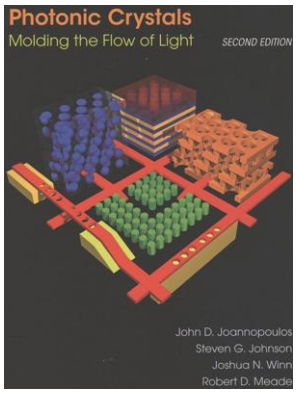

J. D. Joannopoulos, S. G. Johnson, J. N. Winn, and R. D. Meade, *Photonics Crystals: Molding the Flow of Light*, 2nd Ed. (Princeton University, Princeton, 2008).

Received for review from Princeton University Press 2008/02/08; published 2008/03/01
 ISSN: 1936-9808

Book Review

This book offers a current account of the field of photonic crystals. In its 286-page account of the field it begins with the basics of electromagnetism and Maxwell's equations including a discussion of symmetry, relevant quantum mechanics, and electrodynamics. The book then deals with one, two, and three dimensional crystals. Attention is then devoted to dielectric waveguides, crystal slabs, and crystal fibers. The book then concludes with a chapter on applications and four appendices. The chapter on applications discusses how to design mirrors, waveguides, and cavities. It also discusses reflection, refraction, and diffraction in crystal media. One of the appendices compares, in tabular form, the quantum mechanical description in a periodic potential and electromagnetic description in a periodic dielectric. This is an exercise that could be useful to scientists in other fields dealing with classical comparisons to quantum mechanics.

This reviewer would have liked to have seen the inclusion of laser dye-doped crystals, a more quantitative discussion of Bragg gratings, and a more extensive index. But no book is perfect. On the other hand, this book offers elegant full-color illustrations and is superbly produced. This has to be applauded in an era dominated by low resolution digital images.

In summary: *Photonics Crystals* is a beauty and is highly recommended to photonics, laser, and optical scientists.

Optics Journal