

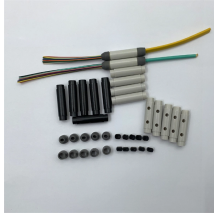
Principles of Nanoscale Optoelectronic Fusion



Overview

Adopting a broad perspective, the authors provide a detailed overview of the theoretical and experimental concepts that are needed to understand and work in nano-optics, across subfields ranging from quantum optics to biophysics. Christian Klinké studied physics at the University of Würzburg and the University of Karlsruhe (Germany) where he also obtained his diploma degree in the group of Thomas Schimmel. In March 2000, he joined the group of Klaus Kern at the Institute of Experimental Physics of the EPFL (Lausanne). Nanoscale optoelectronics is an interdisciplinary field that combines the principles of optics, electronics, and nanotechnology to develop innovative devices and systems. Now in its second edition, the text has been thoroughly updated to take into account new developments and research directions. This integration addresses challenges like high-speed, low-power consumption and intelligence, driving the. JNO is a cross-disciplinary peer-reviewed journal to consolidate all experimental and theoretical research activities in the areas of nanoscale electronic and optoelectronic materials and devices, electronic and optical properties of semiconductors, inorganic, organic, and hybrid nanostructures.

Principles of Nanoscale Optoelectronic Fusion



To fully explore the great powers of managing, manipulating and making use of light at nanoscale, it is necessary to understand the basic physics underlying different processes involved in ...



It will allow for the multi-functional integration of communications, sensing, and computing chips, as well as optoelectronic intelligent chips, promoting innovation in ultra-broadband optical networks, satellite ...



This chapter deals with understanding nanoscale structures and materials and their usefulness in the context of optoelectronic design. We will first identify typical engineering bottlenecks in designing ...



To explore the latest developments and challenges and the future trends in nano-optics and nano-optoelectronics, this Special Issue compiles sixteen papers dedicated to very recent ...



This editorial highlights a recent collection of articles in Nanoscale that exemplify this exciting evolution, showcasing the rapid bridging of fundamental understanding with technological implementation.



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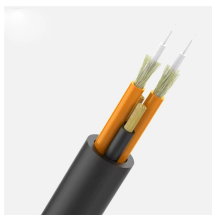
This technique advances optoelectronic applications and deepens insights into light-matter interactions in low-dimensional systems, offering a powerful tool for designing efficient ...



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First published in 2006, this book has become the standard reference on nano-optics. Now in its second edition, the text has been thoroughly updated to take into account new developments and...



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To understand the principles of nanoscale optoelectronics, it is essential to consider the fundamentals of optics and electronics at the nanoscale. At the nanoscale, the behavior of light and ...

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