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Descrizione fisica	1 online resource (972 pages) : illustrations
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Nota di contenuto	chapter 1. Introduction -- chapter 2. Local and nonlocal elasticity : introductory concepts -- chapter 3. Introduction to the theory of composites and functionally graded materials -- chapter 4. Introduction to integral transforms -- chapter 5. Introduction to wave propagation -- chapter 6. Wave propagation in onedimensional isotropic structural waveguides -- chapter 7. Wave propagation in twodimensional isotropic waveguides -- chapter 8. Wave propagation in laminated composites -- chapter 9. Wave propagation in sandwich structural waveguides -- chapter 10. Wave propagation in functionally graded material waveguides -- chapter 11. Wave propagation in nanostructures and nanocomposite structures -- chapter 12. Finite element method for wave propagation problems -- chapter 13. Spectral finite element formulation -- chapter 14. Wave propagation in smart composite structures -- chapter 15. Wave propagation in defective waveguides -- chapter 16. Wave propagation in periodic waveguides -- chapter 17. Wave propagation in uncertain waveguides -- chapter 18. Wave propagation in hyperelastic waveguides.

Sommario/riassunto

This book focuses on basic and advanced concepts of wave propagation in diverse material systems and structures. Topics are organized in increasing order of complexity for better appreciation of the subject. Additionally, the book provides basic guidelines to design many of the futuristic materials and devices for varied applications. The material in the book also can be used for designing safer and more lightweight structures such as aircraft, bridges, and mechanical and structural components.