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Titolo	Electromagnetic Ultrasonic Guided Waves / / by Songling Huang, Shen Wang, Weibin Li, Qing Wang
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ISBN	981-10-0564-8
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (311 p.)
Collana	Springer Series in Measurement Science and Technology, , 2198-7807
Disciplina	620.1127
Soggetti	Physical measurements Measurement Acoustical engineering Materials science Acoustics Engineering—Materials Measurement Science and Instrumentation Engineering Acoustics Characterization and Evaluation of Materials Materials Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Electromagnetic acoustic transducer -- Analytical method of EMAT based on Lorentz force mechanization -- Analytical method of EMAT based on a magnetostrictive mechanism -- The propagation characteristics of a circumferential ultrasonic guided wave in plate and pipe -- Simulation of interactions between guided waves and the defects by boundary element method -- Finite element simulation of ultrasonic guided waves -- Applications of the electromagnetic ultrasonic guided waves technique.
Sommario/riassunto	This book introduces the fundamental theory of electromagnetic ultrasonic guided waves, together with its applications. It includes the dispersion characteristics and matching theory of guided waves; the mechanism of production and theoretical model of electromagnetic ultrasonic guided waves; the effect mechanism between guided waves

and defects; the simulation method for the entire process of electromagnetic ultrasonic guided wave propagation; electromagnetic ultrasonic thickness measurement; pipeline axial guided wave defect detection; and electromagnetic ultrasonic guided wave detection of gas pipeline cracks. This theory and findings on applications draw on the author’s intensive research over the past eight years. The book can be used for nondestructive testing technology and as an engineering reference work. The specific implementation of the electromagnetic ultrasonic guided wave system presented here will also be of value for other nondestructive test developers.