1. Record Nr. UNINA9910465314903321

Titolo	Multi-scales behaviour of materials : special topic volume with invited peer reviewed papers only / / edited by Moussa Karama
Pubbl/distr/stampa	Zurich, Switzerland : , : Trans Tech Publications, , 2012 ©2012
ISBN	3-03813-726-X
Descrizione fisica	1 online resource (236 p.)
Collana	Applied Mechanics and Materials, , 1662-7490 ; ; Volume 146
Altri autori (Persone)	KaramaMoussa
Disciplina	620.0011
Soggetti	Multiscale modeling Mathematical models Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and indexes.
Nota di contenuto	Multi-Scales Behaviour of Materials; Preface; Table of Contents; Micro-Scale Modeling of Carbon-Fiber Reinforced Thermoplastic Materials; Cellulose Whiskers Micro-Fibers Effect in the Mechanical Proprieties of PP and PLA Composites Fibers Obtained by Spinning Process; Behavior of Reinforced Concrete Beams by Confined Oblique Rods; Behavior of the Composite Lightweight Concrete; Effects of Ageing in Marine Environment on Glass Fibre/Unsaturated Polyester Composite; Study of Mechanical Behavior of Concrete in Direct Tensile Fiber Chips Effect of Artificial Defect and Mean Shear Stress on Torsional Fatigue Behaviour Optimizing Residual Stress Profile Induced by Laser Shock Peening Using DOE Technique; Toward Optimal Updating Time Inspection Based on Reliability Approach of Fatigue Crack Propagation; Impact and Sliding Wear Resistance of Hadfield and Rail Steel; Predicting the Reliability of Aligned Carbon Nanotube Bundles in Mechanical Structures; Safety and Reliability of Carbon Nanotubes in Nanoactuator Application Correlating Piezoelectric Polymer/Carbon Nanotubes Nanocomposite Strain Sensor with Reliability and Optimization Tools Performance and Analysis of Concrete in Sewer Environment: Anisotropy of Damage; Epoxy-Layered Silicate and Epoxy MWCNTs Nanocomposites; Design

	and Finite Element Modal Analysis of 48m Composite Wind Turbine Blade; Residual Stresses in a Ceramic-Metal Composite; Impact Depth on Glass Surface Caused by Sand Particles; Effect of Hydrogen on Mechanical Properties of Pipeline API 5L X70 Steel; Keywords Index; Authors Index
Sommario/riassunto	This volume focuses on the development of methods, for predicting the behaviour of materials, so as to be able to design materials having specific properties. This requires a multi-scale material modeling framework that is based upon the fundamental laws of physics and links the electronic modeling hierarchy all the way from the atomistic and mesoscale modeling regimes up to macroscopic material behaviour. It is evident that such a framework cannot be based upon rigid formal parameterizations alone, but must emerge from a detailed understanding of the mechanistic behaviour of materials, a prof