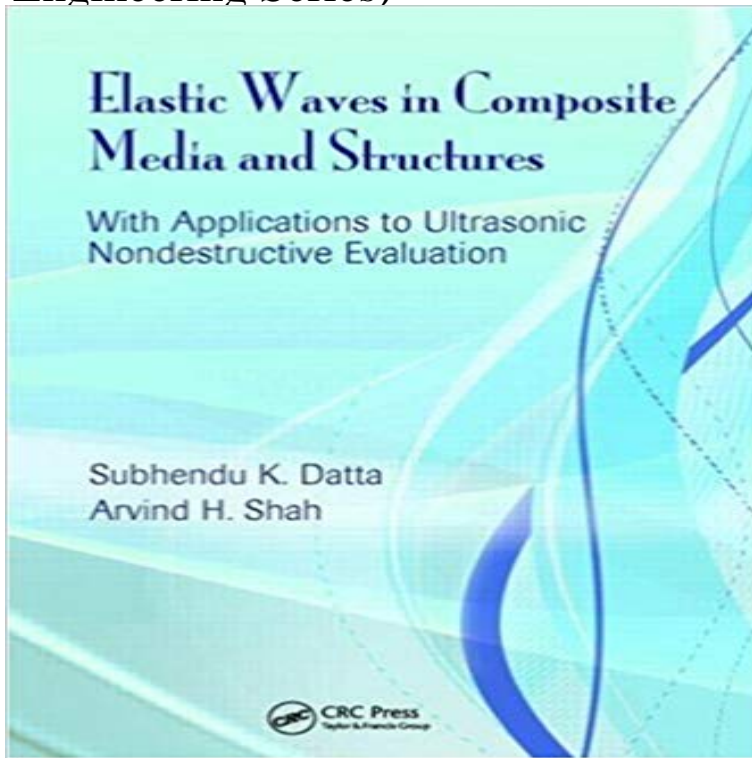


Elastic Waves in Composite Media and Structures: With Applications to Ultrasonic Nondestructive Evaluation (Mechanical and Aerospace Engineering Series)



New applications for composite materials are being developed at a rapid pace. However, their complex microstructures present considerable challenges for nondestructive testing and characterization. Ultrasonic waves provide quantitative means of nondestructive evaluation of these materials and structures. For this purpose, it is necessary to obtain a clear understanding of the characteristic features of guided elastic wave propagation in such materials and structures and their dynamic response.. Elastic Waves in Composite Media and Structures presents effective analytical and numerical techniques to study the characteristic features of elastic guided waves in fiber reinforced laminated media. The book closely examines the salient features of dispersive guided modes and how they are modified by defects, inhomogeneities, and boundaries. An accompanying CD-ROM contains executable computer programs, which can be used to simulate different scenarios for designing and interpreting ultrasonic experiments. Using the extensive numerical results provided by this cutting-edge resource, researchers and practitioners will gain valuable insight into how to develop effective methods for nondestructive testing of composite materials.

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