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Titolo	Laser Doppler Vibrometry for Non-Contact Diagnostics [[electronic resource] /] / edited by Kristian Kroschel
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Soggetti	Lasers Photonics Biomedical engineering Biophysics Biological physics Signal processing Image processing Speech processing systems Internal medicine Optics, Lasers, Photonics, Optical Devices Biomedical Engineering and Bioengineering Biological and Medical Physics, Biophysics Signal, Image and Speech Processing Internal Medicine
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1. Non-contact Health Monitoring with LDV -- Chapter 2. Introduction to Laser Doppler Vibrometry -- Chapter 3. Data Acquisition and Processing -- Chapter 4. Parameters of Respiration -- Chapter 5. Vital Parameters of the Heart -- Chapter 6. VCG Signals on the Thorax and Detection of the PR-Interval -- Chapter 7. Distant Pulse Oximetry.
Sommario/riassunto	This book presents recent outcomes of the collaborative "Tricorder"

project, which brings together partners from industry, research institutes and hospitals to deliver an easy contactless alternative for electrocardiograms (ECG). Featuring contributions investigating the possible applications of laser Doppler vibrometry (LDV) signals for the remote measurement of vital parameters of the heart, the book provides insights into the vision and the history of the "Tricorder" project and the basic differences between the vibrocardiograms and electrocardiograms. It also discusses topics such as signal processing, heartbeat measurement techniques, respiration frequency and oxygen saturation determination, with a particular focus on the diagnostic value of the method presented, e.g., diagnosis of atrial fibrillation and estimation of the oxygen saturation in premature infants. Further, the authors review the advantages and drawbacks of the new method and the specific fields of application. This book will appeal to researchers and industry leaders interested in laser remote sensing for medical applications as well as medical professionals curious about new healthcare technologies.
