Sixth International Conference on Nonlinear Mechanics (ICNM-6) Proceedings

Description: This series volume contains 128 not previously published research presentations on using nonlinear mechanics to understand and model a wide variety of materials, including polymers, metals and composites, as well as subcellular and cellular tissues. Focus is on numerical and physics approaches to representing multiscale relationships within complex solids and fluids systems, with applications in materials science, energy storage, medical diagnostics and treatment, and biotechnology.

Key Features:
- Novel mathematical and modeling approaches to problems in graded materials, biological materials, fluid mechanics and more
- Covers nano-mechanics, multi-scale modeling, interface mechanics and micro-structure

Contents:
Preface
Committees

SESSION 1: INVITED LECTURES
Micro-Macro Analysis of Creep and Damage Behavior of Multi-Pass Welds
Some New Developments in Non-Linear Solid Mechanics
Design of Material Systems: Mathematics and Physics of the Archetype-Genome Exemplar
Criticism of Generally Accepted Fundamentals and Methodologies of Traffic and Transportation Theory

SESSION 2: NONLINEAR CONTINUUM MECHANICS
Geometrically Nonlinear Analysis of Simple Plane Frames of Functionally Graded Materials
Thermal Post-Buckling of FG Circular Plates Under Transversely Point-Space Constraint
Tunability of Longitudinal Wave Band Gap in One Dimensional Magneto-Elastic Phonic Crystal
Teaching Nonlinear Mechanics at the Undergraduate and Graduate Level - Two Examples
Geometrically Nonlinear FE Instability Simulations of Hinged Composite Laminated Cylindrical Shells
Constitutive Relation of Martensitic Transformation in CuAlNi Based on Atomistic Simulations
Soft Behaviors of Beam Shaped Liquid Crystal Elastomers Under Light Actuations
XFEM Based Discontinuity Simulation for Saturated Soil
Numerical Algorithm of Solving the Problem of Large Elastic-Plastic Deformation by FEM
Finite Deformation for Everted Compressible Hypereleastic Cylindrical Tubes
Modelling and Non-Linear Free Vibrations of Cable-Stayed Beam
Wavelet Solution of a Class of Nonlinear Boundary Value Problems
Axial Compression of a Rectangular Rubber Ring Composed of an Incompressible Mooney-Rivlin Material
Influence of Concentration-Dependent Elastic Modulus and Charge or Discharge Rate on Tensile Stress in Anode
An Integral Equation Approach to the Fully Nonlinear Fluid Flow Problem in an Infinite Channel Over Arbitrary Bottom Topography
Analysis of Nonlinear Dynamical Characteristics for Thermoelectric Half-Plane with Voids
Tensor Model for Dynamic Damage of Ductile Metals Over a Wide Range of Strain Rates

SESSION 3: MULTI-SCALE MECHANICS AND MULTI-PHYSICS MODELING
The Nonlinear Magnetolectric Effect of Layered Magnetolectric Composite Cylinder with an Imperfect Interface
A Solution for Nonlinear Poisson-Neumann Problem of Nb3Sn Superconducting Transport Current
Temperature Effect on the Tensile Mechanical Properties of Graphene Nanoribbons
Square Inclusion with a Nonlinear Eigenstrain in an Anisotropic Piezoelectric Full Plane
Nonlinear Analysis of the Threaded Connection with Three-Dimensional Finite Element Model
Effects of Particle Volume Fraction on the Macro-Thermo-Mechanical Behaviors in Plate-Type Dispersion
Nuclear Fuel Elements
Mechanics of Semiflexible Polymer Chains Under Confinements
Study on the Solution of Reynolds Equation for Micro Gas Bearings Using the Alternating-Direction Implication Algorithm
Atomistic Study of Li Concentration Dependence of the Mechanical Properties of Graphite Anode in Li-ion Battery
3D Extrusion Simulation of the Single Screw Head and Optimization Design
Buckling Behavior of Defective Carbon Nanotubes
Elastic Properties of Single-Stranded DNA Biofilm with Strong Interactions
Analysis on Thickness Dependence of Jc Caused by Dislocations and Grain Boundaries in YBCO Superconducting Films
Operating Strain Response in CICC Coils Through Nonlinear Finite Element Modeling
Dynamics Analysis of a Multi-Degree-of-Freedom Electro-Hydraulic Mix-Drive Motion Simulator by KANE Equation
Multiscale 3D Fracture Simulation Integrating Tomographic Characterization
Research into Compressive Mechanical Properties of Special Piezomagnetic Material Sheets
A Numerical Study on Detonation Wave Propagation Using High-Precision and High-Resolution Schemes

SESSION 4: STRUCTURAL DYNAMIC AND STRUCTURE-FLUID INTERACTIONS
A Study on Pure IL VIV of a Marine Riser in Shear Current
Parametric Studies on Nonlinear Flutter of High-Aspect-Ratio Flexible Wings
Model Reduction of a Flexible Beam Rotating at High Speed Considering Dynamic Stiffening
Vibration Modal Analysis of Cantilever Beams with Complicated Elasticity Boundary Constraint
Numerical Simulation of Ahmed Model in Consideration of the FSI Effect
Aerodynamic Damping of a Hammerhead Launch Vehicle in Transonic Flow
Symmetry Reductions and Explicit Solutions of (3 + 1)-Dimensional Kadomtsev-Petviashvili (KP) Equation
Nonlinear Behaviors of an Isotropic Incompressible Hyperelastic Spherical Membrane Under Different Dynamic Loads
Creep Buckling of Viscoelastic Plate Considering Higher Order Modes

SESSION 5: COMPLEX FLUID FLOW AND NONLINEAR STABILITY
Homotopy Analysis of Korteweg-de Vries Equation with Time Delay
Homotopy Analysis Method for Bubble Pulsation Equation with Nonlinear Term of Fractional Power
Chebyshev Finite Spectral Method for Boussinesq-Type Equations on Staggered Grids
Twin Jets in Crossflow
Application of Fixed Point Method to Obtain a Semi-Analytical Solution of Stagnation Flow
On the Nonlinear Stability of Laminar Flow Between Parallel Planes
Boundary Treatments in Lattice Boltzmann Method
A Lattice Boltzmann Based Immersed Boundary Method for Fluid-Structure Interaction
Numerical Solutions of Convection-Diffusion Equations by Hybrid Discontinuous Galerkin Methods
Steady-State Solutions of the Wave-Bottom Resonant Interaction
Lattice Boltzmann Simulation of the Shock Damping and the Shock Increased by Means of Lorentz Force
Analysis of the Effects of Nonlinear Characteristics of Lag Dampers on Helicopter Ground Resonance
Flow Structures and Sound Radiation in Supersonic Mixing Layers with Nonlinear PSE Method
Turbulent Structures in Subsonic Jet Flow Forced by Random Disturbances
Exponential p-Stability for a Delayed Recurrent Neural Networks with Impulses
Spatial Variation of Scaling Exponents for Structure Functions in a Decaying Turbulence

SESSION 6: NONLINEAR DYNAMIC OF STRUCTURE
Analysis of Chaos Behavior of Single Mode Vibration of Cable-Stayed
Chaotification of Fractional Maps
Nonlinear Finite Element Analysis of the Dynamic Axial Crushing of Empty Hexagonal Tube
Active Control of a Nonlinear Aeroelastic System Using the Receptance Method
Dynamics Analysis of the FHN Neuronal Model
Analyzing the Effect of the Axial Force to the Natural Frequencies of Arch
Stable Periodic Response of One-Way Clutches in a Two-Pulley Belt-Drive Model
Supercritical Nonlinear Dynamics of an Axially Moving Viscoelastic Beam with Speed Fluctuation
Nonlinear Dynamic Response to a Moving Force of Timoshenko Beams Resting on Pasternak Foundations
An Improved Method for the Construction of Nonlinear Operator in Homotopy Analysis Method
A Nonlinear Integration Scheme for Evolutionary Differential Equations
A Comparative Study of Civil Aircraft Crashworthiness with Different Ground Conditions
Improved Dynamic Analysis of Development of Pulmonary Edema
The Timescale Function Method for Solving Free Vibration of Nonlinear Oscillator
Nonlinear Aeroelastic Analysis of Flexible Wings with High-Aspect-Ratio Considering Large Deflection
Differential Quadrature Method for Vibration Analysis of Finite Beams on Nonlinear Viscoelastic Foundations
Numerical Simulation on the Strength and Sealing Performance for High-Pressure Isolating Flange
Nonlinear Dynamical Stability of the Lattices with Initial Material and Geometric Imperfection
Nonlinear Vibration of Symmetric Angle-Ply Laminated Piezoelectric Plates with Linearly Varying Thickness
An Exact Free Vibration Frequency Formula for Oscillator with Single-Term Positive-Power Restoring Force
An Exact Solution of Synchronization State for a Class of Networked Mass-Spring-Damper Oscillator Systems

SESSION 7: INTERFACE MECHANICS AND ENGINEERING APPLICATION
Numerical Simulation of Free Surface Collapse in Propellant Tank
Restudy on the Adaptive Mesh Technique for Seepage Problems
High-Order Series Solutions of Wave and Current Interactions
Deformation and Stress Distribution of Arterial Walls of the Aged
A p53-Mdm2 Dynamical Model Induced by Laminar Shear Stress in Endothelial Cells
Optimized Image Processing Based on CUDA in a Combined Measurement Technique of PIV and Shadowgraph
3D Visualization of the Flow Fields Using Digital In-Line Holography
Analysis and Experimental Study on Air Foam Flooding Seepage Flow Mechanics
Experimental Measurements for Mechanical and Electrical Conductive Properties of CNT Bundles
Analysis on Dynamic Response of Bedding Rock Slope with Bolts under Earthquakes
Numerical Prediction of Aerodynamic Noise Radiated from High Speed Train Pantograph
Effects of Length on Aerodynamics of High Speed Train Models
Free Convection Nanofluid Flow in the Stagnation-Point Region of a Three Dimensional Body
Vertical Distribution and Dynamic Release Characteristics of Pollutants from Resuspended Sediment
Numerical Simulation of the Contaminant Release Through the Sediment-Overlying Water Interface
Analysis on the Aerodynamic and Aero-Noise of MIRA Model
Radial Squeeze Force of MR Fluid Between Two Cylinders
Nonlinear Buckling Analysis and Ultimate Extended Capacity Research of Downhole Pipe Strings in Ultra-Deep Horizontal Wells
A Novel Method of Generating Nonlinear Internal Wave in a Stratified Fluid Tank and Its Theoretical Model

SESSION 8: MINI-SYMPOSIUM ON TRAFFIC FLUID
Study on Correlation Analysis of Synchronized Flow in the Kerner-Klenov-Wolf Cellular Automation Model
Numerical Simulation of Traffic Flow in the Rain or Snow Weather Condition
First Order Phase Transitions in the Brake Light Cellular Automation Model Within the Fundamental Diagram Approach
The Leader-Follower Winding Behavior of Pedestrians in a Queue
Effect of Overpasses in Two-Dimensional Traffic Flow Model with Random Update Rule
Analysis of the Density Wave in a New Continuum Model
The Phenomenon of High-Speed-Car-Following on Chinese Highways
A Lattice Hydrodynamic Model Considering the Difference of Density and its Analysis
Experimental Feature of Car-Following Behaviors in a Platoon of 25 Vehicles
Car-Following Model for Manual Transmission Vehicles
The Mechanism of Synchronized Flow in Traffic Flow Modeling
An Asymmetric Stochastic Car-Following Model Based on Extended Tau Theory
A Gaussian Distribution Based Dual-Cognition Driver Behavior Model at Cross Traffic
A New Traffic Kinetic Model Considering Potential Influence
The Effect of Marks on the Pedestrian Evacuation
Equilibrium Velocity Distribution Function for Traffic Flow
Effects of Antilock Braking System on Driving Behavior Under Emergent Stability Analysis of Pedestrian Flow in Two-Dimensional Optimal Velocity Model with Asymmetric Interaction
Simulation-Based Stability Analysis of Car-Following Models Under Heterogeneous Traffic
Crossing Speed of Pedestrian at an Unsignalized Intersection
Modeling Mixed Traffic Flow at a Crosswalk with Push Button
Effects of Game Strategy Update on Pedestrian Evacuation in a Hall
Study on Long-Term Correlation of CO and CO2 from Vehicle Emissions on Roadsides with the Detrended Fluctuation Analysis Method
Bottleneck Effect on a Bidirectional Two-Lane Mixed Traffic Flow

Author Index
Ordering:

Order Online - http://www.researchandmarkets.com/reports/2640923/

Order by Fax - using the form below

Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct.

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Sixth International Conference on Nonlinear Mechanics (ICNM-6) Proceedings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Address</td>
<td><a href="http://www.researchandmarkets.com/reports/2640923/">http://www.researchandmarkets.com/reports/2640923/</a></td>
</tr>
<tr>
<td>Office Code</td>
<td>SCH35RZ6</td>
</tr>
</tbody>
</table>

Product Format
Please select the product format and quantity you require:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Hard Copy: USD 150 + USD 29 Shipping/Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Shipping/Handling is only charged once per order.</td>
<td></td>
</tr>
</tbody>
</table>

Contact Information
Please enter all the information below in BLOCK CAPITALS

<table>
<thead>
<tr>
<th>Title:</th>
<th>Mr ☐ Mrs ☐ Dr ☐ Miss ☐ Ms ☐ Prof ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name:</td>
<td></td>
</tr>
<tr>
<td>Email Address: *</td>
<td></td>
</tr>
<tr>
<td>Job Title:</td>
<td></td>
</tr>
<tr>
<td>Organisation:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>City:</td>
<td></td>
</tr>
<tr>
<td>Postal / Zip Code:</td>
<td></td>
</tr>
<tr>
<td>Country:</td>
<td></td>
</tr>
<tr>
<td>Phone Number:</td>
<td></td>
</tr>
<tr>
<td>Fax Number:</td>
<td></td>
</tr>
</tbody>
</table>

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by wire transfer: Please transfer funds to:

<table>
<thead>
<tr>
<th>Account number</th>
<th>833 130 83</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sort code</td>
<td>98-53-30</td>
</tr>
<tr>
<td>Swift code</td>
<td>ULSBIE2D</td>
</tr>
<tr>
<td>IBAN number</td>
<td>IE78ULSB98533083313083</td>
</tr>
<tr>
<td>Bank Address</td>
<td>Ulster Bank, 27-35 Main Street, Blackrock, Co. Dublin, Ireland</td>
</tr>
</tbody>
</table>

If you have a Marketing Code please enter it below:

Marketing Code: _____________________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:
(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World