

Table of Contents

Preface and Committees

Chapter 1: Nanophotonics

Gas Cluster Ion Beam Technology for Nano-Fabrication

N. Toyoda and I. Yamada 1

Passive and Active Nanophotonics

Y. Fainman, D. Tan, S. Zamek, O. Bondarenko, A. Simic, A. Mizrahi, M. Nezhad, V. Lomakin,
Q. Gu, J. Lee, M. Khajavikhan and B. Slutsky 9

Chapter 2: Active Optical Materials and Devices

White Light Generation in Rare-Earth-Doped Amorphous Films Produced by Ultrasonic Spray Pyrolysis

R. Martínez-Martínez, E. Yescas, E. Álvarez, C. Falcony and U. Caldiño 19

Hybrid Organic-Inorganic Photodriven Nanoimpellers for Drug Release

A. Franco, J.A. García-Macedo and J.I. Zink 25

PLZT:Nd³⁺ Ceramics for Photonic Applications

M. Plonska, W.A. Pisarski, B. Wodecka-Dus and L. Cienki 32

Development of Field-Controlled Smart Optic Materials (ScN, AlN) with Rare Earth Dopants

H.J. Kim, Y.J. Park, G.C. King and S.H. Choi 38

Multimodal, High-Resolution Imaging System Based on Stimuli-Responsive Polymers

G. Paschew, R. Körbitz and A. Richter 44

Electric Field Dependence of Molecular Orientation and Anisotropic Magnetic Interactions in the Ferroelectric Liquid Crystalline Phase of an Organic Radical Compound by EPR Spectroscopy

K. Suzuki, Y. Uchida, R. Tamura, Y. Noda, N. Ikuma, S. Shimono and J. Yamauchi 50

Whispering Gallery Mode Microresonators for Biosensing

S. Soria, S. Berneschi, L. Lunelli, G. Nunzi Conti, L. Pasquardini, C. Pederzoli and G.C. Righini 55

Chapter 3: Adaptive Optics

Intelligent Optical Systems Using Adaptive Optics

N. Clark 64

Adaptive Optical Systems in Russian Federal Nuclear Center - VNIIEF with Different Control Principles

S. Garanin, S. Khokhlov, A. Manachinsky and F. Starikov 75

Peculiarities of Adaptive Laser Location of Debris with Rough Surface

V. Bogachev, S. Garanin, N. Maslov, F. Starikov and V. Volkov 85