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Autore	Diez Pablo
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Descrizione fisica	1 online resource (494 pages)
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Soggetti	Brain-computer interfaces Wheelchair Self-Help Devices
Lingua di pubblicazione	Inglese
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Nota di contenuto	Introduction -- The motor system -- Using noninvasive methods to drive brain-computer interface (BCI): the role of electroencephalography and functional near-infrared spectroscopy in BCI -- Biopotential acquisition for brain-wheelchair interfaces -- EEG signal processing in brain-computer interface -- High-speed steady-state visual evoked potential-based brain-computer interfaces -- P300-based brain-computer interfaces -- Motor imagery based brain-computer interfaces -- Electroencephalogram based brain-computer interfaces -- Hybrid brain-computer interfaces for wheelchair control: a review of existing solutions, their advantages and open challenges -- Wheelchairs: history, characteristics, and technical specifications -- Smart-wheelchairs -- Brain-computer interfaces for controlling wheelchairs -- Control strategies of a brain-controlled wheelchair using two mental tasks -- Towards a system to command a robotic wheelchair based on independent SSVEP-BCI -- EOG-based wheelchair control -- Voice-directed autonomous navigation of a smart-wheelchair -- Brain-computer interfaces for neurorehabilitation: enhancing functional electrical stimulation.
Sommario/riassunto	Smart Wheelchairs and Brain-Computer Interfaces: Mobile Assistive Technologies combines the fields of neuroscience, rehabilitation and

robotics via contributions from experts in their field to help readers develop new mobile assistive technologies. It provides information on robotics, control algorithm design for mobile robotics systems, ultrasonic and laser sensors for measurement and trajectory planning, and is ideal for researchers in BCI. A full view of this new field is presented, giving readers the current research in the field of smart wheelchairs, potential control mechanisms and human interfaces that covers mobility, particularly powered mobility, smart wheelchairs, particularly sensors, control mechanisms, and human interfaces.

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