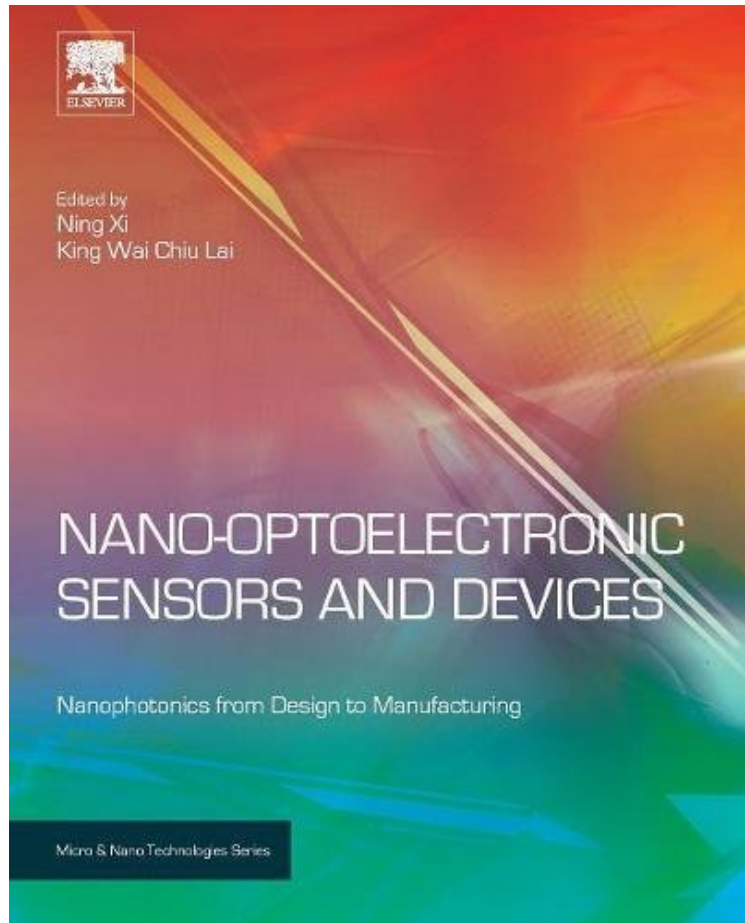


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## **Nano Optoelectronic Sensors and Devices: Nanophotonics from Design to Manufacturing (Micro and Nano Technologies)**

*Ning Xi, King Lai*

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**Ning Xi, King Lai : Nano Optoelectronic Sensors and Devices: Nanophotonics from Design to Manufacturing (Micro and Nano Technologies)** before purchasing it in order to gage whether or not it would be worth my time, and all praised Nano Optoelectronic Sensors and Devices: Nanophotonics from Design to Manufacturing (Micro and Nano Technologies):

Nanophotonics has emerged as a major technology and applications domain, exploiting the interaction of light-emitting and light-sensing nanostructured materials. These devices are lightweight, highly efficient, low on power consumption, and are cost effective to produce. The authors of this book have been involved in pioneering work in

manufacturing photonic devices from carbon nanotube (CNT) nanowires and provide a series of practical guidelines for their design and manufacture, using processes such as nano-robotic manipulation and assembly methods. They also introduce the design and operational principles of opto-electrical sensing devices at the nano scale. Thermal annealing and packaging processes are also covered, as key elements in a scalable manufacturing process. Examples of applications of different nanowire based photonic devices are presented. These include applications in the fields of electronics (e.g. FET, CNT Schottky diode) and solar energy. Discusses opto-electronic nanomaterials, characterization and properties from an engineering perspective, enabling the commercialization of key emerging technologies Provides scalable techniques for nanowire structure growth, manipulation and assembly (i.e. synthesis) Explores key application areas such as sensing, electronics and solar energy

About the Author Dr Ning Xi is Distinguished Professor of Electrical and Computer Engineering and received his D.Sc. degree in Systems Science and Mathematics from Washington University in St. Louis , Missouri in December, 1993. He received his M.S. degree in computer science from Northeastern University , Boston , Massachusetts , and B.S. degree in electrical engineering from Beijing University of Aeronautics and Astronautics. Currently, he is John D. Ryder Professor of Electrical and Computer Engineering in the Department of Electrical and Computer Engineering at Michigan State University . Dr. Xi received the Best Paper Award in IEEE/RSJ International Conference on Intelligent Robots and Systems in August, 1995. He also received the Best Paper Award in the 1998 Japan-USA Symposium on Flexible Automation. Dr. Xi was awarded the first Early Academic Career Award by the IEEE Robotics and Automation Society in May, 1999. In addition, he is also a recipient of National Science Foundation CAREER Award. His research interests include robotics, manufacturing automation, micro/nano systems, and intelligent control and systems. Dr King W.C. Lai is Assistant Professor in the Department of Mechanical and Biomedical Engineering at City University, Hong Kong. He has over 10 years of research experience in micro/nano manipulation and micro/nano assembly. His main research interests include development of micro/nano sensors using MEMS and nanotechnology; design and fabrication of MEMS/nano systems and devices, optical sensing system and photovoltaics, nanobiotechnology, automation and manipulation of micro/nano scale systems. He has contributed to the research and development of nanomanufacturing technology for various nanodevices. He developed a micro/nano robot and a microinjection system for microassembly and microspotting of nanomaterials such as carbon nanotube, graphene etc. He has also developed apply the systems for the observation and manipulation of different biological samples such as living cells and DNA strands. He has published more than 80 peer-reviewed conference papers, book chapters and high-quality journals in the field of micromanipulation, nanorobotics and MEMS devices