

# **Yearly Plan for IQAC 2010-11**

## **School of Physics, DAVV, Indore**

### **1. Curriculum Aspects :**

School of Physics is having the following programs:

- a. A two year M.Sc. Physics programme with intake strength of 30 per year. The curriculum designing has wide applicability to various disciplines, which require physics.
- b. A two year M.Sc. Materials Science programme with intake strength of 15 per year. The curriculum designing has wide applicability in the field of materials science.
- c. A one year M.Phil. Physics course having intake of 20 students per year.
- d. A two year M.Tech. in Laser Science and Applications having intake of 15 students. The syllabus covers all the major areas of Laser Science and its applications.

All the courses include theory, practicals as well as project work. In M.Tech. program the project work is of one year and the students carry out their project in National laboratories. M.Sc. students performing well in the first year are sent for summer project in Institutes like IPR, PRL, RRCAT, etc.

In each semester there are 4 to 5 papers (3-4 hours theory for each paper per week) and 8 credits laboratory work (18 hours per week). In addition, students have to give seminars, which are of 2 hrs per week. Three class tests are held for each semester regularly in all subjects.

At present, about 25 Research scholars and 1 post doctoral fellow are working in the department. Out of these, some of them are also working at other nationally recognized laboratories. A number of research papers have been published in the national as well as international journals, several students have been awarded doctoral degree and research projects are running successfully.

The school has 9 faculty members.

The meetings of Board of Studies are regularly held for the upgradation of the Course as per the UGC Guidelines. Recent advances in the field of physics are included in the course from time to time.

Employability of students is generally in the research field, industry and teaching.

Feedback on curriculum is regularly obtained from the students.

### **2. Strategies of Teaching Learning**

Advertisement for the Admission is being taken care by the University. The information is also available on the university website. The admission is through written examination followed by interview. This is conducted by the department. Reservation for SC/ST/OBC are as per government policy.

#### **Teaching Learning process**

University academic calendar is strictly followed.

Teaching Method: Department uses OHP, LCD projector, and blackboard teaching.

Laboratories: Well equipped electronics, optics, and computer laboratories for M.Sc. and laser, fiber optics, and computer laboratories for M.Tech. students.

Library: School has a well established departmental Library with latest editions of books. The library is having OPAC software.

The facility of INFLIBNET and electronic journals is available with the university and is widely used by the students, research scholars and faculty members.

### **Teacher quality**

There are 1 Professor, 5 Professors (CAS), 1 Reader(CAS), 1 Senior Lecturer (CAS) and 1 Lecturer(on deputation from RGPV, Bhopal) in the department. One post of Professor and 3 posts of Reader are vacant. One expert was invited to teach in the department. All the teachers have Ph.D. qualification with wide experience. The faculty has three women members.

Several refresher courses have been conducted by the department on behalf of Academic Staff College. Almost all the faculty members served as resource persons in these courses. Almost all the faculty members have attended Symposiums/workshops and have given invited talks. All the faculty members use computer, internet and audio visual aids etc.

### **Evaluation Process and Reforms**

The evaluation of teachers by the students is in the form of feedback.

The evaluation of the students takes place during the course. This includes 3 class tests followed by a final examination for each theory papers. Grades are awarded as per Ordinance 31. The students are shown the answer sheet after evaluation and the questions are discussed in the class.

The examination result is declared within 1-2 weeks of the examination. The current system of evaluation is in practice from 1991 and it has been observed to be very satisfactory.

### **3. Research, Consultancy and Extension:**

The department is running nine research projects:

- 1). "Some studies on Magnetic, optical and transport properties of BaTiO<sub>3</sub> thin film doped with Cu/Co/Fe", UGC –DAE –CSR, 2008-2011. Dr. A Mishra
- 2) Spin dynamics and coherent control in semiconductor quantum dots, DST, Rs.15,58,848/-, 2008-2011. Dr. P.Sen
- 3) Non-Invasive detection of blood glucose/urea using optical low coherence reflectometry, UGC, Rs.11,93,800/-, 2008-2011. Dr. P.Sen
- 4) Electronic and Optical properties of ZnO based multilayered thin films, UGC –DAE – CSR, Rs. 1,50, 200/-, 2010-2011. Dr. P.Sen
- 5) Transport properties of doped Ferrite thin films [Received: Rs. 1.02 Lakhs] [UGC DAE CSR Indore] Dec. 2008 to Nov.2011] [Total approved: Rs. 3.82 Lakhs] Dr. Dinesh Varshney

6) Structural phase transition and lattice mechanical properties of rare earth semiconducting chalcogens. Supported by Defence Research and Development Organisation, Delhi. Dr. Dinesh Varshney

7) Effect of chemical disorder on the transport properties of colossal magnetoresistive materials. Supported by Madhya Pradesh Council of Science and Technology, Bhopal. Dr. Dinesh Varshney

8) Study of ferrite thin films prepared by pulsed laser deposition, Sanctioned by UGC DAE-CSR, (2011 –2014). Dr. S. N. Kane

9) Experimental and Numerical Studies of High Power Cherenkov and Cyclotron

Masers, DRDO, (2008—Sep. 2010), Rs. 30.66 lakhs. Dr.Y.Choyal

## **Research and Publication output.**

### **List of Publications**

1. Determination of structural parameters by EXAFS analysis of some Co complexes.  
A. Mishra, N. Parsai & N. Dagaonkar, *Acta physica polonica A*, Vol. 117 (2010), 257.
2. Extended X-ray absorption fine structure data analysis of copper (II) complexes of 6-methyl-5-arylhydrazono-2-thio-pyridine ligand.  
Ashutosh Mishra, Neetu Parsai, Namrata Soni and Ruchita Awate, *Ind. J. Pure and applied Physics*, 48, 81, (2010).
3. XRD studies of some copper and cobalt aniline complex.  
A. Mishra, Sweta Mishra, Samrath Ninama, Kamaljeet Sura *Search and research*, Vol-! no. 3, 46, (2010).
4. Exposure to time varying electric and magnetic fields:Take a chance with health.  
B. D. Shrivastava, A. Mishra and Ravindra Barde, *Ultra Scientist of physical Sciences*, vol. 22, 67 (2010).
5. A simplified analysis of EXAFS data and determination of bond lengths.  
Ashutosh Mishra, N. Parsai and B. D. Shrivastava, *Ind. J. Pure & applied Physics*, Vol. 49, 25, (2011).
6. S. Kumar, P. K. Dutta and Pratima Sen (2010) Preparation and characterization of optical property of crosslinkable film of chitosan with 2 – thiophenecarboxaldehyde, *Carbohydrate Polymers* 80, pp. 563 – 569.
7. M. Das, P. K. Sen and Pratima Sen (2010) Theory of Mie scattered Second harmonic generation, *Nonlinear Optics and Quantum Optics* 41, pp. 243-252.
8. S. Pawar, S. Kumbhaj, P. Sen and P. K. Sen (2010) Fibre Bragg grating based intensity dependent optical notch filter, *Nonlinear Optics and Quantum Optics*, 41, pp.253 - 264.

9. Pratima Sen, Saikat Chattopadhyay, J. T. Andrews and P. K. Sen (2010) Impact of shell thickness on exciton and biexciton binding energies of a ZnSe/ZnS Core/Shell Quantum Dot, *Journal of Physics and Chemistry of Solids*, 71, pp. 1201 - 1205.
10. Pratima Sen, Shivani Rana and Pranay. K. Sen (2010), Polarization rotation in asymmetric semiconductor quantum dots *J. Modern Optics* 57, pp. 646 - 652.
11. M. Das, S. Rana and P. Sen (2010), Second harmonic generation in ZnO nanorods, *Journal of Nonlinear Optical Physics and Materials*, 19, pp.1 - 14.
12. Shubhada Kumbhaj, Santosh Pawar, Pratima Sen and Pranay Kumar Sen (2010), Nonlinear wave propagation in cubic-quintic fiber Bragg grating, *Nonlinear Optics & Quantum Optics*, 41, pp. 313-327.
13. A. A. Koser, Pratima Sen and P. K. Sen (2011), Effect of Intensity Dependent Group Velocity on Pulse Broadening in GaAs/AlGaAs Waveguide Structure, *Nonlinear Optics & Quantum Optics*, 42, pp. 1 - 11.
14. Shivani Rana and Pratima Sen (2011) Effect of size asymmetry of QDs on splitting of hybrid valence band states, *Physica E* 43, pp. 1027 – 1030.
15. Saikat Chattopadhyay, Naveen V. Kulkarni, Kaushik Choudhury, R. Prasad, Aga Shahee, B.N. Raja Sekhar and P. Sen (2011), Lattice expansion in ZnSe quantum dots, *Materials Lett.* 65, pp. 1625 – 1627.
16. Pinaki Dasgupta, Saikat Chattopadhyay, R.J. Choudhary, D.M. Phase and Pratima Sen, Band offset in Zn<sub>0.965</sub>Cd<sub>0.035</sub>O/ZnO bilayer films, *Materials Lett.* (In Press).
17. Varun Sarda, Yamini karmarkar, Neha Lakhotia and Pratima Sen, What can the Log-periodic Power Law Tell about Stock Market Crash? *Applied Economics Journal* (accepted).
18. “Thickness dependence of crystalline state in FeZrNbCuB thin films obtained by sputter deposition” , Marco Coisson, Federica Celegato, Elena S. Olivetti, Paola Tiberto, Franco Vinai, Shashank N. Kane, Elena A. Gan’shina, Andrey I. Novikov, Nikolai S. Perov, *Journal of Alloys and Compounds* 509 (2011) 4688–4695
19. “On the influence of Joule heating induced nanocrystallization on structural and magnetic properties of Co<sub>64</sub>Fe<sub>21</sub>B<sub>15</sub> alloy”, S.N. Kane, M. Coisson, P. Tiberto, F. Vinai, F. Mazaleyrat, *Current Applied Physics* (2011) (IN-PRESS)
20. Structural and Electrical conductivity of Mn doped Hematite ( $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>) phase  
(Dinesh Varshney, and A. Yogi)  
  
2011, *J. of Molecular Structure* [Elsevier–B. V.], Vol. xxx, Pp. xxx-xxx
21. Electrical resistivity of the hole doped La<sub>0.8</sub>Sr<sub>0.2</sub>MnO<sub>3</sub> manganites: Role of electron-electron, –phonon, and – magnon interactions  
(Dinesh Varshney, and N. Dodiya)  
  
2011, *Materials Chemistry and Physics* [Elsevier–B. V.], Vol. 124, Pp. xxx-xxx
22. Structural and transport properties of stoichiometric Mn<sup>2+</sup> - doped magnetite: Fe<sub>3-x</sub>Mn<sub>x</sub>O<sub>4</sub>  
(Dinesh Varshney, and A. Yogi)  
  
2011, *Materials Chemistry and Physics* [Elsevier–B. V.], Vol. 124, Pp. xxx-xxx

- 23.** Structural properties and electrical resistivity of Na-substituted Lanthanum manganites:  $\text{La}_{1-x}\text{Na}_x\text{MnO}_{3+y}$  ( $x = 0.1, 0.125$  and  $0.15$ )  
(Dinesh Varshney, N. Dodiya, and M. W. Shaikh)  
2011, J. Alloys and Compounds [Elsevier-B. V.] [Elsevier-B. V.], Vol. 496, Pp. xxx-xxx
- 24.** Electron-phonon interaction and small polaron mechanism of temperature dependent resistivity of Zn nanowires  
(K. K. Choudhary, D. Prasad, K. Jayakumar and Dinesh Varshney)  
2011, Journal of Computational and Theoretical Nanoscience [A.S.P.–U. S. A.], Vol. 8, pp. xxxx-xxxx
- 25.** Possibility of Semiconductor-Metal Transition in a Quantum Wire  
(A. Merwyn Jasper D Reuben, Dinesh Varshney, and K. Jayakumar)  
2011, Journal of Computational and Theoretical Nanoscience [A.S.P.–U. S. A.], Vol. 8, pp. xxxx-xxxx
- 26.** The anomalous penetration of intense circularly polarized electromagnetic beam through overdense magnetized plasma  
(Meenu Asthana Varshney, Bhavna Rathore, and Dinesh Varshney)  
2011, Optik Int. J. Light Electron Optics [Elsevier–B. V.], Vol. 122, pp. xxx-xxx
- 27.** Effect of confining potential on the diamagnetic susceptibility of a donor in a spherical quantum dot  
(A. Merwyn Jasper D Reuben, Dinesh Varshney, and K. Jayakumar)  
2011, Journal of Computational and Theoretical Nanoscience [A.S.P.–U. S. A.], Vol. 8, pp. 189-193
- 28.** Pressure dependent mechanical and thermodynamical properties of  $\text{Hg}_{0.91}\text{Mn}_{0.09}\text{Te}$  semiconductor  
(Dinesh Varshney, R. Sapkale, Geetanjali Dagaonkar, and Meenu Varshney)  
2011, European Physical Journal B [Springer Verlag–France], Vol. 79, pp. 495-502
- 29.** A-site disordered doping effects on magnetic, electrical and thermal properties of  $\text{La}_{0.5-x}\text{Ln}_x\text{Ca}_{0.5-y}\text{A}_y\text{MnO}_3$  manganites  
(Irfan Mansuri, Dinesh Varshney, N. Kaurav, C. L. Luo, and Y. K. Kuo)  
2011, Journal of Magnetism and Magnetic Materials [Elsevier-B. V.], Vol. 323, pp. 316-323
- 30.** Propagation modes and regimes of intense laser beam in magnetoactive plasma  
(Meenu Asthana Varshney, B. Rathore, S. Sen, and Dinesh Varshney)  
2011, Optik Int. J. Light Electron Optics [Elsevier–B. V.] Vol. 122, Pp. 395-401
- 31.** Influence of Ce doping on structural and transport properties of  $\text{Ca}_{1-x}\text{Ce}_x\text{MnO}_3$  ( $x = 0.2$ ) manganites  
(Dinesh Varshney, and Irfan Mansuri)

- 2011, Journal of Low temperature Physics [Springer Verlag–France], Vol. 162, pp. 52-61
32. Pressure induced phase transition (B3-B1) and elastic properties of II-VI ZnSe semiconductors.  
(Dinesh Varshney, V. Rathore, R. Kinge, and R. K. Singh)
- 2011, Int. Journal of Modern Physics B [Singapore], Vol. 24, Pp. 1-11
33. Interpretation of temperature dependence of the in-plane electrical resistivity in YBa<sub>2</sub>Cu<sub>4</sub>O<sub>8</sub>: electron-phonon approach.  
(Dinesh Varshney, A. Yogi, and K. K. Choudhary)
- 2010, Physica C [Elsevier–B. V.], Vol. 470, pp. 2016-2022
34. Electrical resistivity behaviour of Sodium substituted manganites: Electron-phonon, Electron-electron and Electron-magnon interactions.  
(Dinesh Varshney, D. Choudhary, and M. W. Shaikh)
- 2010, European Physical Journal B [Springer Verlag–France], Vol. 76, pp. 327-338
35. Superconducting pairing and two-gap nature of Al and C doped MgB<sub>2</sub>: Screened Phonon-pairing mechanism.  
(Dinesh Varshney, M. Nagar, S. Bhatnagar, and M. Varshney)
- 2010, Superconductor Science and Technology [I.O.P.–U. K.], Vol. 23, pp. 1-19
36. Structural and transport properties of stoichiometric and Cu<sup>2+</sup> - doped magnetite: Fe<sub>3-x</sub>Cu<sub>x</sub>O<sub>4</sub>.  
(Dinesh Varshney, and A. Yogi)
- 2010, Materials Chemistry and Physics [Elsevier–B. V.], Vol. 123, Pp. 434-438
37. Melting characteristics of a series of Polyester resin derived from ε-Caprolactone and different glycols, G.S. Mukherjee and M. Banerjee, *Journal of Indian Chemical Society*, 88 April (2011) pp. 1-5
38. An exact linear dispersion relation for CRM instability  
Plasma Physics and Controlled Fusion, 2011, (In press)  
Y Choyal and K Minami(Deceased)
39. Excitation of an Axisymmetric Arbitrary-Walled Periodic Slow-Wave Structure by an Electron Beam Confined by a Finite-Strength Magnetic Field.  
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Prasad Deshpande; Y. Choyal; B. Kumar; K. P. Maheshwari; K. S. Bhat  
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40. Analytical and numerical investigation of pulse-shape effect on the interaction of an ultrashort, intense, few-cycle laser pulse with a thin plasma layer.  
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Maheshwari, K.P.; Malav, H.; and Choyal, Y.  
DOI:10.1017/S0263034610000741
41. Design and Simulation of Pole Piece for Focusing of Multi-beam Electron Gun,  
J Infrared Milli Terahz Waves  
Ashok Nehra, L. M. Joshi, R. K. Gupta, Shivani Sharma, Y. Choyal, and R. K. Sharma  
DOI 10.1007/s10762-011-9783-8
42. Analytical and numerical investigation of diffraction effects on the nonlinear propagation of ultra-intense few-cycle optical pulses in plasmas.  
J. Plasma Physics, vol. 76, pp. 209–227, 2010.  
DOI:10.1017/S0022377809990286  
Malav, H.; Maheshwari, K.P.;Meghwal R.S., Choyal, Y., and Sharma R.
43. Pulse requirements for field integral measurements in pulsed wire method,  
Sumit Tripathi, G.Mishra,Vinit Kumar, Sanjay Chouksey, Ravi Kumar, Nuclear Instruments and Methods in Physics Research A, 635 (2011) pp.121, 2011.
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Sumit Tripathi, G.Mishra, Mona Gehlot,Jeevakhan Hussain, Sanjay Chouksey, Vinit Kumar,  
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45. Three frequency undulator radiation and free electron laser gain ,  
Sumit Tripathi, G.Mishra ,  
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46. Pulsed wire method and undulator field measurement,  
Sumit Tripathi, G.Mishra, Mona Gehlot , J.Hussain, Sanjay Chouksey, Vinit Kumar,  
Umesh Kale, Pravin Nerpagar,  
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47. Analysis of two frequency harmonic undulator radiation and gain ,  
G.Mishra & Jeevakhan Hussain,  
Nuclear Instruments and Methods in Physics Research A,621,p-637,2010.
48. Effect of beam energy spread on cascade optical klystron undulator radiation,  
Mona Gehlot, G.Mishra,  
OpticsCommunication, No.283,p-1445,2010.
49. Analysis of pulsed wire method for field integral measurements,  
Vinit Kumar & G.Mishra,  
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#### **Publication in International National/ National Conference Proceedings**

1. Abbas Ali Koser, Pratima Sen, and Pranay K. Sen (Aug. 2010), Effect of dispersion and nonlinearity on intense femtosecond pulse propagation in GaAs/AlGaAs waveguide Structure, International Conference on Coherent and Nonlinear Optics, ICONO/LAT 2010, Moscow, Russia.
2. Saikat Chattopadhyay, J. T. Andrews and Pratima Sen (Dec. 2010), Effect of shell thickness on PL-intensity of a ZnSe/ZnS Core/Shell Quantum Dot, *10<sup>th</sup> International Conference on Fibre Optics and Photonics: PHOTONICS-2010*, IIT Guwahati.
3. Shivani Rana, Pratima Sen and Pranay K. Sen (Dec. 2010), Splitting of hybrid hole states in CdSe/ZnSe QDs, *10<sup>th</sup> International Conference on Fibre Optics and Photonics: PHOTONICS-2010*, IIT Guwahati.
4. Santosh Pawar, S. Kumbhaj, P. Sen and P. K. Sen (Dec. 2010), Influence of Cubic-Quintic Nonlinearity on Photonic Band Gap of Fiber Bragg Grating, *10<sup>th</sup> International Conference on Fibre Optics and Photonics: PHOTONICS-2010*, IIT Guwahati.
5. S. Kumbhaj, Santosh Pawar, P. Sen and P. K. Sen (Dec. 2010), Optical Transistor Action in Kerr Fiber Bragg Grating, *10<sup>th</sup> Int. Conf. on Fibre Optics and Photonics: PHOTONICS-2010*, IIT Guwahati.
6. J. Solanki, P. Sen and J. T. Andrews (Jan. 11), Blood Glucose Monitoring in Human Subjects Using Optical Coherence Tomography, *Int. Conf. on Contemporary Trends in Optics and Optoelectronics*, IIST Trivandrum.
7. Shivani Rana and Pratima Sen (May 2011), Magnetically tuned polarization rotation in Mn doped CdSe/ZnSe QDs, Optics -11, NIT Calicut.
8. Magnetically induced transparency in overdense plasmas  
(Meenu Asthana Varshney Sonu Sen, Bhavna Rathore, and Dinesh Varshney)  
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9. Nonlinear propagation of intense electro magnetic beams with plasma density ramp functions.  
(Meenu Asthana Varshney, Sonu Sen, Bhavna Rathore, and Dinesh Varshney)  
2010, J. Phys.: Conf. Ser. [I.O.P.–U. K.], Vol. 208 Pp. 012088 (pp1 –6)
10. Pressure and Phase Dependent Elastic Properties of Europium Monochalcogenides  
(Dinesh Varshney, Swarna Shriya, G. Dagaonkar, and R. Kinge)  
2010, Solid State Physics, Proceeding of the 55<sup>th</sup> DAE Solid State Physics Symposium India, Ed. Alka. B. Garg, and R. Mittal, American Institute of Physics Publication, Pp. xxxx
11. Structural Properties Of Potassium Doped Lanthanum Manganites  
(Dinesh Varshney, M. W. Shaikh, N. Dodiya, and I. Mansuri)  
2010, Solid State Physics, Proceeding of the 55<sup>th</sup> DAE Solid State Physics Symposium India, Ed. Alka. B. Garg, and R. Mittal, American Institute of Physics Publication, Pp. xxxx
12. Structural And Phonon Modes Of Multiferroic Bi<sub>0.9</sub>Ca<sub>0.1</sub>Fe<sub>0.9</sub>Co<sub>0.1</sub>O<sub>3</sub> Nanoparticles  
(Dinesh Varshney, Geeta Das, and Ashwini Kumar)  
2010, Solid State Physics, Proceeding of the 55<sup>th</sup> DAE Solid State Physics Symposium India, Ed. Alka. B. Garg, and R. Mittal, American Institute of Physics Publication, Pp. xxxx
13. Structural And Magnetic Properties Of Mn And Zn Doped Fe<sub>3</sub>O<sub>4</sub> Nanoparticles  
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14. Transport Properties Of Fe<sub>3-x</sub>Ti<sub>x</sub>O<sub>4</sub> (x = 0.0 and 0.0206) Epitaxial Thin Films  
(Dinesh Varshney, A. Yogi, Kavita Verma, and D. M. Phase)  
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15. Manifestation Of Electron-Phonon, -Electron, And –Magnon Resistivity Of La<sub>0.7</sub>Ca<sub>0.25</sub>K<sub>0.05</sub>MnO<sub>3</sub> Manganites  
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2010, Solid State Physics, Proceeding of the 55<sup>th</sup> DAE Solid State Physics Symposium India, Ed. Alka. B. Garg, and R. Mittal, American Institute of Physics Publication, Pp. xxxx
16. Explanation of Temperature Dependent Resistivity Of Ag Doped Manganites: La<sub>1-x</sub>Ag<sub>x</sub>MnO<sub>3</sub>  
(Dinesh Varshney, Dinesh Choudhary, and E. Khan)  
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17. Electrical, Magnetic And Thermal Transport Behavior Of Divalent/Tetravalent Doped LaMnO<sub>3</sub> Manganites  
(Dinesh Varshney, I. Mansuri, N. Kaurav, and Y. K. Kuo)  
2010, Solid State Physics, Proceeding of the 55<sup>th</sup> DAE Solid State Physics Symposium India, Ed. Alka. B. Garg, and R. Mittal, American Institute of Physics Publication, Pp. xxxx
18. Electrical resistivity and thermopower of La/Nd/PrMnO<sub>3</sub> manganites: Role of small polaron conduction

- (Dinesh Varshney, Poorva Sharma, and I. Mansuri)  
2010, Solid State Physics, Proceeding of the 55<sup>th</sup> DAE Solid State Physics Symposium India, Ed. Alka. B. Garg, and R. Mittal, American Institute of Physics Publication, Pp. xxxx
19. Spin fluctuation mechanism to normal state resistivity of iron-based superconductors: La [O<sub>1-x</sub>F<sub>x</sub>]FeAs  
(K. K. Choudhary, S. Singh, P. Prasad, N. Kaurav, and Dinesh Varshney)  
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  20. Laser-dressed spin polaron in CdTe–Cd<sub>1-x</sub>Mn<sub>x</sub>Te Quantum well.  
(P. Nithiananthi, Dinesh Varshney, and K. Jayakumar)  
  
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  21. Tuning Band Gap of NiS nanoparticles, M.Banerjee, Lalsingh Chongad and Arti Sharma, *National Conference on Emerging interfaces of Physics and Technology (EIPT 2011), Ujjain, 2011.*
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  23. Monte Carlo simulation of a finite thickness neutralized electron beam  
  
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Digital Object Identifier: 10.1109/IVEC.2011.5747078

## **Collaborations**

### **2. Infrastructure and Learning Resources**

The department conducts its activities on the Laser Bhawan and ground floor of Vigyan Bhawan. The total area is approximately 1500 sq meters. There are 5 student laboratories including computer laboratory and six research laboratories.

School has a well established departmental Library with latest editions of books. The facility of INFLIBNET and electronic journals is available with the university and is widely used by the students, research scholars and faculty members.

### **3. Student Support and Progression**

Fellowships to SC/ST/OBC students are provided by the Government.

Due attention is given to academically weaker students.

Syllabus is made available to the students.

Students actively participated in annual UTD sports celebration. The department provided the sport kits for participation.

### **4. Governance and Leadership**

To produce physicists and laser professionals.

### **7. Innovative practices**

An Internal quality assurance system has been developed for quality assurance and enhancement. To achieve this goal, there are regular meetings of the Faculty members within the department as well as at the University Level.

### **Plan on improvement in Relationship with stakeholders**

Students will be encouraged to follow the best practices under academic and extra-curricular activities.

Continual monitoring of the students and interaction with them will definitely improve their performance.

### **Evaluative report of the Department**

Faculty Profile

Number of Faculty members in position:

A) Professor	1
B) Professor	5(CAS)
C) Reader	1 (CAS)
D) Senior Lecturers	1(CAS)
E) Lecturers	1 (on deputation from RGPV, Bhopal)

Name of the Faculty Member	Designation	Highest Qualification
Dr. A. Mishra	Professor	Ph.D.
Dr. A. K.Dutta	Professor	Ph.D.
Dr. P.Sen	Professor	Ph.D.
Dr. D. Varshney	Professor	Ph.D.
Dr. G. Mishra	Professor	Ph.D.
Dr. M. Banerjee	Professor	Ph.D.
Dr. S. N. Kane	Reader	Ph.D.
Dr. Y. Choyal	Sr. Lecturer	Ph.D.
Dr. J. Chauhan	Lecturer	Ph.D.

**Plan on improvement:**

UGC has sanctioned a total of Rs. 25 lakhs for equipments, Infrastructure, equipment, teaching staff and (5)books grant under XI Plan.

A rotating anode system provided by UGC-DAE-CSR, Indore will be installed in the department. The output power of x-ray is 12kW CW.

In the material science laboratory, a setup for low/high temperature resistivity measurement will be installed.

Research projects carried out: Many research projects have been sanctioned to departmental Faculty by different funding organization as mentioned earlier.

**Name & Signature of the  
Coordinator QAC**

**Name & Signature of the  
HEAD, UTD**