

1. Record Nr.	UNINA9910300413503321
Autore	Kolikov Victor
Titolo	Pulsed Electrical Discharges for Medicine and Biology : Techniques, Processes, Applications // by Victor Kolikov, Philip Rutberg
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-18129-7
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (225 p.)
Collana	Biological and Medical Physics, Biomedical Engineering, , 1618-7210
Disciplina	537.0724
Soggetti	Biophysics Microwaves Optical engineering Water quality Water - Pollution Nanotechnology Health promotion Biological and Medical Physics, Biophysics Microwaves, RF and Optical Engineering Water Quality/Water Pollution Health Promotion and Disease Prevention
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Experimental Facility -- Diagnostic Techniques -- Electro physical Processes in Water -- Substances Formed During Discharges -- Water Dispersions of Nanoparticles -- Impact of the WDN on Bacteria and Spores of Fungi -- Interaction of the WDN with Biological Objects -- WDN and Living Beings -- Application of the PED and WDN.
Sommario/riassunto	This book presents the application of pulsed electrical discharges in water and water dispersions of metal nanoparticles in medicine (surgery, dentistry, and oncology), biology, and ecology. The intensive electrical and shock waves represent a novel technique to destroy viruses and this way to prepare anti-virus vaccines. The method of pulsed electrical discharges in water allows to decontaminate water

from almost all known bacteria and spores of fungi being present in human beings. The nanoparticles used are not genotoxic and mutagenic. This book is useful for researchers and graduate students.

2. Record Nr.	UNINA9910971582503321
Autore	Choudhary Ram Naresh Prasad
Titolo	Dielectric materials : introduction, research and applications // Ram Naresh Prasad Choudhary, Sunanda Kumari Patri
Pubbl/distr/stampa	New York., : Nova Science Publishers, 2009
ISBN	1-61728-367-3
Edizione	[1st ed.]
Descrizione fisica	1 online resource (166 p.)
Collana	Materials science and technologies
Altri autori (Persone)	PatriSunanda Kumari
Disciplina	537/.24
Soggetti	Dielectrics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Library of Congress Cataloging-in-Publication Data -- Contents -- Preface -- Acknowledgement -- Chapter 1 -- Introduction -- Chapter 2 -- Classification of Dielectrics -- (A) Non-Ferroelectric Materials -- (B) Ferroelectric Materials -- Chapter 3 -- History -- 3.1. Ferroelectricity -- 3.2. Pyroelectricity -- 3.3. Piezoelectricity -- 3.4. Multiferroicity -- Chapter 4 -- Dielectric Response of Materials -- Chapter 5 -- Dielectric Spectroscopy -- 5.1. Phase Transition -- 5.2. Diffuse Phase Transition -- 5.3. Dielectric Relaxation -- Chapter 6 -- Synthesis of Different Dielectric Materials -- 6.1. Single Crystal -- 6.2. Ceramics -- 1) Mechanical Methods -- 2) Chemical Methods -- 6.3. Thin Film -- 6.4. Polymers -- 6.4.1. Electrical Properties of Polymers -- 6.4.2. Different Types of Dielectric Polymers -- 6.5. Liquid Crystals -- Thermotropic LCs -- Lyotropic -- Metallotropic -- 6.5.1. Ferroelectric Liquid Crystals -- 6.5.2. Dielectric Spectroscopy of Liquid Crystal -- Chapter 7 -- Characterization Techniques -- 7.1. Thermal Analysis -- 7.1.1. Differential Thermal Analysis (DTA) -- 7.1.2. Thermo Gravimetric Analysis (TGA) -- 7.3. Structural and Microstructural Analysis -- 7.3.1. X-ray Diffraction Study (XRD) -- 7.3.2. Scanning Electron Microscopy (SEM) -- 7.3.3. Transmission Electron Microscopy (TEM) -- 7.3.4. FTIR

Spectroscopy -- 7.3.5. Raman Spectroscopy -- 7.4. Dielectric Study -- 7.4.1. Spontaneous Polarization Study -- 7.4.2. Pyroelectric Studies -- 7.4.3. Piezoelectric Study -- 7.5. Electrical Property -- 7.5.1. Complex Impedance Spectroscopy -- 7.5.2. Electrical Conductivity Study -- ac Conductivity -- dc Conductivity -- Chapter 8 -- Research on some Dielectric Materials -- 8.1. Hydrogen-Bonded Materials -- 8.1.1.  $\text{KH}_2\text{PO}_4$  -- 8.1.2.  $\text{PbHPO}_4$  -- 8.1.3.  $\text{CsH}_2\text{PO}_4$  -- 8.2. Oxide Ferroelectrics -- 8.2.1. Perovskite Structures. (a) Charge Neutrality -- (b) Goldschmidt Tolerance Factor -- 8.2.2. Tungsten Bronze Structure -- 8.2.3. Layered Structure Oxides and Complex Compounds -- 8.2.4. Pyrochlore Oxides -- 8.2.4. Other Dielectrics -- Chapter 9 -- Complex Impedance Spectroscopy of Dielectric Materials -- Chapter 10 -- Multiferroic Property of Dielectric Materials -- Chapter 11 -- Applications -- 11.1. Dielectric Devices -- 11.2. Piezoelectric Devices -- 11.3. Pyroelectric Devices -- 11.4. Ferroelectric Devices -- 11.5. Multiferroic Devices -- 11.6. Other Applications -- Chapter 12 -- Conclusion -- References -- Index -- Blank Page.

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### Sommario/riassunto

In reviewing the growth, development and properties of dielectrics, it is worth discussing the issues of creating new materials and understanding the origin of the properties shown with external stimuli. Beginning with a brief summary of the history of the dielectric materials, this review focuses on the chronological development and recent works with possible future applications. At present, the broad class of dielectrics becomes interesting from the point of view of its diverse applications in various fields. Solid dielectrics are perhaps the most commonly used dielectrics in electrical engineering, and many solids are very good insulators. As we know, solids may be classified according to various criteria: (i) structure (as crystalline and non-crystalline solids); (ii) electrical conductivity (conductors, semiconductors and insulators); (iii) the existence of some basic properties. Dielectric materials can be divided into 32 crystal classes or point groups.

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