

Table of Contents

Preface

Strain Monitoring Using a Rayleigh Backscattering System for a Composite UAV Wing Instrumented with an Embedded Optical Fiber	1
P. Martinez Bueno, M. Martinez, C. Rans and R. Benedictus	1
Structural Behavior of Composite Laminates Subjected to Interlaminar Damage Induced by Thermal Fatigue	20
A.E. Treml, R.F. Gouvêa, R.C.M. Sales, M.V. Donadon and J.D. Bressan	20
Influence of Temperature on Interlaminar Fracture Toughness of a Carbon Fiber-Epoxy Composite Material	35
R. de Cássia Mendonça Sales, B.L. Rossi Dias Endo and M.V. Donadon	35
Compression Failure Modes of Carbon Fiber Fabric Scraps/Epoxy Laminates	52
C.V. Opelt, C.S.R. Souza, J.M.F. Marlet, G.M. Cândido and M.C. Rezende	52
Experimental Investigation of Processing Welding Parameters for PPS/Carbon Fiber Laminates for Aeronautical Applications	62
S.D.B. de Souza, A.B.R.M. Abrahão, M.L. Costa, J.M.F. Marlet, L.R.O. Hein and E.C. Botelho	62
Carbon Fiber Surface Modification by Plasma Treatment for Interface Adhesion Improvements of Aerospace Composites	75
A.L. Santos, E.C. Botelho, K.G. Kostov, M. Ueda and L.L.G. da Silva	75
Application of Shunted Piezoelectric Materials in Aeroelasticity	88
L.S. Leao, M.V. Donadon, A.M.G. de Lima and A.G.C. Filho	88
Electromagnetic Evaluation of Multifunctional Composites for Use in Radar Absorbing Structures	104
L. de Castro Folgueras, M.A. Alves and M.C. Rezende	104
Experimental Determination of the Crack Tip Stress Intensity Factor in Integrally Stiffened Panels	112
C.E. Chaves and C.M. de Assunção	112
Fatigue Life Estimation of Aeronautical Joints Based on Stress Severity Factor	128
R. da Silva Gonçalves and C.E. Chaves	128
Numerical and Experimental Analysis of Adhesively Bonded Stiffened Panels Subjected to In-Plane Compression Loading	140
M. Rossini and M.V. Donadon	140
Analysis of Aluminum Extrusion in a 90° Die by Finite Volume Method	153
M. Matos Martins, S.T. Button and J.D. Bressan	153
Three Strategies to Achieve Concurrent Strengthening by Ultrafine-Grained and Precipitation Hardenings for Severely Deformed Age-Hardnable Aluminum Alloys	161
H. Shoichi, Y.P. Tang, Z. Horita, S.W. Lee, K. Matsuda and D. Terada	161
Mechanical Behavior of Surface Nitrided and Heat-Treated Laser Welded Ti-6Al-4V	167
H.R. Simoni, A.J. Abdalla, C.A.R.P. Baptista and M.S.F. de Lima	167
Phase Transformations during Laser Processing of Aerospace Metallic Materials	179
M.S.F. de Lima	179
Modelling of Forming Limit Strains of AA5083 Aluminium Sheets at Room and High Temperatures	202
J.D. Bressan, L.P. Moreira, M.C. dos Santos Freitas, S. Bruschi, A. Ghiotti and F. Michieletto	202
Industrial Applications of Hard and Superhard Nanocomposite Coatings on Tools for Machining, Forming, Stamping and Injection Molding	218
S. Veprek, P. Holubar and M. Veprek-Heijman	218
Advances in the Turning of Titanium Alloys with Carbide and Superabrasive Cutting Tools	234
R.B. da Silva, M.B. da Silva, W.F. Sales, E.O. Ezugwu and Á.R. Machado	234
Comparison of Mechanical and Microstructural Characteristics in Maraging 300 Steel Welded by PAW and GTAW Processes Submitted to Repair	255
P.R. Sakai, D.F. da Silva, S. Lombardo and A.J. Abdalla	255