

1. Record Nr.	UNINA9910300537103321
Titolo	Advanced Nanotechnologies for Detection and Defence against CBRN Agents // edited by Plamen Petkov, Dumitru Tsiulyanu, Cyril Popov, Wilhelm Kulisch
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2018
ISBN	94-024-1298-0
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (XIV, 512 p. 269 illus., 117 illus. in color.)
Collana	NATO Science for Peace and Security Series B: Physics and Biophysics, , 1874-6500
Disciplina	620.5
Soggetti	Nanoscale science Nanoscience Nanostructures Nanotechnology Materials science System safety Nanochemistry Nanoscale Science and Technology Characterization and Evaluation of Materials Security Science and Technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I General Topics -- CHAP. 1. A. Vaseashta: Roadmapping the Future in Defense and Security: Innovations in Technology using Multidisciplinary Convergence -- Part II: Material Preparation and Processing -- chap. 2. T. Kocourek, M. Jelínek, V. Studnika, J. Drahoukoupil: Crystalline Thin Layers of BaTiO3 for Gas Sensors Prepared by PLD -- Chap. 3, B. Georgieva, S. Kolev, C. Ghelev, T. Koutzarova, D. Kovacheva, B. Vertruyen, R. Closset: A Comparative Study of the Morphology of Y-Type Hexaferrite Powders Obtained by Sol-Gel Auto-Combustion and Ultrasonic Co-Precipitation -- chap. 4, G. Telbiz, E. Leonenko, G. Gulbinas, P. Manoryk: 2D hybrid Si-, Ti-Nanocomposites for Optoelectronic Devices Manufactured by the Sol-Gel Method -- Chap. 5, T.S. Kavetsky, M.M. Kravtsiv, G.M. Telbiz, V.I.

Nuzhdin, V.F. Valeev, A.L. Stepanov: Surface Plasmon Resonance Band of Ion-Synthesized Ag Nanoparticles in High Dose Ag:PMMA Nanocomposite Films -- Chap. 6, T.S. Kavetsky, K.V. Zubrytska, A.V. Stronski, L.I. Pan'kiv, P. Petkov, V.I. Nuzhdin, V.F. Valeev, A.M. Rogov, Y.N. Osin, A.S. Morozova, A.L. Stepanov: Formation of a Periodic Structure in a Chalcogenide Film Substrate by Silver Ion Implantation -- Chap. 7, M. Trzciski, T.S. Kavetsky, A.L. Stepanov: Optical Band Gap and Carbon Clusters in PMMA Nanocomposite Films Formed by Ion Implantation: Boron, Helium, and Xenon Ions -- Part III Structural and Optical Characterization -- Chap. 8, I. Rigó, M. Veres, L. Himics, T. Váci, P. Fürjes: Preparation and Characterization of SERS Substrates of Different Morphology -- Chap. 9, I. Kostova, D. Tonchev: Synthesis of UV Sensitive Rare Earth Doped Materials -- Chap. 10, D. Nicheva, V. Boev, P. Petkov, G. Avdeev, T. Petkova: Characterization of Nickel-cobaltite Spinel Prepared by Different Methods -- Chap. 11, Z. Slavkova, O. Kostadinova, G. Avdeev, T. Petkova: Structure and Thermal Behaviour of Lithium Sodium Sulphate -- Chap. 12, O. Paiuk: Influence of Modification on the Structure and Physical Properties of Arsenic Trisulfide. A Short Review -- Part IV Electrical Characterization -- Chap. 13, L.C. Costa: Time Domain versus Frequency Domain in the Characterization of Materia -- Chap. 14, M.P.F. Graça, P.R. Prezas: The Measurement of Thermally Stimulated Depolarization and Polarization Currents -- Chap. 15, S. Devesa, M.P.F. Graça, L.C. Costa: Iron Concentration Effect on the Microwave Dielectric Properties of BiNbO₄ Ceramics -- Chap. 16, B.M.G. Melo, M.A. Valente, M.P.F. Graça: Dielectric Analysis of Phosphate-Borate Glass-Ceramics Doped with Alkali Oxides -- Chap. 17, S. Soreto Teixeira, A.J.M. Sales, M.P.F. Graça, M.A. Valente, L.C. Costa: Electrical and Magnetic Properties of Yttrium Ferrites -- Part V Materials: Graphene, Nanotubes and Nanodiamonds -- Chap. 18, A. Ansón-Casaos, E. Garcia-Bordeje, A. M. Benito, W.K. Maser: Nanostructured Carbon Materials: Synthesis and Applications -- Chap. 19, N. Felgen, A. Schmidt, B. Naydenov, F. Jelezko, J.P. Reithmaier, C. Popov: Quantum Information Technology and Sensing Based on Color Centers in Diamond. cHap. 20, L. Himics, M. Veres, S. Tóth, I. Rigó, M. Koós: Experimental Study of Spectral Parameters of Silicon-Vacancy Centers in MWCVD Nanodiamond Films Important for Sensing Applications, Chap. 21, A. Petrovski, P. Paunovi, A. Grozdanov, A. T. Dimitrov, G. Gentile, M. Avella: Electrochemical Synthesis of PANI/Graphene Nanocomposites Aimed for Sensors, Chap. 22, A. Santidrian, N. Lozano, A. M. Benito, W. K. Maser, A. Anson-Casaos: Preparation of Metallic and Semiconducting SWCNT Inks by a Simple Chromatographic Method: A Two-Parameter Study -- Part VI Materials: Nanowires and Fibers -- Chap. 23, A. Vaseashta, N. Karagülle: Loaded Nanofibers - Force Protection, Filtration, Decontamination -- Chap. 24, N. Bölgen, A. Vaseashta: Nanocomposites of Electrospun Polymeric Materials as Protective Textiles against Chemical and Biological Hazards -- Part VII Materials: Nanocomposites -- Chap. 25, Z. Samir, S. Boukheir, Y. El Merabet, M.P. F. Graça, M.E. Achour, L.C. Costa: Temperature Effect on the Dielectric Response of Carbon Nanotubes Particles Filled Polyester Polymer Composites -- Chap. 26, S. Kolev, T. Koutzarova: Nanosized Ferrite Materials for Absorption of and Protection from MW Radiation -- Chap. 27, L. Kreit, Z. Samir, I. Bouknaitir, A. Triki, M.E. Achour, L.C. Costa, A. Kallel, A. Oueriagli, M. Mabrouki: Dielectric Relaxation in Biocomposites Based on Olive Pomace Grain -- Chap. 28, Z. Petkova, I. Kostova, G. Antova: Green Synthesis of Silver Nanoparticles and Their Application in Thin Polymer Films -- Chap. 29, L. Storozhuk, N. Iukhymenko: Synthesis of Iron Oxide Nanoparticles Modified with Silanes and Their Heating

Ability in Alternating Magnetic Fields -- Part VIII Materials: Glasses and Polymers -- Chap. 30, T. Kavetsky, O. Smutok, M. Gonchar, O. Šauša, Y. Kukhazh, H. Švajdlenková, T. Petkova, V. Boev, V. Ilcheva: Ureasil-based Polymer Matrices as Sensitive Layers for the Construction of Amperometric Biosensors -- Chap. 31, D. Tsiulyanu, M. Ciobanu, O. Mocreac: Impedance Characterization of Gas Sensitive Chalcogenide Films -- Chap. 32, T. Kavetsky, H. Švajdlenková, Y. Kukhazh, O. Šauša, K. echová, I. Mako, N. Hoivanovych, O. Dytso, T. Petkova, V. Boev, V. Ilcheva: Swelling Behavior of Organic-Inorganic Ureasil-Based Polymers -- Chap. 33, V. Ilcheva, V. Boev, D. Tatchev, G. Avdeev, G. Zamfirova, V. Gaydarov, V. Lilova, T. Petkova: Synthesis and Characterization of Organically Modified Silicates by Co-condensation of Two Organic - Inorganic Ureasilicate Monomers,- Chap. 34, R. Harizanova, L. Vladislavova, C. Bocker, G. Avdeev, C. Rüssel: Sr-substituted Barium Titanate Glass Ceramics from Oxide Glasses as Potential Material for Sensor Preparation -- Chap. 35, L. Vladislavova, C. Thieme, T. Zscheckel, C. Patzig, T. Höche, C. Rüssel: BaO/SrO/ZnO/SiO₂ Glass System: Influence of Different Nucleation Agents: Bulk versus Surface Crystallisation -- Chap. 36, S. Slavov, Z. Jiao: Bismuth-Titanate Bi₂Ti₂O₇ Crystallization in the Bi₂O₃/TiO₂/SiO₂/Nd₂O₃ System -- Part IX Applications: Sensors and Detectors -- Chap. 37, T. Eftimov, D. Tonchev, I. Kostova, G. Patronov, T. Pashova: Application of Sm Oxide Doped Oxyfluoride Glasses for the Development of Extrinsic Fibre Optical X-ray Sensors -- Chap. 38, A. Hofmann, M. Meister, S. Germer: Next Generation Diagnostics: Highly Sensitive Integrated CMOS Photodiode Sensor Array for Light Absorption Measurement -- Chap. 39, G. Chepishovski, A. Petrovski, A. Grozdanov, P. Paunovi, A. Dimitrov, G. Gentile, M. Avella: MWCNT/PANI Screen Printed Electrodes for Gas Sensors -- Chap. 40, A. Shalaby, Sh. Safwat-Mansour, A.S. Afify, M. Hassan, A. Staneva: Synthesis of RGO/SiO₂ and Ag/RGO/SiO₂ Nanocomposites and Study of Their Sensitivity Towards Humidity -- Chap. 41, M. Abdallah, N. Velikova, Y. Ivanova, A.S. Afify, M. Ataalla, M. Hassan: Preparation of Nanoporous Hybrid Materials with Bridged Tetra Sulfide Functional Groups and Determination of Their Sensing Characteristics towards Relative Humidity -- Chap. 42, M. Ataalla, Ahmed S. Afify, M. Hassan, A.M. Adam, M. Milanova, I. Piroeva: Humidity Sensing Properties of Tungsten Based Glass Crystalline Materials in the WO₃-ZnO-La₂O₃-Al₂O₃ System -- Chap. 43, D. Demir, N. Bölgen, Ashok Vaseashta: Green Synthesis of Silver Nanoparticles Using Lantana Camara Leaf Extract and Their Use as Mercury(II) Ion Sensor -- Chap. 44, S. Kozhukharov, Ch. Girginov, O. Kostadinova: Highly Ordered AAO Layers for Various Sensor Applications -- Chap. 45, V. Postica, O. Lupan, J. Götrrup, R. Adelung: Individual Bi₂O₃-Functionalized ZnO Microwire for Hydrogen Gas Detection -- Part X Applications: Water Treatment, Environment and Health -- Chap. 46, P. Paunovi, O. Popovski, P. Khadke, U. Krewer, G. Naevski, A. Grozdanov, A. T. Dimitrov: Improvement of the Catalytic Activity of Pt through Synergetic Interaction with Co -- Chap. 47, P. Písařík, M. Jelínek, J. Remsa, J. Mikšovský: Antibacterial Coatings for Biomedical Applications -- Chap. 48, I.V. Pavlidis: Identification and Evolution of Biocatalysts of Interest -- Chap. 49, T.S. Kavetsky, R.I. Khalilov, O.O. Voloshanska, L.M. Kropyvnytska, T.M. Beyba, V.A. Serezhenkov, A.N. Nasibova, A. Akbarzadeh, S.Ya. Voloshanska: Self-organized Magnetic Nanoparticles in Plant Systems: ESR Detection and Perspectives for Biomedical Applications -- CHAP. 50, N. Enaki, T. Paslari, E. Starodub, S. Bizgan, C. Ristoscu, I.N. Mihailescu, A. Vaseashta: Nanoparticle Based Decontamination of Bacteria/Pathogens -- CHAP. 51, A. Stoilova, A. Georgiev, D. Nazarova, L. Nedelchev, D.

Sommario/riassunto

This volume gives a broad overview of advanced technologies for detection and defence against chemical, biological, radiological and nuclear (CBRN) agents. It provides chapters addressing the preparation and characterization of different nanoscale materials (metals, oxides, glasses, polymers, carbon-based, etc.) and their applications in fields related to security and safety. In addition, it presents an interdisciplinary approach as the contributors come from different areas of research, such as physics, chemistry, engineering, materials science and biology. A major feature of the book is the combination of longer chapters introducing the basic knowledge on a certain topic, and shorter contributions highlighting specific applications in different security areas.
