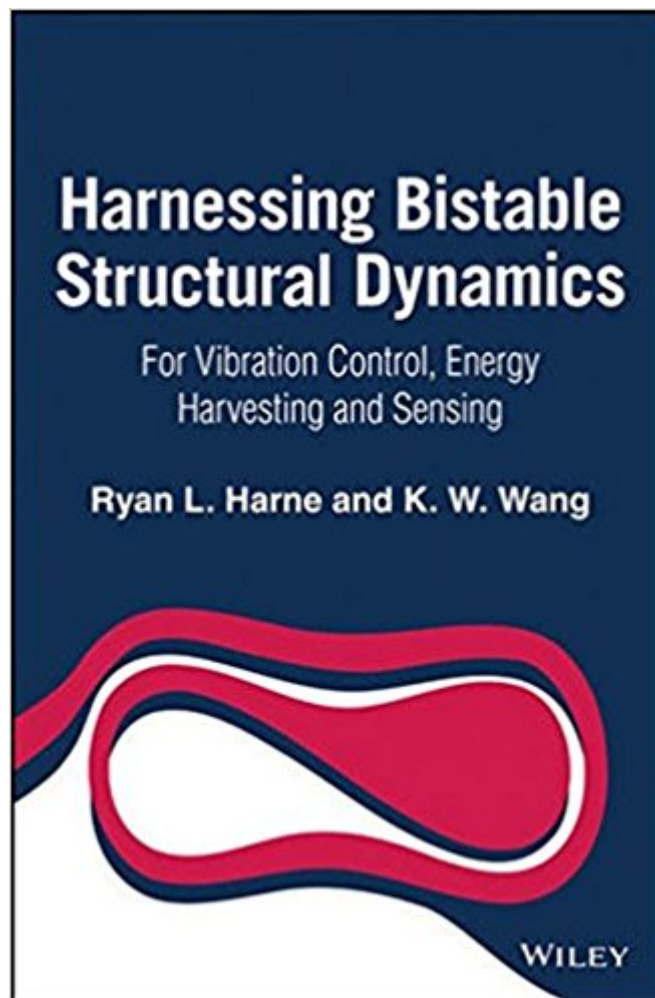




Ebook Directory
the best source of ebook

The book was found

Harnessing Bistable Structural Dynamics: For Vibration Control, Energy Harvesting And Sensing



Synopsis

This book formulates and consolidates a coherent understanding of how harnessing the dynamics of bistable structures may enhance the technical fields of vibration control, energy harvesting, and sensing. Theoretical rigor and practical experimental insights are provided in numerous case studies. The three fields have received significant research interest in recent years, particularly in regards to the advantageous exploitation of nonlinearities. Harnessing the dynamics of bistable structures--that is, systems with two configurations of static equilibria--is a popular subset of the recent efforts. This book provides a timely consolidation of the advancements that are relevant to a large body of active researchers and engineers in these areas of understanding and leveraging nonlinearities for engineering applications. Coverage includes: Provides a one-source reference on how bistable system dynamics may enhance the aims of vibration control, energy harvesting, and sensing with a breadth of case studies Includes details for comprehensive methods of analysis, numerical simulation, and experimentation that are widely useful in the assessment of the dynamics of bistable structures Details approaches to evaluate, by analytical and numerical analysis and experiment, the influences of harmonic and random excitations, multiple degrees-of-freedom, and electromechanical coupling towards tailoring the underlying bistable system dynamics Establishes how intelligently utilizing bistability could enable technology advances that would be useful in various industries, such as automotive engineering, aerospace systems, microsystems and microelectronics, and manufacturing

Book Information

Hardcover: 408 pages

Publisher: Wiley; 1 edition (March 20, 2017)

Language: English

ISBN-10: 1119128048

ISBN-13: 978-1119128045

Product Dimensions: 6.8 x 1 x 9.8 inches

Shipping Weight: 1.7 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #1,060,108 in Books (See Top 100 in Books) #52 in Books > Engineering & Transportation > Engineering > Civil & Environmental > Structural Dynamics #582 in Books > Engineering & Transportation > Engineering > Civil & Environmental > Structural #1750 in Books > Textbooks > Engineering > Mechanical Engineering

Customer Reviews

This book formulates and consolidates a coherent understanding of how harnessing the dynamics of bistable structures may enhance the technical fields of vibration control, energy harvesting, and sensing. Theoretical rigor and practical experimental insights are provided in numerous case studies. The three fields have received significant research interest in recent years, particularly in regards to the advantageous exploitation of nonlinearities. Harnessing the dynamics of bistable structures—that is, systems with two configurations of static equilibria—is a popular subset of the recent efforts. This book provides a timely consolidation of the advances that are relevant to a large body of active researchers and engineers in these areas of understanding and leveraging nonlinearities for engineering applications. Coverage includes: A one-source reference on how bistable system dynamics may enhance the aims of vibration control, energy harvesting, and sensing with a breadth of case studies Details for comprehensive methods of analysis, numerical simulation, and experimentation that are widely useful in the assessment of the dynamics of bistable structures Approaches to evaluate, by analytical and numerical analysis and experiment, the influences of harmonic and random excitations, multiple degrees-of-freedom, and electromechanical coupling towards tailoring the underlying bistable system dynamics Establishment of how intelligently utilizing bistability could enable technology advances that would be useful in various industries, such as automotive engineering, aerospace systems, microsystems and microelectronics, and manufacturing

Ryan L. Harne, University of Michigan, USA Dr. Harne is a Research Fellow in the Department of Mechanical Engineering at the University of Michigan, Ann Arbor. His current research interests include vibration energy harvesting, control, and mitigation; smart structures and adaptive systems; sensing, sensors, and detection strategies for structures representing scales from nano- to macro.

Kon-Well Wang, University of Michigan, USA Professor Wang is the Stephen P. Timoshenko Professor and Chair of Mechanical Engineering at the University of Michigan. Professor Wang's main technical interests are in structural dynamics and adaptive structural systems. He has served as the Chief Editor for the ASME Journal of Vibration and Acoustics, and is currently an Associate Editor for the Journal of Intelligent Material Systems and Structures.

[Download to continue reading...](#)

Harnessing Bistable Structural Dynamics: For Vibration Control, Energy Harvesting and Sensing
ISO 2631-2:2003, Mechanical vibration and shock - Evaluation of human exposure to whole-body

vibration - Part 2: Vibration in buildings (1 Hz to 80 Hz) ISO 13753:1998, Mechanical vibration and shock - Hand-arm vibration - Method for measuring the vibration transmissibility of resilient materials when loaded by the hand-arm system Spatial Control of Vibration: Theory and Experiments (Stability, Vibration and Control of Systems, Series A) Energy Harvesting: Solar, Wind, and Ocean Energy Conversion Systems (Energy, Power Electronics, and Machines) Structural Dynamics and Vibration in Practice: An Engineering Handbook Topics in Fluorescence Spectroscopy, Vol. 10: Advanced Concepts in Fluorescence Sensing, Pt. B: Macromolecular Sensing Topics in Fluorescence Spectroscopy, Vol. 9: Advanced Concepts in Fluorescence Sensing, Pt. A: Small Molecule Sensing Rainwater Harvesting for Drylands and Beyond (Vol. 2): Water-Harvesting Earthworks Structural Dynamics of Earthquake Engineering: Theory and Application Using Mathematica and Matlab (Woodhead Publishing Series in Civil and Structural Engineering) Sound and Structural Vibration, Second Edition: Radiation, Transmission and Response Sound and Structural Vibration: Radiation, Transmission and Response Reiki: The Healing Energy of Reiki - Beginner's Guide for Reiki Energy and Spiritual Healing: Reiki: Easy and Simple Energy Healing Techniques Using the ... Energy Healing for Beginners Book 1) Vibration of Mechanical and Structural Systems: With Microcomputer Applications Random Vibration of Mechanical and Structural Systems Dynamics and Vibration: An Introduction Tunneling Dynamics in Open Ultracold Bosonic Systems: Numerically Exact Dynamics " Analytical Models " Control Schemes (Springer Theses) Chakra for Sex: Harnessing the Sexual Energy: Lessons, Poses and Exercises to Open up Your Sacred Chakra and Improve Your Sex Life: Sex Improvement, Book 2 Energy Harvesting Technologies The Power of Positive Energy: Everything you need to awaken your soul, raise your vibration, and manifest an inspired life

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)