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Disciplina	620.5
Soggetti	Optical materials Semiconductors Microtechnology Microelectromechanical systems Lasers Condensed matter Optical Materials Microsystems and MEMS Laser Condensed Matter Physics
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Carbon-based nanoelectronics -- Metallic chalcogenides nanoelectronics -- Silicene and germanium nanoelectronics -- 2D electron gas nanoelectronics -- Other 2D materials.
Sommario/riassunto	This book is dedicated to the new two-dimensional one-atomic-layer- thick materials such as graphene, metallic chalcogenides, silicene and other 2D materials. The book describes their main physical properties and applications in nanoelectronics, photonics, sensing and computing. A large part of the book deals with graphene and its amazing physical properties. Another important part of the book deals with semiconductor monolayers such as MoS ₂ with impressive applications in photonics, and electronics. Silicene and germanene are the atom- thick counterparts of silicon and germanium with impressive

applications in electronics and photonics which are still unexplored. Consideration of two-dimensional electron gas devices conclude the treatment. The physics of 2DEG is explained in detail and the applications in THz and IR region are discussed. Both authors are working currently on these 2D materials developing theory and applications.
