CHAPTER 55

TECHNOLOGY
APPLIED SCIENCES AND HUMANITIES

Doctoral Theses

678. ARORA (Priyanka)
Micro Structural, Di-, Ferro-,Piezo and Pyro-electric Investigations of Barium Zirconate Titanate.
Supervisor : Prof. A.K. Jha
Th 21221

Contents

1. Introduction 2. Experimental details 3. Optimization of processing conditions in zirconium substituted barium titanate ($BaZr_XTi_{1-X}O_3$) ferroelectric Ceramics 4. Effect of yttrium substitution on the barium zirconate titanate ferroelectric ceramics 5. Effect of holmium substitution on the barium ziroconate titanate ferroelectric ceramics 6. Effect of multiferroic bismuth ferrite substitution on the barium zirconate titanate ferroelectric ceramics 7. Inferences and suggestions for future work. References.

679. DABAS (Bhawana)
Linear and Non-Linear Propagation Characteristic of Photonic Crystal Fibers.
Supervisor : Prof. R.K. Sinha
Th 21216

Contents

1. Introduction 2. Propagation characteristic of silica based photonic crystal fiber 3. Propagation characteristic of non silica based photonic crystal fiber 4. Analysis and design of highly birefringent chalcogenide As_2Se_3 glass PCF 5. Nonlinear propagation characteristic of chalcogenideAs_2Se_3 glass PCF 6. Raman amplification in telluride glass photonic crystal fiber 7. Summary and future scope. References.

680. RANA (Anu)
Growth, Optimization and Characterization of Rare Earth Doped Ferrite Materials for Device Applications.
Supervisor : Prof. O.P.Thakur
Th 20980

Contents

1. Introduction 2. Synthesis and characterization techniqes 3. Structural, magnetic and electrical properties of gadolinium doped cobalt ferrite nano particles 4. Effect of La^{3+} ION doping on properties of Ni-Zn ferrite nano particles 5. Structural, magnetic and electrical properties of $Mn_{0.5}Zn_{0.5}Fe_{1.8}RE_{0.2}O_4$ [RE =Fe, Gd, La, Sm] nano-particles 6. Device applications 7. Conclusion and future scope. Nomenclature

681. SHARMA (Ranjana)
Structure Property Co-relation Studies Of Organically Modified Clay Based Binary Polymer Blends.
Supervisor : Dr. Purnima Jain
Th 20994

Contents

1. Introduction and Literature survey 2.Materials and experimental techniques 3. Mechanical properties of impact modified PBT and PTT, PBT, PTT blends and impact modified PBT/PTTblends and impact modified PBT/PTT blends based nanocomposites 4. Morphological characterization of impact modified PBT and PTT, PBT/ PTT blends and Impact modified PBT/PTT blends based nanocomposites 5. Thermal properties of impact modified PBT and PTT, PBT/PTT blends and impact modified PBT/PTT blends based Nanocomposites 6. Melt rheology of impact modified PBT and PTT, PBT/PTT blends and impact modified PBT/PTT blends based Nanocomposites7. Studies the effect of organoclay loadings on various properties of impact modified PBT nanocomposites using microcompounder. Summary and future scope. List of publications.

682. SUGANDHA
Structural and Electrical Investigations of STRONTIUM BISMUTH TANTALATE Ferroelectric Ceramics.
Supervisor : Prof. A.K. Jha
Th 21220

Contents

1. Introduction and background 2. Experimental details 3. Optimization of sintering temperature 4. $Sr_{1-x}Y_{2x/3}Bi_2Ta_2O_9$ (X=0.0-0.1) and $Sr_{0.8-x}Y_{2x/3}Bi_{2.2}Ta_2O_9$ (X=0.0 and 0.05) : Effect of Yttrium Substitution. 5. $SrBi_{2-x}Ho_xTa_2O_9$ (X=0.0-2.0) and $Sr_{0.8}Bi_{2.2-x}Ho_xTa_2O_9$(x=0.0 and 0.01) : Effect of Holmium Substitution 6. Synthesis and Characterization of $Sr_{0.8}Bi_{2.2}Ta_2O_9$ using Mechanical activation and microwave synthesis technique. Conclusions & suggestions for future work.

683. YADAV (Rani)
Some Problems in Approximation for Linear Positive Operators.
Supervisor : Prof. Vijay Gupta
Th 20993

Contents

1. Introduction 2. Direct estimates for certain summation-integral operators 3. Ordinary and simultaneous approximation for generalized baskakov-beta operators4. Convergence for certain baskakov-beta operators 5. Direct and inverse estimates for beta-szasz operators 6. Approximation on q-Beta-Szasz-type operators. Approximation by certain complex bernstein-durrmeyer operators.