

Table of Contents

Preface	iv
Si Nanocrystals and Erbium Co-Doped Glasses for Optical Amplifiers E. Borsella	3
Nanomaterials for Lighting M. Zachau and A. Konrad	13
Luminescent Nano-Sized ZnS and ZnO Particles M. Bredol and H. Althues	19
Microstructure and Spectroscopy of Lu₂O₃:Eu Prepared Using Various Synthesis Techniques E. Zych, J. Trojan-Piegza, L. Kępiński and P. Dorenbos	25
Grains of Porous Silicon Embedded in SiO₂:Studies of Optical Gain and Electroluminescence K. Dohnalová, K. Luterová, J. Valenta, J. Buršík, M. Procházka, V. Křesálek, B. Hönerlage and I. Pelant	31
Luminescence Properties of a Multi-Component Glass Co-Implanted with Si and Er F. Enrichi, G. Mattei, C. Sada, E. Trave, E. Borsella, D. Pacifici, G. Franzò, F. Priolo, F. Iacona and M. Prassas	37
Intersublevel Relaxation Dependence of Carrier Hopping in Self-Organized InAs Quantum Dot Heterostructures Y.F. Wu, H.T. Shen, Y.H. Lin, C.C. Cheng, R.M. Lin, T.E. Nee and N.T. Yeh	41
Growth of InAs Quantum Dots on a Low Lattice-Mismatched AlGaSb Layer Prepared on GaAs (001) Substrates N. Yamamoto, K. Akahane, S. Gozu and N. Ohtani	49
Three-Dimensional Photonic Crystals D.C. Meisel, M. Deubel, M. Hermatschweiler, K. Busch, W. Koch, G. von Freymann, A. Blanco, C. Enkrich and M. Wegener	55
Two- and Three-Dimensional Photonic Crystals Produced by Pulsed Laser Irradiation in Silver-Doped Glass Y.S. Kaganovsky, I. Antonov, M. Rosenbluh, J. Ihlemann and A.A. Lipovskii	65
Fabrication of 3D TE Structures M.S. Toprak, D. Kim, M. Mikhaylova, Y.S. Jo and M. Muhammed	73
Multiple Scattering Active Media as Small-Size Frequency Tunable Sources of Stimulated Emission E. Tikhonov, V.P. Yashchuk, O. Prygodjuk and V. Bezrodny	77
Fabrication of GaSb Microlenses by Photo and E-Beam Lithography and Dry Etching E. Papis, A. Piotrowska, T.T. Piotrowski, K. Gołaszewska, L. Ilka, R. Kruska, J. Ratajczak, J. Kaćki, J. Wróbel, M. Aleszkiewicz and R. Łukaskiewicz	83
Zirconia Pressure Sensors: From Nanopowders to Device R.R. Piticescu, M. Hrovath, D. Belavic, A. Ionascu, B. Malic, A.M. Motoc and C.J.A. Monty	89
Semiconductor Nanostructures for Infrared Applications N. Žurauskienė, S. Ašmontas, A. Dargys, J. Kundrotas, G. Janssen, E. Goovaerts, S. Marcinkevičius, P.M. Koenraad, J.H. Wolter and R.P. Leon	99
Semiconducting Nanowires: Properties and Architectures D. Erts, B. Polyakov, E. Saks, H. Ölin, L. Ryen, K. Ziegler and J.D. Holmes	109
Thermodynamic Properties of Nano- and Micro-Structured Perovskite-Type Compounds S. Tanasescu, C. Marinescu and F. Maxim	117
Microstructural Characterisation of RF Magnetron Sputtered ZnO Thin Films on SiC A. Trinchì, W. Włodarski, S. Santucci, D. Di Claudio, M. Passacantando, C. Cantalini, B. Rout, S.J. Ippolito, K. Kalantar-Zadeh and G. Sberveglieri	123
Microstructure and Electrical Properties of Doped ZnO Varistor Nanomaterials X. Kang, T. Minjing, M. Zhang and W. Tiandiao	127
Growth and Investigation of Oxide Heterostructures Containing Half-Metallic Fe₃O₄ B. Vengalis, V. Lissauskas, K. Šliužienė, V. Petrauskas, S. van Dijken, M. Bari, M. Venkatesan and J.M.D. Coey	133

The Effect of Milling Mode on the Hydriding Properties of Nanocrystalline Mg₂Ni J. Bystrzycki, T. Czujko, R.A. Varin and J. Mizera	137
Synthesis of a Zero-Birefringence Polymer Doped with an Inorganic Birefringent Crystal H. Ohkita, A. Tagaya and Y. Koike	143
Nanocrystalline Iron-Carbon Fillers for Polymers U. Narkiewicz, W. Arabczyk, T. Bodziony, J. Subocz and J. Majszczyk	149
Influence of Fine-Dispersed Dielectric Particles on Dye Luminescence in a Polymer Matrix E. Tikhonov, V.P. Yashchuk, O. Prygodjuk, V. Bezrodny and Y. Filatov	153
Dielectric Characteristics of Polyimides Modified by Additions of C₆₀-Fullerene J. Subocz, A. Valozhyn, P. Berczyński and E. Herko	157
A Novel Thermosensitive Composite Fabricated with Au Nanoparticles, Poly(Lactide), and Poly(N-Isopropylacrylamide) Y.S. Jo, D. Kim, Y.K. Jeong, K.J. Kim and M. Muhammed	161
Polymeric Nanocomposites of Complex Ferrite D. Kim, M.S. Toprak, M. Mikhaylova, Y.S. Jo, S.J. Savage, H.B. Lee, T. Tsakalakos and M. Muhammed	165
Peculiarities of Formation and Growth of Thin Polymer Plasma-Deposited Films A.M. Lyakhovitch, A.M. Dorfman and M.A. Shirobokov	169
Oxygen Plasma Processing of Silicon and Silica Substrates for Thin Films of Polymer Blends S. Tamulevičius, I. Prosyčėvas, A. Guobienė and J. Puišo	175
Recent Developments in the Synthesis of Iron-Based Nanostructures by Laser Pyrolysis: Integrating Structural Analysis with the Experimental Method R. Alexandrescu, I. Morjan, F. Dumitrache, I. Voicu, I. Soare, I. Sandu and C.T. Fleaca	181
Structure of Alumina and Zirconia Nanoparticles Synthesized by the Karlsruhe Microwave Plasma Process S. Schlabach, V. Szabó, D. Vollath, A. Braun and R. Clasen	191
Morphology Control of PbS Nanocrystals by a Novel Hydrothermal Process Y. Ji, D.R. Yang, H. Zhang, X.Y. Ma, J. Xu and D.L. Que	197
Synthesis of One-Dimensional Chalcogenides by a Novel Hydrothermal Process H. Zhang, D.R. Yang, Y. Ji, X.Y. Ma, J. Xu and D.L. Que	203
Powder Precursors for Nanoceramics: Cleaning and Compaction G. Kalisz, A. Swiderska-Sroda, S. Gierlotka, E. Grzanka, B.F. Palosz and S. Stelmakh	209
New Type of Paramagnetic Silver Cluster in Sodalite: Ag₈⁷⁺ J. Sadło, J. Michalik, H. Yamada, Y. Michiue and S. Shimomura	213
Ab initio Calculations of Copper Nanostructures of MgO Substrate O. Sychev, Y.F. Zhukovskii, E.A. Kotomin and G. Borstel	219
Size Effects in Dynamics of Dipolar Planar Nanosystems H. Puzkarski, J.-S. Lévy and M. Krawczyk	223
Nanolevel Structuring – Design of Novel Functional Highly-Organized Solids and Materials O. Osmolowskaia, V. Smirnov and V. Semenov	227
Ion Implanted Nanolayers in AlN for Direct Bonding with Copper J. Piekoszewski, W. Olesińska, J. Jagielski, D. Kaliński, M. Chmielewski, Z. Werner, M. Barlak and W. Szymczyk	231
Structural and Catalytic Properties of Thin Films of CuO_x-CeO_{2-x} Deposited by Laser Ablation M. Chmielowska, A. Kopia, C. Leroux, S. Saitzek, J. Kusinski and J.R. Gavarri	235
Structure and Electrical Properties of Nanocrystalline CdS_{0.2} Se_{0.8} Films Sputtered on Substrates with a Silver Sublayer A.K. Fedotov, A.M. Saad, A.V. Mazanik, O. Stukalov, A.F. Petrov, D. Fink, T. Figielski and A.V. Frantskevich	239
CdS-PbS Multilayer Thin Films Grown by the SILAR Method S. Lindroos, J. Puišo, S. Tamulevičius and M. Leskelä	243
Molecular Adsorption on GaAs Studied by HREELS A.M. Botelho do Rego, A.M. Ferrari, M. Rei Vilar, J. El Beghdadi and R. Naaman	247
Nanosize Structure of Sputter-Deposited Tungsten Carbide Thin Films P. Dubček, N. Radić, S. Bernstorff, K. Salamon and O. Milat	251

PL Studies of Nanostructured Layers in Temperature - Pressure Treated Silicon Implanted with Helium	
B. Surma, A. Misiuk, V. Raineri, A. Wnuk, J. Jagielski and A. Bukowski	255
Properties of TiO₂ Films Prepared by the Spray Pyrolysis Method	
I. Oja, A. Mere, M. Krunks, C.-. Solterbeck and M. Es-Souni	259
Studies of Multiwall Carbon Nanotubes Using Raman Spectroscopy and Atomic Force Microscopy	
M. Zdrojek, W. Gebicki, C. Jastrzebski, T. Melin and A. Huczko	265
Studies on the Preparation and Characterisation of Carbon Nanostructures	
R.J. Kalenczuk, E. Borowiak-Palen, T. Pichler, M. Rummeli and J. Fink	269
Arc Plasma Synthesis of (Fe-Nd-B) - Containing Carbon Encapsulates	
M. Bystrzejewski, A. Huczko, H. Lange, P. Baranowski, J. Kozubowski, M. Woźniak, M. Leonowicz and W. Kaszuwara	273
Perspectives of Nanotechnology - Abstracts	279
Plenary Session - Abstracts	287