

# Contents

<b>Introduction</b> . . . . .	1
Christoph Guger, Brendan Z. Allison and Mikhail A. Lebedev	
<b>Advances in BCI: A Neural Bypass Technology to Reconnect the Brain to the Body</b> . . . . .	9
Gaurav Sharma, Nicholas Annetta, David A. Friedenberg and Marcia Bockbrader	
<b>Precise and Reliable Activation of Cortex with Micro-coils</b> . . . . .	21
Seung Woo Lee and Shelley I. Fried	
<b>Re(con)volution: Accurate Response Prediction for Broad-Band Evoked Potentials-Based Brain Computer Interfaces</b> . . . . .	35
J. Thielen, P. Marsman, J. Farquhar and P. Desain	
<b>Intracortical Microstimulation as a Feedback Source for Brain-Computer Interface Users</b> . . . . .	43
Sharlene Flesher, John Downey, Jennifer Collinger, Stephen Foldes, Jeffrey Weiss, Elizabeth Tyler-Kabara, Sliman Bensmaia, Andrew Schwartz, Michael Boninger and Robert Gaunt	
<b>A Minimally Invasive Endovascular Stent-Electrode Array for Chronic Recordings of Cortical Neural Activity</b> . . . . .	55
Thomas J. Oxley, Nicholas L. Opie, Sam E. John, Gil S. Rind, Stephen M. Ronayne, Anthony N. Burkitt, David B. Grayden, Clive N. May and Terence J. O'Brien	
<b>Visual Cue-Guided Rat Cyborg</b> . . . . .	65
Yueming Wang, Minlong Lu, Zhaohui Wu, Xiaoxiang Zheng and Gang Pan	

<b>Predicting Motor Intentions with Closed-Loop Brain-Computer Interfaces</b> . . . . .	79
Matthias Schultze-Kraft, Mario Neumann, Martin Lundfall, Patrick Wagner, Daniel Birman, John-Dylan Haynes and Benjamin Blankertz	
<b>Towards Online Functional Brain Mapping and Monitoring During Awake Craniotomy Surgery Using ECoG-Based Brain-Surgeon Interface (BSI)</b> . . . . .	91
L. Yao, T. Xie, Z. Wu, X. Sheng, D. Zhang, N. Jiang, C. Lin, F. Negro, L. Chen, N. Mrachacz-Kersting, X. Zhu and D. Farina	
<b>A Sixteen-Command and 40 Hz Carrier Frequency Code-Modulated Visual Evoked Potential BCI</b> . . . . .	97
Daiki Aminaka and Tomasz M. Rutkowski	
<b>Trends in BCI Research I: Brain-Computer Interfaces for Assessment of Patients with Locked-in Syndrome or Disorders of Consciousness</b> . . . . .	105
Christoph Guger, Damien Coyle, Donatella Mattia, Marzia De Lucia, Leigh Hochberg, Brian L. Edlow, Betts Peters, Brandon Eddy, Chang S. Nam, Quentin Noirhomme, Brendan Z. Allison and Jitka Annen	
<b>Recent Advances in Brain-Computer Interface Research—A Summary of the BCI Award 2016 and BCI Research Trends</b> . . . . .	127
Christoph Guger, Brendan Z. Allison and Mikhail A. Lebedev	

Brain-Computer Interface Research

A State-of-the-Art Summary 6

Guger, C.; Allison, B.; Lebedev, M. (Eds.)

2017, VI, 134 p. 49 illus., 44 illus. in color., Softcover

ISBN: 978-3-319-64372-4