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Titolo	Carbon for Sensing Devices / / edited by Danilo Demarchi, Alberto Tagliaferro
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ISBN	3-319-08648-0
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (270 p.)
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Soggetti	Electronic circuits Nanotechnology Circuits and Systems Electronic Circuits and Devices Nanotechnology and Microengineering
Lingua di pubblicazione	Inglese
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Section 1 Carbon Materials and their preparation -- Introduction to Carbon materials -- Technologies of Carbon Materials. Syntheses and preparations -- Section 2 Functionalization of carbon materials and surfaces -- Enhancing the surface sensitivity and selectivity: functionalization of carbon nanomaterials -- Section 3 Applications and devices -- Hybrid and nano-composite carbon sensing platforms -- Carbon nanomaterials for electrochemical and electrochemiluminescent medical sensors -- Silicon Carbide Materials for Biomedical Applications -- PiezoResistance Strain and Pressure sensing using CNT+Polymers -- Diamond sensors.
Sommario/riassunto	This book reveals why carbon is playing such an increasingly prominent role as a sensing material. The various steps that transform a raw material in a sensing device are thoroughly presented and critically discussed. The authors deal with all aspects of carbon-based sensors, starting from the various hybridization and allotropes of carbon, with specific focus on micro and nanosized carbons (e.g., carbon nanotubes,

graphene) and their growth processes. The discussion then moves to the role of functionalization and the different routes to achieve it. Finally, a number of sensing applications in various fields are presented, highlighting the connection with the basic properties of the various carbon allotropes. Readers will benefit from this book's bottom-up approach, which starts from the local bonding in carbon solids and ends with sensing applications, linking the local hybridization of carbon atoms and its modification by functionalization to specific device performance. This book is a must-have in the library of any scientist involved in carbon based sensing application. • Provides comprehensive coverage of carbon for sensing devices, from molecular bonding and its modification by functionalization to device application; • Discusses all forms of carbon for sensing devices, including carbon nanotubes and graphene, and explains applications to numerous fields; • Includes coverage of the most sophisticated and up to date fabrication methodologies.