

Table of Contents

Preface

Topological Optimization of Shell Laminate Composites Parts Manufactured by the TFP Process P. Yu, J. Simon, C. Binetruy and N. Hamila	1
Process Influences on Plastificate and Fiber Microstructure Formation: An LFT-D Compression Molding Parameter Study C. Schelleis, L. Meckes and F. Henning	9
Stability of Tubular Preforms from Multi-Layer Winding of Composite Tapes Prior to Thermoforming N. Elgaby, G. Helbert, N. Hamila, R. Campos, A. Sanchez and B. Laine	21
Influence of Fiber Orientation Clustering Methods in Virtual Process Chains of Discontinuous-Fiber Composite Components L. Schreyer, L.S. Pusineri Yaluff, C. Krauß and L. Kärger	33
Wrinkling Behaviour of Engineering Fabrics in Diaphragm-Assisted Deep Drawing A. Tabatabaiean, C. Blair, K. Ambuehl and P. Harrison	43
Fibre Tension-Induced Stresses in Filament-Wound Composites J. Liu, S.V. Lomov, C.H. Park and J. Ivens	53
Thermo-Chemical Modeling and Experimental Validation of Pultruded Glass Fiber Reinforced Composites J. Harris, S. Gharat, L. Wang, A. Zolali, A. Taub and M. Banu	61
Controlled Preform Consolidation for Manufacturing Difficult Resin System Composites D.R. Palubiski, N. Shirshova, E.S. Greenhalgh, M.S.P. Shaffer and D.S. Ivanov	75
Multi-Stage Consolidation Strategy to Improve Impregnation Quality in Thermoplastic UD Tapes O. Eryilmaz, O. Yuksel, M. El-Jakl, N. Karakaya, G. Ozkoc and B. Caglar	85
Cost-Effective One-Shot Stamping of Steel-Based High-Performance Lightweight Multi-Material Structures H. Wu, M. Mohamed, C. Gao, Z. Ding, M. Ganapathy, P. Biswas, R.K. Verma, A. Taylor and N. Li	95
A CT-Based Methodology for Mesostructural Characterization of Unidirectional Continuous-Fiber Polymer Composites Using Line-Profile Descriptors R. Mele, P. De Sio, F. Tucci and P. Carlone	103
Environmental Impact Assessment of Thermoplastic Pultrusion of GF-PP Pre-Consolidated Tapes P. De Sio, E. Cozzolino, F. Tucci and A. Astarita	119
The First European Benchmark Exercise on Squeeze Flow Testing of High-Performance C-SMCs: Review C. Qian, M. Duhovic, L. Schreyer, M. Olma, A. Gebhard, W.J.B. Grouve, D. Schommer, F. Gortner, T. Neumeyer, L. Kärger, M. Hohberg, H. Yuan, A.J. Imbsweiler, L.S. Ramirez, S. Simaafrookhteh, J. Ivens, S.V. Lomov, G. Bieleman, F. Mahé, C. Binetruy, A. Kapshammer, Z. Major, D.S. Ivanov, J.P.H. Belnoue, A. Koptelov, J. Jakimow, Y. Aitomaki and D. Ramantani	131
Iterative Un-Forming of Highly Aligned Discontinuous Preform/Material Y. Feng, H. Yuan, B.O. Yavuz, I. Hamerton, B.C. Kim, S.R. Hallett and J.P.H. Belnoue	143
Mechanical Response of Flax Rovings under Compaction: Experimental Investigation S. Zidi, T. Larquemin, A. Hivet, G. Hivet and D. Duriatti	153