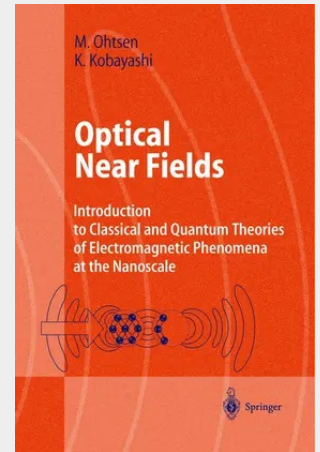


## Optical Near Fields

Introduction to Classical and Quantum Theories of Electromagnetic Phenomena at the Nanoscale

Using the thin film of light, the optical near field, that is localized on the surface of a nanometric material has removed the diffraction limit as a barrier to imaging on the nano- and atomic scales. A paradigm shift in the concepts of optics and optical technology is required to understand the intrinsic nature of the near fields and how best to exploit them. Professors Ohtsu and Kobayashi crafted **Optical Near Fields** on the basis of their hypothesis that the full potential for utilizing optical near fields can be realized only with novel nanometric processing, functions, and manipulation, i.e., by controlling the intrinsic interaction between nanometer-sized optical near fields and material systems, and further, atoms. The book presents physically intuitive concepts and theories for students, engineers, and scientists engaged in research in nanophotonics and atom photonics.

This book outlines physically intuitive concepts and theories for students, engineers, and scientists who will be engaged in research in nanophotonics and atom photonics. The main topic is the optical near field, i.e., the thin film of light that is localized on the surface of a nanometric material. In the early 1980s, one of the authors (M. Ohtsu) started his pioneering research on optical near fields because he judged that nanometer-sized light would be required to shift the paradigm of optical science and technology. This field of research did not exist previously, and was not compatible with trends in optical science and technology. However, he was encouraged by the knowledge that scientists in other countries started similar research in the mid 1980s. In the 1990s, optical technology progressed very rapidly and the photonics industry developed, but further progress became difficult due to the fundamental limit of light known as the diffraction limit. However, there was a growing awareness among scientists and engineers that this limit can be overcome using optical near fields. Since a drastic paradigm shift in the concepts of optics is required to understand the intrinsic nature of optical near fields, the demand for a textbook on this subject has increased. The present book aims to meet this demand.



**53,49 €**

49,99 € (zzgl. MwSt.)

*Lieferfrist: bis zu 10 Tage*

**Artikelnummer:** 9783540404835

**Medium:** Buch

**ISBN:** 978-3-540-40483-5

**Verlag:** Springer Berlin Heidelberg

**Erscheinungstermin:** 17.11.2003

**Sprache(n):** Englisch

**Auflage:** 2004

**Serie:** Advanced Texts in Physics

**Produktform:** Gebunden

**Gewicht:** 1080 g

**Seiten:** 206

**Format (B x H):** 160 x 241 mm

