

CONTENTS

Preface

| | |
|--|-----|
| Basic Equations of the Linearized Theory of Elasticity: A Brief Review by <i>E. Viola</i> | 1 |
| Dynamical Analysis of Spherical Structural Elements and Using the First-Order Shear Deformation Theory by <i>E. Viola and F. Tornabene</i> | 17 |
| A Comparison of Two Dimensional Structural Theories for Isotropic Plates by <i>E. Viola and F. Daghia</i> | 43 |
| Thickness Effect on the Dynamic Behavior of Three Dimensional Plates by Using the Ritz Method by <i>E. Viola and C. Gentilini</i> | 57 |
| Exact Analysis of Wave Motions in Rods and Hollow Cylinders by <i>E. Viola and A. Marzani</i> | 83 |
| Semi-Analytical Formulation for Guided Wave Propagation by <i>E. Viola, A. Marzani and I. Bartoli</i> | 105 |
| Numerical Evaluation of Semi-Analytical Finite Element (SAFE) Method for Plates, Rods and Hollow Cylinders by <i>E. Viola, A. Marzani and I. Bartoli</i> | 123 |
| Smart Materials and Structures by <i>D. Inman</i> | 139 |
| Applications of Smart Materials for Vibration Suppression by <i>D. Inman</i> | 151 |
| Basics of Control for Vibration Suppression by <i>D. Inman</i> | 167 |

| | |
|---|-----|
| Smart Materials in Structural Health Monitoring <i>by D. Inman, B.L. Grisso and H.A. Sodano</i> | 179 |
| Vibration Mechanics: A General Approach to Solving Nonlinear Problems <i>by I.I. Blekhman</i> | 189 |
| Linearization Techniques in Stochastic Dynamic Systems <i>by L. Socha</i> | 249 |
| Models, Verification, Validation, Identification and Stochastic Eigenvalue Problems <i>by S. Adhikari</i> | 321 |
| Vibration of Beams and Plates: Review of First Closed-Form Solutions in the Past 250 Years <i>by I. Elishakoff</i> | 389 |
| Closed-Form Trigonometric Solution of Inhomogeneous Beam-Columns 1: Buckling Problem <i>by I. Calì and I. Elishakoff</i> | 455 |
| Closed-Form Trigonometric Solution of Inhomogeneous Beam-Columns 2: Vibration Problem <i>by I. Elishakoff and I. Calì</i> | 475 |