

# Table of Contents

<b>Preface</b>	iv
<b>Si Nanocrystals and Erbium Co-Doped Glasses for Optical Amplifiers</b>	3
E. Borsella	
<b>Nanomaterials for Lighting</b>	13
M. Zachau and A. Konrad	
<b>Luminescent Nano-Sized ZnS and ZnO Particles</b>	19
M. Bredol and H. Althues	
<b>Microstructure and Spectroscopy of Lu<sub>2</sub>O<sub>3</sub>:Eu Prepared Using Various Synthesis Techniques</b>	25
E. Zych, J. Trojan-Piegza, L. Kępiński and P. Dorenbos	
<b>Grains of Porous Silicon Embedded in SiO<sub>2</sub>:Studies of Optical Gain and Electroluminescence</b>	31
K. Dohnalová, K. Luterová, J. Valenta, J. Buršík, M. Procházka, V. Křesálek, B. Hönerlage and I. Pelant	
<b>Luminescence Properties of a Multi-Component Glass Co-Implanted with Si and Er</b>	37
F. Enrichi, G. Mattei, C. Sada, E. Trave, E. Borsella, D. Pacifici, G. Franzò, F. Priolo, F. Iacona and M. Prassas	
<b>Intersublevel Relaxation Dependence of Carrier Hopping in Self-Organized InAs Quantum Dot Heterostructures</b>	41
Y.F. Wu, H.T. Shen, Y.H. Lin, C.C. Cheng, R.M. Lin, T.E. Nee and N.T. Yeh	
<b>Growth of InAs Quantum Dots on a Low Lattice-Mismatched AlGaSb Layer Prepared on GaAs (001) Substrates</b>	49
N. Yamamoto, K. Akahane, S. Gozu and N. Ohtani	
<b>Three-Dimensional Photonic Crystals</b>	55
D.C. Meisel, M. Deubel, M. Hermatschweiler, K. Busch, W. Koch, G. von Freymann, A. Blanco, C. Enkrich and M. Wegener	
<b>Two- and Three-Dimensional Photonic Crystals Produced by Pulsed Laser Irradiation in Silver-Doped Glass</b>	65
Y.S. Kaganovsky, I. Antonov, M. Rosenbluh, J. Ihlemann and A.A. Lipovskii	
<b>Fabrication of 3D TE Structures</b>	73
M.S. Toprak, D. Kim, M. Mikhaylova, Y.S. Jo and M. Muhammed	
<b>Multiple Scattering Active Media as Small-Size Frequency Tunable Sources of Stimulated Emission</b>	77
E. Tikhonov, V.P. Yashchuk, O. Prygodjuk and V. Bezrodny	
<b>Fabrication of GaSb Microlenses by Photo and E-Beam Lithography and Dry Etching</b>	83
E. Papis, A. Piotrowska, T.T. Piotrowski, K. Gołaszewska, L. Ilka, R. Kruszka, J. Ratajczak, J. Kątcki, J. Wróbel, M. Aleszkiewicz and R. Łukaskiewicz	
<b>Zirconia Pressure Sensors: From Nanopowders to Device</b>	89
R.R. Piticescu, M. Hrovath, D. Belavic, A. Ionascu, B. Malic, A.M. Motoc and C.J.A. Monty	
<b>Semiconductor Nanostructures for Infrared Applications</b>	99
N. Žurauskienė, S. Ašmontas, A. Dargys, J. Kundrotas, G. Janssen, E. Goovaerts, S. Marcinkevičius, P.M. Koenraad, J.H. Wolter and R.P. Leon	
<b>Semiconducting Nanowires: Properties and Architectures</b>	109
D. Erts, B. Polyakov, E. Saks, H. Olin, L. Ryen, K. Ziegler and J.D. Holmes	
<b>Thermodynamic Properties of Nano- and Micro-Structured Perovskite-Type Compounds</b>	117
S. Tanasescu, C. Marinescu and F. Maxim	
<b>Microstructural Characterisation of RF Magnetron Sputtered ZnO Thin Films on SiC</b>	123
A. Trinchi, W. Włodarski, S. Santucci, D. Di Claudio, M. Passacantando, C. Cantalini, B. Rout, S.J. Ippolito, K. Kalantar-Zadeh and G. Sberveglieri	
<b>Microstructure and Electrical Properties of Doped ZnO Varistor Nanomaterials</b>	127
X. Kang, T. Minjing, M. Zhang and W. Tiandiao	
<b>Growth and Investigation of Oxide Heterostructures Containing Half-Metallic Fe<sub>3</sub>O<sub>4</sub></b>	133
B. Vengalis, V. Lisauskas, K. Šliužienė, V. Petruskas, S. van Dijken, M. Bari, M. Venkatesan and J.M.D. Coey	

<b>The Effect of Milling Mode on the Hydriding Properties of Nanocrystalline Mg<sub>2</sub>Ni</b>	137
J. Bystrzycki, T. Czujko, R.A. Varin and J. Mizera	
<b>Synthesis of a Zero-Birefringence Polymer Doped with an Inorganic Birefringent Crystal</b>	143
H. Ohkita, A. Tagaya and Y. Koike	
<b>Nanocrystalline Iron-Carbon Fillers for Polymers</b>	149
U. Narkiewicz, W. Arabczyk, T. Bodziony, J. Subocz and J. Majszczyk	
<b>Influence of Fine-Dispersed Dielectric Particles on Dye Luminescence in a Polymer Matrix</b>	153
E. Tikhonov, V.P. Yashchuk, O. Prygodjuk, V. Bezrodny and Y. Filatov	
<b>Dielectric Characteristics of Polyimides Modified by Additions of C<sub>60</sub>-Fullerene</b>	157
J. Subocz, A. Valozhyn, P. Berczyński and E. Herko	
<b>A Novel Thermosensitive Composite Fabricated with Au Nanoparticles, Poly(Lactide), and Poly(N-Isopropylacrylamide)</b>	161
Y.S. Jo, D. Kim, Y.K. Jeong, K.J. Kim and M. Muhammed	
<b>Polymeric Nanocomposites of Complex Ferrite</b>	165
D. Kim, M.S. Toprak, M. Mikhaylova, Y.S. Jo, S.J. Savage, H.B. Lee, T. Tsakalakos and M. Muhammed	
<b>Peculiarities of Formation and Growth of Thin Polymer Plasma-Deposited Films</b>	169
A.M. Lyakhovitch, A.M. Dorfman and M.A. Shirobokov	
<b>Oxygen Plasma Processing of Silicon and Silica Substrates for Thin Films of Polymer Blends</b>	175
S. Tamulevičius, I. Prosyčėvas, A. Guobienė and J. Puišo	
<b>Recent Developments in the Synthesis of Iron-Based Nanostructures by Laser Pyrolysis: Integrating Structural Analysis with the Experimental Method</b>	181
R. Alexandrescu, I. Morjan, F. Dumitrache, I. Voicu, I. Soare, I. Sandu and C.T. Fleaca	
<b>Structure of Alumina and Zirconia Nanoparticles Synthesized by the Karlsruhe Microwave Plasma Process</b>	191
S. Schlabach, V. Szabó, D. Vollath, A. Braun and R. Clasen	
<b>Morphology Control of PbS Nanocrystals by a Novel Hydrothermal Process</b>	197
Y. Ji, D.R. Yang, H. Zhang, X.Y. Ma, J. Xu and D.L. Que	
<b>Synthesis of One-Dimensional Chalcogenides by a Novel Hydrothermal Process</b>	203
H. Zhang, D.R. Yang, Y. Ji, X.Y. Ma, J. Xu and D.L. Que	
<b>Powder Precursors for Nanoceramics: Cleaning and Compaction</b>	209
G. Kalisz, A. Swiderska-Sroda, S. Gierlotka, E. Grzanka, B.F. Palosz and S. Stelmakh	
<b>New Type of Paramagnetic Silver Cluster in Sodalite: Ag<sub>8</sub><sup>7+</sup></b>	213
J. Sadło, J. Michalik, H. Yamada, Y. Michiue and S. Shimomura	
<b>Ab initio Calculations of Copper Nanostructures of MgO Substrate</b>	219
O. Sychev, Y.F. Zhukovskii, E.A. Kotomin and G. Borstel	
<b>Size Effects in Dynamics of Dipolar Planar Nanosystems</b>	223
H. PuszkarSKI, J.-S. Lévy and M. Krawczyk	
<b>Nanolevel Structuring – Design of Novel Functional Highly-Organized Solids and Materials</b>	227
O. Osmolowskaia, V. Smirnov and V. Semenov	
<b>Ion Implanted Nanolayers in AlN for Direct Bonding with Copper</b>	231
J. Piekoszewski, W. Olesińska, J. Jagielski, D. Kaliński, M. Chmielewski, Z. Werner, M. Barlak and W. Szymczyk	
<b>Structural and Catalytic Properties of Thin Films of CuOx-CeO<sub>2-x</sub> Deposited by Laser Ablation</b>	235
M. Chmielowska, A. Kopia, C. Leroux, S. Saitzek, J. Kusinski and J.R. Gavarri	
<b>Structure and Electrical Properties of Nanocrystalline CdS<sub>0.2</sub>Se<sub>0.8</sub> Films Sputtered on Substrates with a Silver Sublayer</b>	239
A.K. Fedotov, A.M. Saad, A.V. Mazanik, O. Stukalov, A.F. Petrov, D. Fink, T. FigielSKI and A.V. Frantskevich	
<b>CdS-PbS Multilayer Thin Films Grown by the SILAR Method</b>	243
S. Lindroos, J. Puišo, S. Tamulevičius and M. Leskelä	
<b>Molecular Adsorption on GaAs Studied by HREELS</b>	247
A.M. Botelho do Rego, A.M. Ferrari, M. Rei Vilar, J. El Beghdadi and R. Naaman	
<b>Nanosize Structure of Sputter-Deposited Tungsten Carbide Thin Films</b>	251
P. Dubček, N. Radić, S. Bernstorff, K. Salamon and O. Milat	

<b>PL Studies of Nanostructured Layers in Temperature - Pressure Treated Silicon Implanted with Helium</b>	
B. Surma, A. Misiuk, V. Raineri, A. Wnuk, J. Jagielski and A. Bukowski	255
<b>Properties of TiO<sub>2</sub> Films Prepared by the Spray Pyrolysis Method</b>	
I. Oja, A. Mere, M. Krunks, C.-. Solterbeck and M. Es-Souni	259
<b>Studies of Multiwall Carbon Nanotubes Using Raman Spectroscopy and Atomic Force Microscopy</b>	
M. Zdrojek, W. Gebicki, C. Jastrzebski, T. Melin and A. Huczko	265
<b>Studies on the Preparation and Characterisation of Carbon Nanostructures</b>	
R.J. Kalenczuk, E. Borowiak-Palen, T. Pichler, M. Rümmeli and J. Fink	269
<b>Arc Plasma Synthesis of (Fe-Nd-B) - Containing Carbon Encapsulates</b>	
M. Bystrzejewski, A. Huczko, H. Lange, P. Baranowski, J. Kozubowski, M. Woźniak, M. Leonowicz and W. Kaszuwara	273
<b>Perspectives of Nanotechnology - Abstracts</b>	
<b>Plenary Session - Abstracts</b>	279
	287