

Contents

1	Micromechanics of the Deformation and Failure Kinetics of Semicrystalline Polymers	1
	J.A.W. van Dommelen, A. Sedighiamiri, and L.E. Govaert	
2	Stress-Relaxation Behavior of Poly(Methyl Methacrylate) (PMMA) Across the Glass Transition Temperature	9
	Danielle Mathiesen, Dana Vogtmann, and Rebecca Dupaix	
3	The Effect of Stoichiometric Ratio on Viscoelastic Properties of Polyurea	17
	Zhanzhan Jia, Alireza V. Amirkhizi, Kristin Holzworth, and Sia Nemat-Nasser	
4	Dynamic Properties for Viscoelastic Materials Over Wide Range of Frequency	21
	T. Tamaogi and Y. Sogabe	
5	Spatio-Temporal Principal Component Analysis of Full-Field Deformation Data	29
	Srinivas N. Grama and Sankara J. Subramanian	
6	Master Creep Compliance Curve for Random Viscoelastic Material Properties	41
	Jutima Simsiriwong, Rani W. Sullivan, and Harry H. Hilton	
7	Processability and Mechanical Properties of Polyoxymethylene in Powder Injection Molding	49
	J. Gonzalez-Gutierrez, P. Oblak, B.S. von Bernstorff, and I. Emri	
8	Constitutive Response of Electronics Materials	57
	Ryan D. Lowe, Jacob C. Dodson, Jason R. Foley, Christopher S. Mougeotte, David W. Geissler, and Jennifer A. Cordes	
9	Analytical and Experimental Protocols for Unified Characterizations in Real Time Space for Isotropic Linear Viscoelastic Moduli from 1-D Tensile Experiments	75
	Michael Michaeli, Abraham Shtark, Hagay Grosbein, Eli Altus, and Harry H. Hilton	
10	High Temperature Multiaxial Creep-Fatigue and Creep-Ratcheting Behavior of Alloy 617	83
	Shahriar Quayyum, Mainak Sengupta, Gloria Choi, Clifford J. Lissenden, and Tasnim Hassan	
11	Metastable Austenitic Steels and Strain Rate History Dependence	99
	Matti Isakov, Kauko Östman, and Veli-Tapani Kuokkala	
12	Measurement Uncertainty Evaluation for High Speed Tensile Properties of Auto-body Steel Sheets	109
	M.K. Choi, S. Jeong, H. Huh, C.G. Kim, and K.S. Chae	
13	Effect of Water Absorption on Time-Temperature Dependent Strength of CFRP	121
	Masayuki Nakada, Shuhei Hara, and Yasushi Miyano	
14	Stress and Pressure Dependent Thermo-Oxidation Response of Poly (Bis)Maleimide Resins	129
	Nan An, G.P. Tandon, R. Hall, and K. Pochiraju	
15	Comparison of Sea Water Exposure Environments on the Properties of Carbon Fiber Vinylester Composites	139
	Chad S. Korach, Arash Afshar, Heng-Tseng Liao, and Fu-pen Chiang	

16	Low-Density, Polyurea-Based Composites: Dynamic Mechanical Properties and Pressure Effect	145
	Wiroj Nantasetphong, Alireza V. Amirkhizi, Zhazhan Jia, and Sia Nemat-Nasser	
17	Haynes 230 High Temperature Thermo-Mechanical Fatigue Constitutive Model Development	151
	Raasheduddin Ahmed, M. Menon, and Tasnim Hassan	
18	Temperature and Strain Rate Effects on the Mechanical Behavior of Ferritic Stainless Steels	161
	Kauko Östman, Matti Isakov, Tuomo Nyysönen, and Veli-Tapani Kuokkala	
19	Modeling and Simulation in Validation Assessment of Failure Predictions for High Temperature Pressurized Pipes	167
	J. Franklin Dempsey, Vicente J. Romero, and Bonnie R. Antoun	
20	Unified Constitutive Modeling of Haynes 230 for Isothermal Creep-Fatigue Responses	175
	Paul Ryan Barrett, Mamballykalathil Menon, and Tasnim Hassan	

<http://www.springer.com/978-3-319-00851-6>

Challenges In Mechanics of Time-Dependent Materials
and Processes in Conventional and Multifunctional
Materials, Volume 2

Proceedings of the 2013 Annual Conference on
Experimental and Applied Mechanics

Antoun, B.; Qi, H.J.; Hall, R.; Tandon, G.P.; Lu, H.; Lu, C.;
Furmanski, J.; Amirkhizi, A. (Eds.)

2014, VIII, 185 p. 145 illus., 67 illus. in color., Hardcover
ISBN: 978-3-319-00851-6