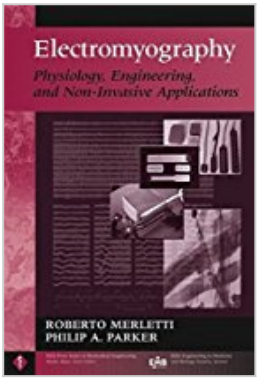

Electromyography: Physiology, Engineering, and Non-Invasive Applications

From Wiley-IEEE Press

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From Wiley-IEEE Press

A complete overview of electromyography with contributions from pacesetters in the field

In recent years, insights from the field of engineering have illuminated the vast potential of electromyography (EMG) in biomedical technology. Featuring contributions from key innovators working in the field today, *Electromyography* reveals the broad applications of EMG data in areas as diverse as neurology, ergonomics, exercise physiology, rehabilitation, movement analysis, biofeedback, and myoelectric control of prosthesis.

Bridging the gap between engineering and physiology, this pioneering volume explains the essential concepts needed to detect, understand, process, and interpret EMG signals using non-invasive electrodes. *Electromyography* shows how engineering tools such as models and signal processing methods can greatly augment the insight provided by surface EMG signals.

Topics covered include:

- Basic physiology and biophysics of EMG generation
- Needle and surface electrode detection techniques
- Signal conditioning and processing issues
- Single- and multi-channel techniques for information extraction
- Development and application of physical models
- Advanced signal processing techniques

With its fresh engineering perspective, *Electromyography* offers physiologists, medical professionals, and students in biomedical engineering a new window into the far-reaching possibilities of this dynamic technology.

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- Sales Rank: #3175808 in Books
- Published on: 2004-07-26
- Original language: English
- Number of items: 1
- Dimensions: 10.28" h x 1.22" w x 7.28" l, 2.35 pounds
- Binding: Hardcover
- 520 pages

Editorial Review

Review
"...the best single reference book currently available in the field…" (*Annals of Biomedical Engineering*, November 2005)

"...the authors successfully reported...the unknown aspects of electromyography, in particular the non-invasive approaches to the neurophysiological monitoring of the central nervous system." (*Doody's Health Services*)

From the Back Cover
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Roberto Merletti, PhD, is Director of the Laboratory for Engineering of the Neuromuscular System at Politecnico di Torino, Italy, and coordinator of neuromuscular research projects for the European Community and European Space Agency. He is author or coauthor of two books and more than fifty journal articles and received his doctoral degree from The Ohio State University.

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