

JOURNAL DE PHYSIQUE



Volume 4
N° 12
December 1994



Physics of Systems for Optical Information Processing



Recognized by the European Physical Society

Published under the scientific responsibility of the French Physical Society
with the cooperation of Centre National de la Recherche Scientifique

les éditions



CONTENTS

(Sommaire en page 3 de couverture)

Physics of Systems for Optical Information Processing

Foreword Pierre CHAVEL and Jean Louis LE GOÛET VII

InGaAs/InP multiple quantum well modulators in experiment and theory.
..... R. SCHWEDLER, H. MIKKELSEN, K. WOLTER, D. LASCHET, J. HERGETH
and H. KURZ 2341

Etched arrays of quantum well optical bistable microresonators.
..... J.L. OUDAR, T. RIVERA, R. KUSZELEWICZ and F. LADAN 2361

Novel application of optically pumped vertical cavity surface emitting lasers: fast amplifying optical switch. R. RAJ 2371

Surface emitting diode lasers. F. LOZES-DUPUY, S. BONNEFONT and H. MARTINOT 2379

Properties and applications of optical thyristors.
..... Paul HEREMANS, Maarten KUIJK, Roger VOUNCKX and Gustaaf BORGHS 2391

Optical data self-routing using address decoding. P. KOPPA, P. CHAVEL, J.L. OUDAR,
R. KUSZELEWICZ, J.Ph. SCHNELL and J.P. POCHOLLE 2405

II-VI Semiconductor microstructures: from physics to optoelectronics. J.L. PAUTRAT 2413

Influence of the density of photorefractive centers on volume holographic capacity storage.
..... Phannara AING, Clara ALVES, Gilles PAULIAT and Gérald ROOSEN 2427

Thermally stable cross-linked polymers for electro-optic applications.
..... J. LIANG, R. LEVENSON, C. ROSSIER, E. TOUSSAERE, J. ZYSS, A. ROUSSEAU,
B. BOUTEVIN, F. FOLL and D. BOSC 2441

Modal theory of diffraction: a powerful tool for the study of grating couplers in nonlinear optics.
..... R. REINISCH, M. NEVIÈRE, H. AKHOUAYRI, J. DANCKAERT and G. VITRANT 2451

Weakly multimode dynamics of a photorefractive oscillator.
..... D. HENNEQUIN, L. DAMBLY, D. DANGOISSE and P. GLORIEUX 2459

Field microstructure and temporal and spatial instability of photonic Bloch waves in nonlinear periodic media. P.St.J. RUSSELL and J.-L. ARCHAMBAULT 2471

Regular Papers

Short Communication

Proportional counter for simultaneous conversion X-ray and transmission Mössbauer spectroscopy. I. BIBICU and M.S. ROGALSKI 2495

Materials Science

Fractal characterization of 3D surface roughness. (*Text in French*).
..... J. LOPEZ, G. HANSALI, J.C. LE BOSSÉ and T. MATHIA 2501

Peculiarities of Bi₄Ti₃O₁₂ films grown by DC magnetron sputtering.
..... A.A. AGASIEV, V.I. ORBUKH and M.Z. MAMEDOV 2521

Physics of Electronic Devices

Behavioral study of power MOSFET switching. (*Text in French*).
..... E. FARJAH, J. ROUDET and J.L. SCHANEN 2531

Physics of Fluids and Mechanics

Structural solution for a flexible servo. (*Text in French*).
..... G. CHAMPENOIS, A. MARTINEZ and J.P. ROGNON 2557

Physics of Energy Transfers

Commutation of DC machine by means of external assistance. (*Text in French*).
..... R. GOYET and H. BENALLA 2583

Physics of Particles in Vacuum and Plasmas

Active species in N₂ flowing post-discharges. A. RICARD and A.R. de SOUZA 2593

Lasers and Optics

Enhanced polarization effects in chiral composites. A.H. SIHVOLA 2601

An efficient and simple spark-gap design for gas lasers. M. DINIZ SANTA MARINHA,
L. MARINHO SOARES, A. DIAS TAVARES Jr., C.E. FELLOWS and C.A. MASSONE 2609

Rosin-Rammler window for ground powder size analysis.
..... C. DIMOFTE, L. MIHUT and I. BALTOG 2617

Physics and Mechanics of Biological Systems

Concentration polarizations kinetics in unsteady plasma filtration of blood. (*Text in French*).
..... L.H. DING, J.M. LAURENT and M.Y. JAFFRIN 2627

Author Index to volume 4, 1994 2633

