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Titolo	Neuromodulation [[electronic resource] /] / edited by Elliot S. Krames, P. Hunter Peckham, Ali R. Rezai
Pubbl/distr/stampa	London ; ; Burlington, MA, : Academic Press, 2009
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Descrizione fisica	1 online resource (xxiii, 1063 pages) : illustrations
Altri autori (Persone)	KramesElliot PeckhamP. Hunter RezaiAli R
Disciplina	616.806
Soggetti	Central nervous system - Physiology Neural transmission - Regulation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	v. 1. Section I. An introduction to neuromodulation -- Section II. Fundamentals of neuromodulation -- Section IIA. Fundamentals of neuromodulation: mechanisms -- Section III. Biomedical engineering considerations -- Section IV. Neuromodulation for chronic pain -- Section IVA. Periphery and spinal cord electrical stimulation for non-visceral pain -- Section IVB. Infusional therapies for pain -- Section IVC. Brain stimulation for pain. v. 2. Section V. Neuromodulation for movement disorders -- Section VI. Neurostimulation for epilepsy -- Section VII. Neuromodulation for psychiatric disorders -- Section VIII. Neuromodulation for functional restoration -- Section IX. Neuromodulation of body organs -- Section IXA. Neuromodulation for cardiovascular disorders -- Section IXB. Neuromodulation for gastrointestinal disorders -- Section IXC. Neuromodulation for urogenital disorders -- Section X. Neuromodulation for emerging applications -- Section XI. Neuromodulation device implant techniques.
Sommario/riassunto	Neuromodulation will be the first comprehensive and in-depth reference textbook covering all aspects of the rapidly growing field of

neuromodulation. This book provides a complete discussion of the fundamental principles of neuromodulation and therapies applied to the brain, spinal cord, peripheral nerves, autonomic nerves and various organs. The textbook is highly structured and organized into overarching sections that cover chronic pain, movement disorders, psychiatric disorders, epilepsy, functional electrical stimulation, cardiac, gastrointestinal, genitourinary and organ neuromodulation. The fundamental principles of electricity and infusion, neural tissue interface, biomedical engineering, neuromodulation devices, basic science, neuroanatomy, neurophysiology, imaging and mechanisms are emphasized. In addition to providing details pertaining to the state-of-the-art current practice, innovative and emerging applications are discussed in specific chapters. Finally, the textbook provides specific chapters focusing on the technical aspects of the various neuromodulation procedures as well as technical specifications of various implantable devices. All of the contributors to Neuromodulation represent leading experts in the field. The editors are internationally renowned in their respective fields of neuromodulation, pain management, functional neurosurgery and biomedical engineering. Neuromodulation will be the first and foremost authoritative text on neuromodulation therapies and will establish the gold standard that defines the field for years to come.

Key Features

The first comprehensive reference on the emerging field of Neuromodulation

Editors and authors include all leading figures in the field, and the leaders of the International Neuromodulation Society

Over 90 chapters on topics ranging from a layout of the fundamentals (e.g. neuroanatomy, plasticity, bioelectrical effects, infusion therapies), solutions for the biomedical engineering challenges (e.g. materials, how to preserve normal function etc.), to a rundown of the existing applications and their future promise

Over 1200 pages in splendid full color, richly illustrated

Important areas of application include: control of chronic pain delivery of drugs to the nervous system via implanted devices

control of epilepsy, Parkinson, etc. functional restoration, e.g. visual, auditory, restoration after stroke, restoration of motor function after traumatic events

stimulation of body organs via neural devices (incl. the heart, abdominal organs, genitourinary organs)

overview over newly emerging fields - control of obesity, blood pressure, tinnitus, brain injury, neurodegenerative diseases, brain-machine interfaces.