

INTERNATIONAL CONFERENCE ON ADVANCES IN CONDENSED AND NANO MATERIALS (ICACNM-2011)

Chandigarh, India 23 – 26 February 2011

EDITORS

S. K. Tripathi
Keya Dharamvir
Ranjan Kumar
G. S. S. Saini
Panjab University, Chandigarh, India

All papers have been peer reviewed.

SPONSORING ORGANIZATIONS

Department of Physics, Panjab University, Chandigarh, India
Department of Science and Technology-PURSE Grant, New Delhi, India
Department of Science and Technology, Chandigarh, India
Department of Science and Technology, New Delhi, India
Council of Scientific and Industrial Research, New Delhi, India
Society for Semiconductor Devices, New Delhi, India



Melville, New York, 2011
AIP | CONFERENCE PROCEEDINGS ■ 1393

Editors

S. K. Tripathi
Keya Dharamvir
Ranjan Kumar
G. S. S. Saini

Department of Physics
Panjab University
Chandigarh, India

E-mail: surya@pu.ac.in

Authorization to photocopy items for internal or personal use, beyond the free copying permitted under the 1978 U.S. Copyright Law (see statement below), is granted by the American Institute of Physics for users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of \$30.00 per copy is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923, USA: <http://www.copyright.com>. For those organizations that have been granted a photocopy license by CCC, a separate system of payment has been arranged. The fee code for users of the Transactional Reporting Services is: 978-0-7354-0963-7/11/\$30.00

© 2011 American Institute of Physics

No claim is made to original U.S. Government works.

Permission is granted to quote from the AIP Conference Proceedings with the customary acknowledgment of the source. Republication of an article or portions thereof (e.g., extensive excerpts, figures, tables, etc.) in original form or in translation, as well as other types of reuse (e.g., in course packs) require formal permission from AIP and may be subject to fees. As a courtesy, the author of the original proceedings article should be informed of any request for republication/reuse. Permission may be obtained online using RightsLink. Locate the article online at <http://proceedings.aip.org>, then simply click on the RightsLink icon/“Permissions/Reprints” link found in the article abstract. You may also address requests to: AIP Office of Rights and Permissions, Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502, USA; Fax: 516-576-2450; Tel.: 516-576-2268; E-mail: rights@aip.org.

AIP Conference Proceedings, Volume 1393
International Conference on Advances in Condensed and Nano Materials (ICACNM-2011)

Table of Contents

Preface: International Conference on Advances in Condensed and Nano Materials (ICACNM-2011)	
S. K. Tripathi, Keya Dharamvir, Ranjan Kumar, and G. S. S. Saini	1
Committees	2
Group Photo	4
INVITED TALKS	
Microstructural study of $(\text{Ag}_2\text{S})_x(\text{GeS}_2)_{100-x}$ and $(\text{Ag}_2\text{S})_x(\text{GeS})_{60}(\text{GeS}_2)_{40-x}$ glasses	
A. A. Piarristeguy, M. Ramonda, M. Ribes, and A. Pradel	7
High speed deposition of oxide materials by using plasma jet at atmospheric pressure	
Yosuke Ito, Osamu Sakai, and Kunihide Tachibana	11
Mechanism of charge transport in cobalt and iron phthalocyanine thin films grown by molecular beam epitaxy	
Arvind Kumar, Soumen Samanta, Ajay Singh, A. K. Debnath, D. K. Aswal, and S. K. Gupta	15
Inorganic-organic thin hybrid films for applications in bulk-heterojunction solar cells	
Michael Krueger, Yunfei Zhou, and Michael Eck	19
Novel fabrication method for transparent conducting oxide films utilizing solid-phase crystallized seed layers	
Naho Itagaki, Kazunari Kuwahara, and Kenta Nakahara	23
Generation and surface modification of Si nano-particles using SiH_4/H_2 and N_2 multi-hollow discharges and their application to the third generation photovoltaics	
Kazunori Koga, Giichiro Uchida, Kosuke Yamamoto, Munenori Sato, Yuki Kawashima, Kunihiro Kamataki, Naho Itagaki, and Masaharu Shiratani	27
New phases of sp^3-bonded boron nitride prepared by photo-assisted plasma processing methods: The fundamentals and applications to electronic devices	
Shojiro Komatsu, Kazuaki Kobayashi, Takahiro Nagata, and Toyohiro Chikyo	31
Transition thresholds in $\text{Ge}_x\text{As}_y\text{Se}_{1-x-y}$ glasses	
R. P. Wang, T. Wang, D. Y. Choi, S. Madden, and B. Luther-Davies	34
Maxwell rigidity and topological constraints in amorphous phase-change networks	
M. Micoulaut, C. Otxacques, J.-Y. Raty, and C. Bichara	38

Many particle interactions in monolayer graphene A. C. Sharma	42
Polymer stabilized liquid crystals: Materials, physics and applications Rishi Kumar and K. K. Raina	46
From tiny magnetic clusters to functional magnetic materials Peter Entel, Sanjubala Sahoo, Alfred Hucht, and Markus E. Gruner	50
Density fluctuations in uniform quantum gases J. Bosse, K. N. Pathak, and G. S. Singh	54
Probing orbital order-disorder transition in CaCu₃Ti₄O₁₂ and SrCu₃Ti₄O₁₂ by Raman spectroscopy V. G. Sathe and Dileep K. Mishra	58

CONTRIBUTED PAPERS

Photoluminescence of Cu doped sponge-like porous ZnO nanoparticles synthesized via chemical route Vipin Kumar and P. D. Sahare	63
Investigation of structural, electronic and optical properties of Ga_{n+1}, Ga_nAl and Ga_nAs (n=1-8) clusters by density functional theory Diksha Makwani and R. Vijaya	65
Structural modification of single wall and multiwalled carbon nanotubes under carbon, nickel and gold ion beam irradiation Kiran Jeet, V. K. Jindal, L. M. Bharadwaj, and Keya Dharamvir	67
Synthesis and characterization of La and Nb substituted Bi₄Ti₃O₁₂ ferroelectric ceramics M. Roy, Indu Bala, S. K. Barbar, S. Jangid, and P. Dave	69
Evaluating and comparing of energy eigen values of quantum wires with squarely and circularly cross sections Ali Hossein Mohammad Zaheri	71
Magnetic properties of Fe/Metal/Fe trilayer films A. Zolanvari, H. Sadeghi, J. Nezamdost, and M. R. Jafari	73
Non-ideal p-n junction diode of Sb_xSe_{1-x} (x = 0.4, 0.5, 0.6, 0.7) thin films Falah I. Mustafa, Shikha Gupta, N. Goyal, and S. K. Tripathi	75
Indium nitride (InN) nanostructures grown by Plasma-Assisted Molecular Beam Epitaxy (PAMBE) Neeraj Sinha, V. M. Jali, Thirumaleshwara N. Bhat, Basanta Roul, Mahesh Kumar, Mohana K. Rajpalke, and S. B. Krupanidhi	77

Plasmons in an atomically-thin Ag monolayer Nisha Bhukal and R. K. Moudgil	79
Hydro-, chloro- and fluorographene structures: A density functional based study Ranber Singh and Gabriel Bester	81
Thermal properties of CdO within Mie-Grüneisen hypothesis A. D. Patel, S. G. Khambholja, N. K. Bhatt, B. Y. Thakore, and A. R. Jani	83
Use of polymer in MoSe₂ solar cells H. S. Patel, J. R. Rathod, K. D. Patel, V. M. Pathak, and R. Srivastava	85
Molecular dynamics simulation of binary fluid in a nanochannel Shanta Mullick, Y. Pathania, and P. K. Ahluwalia	87
Template synthesis of copper nanowires via electrodeposition technique and their characterization Narinder Kumar, Rajesh Kumar, Sushil Kumar, and S. K. Chakarvarti	89
Dynamically screened electron-phonon interaction in disorder semiconductors P. Tripathi, S. S. Z. Ashraf, S. T. Hasan, K. N. Vyas, and A. C. Sharma	91
Magnetoelectric coupling, dielectric relaxor, tunability and impedance spectroscopy of nanostructured Pb_{1-x}Sr_x(Fe_{0.012}Ti_{0.988})O₃ thin films Kuldeep Chand Verma, Jaspreet Kaur, N. S. Negi, and R. K. Kotnala	93
Iso-conversional analysis of amorphous-crystalline transformation of Se₇₅Te₁₅Sn₁₀ glassy alloy Balbir Singh Patial, Nagesh Thakur, and S. K. Tripathi	95
Amorphous-crystalline phase transformation and optical gap in photodoped GeTe:Ag films Praveen Kumar and R. Thangaraj	97
Synthesis, characterization and application of silica-gold nano-composites Suman Singh, Rajnish Kaur, Pooja Sharma, D. V. S. Jain, and M. L. Singla	99
First principle study of sodium nanoclusters Prabodh Sahai Saxena, Pankaj Srivastava, and Ashwani Kumar Shrivastava	101
Mössbauer studies on nanosized rubidium ferrite (RbFeO₂) prepared by thermal decomposition of rubidium ferrioxalate precursor using precursor method Manik Gupta and B. S. Randhawa	103
Optical properties of SHI irradiated a-(Ge_{0.20}Se_{0.80})_{0.90}Ag_{0.10} thin films Akshay Kumar, S. K. Tripathi, P. K. Kulriya, A. Tripathi, and D. K. Avasthi	105
Improvement in electric, dielectric and magnetic properties of MgGd_{0.05}Fe_{1.95}O₄ ferrites processed by solid state reaction technique Jagdish Chand, Satish Verma, Pawan Kumar, Gagan Kumar, and M. Singh	107

Modification and designing of electrodeposited polyaniline films for potential applications	109
I. D. Sharma, S. K. Dhawan, Ritu Srivastav, and V. K. Sharma	
Study of some physical properties of $\text{Se}_{30}\text{Te}_{70-x}\text{Sn}_x$ glasses	111
Pawan Heera and Raman Sharma	
Concentration dependent physical properties of $\text{Ge}_{1-x}\text{Sn}_x$ solid solution	113
A. R. Jivani and A. R. Jani	
Third-order optical nonlinearity of CdSe/PVA nanocomposites	115
Mamta Sharma and S. K. Tripathi	
Schottky barrier with liquid metal	117
B. P. Modi and K. D. Patel	
Shock wave processing of metal powders and their micro-structural characterization	119
Akash Deep Sharma, A. K. Sharma, and Nagesh Thakur	
Properties of thin-film zinc telluride prepared by thermal evaporation	121
J. R. Rathod, H. S. Patel, K. D. Patel, and V. M. Pathak	
Structural characterization of spinel zinc aluminate nanoparticles prepared by coprecipitation method	123
Shyam Sunder, Sunil Rohilla, Sushil Kumar, and Praveen Aghamkar	
Study of structural, electrical and magnetic properties of Al^{3+} ions doped $\text{Mg}_{0.2}\text{Mn}_{0.5}\text{Ni}_{0.3}\text{Al}_y\text{Fe}_{2-y}\text{O}_4$ spinel ferrites for high frequency applications	125
Satish Verma, Jagdish Chand, Pawan Kumar, and M. Singh	
Investigation of dispersive conductivity and dielectric losses in barium bismuth silicate glasses	127
Neetu Ahlawat, Sujata Sanghi, Ashish Agarwal, Navneet Ahlawat, Praveen Aghamkar, and Monica	
Linear and nonlinear optical properties of (PDPT) thin film	129
A. Q. Abdullah, M. F. AL-Mudhaffer, A. Y. AL-Ahmad, and A. shawi	
Spectral studies (Judd-Ofelt theory) of Er^{3+} in zinc bismuth borate glasses	131
I. Pal, A. Agarwal, S. Sanghi, and M. P. Aggarwal	
Optical and structural analysis of lead bismuth silicate glasses	133
S. Bhardwaj, R. Shukla, S. Sanghi, A. Agarwal, and I. Pal	
Structure, dielectric relaxation and magnetic properties of $\text{Bi}_{0.8}\text{Sr}_{0.2}\text{Fe}_{1-x}\text{Ti}_x\text{O}_3$ multiferroic	135
Reetu, A. Agarwal, S. Sanghi, and Ashima	
Synthesis and characterization of $\text{Ba}_{1-x}\text{Ca}_x\text{Fe}_{12}\text{O}_{19}$ hexaferrite synthesized by solid state reaction method	137
Ashima, S. Sanghi, A. Agarwal, and Reetu	
Substrate effect on the elastic properties of $\text{Ga}_x\text{In}_{1-x}\text{As}_y\text{Sb}_{1-y}$ semiconductor	139
P. S. Vyas, B. Y. Thakore, P. N. Gajjar, and A. R. Jani	

XPS study of thermally evaporated Ge-Sb-Te amorphous thin films Sandeep Kumar, Digvijay Singh, and R. Thangaraj	141
Interaction of silver nanoparticles with plasma proteins Harmandeep Kaur and S. K. Tripathi	143
Thermal properties of PMMA doped with polyaniline A. K. Tomar, Suman Mahendia, Rishi Pal Chahal, and Shyam Kumar	145
Study of electrical conductivity of Kr⁺ ion implanted polycarbonate in relation to carbon structure P. K. Goyal, V. Kumar, Renu Gupta, S. Kumar, P. Kumar, and D. Kanjilal	147
Optical behaviour of N⁺ ion implanted CR-39 polymer V. Kumar, P. K. Goyal, Renu Gupta, T. Sharma, S. Kumar, P. Kumar, and D. Kanjilal	149
Preparation and characterization of palm leaf incorporated polyvinyl alcohol bio composites Arunendra Kumar Patel, Rakesh Bajpai, J. M. Keller, and Abhijit Saha	151
Interaction of ZnO nanoparticles with food borne pathogens <i>Escherichia coli</i> DH5a and <i>Staphylococcus aureus</i> 5021 and their bactericidal efficacy Pawan Kaur, Rajesh Thakur, Sandeep Kumar, and Neeraj Dilbaghi	153
Experimental conditions induced variation in texture coefficient of crystal planes in Cu/CuO nanostructures Devender Gehlawat, R. P. Chauhan, and R. G. Sonkawade	155
Temperature dependent electrical transport properties of Ni-Cr and Co-Cr binary alloys B. Y. Thakore, P. H. Suthar, S. G. Khambholja, P. N. Gajjar, N. K. Bhatt, and A. R. Jani	157
Effect of surface defects on green luminescence from ZnO nanoparticles Surender Kumar and P. D. Sahare	159
Effect of Boron doping on the electronic properties of the fullerenes of different sizes Deepak Agnihotri and Hitesh Sharma	161
Theoretical investigation of phonon dispersion relation of 3d liquid transition metals P. B. Thakor, Y. A. Sonvane, P. N. Gajjar, and A. R. Jani	163
First principle prediction of half metallic ferromagnetism in Heusler NiMnZ (Z = P, Ge) compounds Mukhtiyar Singh, Hardev Singh, and Manish K. Kashyap	165
Comparative magneto-optical properties of rare earth RAl₂ (R = Ce and Pr) compounds Manish K. Kashyap and Bhajan Lal	167
Ab-initio study of electronic band structures of Cd_xAs₂(B = Si, Ge and Sn) chalcopyrite compounds Hardev Singh, Mukhtiyar Singh, and Manish K. Kashyap	169

Preparation and characterization of a junction between conducting polymer and cadmium sulfide S. K. Tripathi and S. J. Abbas	171
Antimicrobial activity of metal & metal oxide nanoparticles interfaced with ligand complexes of 8-hydroxyquinoline and α-amino acids Gaurav Bhanjana, Neeraj Kumar, Rajesh Thakur, Neeraj Dilbaghi, and Sandeep Kumar	173
Synthesis, structural and electrical properties of layer structured $Ba_2Bi_4Ti_5O_{18}$ compound M. Roy, S. K. Barbar, P. Dave, S. Jangid, Indu Bala, S. Sahu, K. Singh, and R. Malviya	175
Structural, optical and thermal investigations of TiO_2 and S-doped TiO_2 nanoparticles Divyanshu Bhatnagar and Ashavani Kumar	177
Structural and optical study of chemical bath deposited nano-structured CdS thin films Suresh Kumar, Dheeraj Sharma, Pankaj Sharma, Vineet Sharma, P. B. Barman, and S. C. Katyal	179
AgInSe₂ as optoelectronic material Navdeep Goyal, Manohar Lal, Anil Kumar, and S. K. Tripathi	181
An investigation of CNT cytotoxicity by using surfactants in different ratio Sandeep Kumar, Neeraj Kumar, Rajesh Thakur, Gaurav Bhanjana, and Neeraj Dilbaghi	183
Kinetics of ammonia exposure in surfactant assisted CuO thick film sensor Iqbal Singh and R. K. Bedi	185
Comparative study of structural and magnetic properties of soft ferrites (MFe_2O_4: M = Co, Ni, Zn, Mg) synthesized via aerosol method Sonali Singhal and Sheenu Jauhar	187
Structure and stability of GeAu_n, n=1-10 clusters: A density functional study Priyanka, Hitesh Sharma, and Keya Dharamvir	189
Structure and stability of pure and doped lithium clusters (Li_n and Li_nX, n=2-8, X=B, Al)—A DFT study Pooja Rani, Sheetal Sharma, and V. K. Jindal	191
Preparation and characterization of CdSe/CdS/PVA core/shell material Anny Narang, Gurvir Kaur, Mamta Sharma, and S. K. Tripathi	193
Ab-initio study of structural and electronic properties of homo and hetro platinum dimers on Ge(001)-(2x1) surface Ashok Kumar, Brij Mohan, and P. K. Ahluwalia	195
Synthesis, structural, microstructural and magnetic properties of $Ti_{1-x}Co_xO_2$ nanoparticles Sunil Sharma, Nagesh Thakur, R. K. Kotnala, and Kuldeep Chand Verma	197
Density functional study of perovskite superconductor MgCNi₃ Jagdish Kumar, Devina Sharma, Ranjan Kumar, V. P. S. Awana, and P. K. Ahluwalia	199

Lattice constants of tetragonal perovskite structured solids Amar Kumar and S. R. Bhardwaj	201
Enhanced antimicrobial activity of antibiotics mixed with metal nanoparticles Sandeep Kumar, Neeraj Kumar, Gaurav Bhanjana, Rajesh Thakur, and Neeraj Dilbaghi	203
Photoelectrical properties of Te-substituted Sn-Sb-Se semiconducting thin films Ravi Chander and R. Thangaraj	205
Structure and strength of carbon nanohorns Dinesh Kumar, Veena Verma, Keya Dharamvir, and H. S. Bhatti	207
Elastic properties and structural studies on boro-vanadate glasses containing sulphate (SO_4^{2-}) ions M. Sudhakar Reddy, V. C. Veeranna Gowda, and C. Narayana Reddy	209
Study of CuO nanoparticles synthesized by sol-gel method Prakash Chand, Anurag Gaur, and Ashavani Kumar	211
Room temperature ferromagnetic ordering in lanthanum substituted nano-cobalt ferrite Pawan Kumar, Jagdish Chand, Satish Verma, and M. Singh	213
Structure and magnetic properties of NiFe_2O_4 nanoferrite prepared by chemical combustion route Sukhdeep Singh, Kuldeep Chand Verma, R. K. Kotnala, and N. K. Ralhan	215
Sub-band gap absorption in as-deposited and annealed nc-CdSe thin films using constant photocurrent method (CPM) Kriti Sharma, A. S. Al-Kabbi, Baljinder Singh, G. S. S. Saini, and S. K. Tripathi	217
Novel nanostructured zinc oxide ammonia gas sensor Surbhi Kumari, P. D. Sahare, Meenakshi Gupta, and J. C. Kapoor	219
Suitability of polymeric media in solid state dye lasers Amit Sharma and G. S. S. Saini	221
Effect of carbon nanotubes on tribo-performance of brake friction materials Tej Singh, Amar Patnaik, and Bhabani K. Satapathy	223
Structural and Mossbauer studies of Fe doped ZnO nanocrystals Pooja Dhiman, S. Kumar, Ashish Gautam, and M. Singh	225
3D isostructurality of inorganic-organic hybrid materials Dinesh, M. Redemeyer, Mukesh Kumar, and S. Dalela	227
First principles study on the elastic and electronic properties of CdX (X = S, Se and Te) Sheetal Sharma, Ajay Singh Verma, Bimal Kumar Sarkar, Rajiv Bhandari, and Vijay Kumar Jindal	229
Structural and electronic properties of $\text{C}_{20-n} \text{Si}_n$ (n=1-10) Anita Rani, Seema Rani, Vaneeta Bala, and Ranjan Kumar	231

Inter and intra granular properties of $\text{La}_{1.85}\text{Sr}_{0.15}\text{CuO}_4$ superconductor as influenced by varying grain size	233
Devina Sharma, Ranjan Kumar, and V. P. S. Awana	
Synthesis and structural analysis of Al-doped Qandillite (Mg_2TiO_4)	235
Alok Kumar Singh, Ravi Kumar, T. D. Senguttuvan, and Azher M. Siddiqui	
Electronic and mechanical properties of ZnX ($X = \text{S, Se and Te}$)—An ab initio study	237
Ajay Singh Verma, Sheetal Sharma, Bimal Kumar Sarkar, and Vijay Kumar Jindal	
Nanoindentation studies of hard nanocomposite Ti-B-N thin films	239
P. Karuna Purnapu Rupa, P. C. Chakraborty, and Suman Kumari Mishra	
Optical and electrical properties of copper substituted zinc oxide prepared using co-precipitation method	241
Japinder Kaur, Tsering Namgyal, Sandeep Bansal, and Sonal Singhal	
Effect of dopants on the optical and magnetic properties of CoFe_2O_4 nanoferrites prepared via sol-gel method	243
Rimi Sharma, Tsering Namgyal, Jagdish Singh, and Sonal Singhal	
Photodarkening effect in a-(GaSe)₉₀Ag₁₀ thin films	245
Shikha Gupta, F. I. Mustafa, G. S. S. Saini, Navdeep Goyal, and S. K. Tripathi	
The thermal expansion and specific heat of novel SOFC $\text{Bi}_{1-x}\text{Sr}_x\text{MnO}_3$ in orthorhombic perovskite phase	247
Archana Srivastava and N. K. Gaur	
Dispersion studies of La substitution on dielectric properties of multiferroic BiFeO_3 ceramics	249
K. Sen, K. Singh, Ashish Gautam, and M. Singh	
Structural and thermoelectric properties of tungsten diselenide crystals	251
K. K. Patel, K. D. Patel, Mayur Patel, C. A. Patel, V. M. Pathak, and R. Srivastava	
Synthesis and luminescent properties of Li-doped ZnS nanostructures by chemical precipitation method	253
Geeta Rani and P. D. Sahare	
Electrical study of ultra high molecular weight polyethylene/multi-wall carbon nanotubes (UHMWPE/MWCNT) nanocomposite	255
Jagdish Kaur, Ajay Kumar, D. V. Rai, and S. K. Tripathi	
Synthesis of nanosized CGYO powders via glycine nitrate methods as precursors for dense ceramic membranes	257
Savinder P. Kochhar and Anirudh P. Singh	
Opto-electronic properties of $\text{A}^{\text{I}}\text{B}^{\text{III}}\text{C}_2^{\text{VI}}$ ternary chalcopyrite semiconducting materials	259
Deepak Sharma, Arti Maheshwari, and A. S. Verma	

Synthesis, characterization and optoelectrical properties of Cd doped ZnO poly crystalline nano thin films deposited by successive ionic layer adsorption and reaction (SILAR) method	261
Nitin Bindal, Manisha Sharma, H. Kumar, S. Sharma, and S. C. Upadhyaya	
Anomalous behavior of Mori' coefficients for the Gaussian core fluid	263
Gaganpreet, Sunita Srivastava, and K. Tankeshwar	
Low temperature charge transport study in polypyrrole	265
Manish Taunk and Subhash Chand	
Thermophysical properties of TiO₂-water based nanofluids	267
Hema Setia, Ritu Gupta, and R. K. Wanchoo	
Diffusion length measurement in nanocrystalline CdSe from steady state photocarrier grating technique	269
Alaa S. Al-Kabbi, Kriti Sharma, G. S. S. Saini, and S. K. Tripathi	
Nano-hydroxyapatite/fluoridated and unfluoridated bioactive glass composites: Structural analysis and bioactivity evaluation	271
Uma Batra, Seema Kapoor, and J. D. Sharma	
Chalcogenide photonic crystal filters for optical communication	273
B. Suthar and A. Bhargava	
Nano-particulate aluminium nitride/Al: An efficient and versatile heterogeneous catalyst for the synthesis of Biginelli scaffolds	275
S. U. Tekale, A. B. Tekale, N. S. Kanhe, S. V. Bhoraskar, and R. P. Pawar	
Quantum dot based chemosensors: Selective estimation of Cu²⁺ in semi-aqueous medium	277
Vandana Sheoran, Preeti Saluja, Narinder Singh, and Navneet Kaur	
Molecular dynamic simulations with glue potentials	279
Ritu Pasrija and Sunita Srivastava	
Frequency dependent electrical characterization of Al/Al₂O₃/PbSe-PVA MIS diode	281
Isha Gawri, Mamta Sharma, and S. K. Tripathi	
Helix dynamics of chirality induced liquid crystal mixture	283
Shikha Kapila and K. K. Raina	
Investigation of structural and optical properties of MoO₃-PbO-B₂O₃:V₂O₅ glasses	285
Sanjay, N. Kishore, and A. Agarwal	
Vibrational spectroscopic study of 1-bromononane	287
Devinder Singh, Neena Jaggi, and Nafa Singh	
Comparison of cluster calculation with different software-the case of small clusters	289
Neetu Goel, Seema Gautam, Priyanka, and Keya Dharamvir	

Effect of temperature on thermodynamic properties of PrGaO₃ Atahar Parveen, Archana Srivastava, and N. K. Gaur	291
Theoretical study of the effect of cell thickness on nematic order in liquid crystals P. Aswini and A. S. Govind	293
Vibrational study of melatonin and its radioprotective activity towards hydroxyl radical Gurpreet Singh, Sarvpreet Kaur, and G. S. S. Saini	295
Structural, magnetic, electrical and optical properties of Co_{0.6}Zn_{0.4}Fe₂O₄ prepared via sol-gel auto combustion route Santosh Bhukal, Kirandish Kaur, and Sonal Singhal	297
Preparation of Chitosan nanoparticles: A study of influencing factors Anupama Thakur and Taranjit	299
Nanofluids: Future industrial coolants Sakshi Arora and Sunita Srivastava	301
Optical properties of liquid crystal elastomers Samriti Khosla, Suman Lal, S. K. Tripathi, Nitin Sood, and Darshan Singh	303
Structural properties of amorphous TiO₂ nanoparticle: Molecular dynamics study Kulbir Kaur, Navdeep Goyal, and Satya Prakash	305
High field conduction in chemically deposited ZnSe nanocrystalline thin films: Observation of Meyer-Neldel rule Charita Mehta, Jasim M. Abbas, G. S. S. Saini, and S. K. Tripathi	307
Magnetic and structural properties of nanosized magnesium doped zinc ferrite synthesized by citrate precursor method A. K. Srivastava, Shweta, Dikshu Bansal, and Simranjit Singh	309
Preparation and characterization of Mg/Mn bilayer metal hydrides thin films M. K. Jangid, S. P. Nehra, and M. Singh	311
Infrared spectroscopic study for structural investigation of lithium lead silicate glasses Navneet Ahlawat, Neetu Ahlawat, Ashish Agarwal, Praveen Aghamkar, and Monica	313
Wigner crystallization in spin-polarized coupled electron quantum layers: Finite width effects Mukesh G. Nayak and L. K. Saini	315
Synthesis of TiO₂ nanoparticle and its phase transition M. H. Mangrola, V. G. Joshi, and B. H. Parmar	317
Synthesis and optical properties of nickel doped zinc oxide nanoparticles Ruby Chauhan, Ashavani Kumar, and Ram Pal Chaudhary	319

Study of electron density of states of nano structured functionalized graphene within DFT calculations	
Jyoti Dhar Sharma, P. K. Ahluwalia, and Naveen Kumar	321
Effect of electrically charged confinement on diffusion of ionic fluid	
Ishu Goyal, Sunita Srivastava, and K. Tankeshwar	323
Self-diffusion of fluid confined in cylindrical nanotubes of different diameters	
Reena Devi, Sunita Srivastava, and K. Tankeshwar	325
DFT study of endohedral complexes of group V atoms with C₆₀	
Akshu Pahuja and Sunita Srivastava	327
Optical properties of Bi doped amorphous Se-Te thin films	
Anup Kumar, Pawan Heera, P. B. Barman, and Raman Sharma	329
Synthesis and characterization of ZnO nanoparticles using combustion method	
Vijay Kumar and Sanjeev Kumar	331
Effect of chemical on conductivity of iron phthalocyanine pyridine thin films	
Sukhwinder Singh, G. S. S. Saini, and S. K. Tripathi	333
Dynamic density response of trapped interacting quantum gases	
Renu Bala, J. Bosse, and K. N. Pathak	335
Effects of nano-particle doping on the physical properties of ferroelectric liquid crystals	
Neeraj and K. K. Raina	337
Improved dielectric properties via mechano-chemical activation in Ba_{0.80}Pb_{0.20}TiO₃ ceramics	
Parveen Kumar, Renu Rani, Sangeeta Singh, J. K. Juneja, Chandra Prakash, and K. K. Raina	339
Observation of lyotropic liquid crystalline phases in some transition metal salt dispersed soft non-aqueous systems	
Ravi K. Shukla and K. K. Raina	341
Synthesis of PbTe thermoelectric film by high energy heavy ion beam mixing	
Srashti Gupta, D. C. Agarwal, Jai Prakash, S. K. Tripathi, S. Neeleshwar, B. K. Panigrahi, and D. K. Avasthi	343
Suppression of spin polarization in a symmetric electron-electron bilayer	
Krishan Kumar and R. K. Moudgil	345
Coexistence of superconductivity and ferromagnetism	
Raminder Gill	347
Use of amino-functionalized CNTs and CVD grown CNTs for better dispersion in Al powder in the fabrication of composites	
S. K. Singhal, Mamta, Satish Teotia, Rajiv Chahal, and R. B. Mathur	349

Synthesis and characterization of dye sensitized TiO₂ nanorods Mamta Rani, Kirat Bir Kaur, and S. K. Tripathi	351
Thermal behaviour of nanocomposites based on glycerol plasticized thermoplastic starch and cellulose nanocrystallites Anupama Kaushik and Ramanpreet Kaur	353
Dielectric studies of Se_{85-x}Te₁₅In_x glasses Anil Kumar, Gurpreet Singh, Manohar Lal, S. K. Tripathi, and Navdeep Goyal	355
Electronic properties of carbon nanotubes using density functional theory Shobhna Dhiman, Dheeraj Kumar, Nibras Mossa Umran, and Ranjan Kumar	357
Porous silicon based sensor for sensing of ammonia Anil G. Sonkusare, Amit L. Sharma, Ranjan Kumar, and Sunita Mishra	359
Surface plasmon polaritons on metallic nanoring M. R. Jafari, A. Zolanvari, and J. Nezamdost	361
Sub-wavelength refractive index in metamaterials H. Sadeghi, H. Khalili, M. Goodarzi, J. Nezamdost, and A. Zolanvari	363
Spectroscopic and electrical characterization of FeSo₄.7H₂O doped poly (o-toluidine) Anand Kumar, Vazid Ali, Sushil Kumar, and M. Husain	365
Ac conductivity of Pb doped a-Ge₂₀Se₈₀ glassy alloys Gurinder Singh, N. Goyal, G. S. S. Saini, and S. K. Tripathi	367
Temperature-dependent Schottky barrier characteristics of Cu/Au Schottky contacts to n-InP V. Lakshmi Devi, I. Jyothi, and V. Rajagopal Reddy	369
Preparation and thermal analysis of ferric doped PVA-PVP-PPy composite films Ravikumar V. Patil, M. R. Ranganath, and Blaise Lobo	371
Reversed micellar route: Synthesis and characterization of metal oxide nanoparticles Suman Kumari, Mithlesh Shukla, and R. K. Shukla	373
Sintering effects on morphology, thermal stability and surface area of sol-gel derived nano-hydroxyapatite powder Seema Kapoor, Uma Batra, and Suchita Kohli	375
Interaction of nano-sized materials with polymer chains in polymer-nanocomposite thin films—An AFM perspective Gaurav Verma, Anupama Kaushik, and Anup K. Ghosh	377
Size-controlled synthesis and evaluation of optical properties of alumina nanoparticles J. Gangwar, A. K. Srivastava, and S. K. Tripathi	379

NIR luminescence from Nd³⁺ and Er³⁺ ions doped cadmium borate glasses for optical amplification

Y. K. Sharm, R. P. Joshi, and S. S. L. Surana

381

Author Index

383