1. Record Nr. UNINA990008964770403321

Titolo	Fragmenta faunistica Musei Zoologici Polonici
Pubbl/distr/stampa	Warszawa, : [s.n.]
ISSN	1505-3970
Lingua di pubblicazione	Polacco
Formato	Materiale a stampa
Livello bibliografico	Periodico

2. Record Nr. UNINA9911019695003321

Titolo	Sensors in medicine and health care / / edited by P.A. Oberg, T. Togawa, F.A. Spelman
Pubbl/distr/stampa	Weinheim, : Wiley-VCH, 2004
ISBN	9786610520039 9781280520037 1280520035 9783527601417 3527601414 9783527604869 3527604863
Descrizione fisica	1 online resource (446 p.)
Collana	Sensors applications ; ; v. 3
Classificazione	44.31
Altri autori (Persone)	ObergP. Ake SpelmanFrancis A TogawaTatsuo <1937->
Disciplina	681.761
Soggetti	Biosensors Detectors Medical instruments and apparatus Process control
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 and index.
Nota di contenuto	Sensors Applications Volume 3 Sensors in Medicine and Health Care; Preface to the Series; Preface to Volume 3 of "Sensors Applications"; Contents; List of Contributors; List of Abbreviations; 1 Introduction; 1.1 Historical Breakthroughs in Medical Sensing Science; 1.1.1 Plethysmography; 1.1.2 Blood Pressure Measurements; 1.1.3 Electrophysiology and Einthoven's Galvanometer; 1.1.3.1 Electrocardiogram; 1.1.3.2 Electroencephalogram; 1.1.3.3 Electromyogram; 1.1.3.4 Microelectrodes and Intracellular Measurements; 1.1.4 Pulse Oximetry; 1.1.5 Body Temperature Measurement; 1.2 The Future 1.2.1 MEMS and BioMEMS Sensors1.2.2 Cell-Based Biosensors; 1.2.3 Optical Biopsies; 1.3 References; 2 Optical Sensors in Medical Care; 2.1 Optics in Medicine; 2.1.1 The Diagnostic/Therapeutic Window; 2.1.2 Propagation of Light in Tissue; 2.1.3 Transport Theory; 2.1.4 Diffusion Theory and Monte Carlo Models; 2.2 Near IR Spectroscopy; 2.2.1 Scattering; 2.2.2 Brain Spectroscopy; 2.2.3 Fick's Law Applied to Brain Blood Flow; 2.2.4 Practical Details; 2.2.5 NIRS Instrumentation; 2.3 Pulse Oximetry; 2.3.1 Theory; 2.3.2 Empirical Calibration; 2.3.3 Clinical Use; 2.4 Laser Doppler Flowmetry 2.4.1 Light Scattering and Doppler Shift of Laser Light2.4.1.1 Elastic and Quasi-Elastic Scattering; 2.4.1.2 Doppler Shift; 2.4.2 Instrumentation; 2.4.3 Fiber Optics Geometry and Fiber Types; 2.4.4 Signal Processing Principles; 2.4.5 Calibration and Standardization of LDF Flow Meters; 2.4.6 Standardization; 2.4.7 Applications of the Laser Doppler Principle; 2.5 Conclusions; 2.5.1 Advantages; 2.5.2 Disadvantages; 2.6 References; 3 Biosensors for Monitoring Glucose; 3.1 Introduction; 3.2 Diabetes and the Need for Glucose Monitoring; 3.3 Monitoring Principles: Transducers 3.4 Monitoring Principles: Enzymes3.5 Manufacturing Issues; 3.6 First Generation Amperometric Glucose Biosensors; 3.7 Catalytic Transducers; 3.8 Mediated Devices; 3.9 Currently-Available Home Blood Glucose Monitors; 3.10 Currently-Available Laboratory Analyzers for Monitoring Glucose; 3.11 Direct Electron Transfer Systems; 3.12 Implantable Glucose Sensors; 3.13 Minimally-Invasive Systems; 3.14 Non-Invasive Systems; 3.15 References; 4 Biomagnetic Imaging: Principles of Magnetic Resonance Imaging and Emerging Techniques in Progress; 4.1 Introduction; 4.2 Magnetic Resonance Signal 4.2.1 Electromotive Force (EMF)4.2.2 Relaxation Times; 4.3 Overview of the Spin-Warp Imaging Method; 4.3.1 Recognition of Spins Distributed in the First Direction; 4.3.2 Recognition of Spins Distributed in the Second Direction; 4.3.3 Recognition of Spins Distributed in the Third Direction; 4.3.4 k-Space; 4.3.5 Image Contrast; 4.4 Diversification of MRI Application Techniques; 4.4.1 Magnetic Resonance Angiography (MRA); 4.4.2 Perfusion and Diffusion Imaging; 4.4.3 Functional Imaging (fMRI); 4.4.4 Magnetic Resonance Spectroscopy (MRS); 4.5 Imaging of Impedance Distribution of the Brain 4.5.1 Principles
Sommario/riassunto	Due to remarkable developments in the field of sensors along with miniaturization, sophisticated microsensors are part of many aspects of 21st century medicine and health care. Turning sensory inputs of all kinds into defined electrical signals that can be interpreted and acted upon by both stationary and portable medical equipment as well as implants, sensors find many applications monitoring blood pressure, heart rates, glucose levels and many other parameters by which human health can be evaluated. They also serve as key components in modern imaging equipment as well as operating equipmen