

# Mechanics Of Time-dependent Materials And Processes In Conventional And Multifunctional Materials

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Using Remendable Polymers for Aerospace Composite Structures.- Study of the Effect of Interface Enthalpy on Nanocomposite Viscoelasticity.- Sterilization Effect on Structure, Thermal and Time-dependent Properties of Polyamides.- Microstructural Evolution of Nafion During Uniaxial Deformation Monitored by X-ray Scattering.- Coupled Non-fickian Diffusion and Large Deformation of Hydrogels.- Accelerated Testing Methods for Oxidative Aging of Polymeric Composites.- Degradation of Shape Memory Polymer Due to Water and Diesel Fuels.- Structural Enhancement of Framing Members Using Polyurea.- Keynote Presentation (40 minutes).- Experiments and Models for the Time Dependent Mechanics of Nanoscale Polymeric Structures and Nanocrystalline Metal Films.- Study of Damage Evolution in High Strength Al Alloys Using X-ray Tomography.- Corrosion Behavior of SS 304 With Ball Milling and Electrolytic Plasma Treatment in NaCl Solution.- Experimental Studies of Phase Transformation in Shape Memory Alloys.- Measurement of Energy Loss in Thin Films Using Microbeam Deflection Method.- Multiscale Characterization of Water-, Oil- and UV-conditioned Shape-memory Polymer Under Compression.- Shape Memory Polymer Based Cellular Materials.- Influence of Mechanical Properties and Loading Conditions on the Recovery of Shape Memory Polymers.- Fatigue Cycling of Shape Memory Polymer Resin.- Higher Rate Testing of Long Fiber Filled Polypropylene.- Characterization of Elastomeric Composite Materials for Blast Mitigation.- Experimental Arrangement for Measuring the High-strain-rate Response of Polymers Under Pressures.- Simulation of Impact Tests on Polycarbonate at Different Strain Rates and Temperatures.- Experimental Investigation of Dynamic Mechanical Properties of Polyurea-fly Ash Composites.- Damage & Fracture of High-explosive Mock Subject to Cyclic Loading.- An Evaluation of A Modified Iosipescu Specimen for Measurement Of Elastic-plastic-creep Properties of Solder Materials.- Temperature Effect on Poisson s Ratio of Woven Composites.- Detection and Damage Monitoring in Composite Structures Using Piezoelectrics.- Representative Volume Element Analysis for the Evaluation of Effective Material.- Properties of Fiber and Particle Loaded Composites With Different Shaped.- Inclusions.- Stress-based Modeling of Composite

Materials.- Time Dependent (Creep) Deformation of Thin Elastomers at Cold Temperature and Effective Strain Analysis of Their Laminates.- Time and Temperature Response of Composite Overwrapped Cylinders.- High Temperature, Non-contact, Electro-magnetic Mechanical Apparatus for Creep Testing.- Experiments and Predictions of Large Deformation and Failure in Thermomechanical Loading Environments.- Compliance Plot Analysis of Nonlinear Response of PMMA During Nanoindentation.- An Incremental Formulation for the Linear Analysis of Viscoelastic Beams: Relaxation Differential Approach Using Generalized Variables.- Modeling the Nonlinear Viscoelastic Behavior of Polyurea Using a Distortionmodified Free Volume Approach.- An Incremental Constitutive Law for Damaging Viscoelastic Materials.- Reliability Analysis of Mixed Mode Cracking With Viscoelastic Orthotropic Behaviour.- Long-term Life Prediction of CFRP Structures Based on MMF/ATM Method.- Non-local Solutions to Direct and Inverse Problems in Mechanics: A Fractional Calculus Approach.- Study on Crystallinity Dependency of Creep Deformation on GFRTTP of Polyoxyethylene (POM).- Numerical Simulation of hot Imprint Process of Periodical Lamellar Microstructure Into Polycarbonate.- Rapid Characterization of Visco-elastic Properties of Polymeric Materials.- Estimation of Fatigue Life of Cortical Bone Considering Viscoelastic Properties and Damage Mechanics.- Crack Initiation and Viscoplasticity in Polyethylene Joint Replacement Components EAN/ISBN : 9781461402138 Publisher(s): Springer, Berlin, The Society for Experimental Mechanics, Inc. Format: ePub/PDF Author(s): Proulx, Tom

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