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**Materials Science : Optical and Electronic Materials**

Cerofolini, Gianfranco F., Meda, Laura

# Physical Chemistry of, in and on Silicon

The aim of this book is twofold: it is intended for use as a textbook for a course on electronic materials (indeed, it stems from a series of lectures on this topic delivered at Milan Polytechnic and at the universities of Modena and Parma), and as an up-to-date review for scientists working in the field of silicon processing. Although a number of works on silicon are already available, the vast amount of existing and new data on silicon properties are nowhere adequately summarized in a single comprehensive report. The present volume is intended to fill this gap. Most of the examples dealt with are taken from the authors' everyday experience, this choice being dictated merely by their greater knowledge of these areas. Certain aspects of the physics of silicon have not been included; this is either because they have been treated in standard textbooks (e.g. the inhomogeneously doped semiconductor and the chemistry of isotropic or preferential aqueous etching of silicon), or because they are still in a rapidly evolving phase (e.g. silicon band-gap engineering, generation-recombination phenomena, cryogenic properties and the chemistry of plasma etching). In line with the standard practice in microelectronics, CGS units will be used for mechanical and thermal quantities, and SI units for electrical quantities. All atomic energies will be given in electronvolts and the angstrom will be the unit of length used for atomic phenomena.

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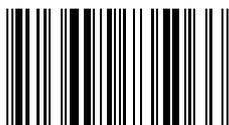
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