DESCRIPTION

Representing a further step towards enabling the convergence of computing and communication, this handbook and reference treats germanium electronics and optics on an equal footing. Renowned experts paint the big picture, combining both introductory material and the latest results.

The first part of the book introduces readers to the fundamental properties of germanium, such as band offsets, impurities, defects and surface structures, which determine the performance of germanium-based devices in conjunction with conventional silicon technology. The second part covers methods of preparing and processing germanium structures, including chemical and physical vapor deposition, condensation approaches and chemical etching. The third and largest part gives a broad overview of the applications of integrated germanium technology: waveguides, photodetectors, modulators, ring resonators, transistors and, prominently, light-emitting devices.

An invaluable one-stop resource for both researchers and developers.

ABOUT THE AUTHOR

Kazumi Wada is head of the Microphotonics Laboratory at the University of Tokyo, Japan.
His current research involves device technology of photonic materials and structures. He is particularly interested in the microscale integration of planar lightwave circuits with Silicon and in engineering of material-photon interaction for novel device functions. After his PhD in semiconductor physics he worked at the Nippon Telegraph and Telephone Corporation Laboratory for Large Scale Integration. In 1998 Kazumi Wada joined the Electronic Materials Laboratory of the Massachusetts Institute of Technology in Cambridge, USA, before returning to Tokyo.

Lionel C. Kimerling is Director of the Microphotonics and the Materials Processing Center and Professor in the Department of Materials Science and Engineering of the Massachusetts Institute of Technology in Cambridge, USA. His research activities address the fundamental science of imperfection in solids and the processing of electronic materials, with an emphasis on both materials science and applications. Lionel C. Kimerling received the prestigious Fellow Award of the Minerals, Metals & Materials Society for his outstanding basic and applied research on defects in semiconductors and for his professional and academic leadership in the field of electronic materials.

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