

Table of Contents

Preface and Scientific Committee

Electrochemical Sensor for Monitoring RedOx Potential of Molten Salts P. Alekseev, E. Grishanin and A. Shimkevich	1
Zinc Oxide Doped Red Sea Egyptian Clay as a Varistor M. El-Hofy, M. Dawoud, M. Elkhatib and A.A. Aziz	7
The Fabrication and Characterization of Niobium-Doped Titania Ceramic M.W. Wu, Y.C. Chen, C.Y. Tsao and C.C. Lin	11
Chemical Sensor Array Modeling: Application to Resistive Based Chemo Sensors A. Abbas and A. Bouabdallah	15
Fluorescent Probes for the Selective Detection of Cysteine in Water H.J. Kim	19
IR Thermography and Resistivity Investigations on Ni-Ti Shape Memory Alloy G. Costanza, S. Paoloni and M.E. Tata	23
Dislocation Density Effect on Thermal Diffusivity of AISI 316 Steel G. Costanza, R. Montanari, S. Paoloni and M.E. Tata	27
HT-XRD Analysis of W Thick Coatings for Nuclear Fusion Technology G. Costanza, R. Donnini, S. Kaciulis, G. Maddaluno and R. Montanari	31
Preparation and Crystallization Kinetics of FeSiB Amorphous Ribbons under Non-Isothermal Regime E. Varouti	35
Characterization of Electron Beam Welded Non-Oriented Electrical Steel with Magnetic Barkhausen Noise P. Vourna	39
A Wireless Network of Acoustic Sensors for Environmental Monitoring S.M. Potirakis, B. Nefzi, N.A. Tatlas, G. Tuna and M. Rangoussi	43
Wireless Sensor Network-Based Water Quality Monitoring System G. Tuna, B. Nefzi, O. Arkoc and S.M. Potirakis	47
Analyzing the Water Budgets of Reservoirs by Using Autonomous Mini Boats G. Tuna, O. Arkoc, S.M. Potirakis and B. Nefzi	51
Study of Free-Standing Electroded PZT Thick-Films: From Materials to Microsystems H. Debeda, R. Lakhmi, V. Pommier-Budinger and C. Lucat	55
The Effect of Frequency on the Flow and Particle Collection Patterns under Electroosmosis C.H. Wei and L.C. Wu	59
Dielectric Behaviour of BaTiO₃-SrTiO₃ Solid Solutions Fabricated by High-Energy Ball Milling P. Dulian, W. Bąk, K. Wiecek-Ciurawa and C. Kajtoch	63
Application of Response Surface Methodology to Synthesize Appropriate Molecularly Imprinted Polymer for Diazinon M. Rahiminezhad, S.J. Shahtaheri, M.R. Ganjali and A.R. Rahimi Forushani	67
Gas Sensing with Atomic Layer Deposited Dielectric Thin Film V.A.T. Dam, M.A. Blauw, S.H. Brongersma and R. van Schaijk	71
Functionalized Carbon Nanotubes-Based Gas Sensors for Pollutants Detection: Investigation on the Use of a Double Transduction Mode A. Ndiaye, J. Brunet, C. Varenne, P. Bonnet, A. Pauly, M. Dubois, K. Guerin and B. Lauron	75
Formation of Vanadium Oxide Thin Films Prepared from Aqueous Sol-Gel System O. Monfort, T. Roch, M. Gregor, L. Satrapinsky, T. Plecenik, A. Plecenik and G. Plesch	79
Biosensors with Nuclear Tracks and Embedded Membranes D. Fink, J. Vacik, H.G. Arellano, G.H. Muñoz, L. Alfonta, W.R. Fahrner, K. Hoppe and A. Kiv	83
Ethanol Sensing with Cu-BTC Metal Organic Framework: Mass Sensitive, Work Function Based and IR Investigations P. Davydovskaya, A. Tawil and R. Pohle	87
BQJ Photodetector Signal Processing T. Courcier, P. Pittet, P.G. Charette, V. Aimez and G.N. Lu	91

Chemical Sensing via Chemotaxis of <i>Euglena gracilis</i> Confined in an Isolated Micro-Aquarium	
K. Ozasa, J.S. Lee, S. Song, M. Hara and M. Maeda	95
A Novel Chlorpyrifos Electrochemical Sensor Based on Polyaniline/Carbon Nanotubes Composite	
S. Ebrahim, R. El-Raey, A. Hefnawy, H. Ibrahim and M. Soliman	99
Fabrication of Infrared Detector Based on of Polyaniline/Polyvinylidene Fluoride Blend Films and their Pyroelectric Measurement	
A.M. El-Shaer, A.K. Aboulseoud, M. Soliman and S. Ebrahim	103
Submicron Electrode Gaps Fabricated by Gold Electrodeposition at Interdigitated Electrodes	
M.J.J. van Megen, W. Olthuis and A. van den Berg	107
Coaxial Stub Resonator for Online Monitoring Early Stages of Corrosion	
N.A. Hoog, M.J.J. Mayer, H. Miedema, W. Olthuis and A. van den Berg	111
Electrochemical Sensor for Detection of Para-Nitrophenol Based on Modified Porous Silicon	
S. Belhousse, K. Lasmi, I. Mezaache, T. Sedrati, N. Belhaneche, S. Sam and N. Gabouze	115
Voltammetric Behavior of Peptide-Modified Porous Silicon after Metal Complexation	
S. Sam, A.C. Gouget-Laemmel, J.N. Chazalviel, F. Ozanam, A. Etcheberry, S. Belhousse and N. Gabouze	119
A New Surface Modifying Material "Mercaptosilatran" for Particle Plasmon Resonance Sensor	
Y.T. Tseng, W.H. Chen and L.K. Chau	123
Ambient Temperature Dependence of Diffusion Rate in a Microfluidic Channel	
S. Erfantalab, A.H. Zare and A. Jenabi	127
Analysis of Nanoparticle-Based Surface Plasmon Resonance Fiber Optic Sensor	
D. Ciprian and P. Hlubina	131
New Indigo/Nanocarbons Hybrid Material as Chemical Filter for the Enhancement of Gas Sensor Selectivity towards Nitrogen Dioxide	
J. Brunet, A. Pauly, M. Dubois, C. Varenne, K. Guerin and A. Ndiaye	135
Estimation of Thickness of Concrete Slab Members Using Impact Echo Method	
S.U. Hong, Y.T. Lee, S.H. Kim and J.H. Na	139
Estimation of Compressive Strength of Concrete Member Using Ultrasonic Pulse Velocity Method	
Y.T. Lee, S.U. Hong, S.H. Kim and J.H. Park	143
Estimation of Compressive Strength of Recycled Aggregate High Strength Concrete Using Ultrasonic Pulse Velocity	
S.U. Hong, S.H. Kim and Y.T. Lee	147
Characterization and Simulation of Neutron Irradiated JBS Silicon Carbide Diode Structures	
S. Popelka, P. Hazdra and V. Zählava	151
Influence of Microstructure on Performance of TiO₂ Nanodots Film Based Biosensor Electrodes	
M.S. Hammadi, K. Cheng and W.J. Weng	155
Dehydroacetic Acid Based Dioxaborine Styryl Dye: Effective Fluorescent Probe for Ammonia and Amine Detection	
M.P. Shandura, Y.P. Kovtun, V.P. Yakubovskiy, Y.P. Piryatinski, P.M. Lutsyk, R.J. Perminov, A.B. Verbitsky and A. Rozhin	159
Ozone Sensor on Flexible Substrate by ZnO Nanoparticles	
M. Acuautila, S. Bernardini and M. Bendahan	163
Humidity Sensor Based on Hetero-Core Structured Fiber Optic Covered with Layer-by-Layer Thin Film	
N. Iwashita, J. Tomisawa, A. Seki and K. Watanabe	167
SPE of Phenols on New Amine - Based Copolymers	
M. Sobiesiak and B. Podkościelna	173
Vapour Sensitivity of InP Surface Quantum Dots	
R. de Angelis, M. Casalboni, L. D'Amico, F. de Matteis, F. Hatami, W.T. Masselink and P. Prosposito	177

Humidity Insensitive Conductometric Sensors for Ammonia Sensing P. Gaudillat, J.M. Suisse and M. Bouvet	181
Electrical Resistance and Seebeck Effect in Undoped Polycrystalline Zinc Oxide F. Hossein-Babaei and S. Masoumi	185
Differentiating among Gas Mixtures Using a Single Tin Oxide Gas Sensor F. Hossein-Babaei, A. Amini and K. Babaian	189
Estimation of Depth of Concrete Column Members Using Impact Echo Method S.H. Kim, S.U. Hong, Y.T. Lee and S.H. Lee	194
Bond of High Strength Concrete with Recycled Coarse Aggregate and Reinforcing Bar S.H. Kim, Y.T. Lee and S.U. Hong	198
Preparation and Selectivity of Resistive Acetone Gas Sensors Based on Polyaniline/Au Interdigitated Electrode J.S. Do, W.L. Liu, M.L. Tsai and S.Y. Kuo	202
Investigation of a New High Sensitive Micro-Electromechanical Strain Gauge Sensor Based on Graphene Piezoresistivity M. Gamil, O. Tabata, K. Nakamura, A.M.R.F. El-Bab and A.A. El-Moneim	207
The Development of FeMn₂O₄ Gas Sensors at Room Temperature I. Gaidan	211
Development of Novel Polymer Oxide Thick Film for Sensor Sensing Layers at Room Temperature I. Gaidan	215
Self-Texture Control of ZnO Films Prepared by Reactive RF Magnetron Sputtering P. Novák, P. Šutta, M. Netrvalová, J. Říha and R. Medlín	219
Optical Second Harmonic Generation as a Tool for <i>In Situ</i>, Real-Time Monitor of Thin Film Epitaxial Growth A. Rubano, T. Günter, M. Lilienblum, D. Paparo, L. Marrucci, F.M. Granozio, U.S. di Uccio and M. Fiebig	223
Analysis of CO and NH₃ Reductive Gases Mixture by Chemically Modified Nanocrystalline Tin Dioxide A. Marikutsa, M. Rumyantseva and A. Gaskov	227
Effect of Crack Formation under Elongation in Carbon Nanotube Networks Embedded in Polyurethane P. Slobodian, P. Riha, R. Benlikaya and R. Olejnik	231
Enhanced Electromechanical Properties of Carbon Nanotube/Polyurethane Composite by KMnO₄ Oxidation R. Bořuta, P. Slobodian, R. Olejnik, M. Machovsky and P. Riha	235
Comparison of Vapor Sensing Properties of Pristine and Hexamethylene Diamine-Treated MWCNT Networks to Primary, Secondary and Tertiary Alcohols R. Benlikaya, P. Slobodian and M. Machovsky	239
Fibrinogen Monolayers of Controlled Coverage and Conformations for Biosensing Applications M. Nattich-Rak, Z. Adamczyk, M. Sadowska, M. Wasilewska and M. Ciesla	243
Switched Reluctance Motors Control C. Morón, E. Tremps, A. Gomez, A. Garcia and J.A. Somolinos	247
Effective Power Signal Filtering Using LC Filters with Air Core Coils J.A. Somolinos, R. Morales, C. Morón and A. Garcia	251
Giant Magnetoimpedance in CoP Electrodeposited Films C. Morón, E. Tremps, A. Garcia, J.M. Fuster and J.A. Somolinos	255
The Kinetically Dominated Overgrowth of Flower-Like Silver Nanostructures and its Application for Surface-Enhanced Raman Scattering N. Zhou, D.S. Li and D.R. Yang	259
Development of Hybrid Piezoelectric Materials for Tactile Sensing M. di Donato, S. Bocchini, G. Canavese, V. Cauda and M. Lombardi	263
Energy Efficiency and System Control of Street Lighting Using Wireless Sensors Network and Actuators F.L.D. Lucia, L.T. Manera and F.C. Frazatto	267
A New Concept of Multimode Magnetorheological Brake Design L.H. Hamdan, S.A. Mazlan, S. Sarip and H. Zamzuri	271

Plasma Polymerized Highly Hydrophobic Hexamethyldisiloxane Layers: Investigation on the Effect of Monomer Flow Rate Related to the Film Gas Sensing Properties	
M. Boutamine, O.C. Lezzar, A. Bellel, S. Sahli, Y. Segui and P. Raynaud	275
Simulation of Grain Size Effects on Gas Sensing Characteristics of Semiconductor Sensors in Nitrogen Oxides Detection	
J.Q. Liu and L. Quan	279
A Study on Different Types of Fiber Coils for Fiber Optic Current Sensors	
L. Yang, A. Frank, R. Wüest, B. Gülenaltin, M. Lenner, G.M. Müller and K. Bohnert	283
Effect of Mg-Substitution on the Magnetic Properties of Cobalt Ferrite	
I.C. Nlebedim and D.C. Jiles	287
Single Tellurium Nanoribbon-Based NO_x Gas Sensor	
H.S. Jung, C.Y. Kim and N.V. Myung	290
Structural Analysis of Silicon Nanostructures Obtained from Thermal Annealing of a-Si:H/SiO₂ Superlattices	
S. Agbo, P. Calta, P. Šutta, V. Vavruňková, M. Netrvalová and L. Prušáková	295
Metal Oxide Nanoparticles Obtained by Microwave Synthesis and Application in Gas Sensing by Microwave Transduction	
J. Rossignol and D. Stuergea	299
Damage in Composite Material: A Microwave Detection	
J. Rossignol and A. Thionnet	303
Improved Reversibility of Liquid Lithium-Ammonia Solutions in Vacuum Tube	
M. Kim, J.B. Kim and J.H. Jeon	306
PA-MBE Grown p-n (p-ZnO:(As+Sb)/n-GaN) and p-i-n (p-ZnO:As/HfO₂/n-GaN) Heterojunctions as a Highly Selective UV Detectors	
E. Przewdziecka, K. Gościński, S. Gieraltowska, E. Guzewicz, R. Jakiela and A. Kozanecki	310
Synthesis and Characterization of Ag Doped LaCoO₃ Nanowire Sputter-Deposited Coatings as Heavy Hydrocarbon Sensors	
A. Taguett, M.A.P. Yazdi, J.B. Sanchez, E. Monsifrot, P. Briois, F. Berger and A. Billard	314
Nitrogen Dioxide and Acetone Sensors Based on Iron Oxide Nanoparticles	
J. Ivanco, S. Luby, R. Rella, M.G. Manera, M. Benkovicova, M. Jergel, P. Siffalovic, K. Vegso, Y. Halahovets and E. Majkova	318
The Multifunctional Composite on the Base of Carbon Nanotubes Network and its Use as a Passive Antenna and Gas Sensing Element	
R. Olejnik, J. Matyas, P. Slobodian and K. Vlcek	322
Non-Exponential Decay Curves in Delayed Luminescence	
J. Swain, Y.N. Srivastava and A. Widom	326
Surface Acoustic Wave Sensors Based on Nanoporous Films for Hydrogen Detection	
C. Viespe	331
Enhanced Electrical Properties of PVDF-TrFE Nanocomposite for Actuator Application	
K.Y. Cho, A.R. Cho, Y.J. Lee, C.M. Koo, S.M. Hong, S.S. Wang, H.G. Yoon and K.Y. Baek	335
A QCM-D Study of Reduced Antibody Fragments Immobilized on Planar Gold and Gold Nanoparticle Modified Sensor Surfaces	
A. Makaraviciute, T. Ruzgas, A. Ramanavicius and A. Ramanaviciene	340
Investigations on the Equivalent Magnetic Noise of Magneto(Elasto)Electric Sensors by Using Modulation Techniques	
X. Zhuang, M. Lam Chok Sing, C. Dolabdjian, P. Finkel, J.F. Li and D. Viehland	344
Microfluidic Biosensing Method Using the Motion of Magnetic Microparticles	
G. Kokkinis, A. Dangel, F. Keplinger and I. Giouroudi	348
Controlled Trapping and Detection of Magnetic Particles by a Magnetic Microactuator and a Giant Magnetoresistance (GMR) Sensor	
I. Giouroudi, C. Gooneratne and G. Kokkinis	352
Localized Surface Plasmon Resonance Sensor of Gold Nanoplates for Detection of Boric Acid	
M. Morsin, M.M. Salleh, A.A. Umar and M. Yahaya	356
Nickel Porous Electrode Pt Layered by PVD Method	
A. Jaron, Z. Żurek and K. Reszka	360
Multi-Functional Fluorescent Upconversion Nanocrystals for Simultaneous Imaging and Delivery of Peptide Toxins	
A. Bansal, M.K. Gnanasammandhan and Y. Zhang	364

TiO₂ Nano-Powders as Potential Low-Temperature Optical Gas Sensors M. Eltermann, S. Lange, K. Utt, U. Joost, I. Kink, V. Kiisk and I. Sildos	368
Application of a Ag Ductile Layer in Minimizing Si Die Stresses in LDMOS Packages R. Fragoudakis, M.A. Zimmerman and A. Saigal	372
Microstructure, Surface Characterization and Fatigue Assessment of 56SiCr7 Spring Steel R. Fragoudakis, F. Stergioudi, N. Michailidis and G. Savaidis	376
MOS Structures Containing Si Nanocrystals for Applications in UV Dosimeters A. Arias, N. Nedev, D. Nesheva, M. Curiel, E. Manolov, D. Mateos, V. Dzurkov, B. Valdez, O. Contreras, R. Herrera, I. Bineva and J.M. Siqueiros	380
Visible Light Sensor Based on Metal-Oxide-Semiconductor Structure N. Nedev, A. Arias, M. Curiel, R. Nedev, D. Mateos, E. Manolov, D. Nesheva, B. Valdez, R. Herrera and A. Sanchez	384
A Novel NAD⁺/MWNTs Nanocomposite-Based Electrochemical Biosensor for Measuring Mevalonic Acid R. Palangsuntikul, S. Pakapongpan, P. Khownarumit and W. Surareunchai	388
Piezoelectric Self-Excited System in Mining Roof Anchor Stress Change Measurement J. Kwaśniewski, I. Dominik and K. Lalik	392
Application of the Ionic Polymer-Metal Composite Sensor Array Indisplacement Measurement I. Dominik, J. Kwaśniewski and F. Kaszuba	396
Effect of Erbium Doping on Sol-Gel Synthesized Vanadium Pentoxide and Titanium Dioxide Thin Films F.P. Gokdemir, E. Yuzbasioglu, A.E. Saatci, O. Ozdemir and K. Kutlu	400
Modal Analysis of Gallium Nitride Membrane for Pressure Sensing Device J. Dzuba, M. Držík, G. Vanko, I. Rýger, M. Vallo, V. Kutiš and T. Lalinský	404
Analysis of Signal Processing Algorithms of Coriolis Mass Flowmeters J. Ruoff, W. Gauchel and H. Kück	408
High Sensitive and Spatial-Resolution Atom Sensor Using Two-Step Photoionization with Two-Color Near-Field Lights Generated at a Nano-Slit K. Sagawa and H. Ito	412
Preparation of SERS Active Substrates Based on Ag/Graphene/Polymer Nanocomposites G. Siljanovska Petreska, J. Blazevska-Gilev, R. Tomovska and R. Fajgar	416
Estimation of Steel Rebar Position and Thickness in Concrete Members Using Impact Echo Method S.U. Hong, S.H. Kim and Y.T. Lee	420
Technology and Properties of (1-x)PZT-(x)PFW Ceramics with 0.25<x<0.55 R. Skulski, E. Nogas-Cwikiel, D. Bochenek, P. Niemiec and P. Wawrzala	424
Chitosan Combined with Conducting Polymers for Novel Functionality: Antioxidant and Antibacterial Activity R. Kiefer, R.J. Lee, R. Temmer, T. Tamm and A. Aabloo	428
Electromagnetic Wave Sensing of <i>Euglena gracilis</i> Viability and Quantification A. Mason, K. Ozasa, O. Korostynska, I. Nakouti, M. Ortoneda-Pedrola, M. Maeda and A. Al-Shammaa	432
Is Low Frequency Excess Noise of GMI Induced by Magnetization Fluctuations? C. Dolabdjian, B. Dufay, S. Saez, A. Yelon and D. Ménard	437
Analysis of Hysteretic Behavior in a PBZTS Ceramics by a Preisach Distribution P. Wawrzala and D. Bochenek	441
Optical Properties of Composite Films Based on Copper Chloride in PMMA Matrix A. Gerbreder, A. Bulanov, E. Sledevskis, V. Gerbreder and J. Teteris	445
Influence of Filler Geometry on Melt Strength of Poly(lactid acid) Composites with Different Electrically Conductive Fillers S. Frackowiak and M. Kozłowski	449
Total Ionizing Dose Effects on CMOS Image Sensors with Deep-Trench Isolation N. Ahmed, G.N. Lu and F. Roy	453
The Effect of Sheet Resistivity and Storage Conditions on Sensitivity of RuO₂ Based pH Sensors L. Manjakkal, K. Cvejín, J. Kulawik, K. Zaraska and D. Szwagierczak	457

Copper Phthalocyanine Functionalized Single-Walled Carbon Nanotubes: Thin Film Deposition and Sensing Properties	
H. Banimuslem, A. Hassan, T. Basova, I. Yushina, M. Durmuş, S. Tuncel, A.A. Esenpınar, A.G. Gürek and V. Ahsen	461
Fabrication of Tips for Magnetic Force Microscopy Employing Magnetic Multilayer Structures	
R. Suzuki, S. Ishihara, M. Ohtake and M. Futamoto	465
Opto-Electrical Modeling of CMOS Buried Quad Junction Photodetector	
S. Feruglio, T. Courcier, A. Karami, A. Alexandre-Gauthier, O. Romain, V. Aimez, P.G. Charette, P. Pittet and G.N. Lu	470
Stretchable and Wearable Piezoresistive Insole for Continuous Pressure Monitoring	
G. Canavese, S. Stassi, C. Fallauto, S. Corbellini, V. Cauda, M. di Donato, M. Pirola and F.C. Pirri	474
Preparation of 3d Ferromagnetic Transition Metal Thin Films with Metastable bcc Structure on GaAs(100) Substrates	
M. Ohtake, S. Minakawa and M. Futamoto	478
Synthesis of Perovskite Sr Doped Lanthanide Cobaltites and Ferrites and Application for Oxygen Sensors: A Comparative Study	
K. Cvejic, L. Manjakal, J. Kulawik, K. Zaraska and D. Szwagierczak	483
Structure and Epitaxial Behavior of Rutile TiO₂ Thin Films Prepared by DC Magnetron Sputtering and <i>Ex-Situ</i> Annealing	
T. Roch, P. Durina, M. Truchly, T. Plecenik, B. Grancic, M. Mikula, A.A. Haidry, M. Gregor, L. Satrapinsky, P. Kus and A. Plecenik	487
Enhanced Sensitivity of Pt/NiO Gate Based AlGaIn/GaN C-HEMT Hydrogen Sensor	
I. Rýger, G. Vanko, T. Lalinský, J. Dzuba, M. Vallo, P. Kunzo and I. Vávra	491
The Study of Graphene Gas Sensor	
J. Nahlik, J. Voves, A. Laposa and J. Kroutil	495
Influence of Metastable States on Electrophysical Properties in Ferroelectric Crystalline Polymers	
V.V. Kochervinskii, A. Pavlov, N. Kozlova, N. Shmakova, D.A. Kiselev and M.D. Malinkovich	499
Influence of Dipolar Interactions in Ferroelectric Vinylidene Fluoride Copolymers on their Structure and Low-Temperature Molecular Mobility	
V.V. Kochervinskii, I.A. Malyshkina, A.S. Pavlov, N.P. Bessonova, N.V. Kozlova and N.A. Shmakova	503
Properties of Multilayer NTC Perovskite Thermistors Prepared by Tape Casting, Lamination and Cofiring	
J. Kulawik and D. Szwagierczak	507
Drift-Like Terms Minimization in the Responses of a Generic Tin Oxide Gas Sensor	
A. Amini, P. Shabani and M. Gharesi	511
Gold and Silver Contacts on Tin Oxide Thin Films Produced by Spray Pyrolysis on SiO₂ Substrates	
S. Moghadam, N. Alaei-Sheini and S. Bagherpour	515
Study on the Magnetic Hysteresis of Terfenol-D Using New Hybrid Model	
S. Talebian, Y. Hojjat, M. Ghodsi and M.R. Karafi	519
Initial Calibration and Online Error Compensation of a Resolver System	
N.L.H. Aung, C. Bi and A. Al-Mamun	523
Properties of Metal Oxide Gas Sensors with Electrodes Placed below the Sensing Layer	
P. Durina, T. Plecenik, M. Mosko, A.A. Haidry, M. Truchly, M. Mikula, B. Grancic, T. Roch, M. Gregor, L. Satrapinsky, P. Kus and A. Plecenik	527
Preparation of Propiolic Acid Doped Polyaniline and Investigation of Opto-Electronic Properties	
E. Ahlatcioglu, M. Okutan and B.F. Senkal	531
Thin Chitosan Films for Optical Gas Sensors	
A.Y. Mironenko, A.A. Sergeev, S. Voznesensky and S.Y. Bratskaya	536
Bi-Crystal Compensation Method for the Over-Response of Solid-State Dosimetry	
R.X. Wang, P. Pittet, J. Ribouton, G.N. Lu, J.M. Galvan, P. Jalade, J. Balosso and A. Ahnesjö	540
Microwave Emission of Carbon Fibres during Electrical Breakdown	
A. Aman, S. Majcherek and S. Hirsch	544

Anisotropy of the Linear Magnetic Birefridence of Europium Iron Garnet N. Tsidaeva, V. Abaeva, A. Turiev, E. Enaldieva, T. Butkhuzi, S. Khaimanov and A. Ramonova	548
Specific Futures of Optical Anisotropy in Terbium Iron and Terbium Gallium Garnets N. Tsidaeva, V. Abaeva, A. Turiev, E. Enaldieva, T. Butkhuzi, S. Khaimanov and A. Ramonova	553
The Change of the Surface Morphology of Organic Films by Laser Pulses A.M. Turiev, N. Tsidaeva, A. Ramonova, T. Butkhuzi, V. Abaeva, S. Khaimanov and E. Enaldieva	557
Fragmentation of Manganese Phthalocyanine Films by Laser Radiation A.M. Turiev, T. Butkhuzi, A. Ramonova, N. Tsidaeva, E. Enaldieva, S. Khaimanov and V. Abaeva	561
<i>Ab Initio</i> Study of Electronic Structure under Hydrostatic Pressure in Ferromagnetic Mn_xGe_{1-x} Alloy S. Djeroud and I. Bouchahdane	565
FEM Simulation of Quartz Thickness Shear Mode Resonator for Gas Sensing Applications P. Kulha, I. Laposa, A. Laposa and M. Husák	569
Different Chemical Approaches for the Synthesis of Polyaniline Nanofibers and its Application in Ammonia Gas Sensing V. Talwar and R.C. Singh	573
Hydrogen-Terminated Diamond Sensors for Electrical Monitoring of Cells T. Izak, K. Novotná, I. Kopová, L. Bačáková, M. Varga, B. Rezek and A. Kromka	577
Electrochemical Measurements of Phenothiazine Drugs in the Presence of Surface Active Ionic Liquids R. Talwar and R.K. Mahajan	581
Synthesis of ZnO Nanorod Arrays by Chemical Solution and Microwave Method for Sensor Application M. Yahaya, S.T. Tan, A.A. Umar, C.C. Yap and M.M. Salleh	585
Fabrication of Diamond Based Quartz Crystal Microbalance Gas Sensor M. Varga, A. Laposa, P. Kulha, M. Davydova, J. Kroutil, M. Husak and A. Kromka	589
Morphology and Laser-Induced Photochemistry of Silicon and Nickel Nanoparticles Y.N. Parkhomenko, A.I. Belogorokhov, A.P. Bliev, V.G. Sozanov, A.G. Kaloeva, I.V. Tvauri, S.A. Khubezhov and T.T. Magkoev	593
Tuning the Molecular Sensitivity of Conductive Polymer Resistive Sensors by Chemical Functionalization E. Frontera, P.C. Cavallo, R. Olejnik, D.F. Acevedo, P. Slobodian, C.A. Barbero and P. Saha	597
Voltammetry of Micro-Liter Electrolyte Samples on ITO Microelectrodes for Analyte Recognition A. Jenabi, A.H. Zare and S. Erfantalab	601
A Mass Efficiency Test of α-β Processed Ti-Al-V Alloys G.S.E. Antipas	605
Non-Destructive Methods for Measuring Steel Properties: A Portable, Low-Cost Electromagnetic Sensor Based on the MBN Phenomenon K.D. Asimakopoulos	609
Non-Destructive Testing with Ultrasound in Rails and Ship Plates P.I. Chatzifotis	613
Computational Modeling and Optimization of a Magnetic Shielding Cabinet N. Diakidis	617
Evaluation of Anisotropic Magnetoresistance Sensors for Port Monitoring Applications N. Hadjigeorgiou, D. Kossivakis and P. Skafidas	621
Vehicle Detection and Monitoring Setup Based on Anisotropic Magnetoresistance Sensors N. Hadjigeorgiou, D. Kossivakis and P. Skafidas	625
Experimental Study Noise of HMR2003 Sensor with or without the Use of Amplifier AMP04 N. Hadjigeorgiou	629
Stress State Determination in Boat Welding Using Magnetic Barkhausen Noise K. Hliadi	633
An Investigation of Elastic Stress (Strain) - Induced Subtle Magnetic Changes in Steels V.N. Kytopoulos and E.K. Ioakeimidis	637
Evaluation of Railway Rails with Non-Destructive Techniques A. Karahaliou	641

Computational Modeling of a Commercial Seebeck Module D. Kossivakis and C.G. Vossou	645
Correlation of Magnetic Properties and Ductile-to-Brittle Transition Temperature in Pipelines G. Kotoula	649
Coagulation Sensors Based on Magnetostrictive Sensors Made by Ferromagnetic Amorphous Alloys for Biomedical Applications G. Koutelieris	653
A Critical Assessment of the Four Basic Methods of Tomographic Imaging E. Mangiorou	657
Chronoamperometry Study of the Electrodeposited $\text{Ni}_{100-x}\text{P}_x$ Alloy Thin Films H. Medouer, C. Benyekken and S. Messaadi	661
Electrodeposited $\text{Ni}_{100-x}\text{Fe}_x$ Thin Films on Copper Substrates S. Messaadi, M. Daamouche and H. Medouer	665
Nanostructured Magnetic Materials for Applications in Electrical Machines R. Evangelos	669
Dipole Positioning Recognition Using Neural Networks K. Skouta	673
Correlation of Magnetic Barkhausen Noise with Microstructure in the In-Depth Direction of a Railhead C. Sokos	677
Experimental and First Principles' Characterization of Functionalized Magnetic Nanoparticles E. Statharas, P. Tserotas and G.S.E. Antipas	681
A Novel Synthesis of Monodispersed Magnetite Nanoparticles by an Organometallic Complexed Precursor P. Tserotas, E. Statharas and I. Kartswnakis	685
Controlled Synthesis of Composite Iron Oxide Nanoparticles P. Tserotas, T. Lazaridis and E. Statharas	689
A Novel Approach for the Synthesis of PEGylated Monodispersed Superparamagnetic Iron Oxide Nanoparticles P. Tserotas, E. Statharas and I. Kartswnakis	693
Development of Fluxgate Magnetometers Based on $\text{Fe}_{61}\text{Co}_{19}\text{Si}_5\text{B}_{15}$ Amorphous Ribbons S. Vaitsi	697