



Bin He (Ed.)

# Neural Engineering

- Provides thorough coverage of the essential contemporary topics in neural engineering
- Introduces to systems neuroengineering, comprising implantable and wearable neural interfacing, neuromodulation, neuroimaging, and neural modeling
- Questions for classroom use follow each chapter, challenging students and readers to master the materials

This third edition overviews the essential contemporary topics of neuroengineering, from basic principles to the state-of-the-art, and is written by leading scholars in the field. The book covers neural bioelectrical measurements and sensors, EEG signal processing, brain-computer interfaces, implantable and transcranial neuromodulation, peripheral neural interfacing, neuroimaging, neural modelling, neural circuits and system identification, retinal bioengineering and prosthetics, and neural tissue engineering. Each chapter is followed by homework questions intended for classroom use. This is an ideal textbook for students at the graduate and advanced undergraduate level as well as academics, biomedical engineers, neuroscientists, neurophysiologists, and industry professionals seeking to learn the latest developments in this emerging field. Advance Praise for Neural Engineering, 3rdEdition: "A comprehensive and timely contribution to the ever growing field of neural engineering. Bin He's edited volume provides chapters that cover both the fundamentals and state-of-the-art developments by the world's leading neural engineers." Dr. Paul Sajda, Department of Biomedical Engineering, Electrical Engineering and Radiology, Columbia University "Neural Engineering, edited by Prof. He, is an outstanding book for students entering into this fast evolving field as well as experienced researchers. Its didactic and comprehensive style, with each chapter authored by leading scientific authorities, provides the ultimate reference for the field."Dr. Dario Farina, Department of Bioengineering, Imperial College London, London, UK "Neural Engineering has come of age. Major advances have made possible prosthesis for the blind, mind control for quadraplegics and direct intervention to control seizures in epilepsy patients.

3rd ed. 2020, XVI, 699 p. 407 illus., 299 illus. in color.

## Printed book

Hardcover

149,99 € | £129.99 | \$179.99

[1]160,49 € (D) | 164,99 € (A) | CHF 177,00

## eBook

117,69 € | £103.50 | \$139.00

[2]117,69 € (D) | 117,69 € (A) | CHF 141,50

Available from your library or [springer.com/shop](https://www.springer.com/shop)

## MyCopy [3]

Printed eBook for just

€ | \$ 24.99

[springer.com/mycopy](https://www.springer.com/mycopy)

Order online at [springer.com](https://www.springer.com) / or for the Americas call (toll free) 1-800-SPRINGER / or email us at: [customerservice@springernature.com](mailto:customerservice@springernature.com). / For outside the Americas call +49 (0) 6221-345-4301 / or email us at: [customerservice@springernature.com](mailto:customerservice@springernature.com).

The first € price and the £ and \$ price are net prices, subject to local VAT. Prices indicated with [1] include VAT for books; the €(D) includes 7% for Germany, the €(A) includes 10% for Austria. Prices indicated with [2] include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted. [3] No discount for MyCopy.

