absorption of Glass/Polyester Composites

M. RIBEAUX AND N. A. WARRIOR

Dynamic Axial Crush of Automotive Rail-Sized Composite Tubes Part 1: Tubes with Woven Reinforcements (Carbon, Kevlar®, and Glass) and Non-Plug Crush Initiators.

A. L. BROWNE AND S. A. IOBST

Geometric and Loading Rate Effects on the Energy Absorption of Triaxially Braided Carbon Vinyl Ester Tubes

R. FERNIE, M. J. DUCKETT AND N. A. WARRIOR

Axial Crush Resistance of Aluminum-Composite Hybrid Tubes.

J. M. BABBAGE AND P. K. MALLICK

Analytical and Computational Models for Cord-Reinforced Composites

H. HASSIS, S. KOCAK AND R. M. PIDAPARTI

SESSION WB6: AUTOMOTIVE/APPLICATIONS—2

Development of Thermoplastic Matrix Composite Tubes for Automotive Applications

G. JANDALI, D. KANAWADE AND P. K. MALLICK

Crush Analysis of Structural Foams Inside a Hollow Steel Tube Under Low-Velocity Uni-axial Compressive Loading.

R. MANN, P. R. MANTENA AND C. MULLEN

Design of Integrated FRP Energy Absorber with Bolted Joint

H. HAMADA, K. SUGIMOTO, H. SAITO AND R. INAI

Design and Performance of Composite Multifunctional Structure-Battery Materials

M. A. QIDWAI, J. P. THOMAS AND P. MATIC

Eco Friendly Sustainable Bio-Composites From Natural Fibers and Cellulosic Plastics for Automotive Applications

L. T. DRZAL, A. K. MOHANTY, A. WILBOWO AND M. MISRA