

Contents

Mathematical Models and Finite Element Approaches for Nanosized Piezoelectric Bodies with Uncoupled and Coupled Surface Effects	1
Victor A. Eremeyev and A.V. Nasedkin	
On the Theory of Acoustic Metamaterials with a Triple-Periodic System of Interior Obstacles	19
M.A. Sumbatyan and M.Yu. Remizov	
Analytical and Computer Methods to Evaluate Mechanical Properties of the Metamaterials Based on Various Models of Polymeric Chains	35
Roman A. Gerasimov, Olga G. Maksimova, Tatiana O. Petrova, Victor A. Eremeyev and Andrei V. Maksimov	
Identification of Arrays of Cracks in the Elastic Medium by the Ultrasonic Scanning	71
M.A. Sumbatyan and M. Brigante	
Short-Wave Diffraction of Elastic Waves by Voids in an Elastic Medium with Double Reflections and Transformations	91
Nikolay V. Boyev	
Finite Element Modeling and Computer Design of Anisotropic Elastic Porous Composites with Surface Stresses	107
A.V. Nasedkin and A.S. Kornievsky	
Acceleration Waves in Media with Microstructure	123
Victor A. Eremeyev	
Models of Active Bulk Composites and New Opportunities of the ACELAN Finite Element Package	133
N.V. Kurbatova, D.K. Nadolin, A.V. Nasedkin, A.A. Nasedkina, P.A. Oganessian, A.S. Skaliukh and A.N. Soloviev	

On the Models of Three-Layered Plates and Shells with Thin Soft Core 159
Victor A. Eremeyev and Konstantin Naumenko

Ray Tracing Method for a High-Frequency Propagation of the Ultrasonic Wave Through a Triple-Periodic Array of Spheres 173
Nikolay V. Boyev and M.A. Sumbatyan

An Experimental Model of the Ultrasonic Wave Propagation Through a Doubly-Periodic Array of Defects 189
Vladimir V. Zotov, Vitaly V. Popuzin and Alexander E. Tarasov

Finite Element Simulation of Thermoelastic Effective Properties of Periodic Masonry with Porous Bricks..... 205
A.V. Nasedkin, A.A. Nasedkina and A. Rajagopal

Spectral Properties of Nanodimensional Piezoelectric Bodies with Voids and Surface Effects 221
G. Iovane and A.V. Nasedkin

A Review on Models for the 3D Statics and 2D Dynamics of Pantographic Fabrics 239
Emilio Barchiesi and Luca Placidi



<http://www.springer.com/978-981-10-3796-2>

Wave Dynamics and Composite Mechanics for
Microstructured Materials and Metamaterials

Sumbatyan, M.A. (Ed.)

2017, XII, 258 p. 92 illus., 30 illus. in color., Hardcover

ISBN: 978-981-10-3796-2