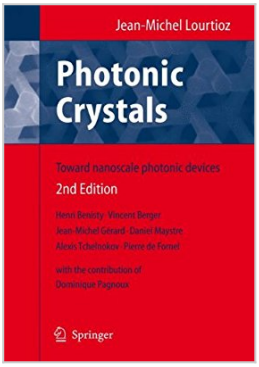

Photonic Crystals: Towards Nanoscale Photonic Devices

By Jean-Michel Lourtioz, Henri Benisty, Vincent Berger, Jean-Michel Gerard, Daniel Maystre, Alexei Tchelnokov

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This book provides the theoretical background required for modelling photonic crystals and their optical properties, while presenting the large variety of devices where photonic crystals have found application. As such, it aims at building bridges between optics, electromagnetism and solid state physics. This second edition includes the most recent developments of two-dimensional photonic crystal devices, as well as some of the last results reported on metamaterials.

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Editorial Review

Review

In *Photonic Crystals: Towards Nanoscale Photonic Devices*, Jean-Michel Lourtioz and his colleagues have come out with an impressive major valume that covers many of the main themes of photonic crystals... The English version, thanks to translator Pierre-Noel Favennec, has been worth the wait... Overall, *Photonic Crystals* is an excellent book that can serve as an introductory text and a reference for graduate students and researchers.

--Eli Yablonovitch, UCLA, in *Physics Today*, August 2006

From the reviews of the second edition:

“This comprehensive book is the excellent picture of modern view on the photonic crystals then today day and future. The wide covering of corresponding theoretical, model and experimental methods, and also broad spectrum applications of the photonic crystals allow one to recommend this book for students, engineers and specialists studying and working in different regions of nanotechnologies, nanomaterials and related scientific areas.” (I. A. Parinov, Zentralblatt MATH, Vol. 1169, 2009)

From the Back Cover

Just like the periodical crystalline potential in solid state crystals determines their properties for the conduction of electrons, the periodical structuring of photonic crystals leads to envisioning the possibility of achieving a control of the photon flux in dielectric and metallic materials.

The use of photonic crystals as cages for storing, filtering or guiding light at the wavelength scale paves the way to the realization of optical and optoelectronic devices with ultimate properties and dimensions. This will contribute towards meeting the demands for greater miniaturization imposed by the processing of an ever increasing number of data.

Photonic Crystals will provide students and researchers from different fields with the theoretical background required for modelling photonic crystals and their optical properties, while at the same time presenting the large variety of devices, ranging from optics to microwaves, where photonic crystals have found application. As such, it aims at building bridges between optics, electromagnetism and solid state physics.

Photonic Crystals was written by six specialists of nanophotonics, with the contribution of a specialist in optical fibres. This second edition was prepared to include the most recent developments of two-dimensional photonic crystal devices, as well as some of the last results reported on metamaterials. The work was coordinated by Jean-Michel Lourtioz, head of the Institut d'Électronique Fondamentale in Orsay.

Users Review

From reader reviews:

Lou Whisenhunt:

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Photonic Devices By Jean-Michel Lourtioz, Henri Benisty, Vincent Berger, Jean-Michel Gerard, Daniel Maystre, Alexei Tchelnokov #170LNRP5AMC

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