

Prof. Roberto Merletti,
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R. Merletti - CV

Prof. Roberto Merletti is tenured Full Professor of Biomedical Engineering at Polytechnic of Torino, Italy. He graduated in Electronic Engineering at Polytechnic of Torino and obtained his PhD from The Ohio State University, USA. He was Associate Professor of Biomedical Engineering at Boston University from 1989 to 1994 and at Polytechnic of Torino, since 1994.

He is the founder and director of the Laboratory for Engineering of the Neuromuscular System at Polytechnic of Torino. He has been involved in five EU projects (he coordinated one) and two ESA projects (he coordinated one) in the field of engineering of the neuromuscular system. He is a member of the editorial board of four major biomedical engineering journals and published over 150 papers in international peer reviewed journals in the fields of non invasive electromyography, electrical stimulation and engineering of the neuromuscular system. He is the editor, with Phil Parker, of the textbook "Electromyography: physiology, engineering and non-invasive applications" (J. Wiley and IEEE Press, 2004).

"Basic Surface EMG: Physiology, detection, processing and interpretation"

R. Merletti

Summary of lecture (A general overview on surface EMG)

- Basic concepts of electrophysiology
- Mechanisms of generation of the surface EMG
- Detection of surface EMG by electrode arrays
- Interpretation of the signals
- Myoelectric manifestations of muscle fatigue
- Applications in rehabilitation, ergonomics, gynaecology, sport and space medicine

"Advanced Surface EMG: A window on the central nervous system"

R. Merletti, A. Holobar

Summary of lecture (Advanced techniques of surface EMG processing)

- The issue of EMG-force relationship
- Indicators of force and fatigue
- Decomposition of the surface EMG in the constituent trains of motor unit action potentials
- Examples and applications

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