Contents

Preface vii

Spectral properties of absorptive photonic crystals
J.-M. COMBES, B. GRALAK, AND A. TIP 1

Regularity properties for the density of states of random Schrödinger operators
J.-M. COMBES, P. HISLOP, AND F. KLOPP 15

Spectral properties of Schrödinger operators with a strongly attractive δ interaction supported by a surface
P. EXNER 25

Absolute continuity of the spectra of periodic waveguides
L. FRIEDLANDER 37

The Anderson metal-insulator transport transition
F. GERMINET AND A. KLEIN 43

Theory and computation of scattering resonances of photonic microstructures
S. E. GOLOWICH AND M. I. WEINSTEIN 59

Asymptotic formulas for eigenvalues and eigenfunctions of periodic magnetic Schrödinger operators
YU. KARPESHINA 91

On guided waves in photonic crystal waveguides
P. KUCHMENT AND B. ONG 105

The design and photofabrication of random achromatic optical diffusers for uniform illumination
T. A. LESKOVA, A. A. MARADUDIN, E. R. MÉNDEZ, AND J. MUÑOZ-LOPEZ 117

Resonance optical switch: calculation of resonance eigenvalues
B. PAVLOV AND K. ROBERT 141

High energy asymptotics of the density of states for certain periodic pseudo-differential operators in dimension one
A. SOBOLEV 171

On discrete spectrum in the gaps of a two-dimensional periodic elliptic operator perturbed by a decaying potential
T. SUSLINA 185

On the principal eigenvalue of the Schrödinger operator with a scaled random potential
V. YURINSKY 201