

# Journal of Composites Technology & Research

## Subject Index

### Volume 16, 1994

#### A-B

##### Acoustic emission

Prediction of fatigue life of composite femoral prostheses using acoustic emission technique (Sundaresan, MJ, Henneke, EG, II, and Reifsnider, KL), April, 127

##### Adhesive joints

Mixed mode energy release rates for adhesively bonded beam specimens (Femlund, G and Spelt, JK), July, 234

##### Bending strength

Effect of fiber-fiber interaction on the strength properties of short fiber reinforced cements (Karam, GN), April, 154

##### Biaxial testing

Biaxial tension-compression test method for composite laminates (Wang, JZ and Socie, DF), Oct., 336

##### Book reviews

*Fiber-Reinforced Ceramic Composites: Materials, Processing and Technology* by Mazdayasni (Yang, F and Saxena, A), July, 284

*Handbook of Composite Reinforcements* by Lee (Johnson, WS), Oct., 352

#### C

##### Ceramic matrix composites

Micromechanics of ambient temperature cyclic fatigue loading in a composite of CAS glass ceramic reinforced with Nicalon fibers (Rousseau, CQ, Davidson, DL, and Campbell, JB), April, 115

##### Classical laminate theory (CLT)

Classical laminate theory models for woven fabric composites (Raju, IS and Wang, JT), Oct., 289

##### Coefficient of thermal expansion

Residual stresses in SCS-6/Ti-24Al-11Nb composite: Part I—Experimental (Rangaswamy, P, Revelos, WC, and Jayaraman, N), Jan., 47

Residual stresses in SCS-6/Ti-24Al-

11Nb composite: Part II—Finite element modeling (Rangaswamy, P and Jayaraman, N), Jan., 54

Time-dependent behavior of continuous-fiber-reinforced metal matrix composites: modeling and applications (Tamin, MN, Zheng, D, and Ghonem, HJ), Oct., 314

##### Compressive strength

Analytical and experimental evaluation of 0/90 laminate tests for compression characterization (Wilson, DW, Altstädt, V, Maier, M, Prandy, J, Thoma, K, and Vinckier, D), April, 146

##### Crack density

Effects of an expanding monomer on the tensile properties of graphite/epoxy (Orso, J and Vizzini, AJ), July, 270

##### Crack opening displacements

Micromechanics of ambient temperature cyclic fatigue loading in a composite of CAS glass ceramic reinforced with Nicalon fibers (Rousseau, CQ, Davidson, DL, and Campbell, JB), April, 115

##### Cross-ply laminates

Thermo-elastic properties of composite laminates with transverse cracks (Varna, J and Berglund, LA), Jan., 77

#### D-E

##### Damage progression

Advanced test technique to quantify thermomechanical fatigue damage accumulation in composite materials (Castelli, MG), Oct., 323

##### Delamination

Effect of through thickness tensile and compressive stresses on delamination propagation fracture energy (Cui, W, Wisnom, MR, and Jones, MI), Oct., 329

##### Efficiency factor

Effect of fiber-fiber interaction on the strength properties of short fiber reinforced cements (Karam, GN), April, 154

##### Elastic properties

Self-consistent fabric geometry model: modification and application of a fabric geometry model to predict the elastic properties of textile composites (Pastore, CM and Gowayed, YA), Jan., 32

##### Expanding monomer

Effects of an expanding monomer on the tensile properties of graphite/epoxy (Orso, J and Vizzini, AJ), July, 270

#### F

##### Fabric and woven composites

Classical laminate theory models for woven fabric composites (Raju, IS and Wang, JT), Oct., 289

##### Failure

New failure criterion for nonlinear composite materials (Abu-Farsakh, GA and Abdel-Jawad, YA), April, 138

##### Failure strength

Biaxial tension-compression test method for composite laminates (Wang, JZ and Socie, DF), Oct., 336

##### Fatigue

Longitudinal fatigue response of a metal matrix composite under strain controlled mode at elevated temperature (Sanders, BP and Mall, S), Oct., 304

Micromechanics of ambient temperature cyclic fatigue loading in a composite of CAS glass ceramic reinforced with Nicalon fibers (Rousseau, CQ, Davidson, DL, and Campbell, JB), April, 115

Prediction of fatigue life of composite femoral prostheses using acoustic emission technique (Sundaresan, MJ, Henneke, EG, II, and Reifsnider, KL), April, 127

##### Fiber cracks

Longitudinal fatigue response of a metal matrix composite under strain controlled mode at elevated temperature (Sanders, BP and Mall, S), Oct., 304

**Fiber-fiber interaction**

Effect of fiber-fiber interaction on the strength properties of short fiber reinforced cements (Karam, GN), April, 154

**Fiber-matrix adhesion**

Interphase in unidirectional fiber-reinforced epoxies: effect on local stress fields (Jayaraman, K, Gao, Z, and Reifsnider, KL), Jan., 21

**Fiber-matrix interphase**

Interphase in unidirectional fiber-reinforced epoxies: effect on local stress fields (Jayaraman, K, Gao, Z, and Reifsnider, KL), Jan., 21

**Fiber-reinforced epoxies**

Interphase in unidirectional fiber-reinforced epoxies: effect on local stress fields (Jayaraman, K, Gao, Z, and Reifsnider, KL), Jan., 21

**Fiber strains**

Micromechanics of ambient temperature cyclic fatigue loading in a composite of CAS glass ceramic reinforced with Nicalon fibers (Rousseau, CQ, Davidson, DL, and Campbell, JB), April, 115

**Fibrous composites**

New failure criterion for nonlinear composite materials (Abu-Farsakh, GA and Abdel-Jawad, YA), April, 138

**Finite element modeling**

Residual stresses in SCS-6/Ti-24Al-11Nb composite: Part II—Finite element modeling (Rangaswamy, P and Jayaraman, N), Jan., 54

**Fracture**

Mixed mode energy release rates for adhesively bonded beam specimens (Fernlund, G and Spelt, JK), July, 234

**Fracture energy**

Effect of through thickness tensile and compressive stresses on delamination propagation fracture energy (Cui, W, Wisnom, MR, and Jones, MI), Oct., 329

**G-H****Graphite/epoxy**

Effects of an expanding monomer on the tensile properties of graphite/epoxy (Orso, J and Vizzini, AJ), July, 270

**Hip prosthesis**

Prediction of fatigue life of composite femoral prostheses using acoustic emission technique (Sundaresan, MJ, Henneke, EG, II, and Reifsnider, KL), April, 127

**Hole effects**

Fracture behavior of a fiber-reinforced titanium matrix composite with open and filled holes at room and elevated temperatures (Roush, JT and Mall, S), July, 201

**I****Impact damage**

Residual strength of impacted composites: analysis and tests (Gottesman, T, Girshovich, S, Drukker, E, Sela, N, and Loy, J), July, 244

**In-plane shear**

Failure behavior of plain weave fabric laminates under in-plane shear loading (Naik, NK and Ganesh, VK), Jan., 3

**Interface strength**

Measurement of interfacial properties for aluminum and titanium matrix alloy composites manufactured by vacuum plasma spray (Valente, T), July, 256

**Interfacial region**

Time-dependent behavior of continuous-fiber-reinforced metal matrix composites: modeling and applications (Tamin, MN, Zheng, D, and Ghonem, HJ), Oct., 314

**Intermetallic matrix**

Micromechanical modeling of process-induced residual stresses in Ti-24Al-11Nb/SCS-6 composite (Chandra, N, Ananth, CR, and Garmestani, H), Jan., 37

**L****Laminate configuration**

Failure behavior of plain weave fabric laminates under in-plane shear loading (Naik, NK and Ganesh, VK), Jan., 3

**Laminate strength**

Analytical and experimental evaluation of 0/90 laminate tests for compression characterization (Wilson, DW, Altstädt, V, Maier, M, Prandy, J, Thoma, K, and Vinckier, D), April, 146

**Laminates**

Biaxial tension-compression test method for composite laminates (Wang, JZ and Socie, DF), Oct., 336

**Life prediction**

Prediction of fatigue life of composite femoral prostheses using acoustic emission technique (Sundaresan, MJ, Henneke, EG, II, and Reifsnider, KL), April, 127

**Longitudinal**

Longitudinal fatigue response of a metal matrix composite under strain controlled mode at elevated temperature (Sanders, BP and Mall, S), Oct., 304

**M****Metal matrix composites**

Effect of laminate orientation on the thermomechanical fatigue behavior of a titanium matrix composite (Neu, RW and Nicholas, T), July, 214

Elevated temperature fatigue behavior of tungsten fiber reinforced superalloy composites (Yuen, JL and Petrusek, DW), Oct., 343

Fracture behavior of a fiber-reinforced titanium matrix composite with open and filled holes at room and elevated temperatures (Roush, JT and Mall, S), July, 201

Longitudinal fatigue response of a metal matrix composite under strain controlled mode at elevated temperature (Sanders, BP and Mall, S), Oct., 304

Measurement of interfacial properties for aluminum and titanium matrix alloy composites manufactured by vacuum plasma spray (Valente, T), July, 256

Micromechanical modeling of process-induced residual stresses in Ti-24Al-11Nb/SCS-6 composite (Chandra, N, Ananth, CR, and Garmestani, H), Jan., 37

Residual stresses in SCS-6/Ti-24Al-11Nb composite: Part I—Experimental (Rangaswamy, P, Revelos, WC, and Jayaraman, N), Jan., 47

Time-dependent behavior of continuous-fiber-reinforced metal matrix composites: modeling and applications (Tamin, MN, Zheng, D, and Ghonem, HJ), Oct., 314

Unidirectional tensile stress-strain response of BP-SiC fiber reinforced Ti-6Al-4V (Li, DS and Wisnom, MR), July, 225

**Metal matrix laminates**

Response of metal matrix laminates with temperature-dependent properties (Mirzadeh, JA and Herakovich, CT), Jan., 68

**Micromechanics**

Self-consistent fabric geometry model: modification and application of a fabric geometry model to predict the elastic properties of textile composites (Pastore, CM and Gowayed, YA), Jan., 32

Unidirectional tensile stress-strain response of BP-SiC fiber reinforced Ti-6Al-4V (Li, DS and Wisnom, MR), July, 225

**Mixed mode**

Mixed mode energy release rates for adhesively bonded beam specimens (Fernlund, G and Spelt, JK), July, 234

**N-P****Nondestructive evaluations (NDE)**

Residual strength of impacted composites: analysis and tests (Gottesman, T, Girshovich, S, Drukker, E, Sela, N, and Loy, J), July, 244

**Notched**

Effect of notch on failure of two-dimensional  $\pm 45^\circ$  triaxial braided textile composite materials (Norman, TL and Patrick, M), July, 262

**Notched strength**

Fracture behavior of a fiber-reinforced titanium matrix composite with open and filled holes at room and elevated temperatures (Roush, JT and Mall, S), July, 201

**Plain weave**

Classical laminate theory models for woven fabric composites (Raju, IS and Wang, JT), Oct., 289

**Push-out**

Measurement of interfacial properties for aluminum and titanium matrix alloy composites manufactured by vacuum plasma spray (Valente, T), July, 256

**R****Random orientation fibers**

Development of strength theories for random fiber composites (Giurgiutiu, V and Reifsnider, KL), April, 103

**Residual stresses**

Micromechanical modeling of process-induced residual stresses in Ti-24Al-11Nb/SCS-6 composite (Chandra, N, Ananth, CR, and Garmestani, H), Jan., 37

Residual stresses in SCS-6/Ti-24Al-11Nb composite: Part II—Finite element modeling (Rangaswamy, P and Jayaraman, N), Jan., 54

Time-dependent behavior of continuous-fiber-reinforced metal matrix composites: modeling and applications (Tamin, MN, Zheng, D, and Ghonem, HJ), Oct., 314

**S****Satin weaves**

Classical laminate theory models for woven fabric composites (Raju, IS and Wang, JT), Oct., 289

**Silicon carbide**

Micromechanical modeling of process-induced residual stresses in Ti-24Al-11Nb/SCS-6 composite (Chandra, N, Ananth, CR, and Garmestani, H), Jan., 37

**Silicon carbide/titanium**

Effect of laminate orientation on the thermomechanical fatigue behavior of a titanium matrix composite (Neu, RW and Nicholas, T), July, 214

**Strain energy**

New failure criterion for nonlinear composite materials (Abu-Farsakh, GA and Abdel-Jawad, YA), April, 138

**Strain energy release rate**

Effect of through thickness tensile and compressive stresses on delamination propagation fracture energy (Cui, W, Wisnom, MR, and Jones, MI), Oct., 329

**Strength**

Development of strength theories for random fiber composites (Giurgiutiu, V and Reifsnider, KL), April, 103

**Stress-strain response**

Development of strength theories for random fiber composites (Giurgiutiu, V and Reifsnider, KL), April, 103

**Superalloys**

Elevated temperature fatigue behavior of tungsten fiber reinforced superalloy composites (Yuen, JL and Petrusek, DW), Oct., 343

**T****Tensile strength**

Fracture behavior of a fiber-reinforced titanium matrix composite with open and filled holes at room and elevated temperatures (Roush, JT and Mall, S), July, 201

**Tension test methods**

Unidirectional tensile stress-strain response of BP-SiC fiber reinforced Ti-6Al-4V (Li, DS and Wisnom, MR), July, 225

**Tension**

Effects of an expanding monomer on the tensile properties of graphite/epoxy (Orso, J and Vizzini, AJ), July, 270

**Test techniques**

Advanced test technique to quantify thermomechanical fatigue damage accumulation in composite materials (Castelli, MG), Oct., 323

**Textiles**

Effect of notch on failure of two-dimensional  $\pm 45^\circ$  triaxial braided textile composite materials (Norman, TL and Patrick, M), July, 262

Self-consistent fabric geometry model: modification and application of a fabric geometry model to predict the elastic properties of textile composites (Pastore, CM and Gowayed, YA), Jan., 32

**Thermal effects**

Response of metal matrix laminates with temperature-dependent properties (Mirzadeh, JA and Herakovich, CT), Jan., 68

**Thermal nondestructive evaluation**

Field deployable nondestructive impact damage assessment methodology for composite structures (Zalameda, JN, Farley, GL, and Smith, BT), April, 161

**Thermo-elastic properties**

Thermo-elastic properties of composite laminates with transverse cracks (Varna, J and Berglund, LA), Jan., 77

**Thermomechanical fatigue (TMF)**

Advanced test technique to quantify thermomechanical fatigue damage accumulation in composite materials (Castelli, MG), Oct., 323

Effect of laminate orientation on the thermomechanical fatigue behavior of a titanium matrix composite (Neu, RW and Nicholas, T), July, 214

**Through-the-thickness reinforcement**

Field deployable nondestructive impact damage assessment methodology for composite structures (Zalameda, JN, Farley, GL, and Smith, BT), April, 161

**Titanium matrix**

Residual stresses in SCS-6/Ti-24Al-11Nb composite: Part II—Finite element modeling (Rangaswamy, P and Jayaraman, N), Jan., 54

**Transverse cracking**

Thermo-elastic properties of composite laminates with transverse cracks (Varna, J and Berglund, LA), Jan., 77

**Triaxial braided**

Effect of notch on failure of two-dimensional  $\pm 45^\circ$  triaxial braided textile composite materials (Norman, TL and Patrick, M), July, 262

**Tungsten fiber**

Elevated temperature fatigue behavior of tungsten fiber reinforced superalloy composites (Yuen, JL and Petrusek, DW), Oct., 343

**Two-dimensional woven fabric composite models**

Failure behavior of plain weave fabric laminates under in-plane shear loading (Naik, NK and Ganesh, VK), Jan., 3

**U-W**

**Ultrasonic testing**

Residual strength of impacted composites: analysis and tests (Gottesman, T, Girshovich, S, Drukker, E, Sela, N, and Loy, J), July, 244

**Ultrasonic volumetric imaging**

Field deployable nondestructive impact damage assessment methodology for composite structures (Zalameda, JN, Farley, GL, and Smith, BT), April, 161

**Woven fabric laminates**

Failure behavior of plain weave fabric laminates under in-plane shear loading (Naik, NK and Ganesh, VK), Jan., 3

**X-Z**

**X-ray diffraction**

Residual stresses in SCS-6/Ti-24Al-

11Nb composite: Part I—Experimental (Rangaswamy, P, Revelos, WC, and Jayaraman, N), Jan., 47

**Yielding**

Response of metal matrix laminates with temperature-dependent properties (Mirzadeh, JA and Herakovich, CT), Jan., 68

**0/90 laminates**

Analytical and experimental evaluation of 0/90 laminate tests for compression characterization (Wilson, DW, Altstädt, V, Maier, M, Prandy, J, Thoma, K, and Vinckier, D), April, 146