Fundamentals of Photonics
A complete, thoroughly updated, full-color second edition

Now in a new full-color edition, *Fundamentals of Photonics, Second Edition* is a self-contained and up-to-date introductory-level textbook that thoroughly surveys this rapidly expanding area of engineering and applied physics. Featuring a logical blend of theory and applications, coverage includes detailed accounts of the primary theories of light, including **ray optics**, **wave optics**, **electromagnetic optics**, and **photon optics**, as well as the **interaction of photons and atoms**, and **semiconductor optics**. Presented at increasing levels of complexity, preliminary sections build toward more advanced topics, such as **Fourier optics and holography**, **guided-wave and fiber optics**, **semiconductor sources and detectors**, **electro-optic and acousto-optic devices**, **nonlinear optical devices**, **optical interconnects and switches**, and **optical fiber communications**.

Each of the twenty-two chapters of the first edition has been thoroughly updated. The *Second Edition* also features entirely new chapters on **photonic-crystal optics** (including multilayer and periodic media, waveguides, holey fibers, and resonators) and **ultrafast optics** (including femtosecond optical pulses, ultrafast nonlinear optics, and optical solitons). The chapters on **optical interconnects and switches** and **optical fiber communications** have been completely rewritten to accommodate current technology.

Each chapter contains summaries, highlighted equations, exercises, problems, and selected reading lists. Examples of real systems are included to emphasize the concepts governing applications of current interest.

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