Neurorehabilitation Devices: Engineering Design, Measurement and Control

Thompson Sarkodie-Gyan Professor
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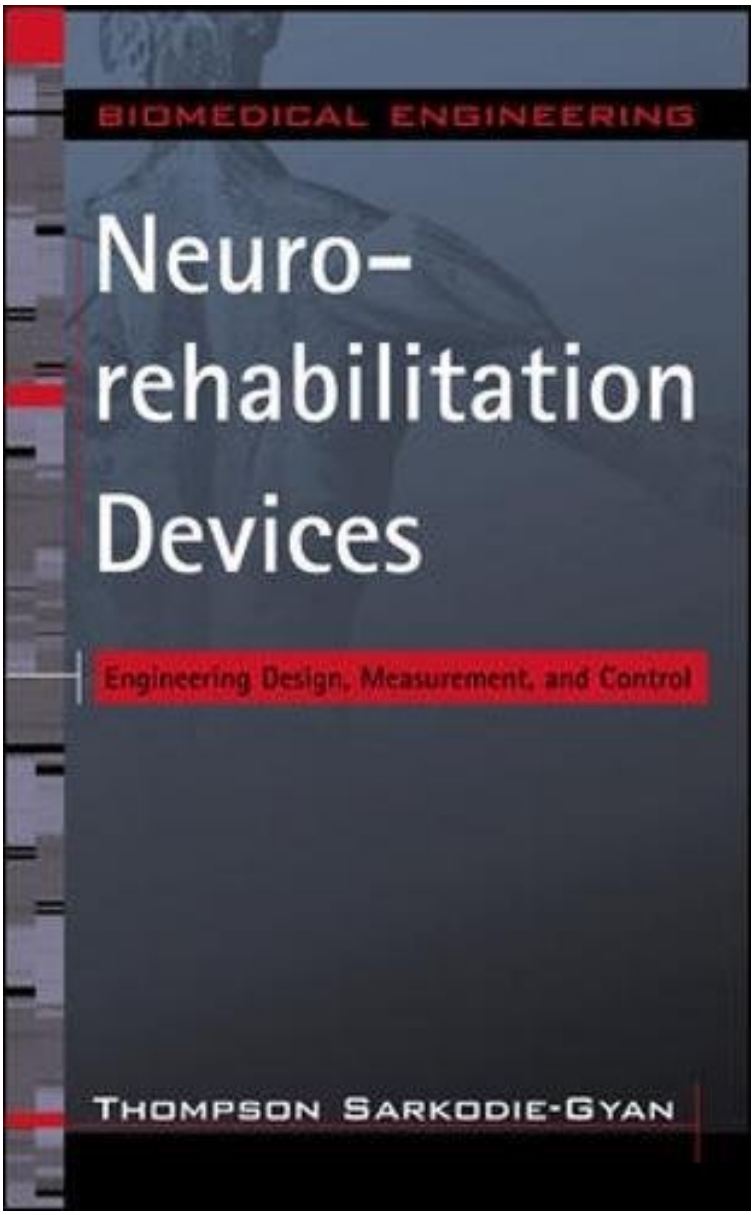

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Thompson Sarkodie-Gyan Professor : Neurorehabilitation Devices: Engineering Design, Measurement and Control before purchasing it in order to gage whether or not it would be worth my time, and all praised

Neurorehabilitation Devices: Engineering Design, Measurement and Control:

Debilitating neuromuscular disorders and traumatic brain, spinal cord or peripheral injuries have a devastating effect on those who suffer from them. Written from an engineering perspective, and based on a course taught by the American Society of Mechanical Engineers, Neurorehabilitation Devices first helps the designer to better understand and formulate design, measurement and control systems for biomedical devices used in the treatment and recovery of people suffering from these disorders. Just some of the topics covered in this book are: methods to allow an amputee to control a powered artificial arm by means of electrical signals generated by contractions of muscles of the residual limb in combination with motor nerve activity from peripheral nerves, as well as the development of new technologies to use electrical stimulation to treat the hyperactive bladder, to electrically induce bowel movement and defecation, and to develop methods for selective stimulation of nerve fibres.

From the Back CoverTHE DEFINITIVE GUIDE TO DEVELOPING NEUROREHABILITATION DEVICES Written from an engineering perspective, this solutions-oriented reference enables readers to fully understand the fundamental principles and terminology of rehabilitation medicine and successfully apply them to the development of human neurorehabilitation devices. With this detailed reference, readers will be able to develop state-of-the-art design, measurement, and control systems and solve the highly specialized problems inherent in biomedical devices used in the treatment and recovery of individuals suffering from neuro-muscular impairments and traumatic brain, spinal cord, and peripheral injuries. The Engineering Data Necessary to Develop Next Generation Neurorehabilitation Devices Introduction to Rehabilitation Medicine Objectives of Rehabilitation State-of-the-Art in Neurorehabilitation Neuro-Diagnosis Neuro-Controls Intelligent Knowledge-Based Neurorehabilitation Future Enhancements and Considerations in Neurorehabilitation The Smart Gait Emulator for Effective NeurorehabilitationAbout the AuthorThompson Sarkodie-Gyan (FInstMC, CEng, Eur Ing) (Socorro, NM) is currently an Associate Professor of Mechanical Engineering at New Mexico Institute of Mining and Technology (New Mexico Tech). The current focus of Dr. Sarkodie-Gyan's research work is in mechatronics, soft computing, biomedical engineering, machine vision and pattern recognition, biosensors (electronic nose). He has close to 100 technical publications to his credit; is member of the ASME, the Verein Deutscher Ingenieure, and the New York Academy of Sciences; and is listed in a number of biographical and scientific (Who's Who) volumes.