ANNUAL QUALITY ASSESSMENT REPORT

Name of the Institute: School of Physics

Year of Report: **2012-2013**

PART A. The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year.

1. Curricular Aspect	• Grade-Credit System is followed • In the school, Programmes like M. Sc. (Physics), M. Sc. (Physics-materials science), M. Phil. (Physics), M. Tech. (Laser science and applications) are running in the assigned year. • The course curriculum is regularly updated. Last updated in 2011-12. • Curriculum development process is based on the recommendations of various experts from the academics Scientific Institutes of national and International repute and student feedback on course content and design. • The updating of syllabus focused the changing needs of time. • Informal feedback from ex-students is also taken into consideration. • Faculties work for the development of scientific aptitude and general attitude of students. • State government's norms are followed in admission process for reserved categories and women. • Remedial sessions are organized for weaker students and enrichment sessions for the brighter ones. • Our faculties provide full freedom to students that they can ask any query any time at any place.
2. Teaching – learning and Evaluation	• Seminar hall is equipped with multimedia projectors • Lectures are supplemented by assignments, seminars and practical • Experiments are conducted in the area Laser, Fiber Optics,

	Electronics, Optics, Computational Physics, Numerical Techniques, Microprocessor , X-Ray Spectroscopy , Nonlinear Optics, Thin Film deposition laboratory ,Materials Science laboratory , Undulator and Free electron lasers laboratory, Polymers Physics and nano materials laboratory, Magnetic Materials laboratory High Power Microwave laboratory. • To hone the research skills and thinking, a 06 months project work is a part of our M Sc and M Phil course work. Our M Tech students undertake one year project training at the prestigious Raja Ramanna centre for advanced technology , Indore. • Teacher student ratio is 1:12 • We have a good team of experienced, energetic and qualified faculties (07Professors,1 Associate Professor) • Besides, we have strong collaboration with in campus interuniversity consortium where students have exposure to many top grade scientific instrument facilities. • Vacancies in regular faculty positions are being met by visiting faculties • International conference on recent trends in physics and the faculties of the department were the resource persons for the refresher course in Physics. • Continuous and comprehensive evaluation process is followed with three sessional examination , end semester exam in each course • Complete transparency is a key feature of our evaluation system • Students are empowered to design time table of examination to consider the convenience but to adhere with the examination schedule • Timely evaluation of answer sheets and declaration of results. • Students' are given feedback on their performance and answer sheets are shown to them • Result processing is computerized

	• Teaching learning process with ICT component • Comprehensive Viva-Voce provides an external audit to the evaluation system • In time table, three classes per week are scheduled for departmental seminar • Many cultural and sports activities are conducted including Annual function, freshers', farewell, induction program and interdepartmental matches
3. Research, consultancy and Extension	• "International conference on recent trends in physics" was organized on Feb 4-5, 2012. • More than 10 students are receiving Research fellowships. • More than 100 research articles are published in International , National Journals and conferences by the faculties of the department in 2012-13 • The faculties are having 12 ongoing research project funded from various agencies like Council of Scientific and Industrial research (CSIR), New Delhi Madhya Pradesh Council of Science and Technology, Bhopal UGC − DAE Consortium for Scientific research Department of Science and technology (DST) Defense Research and Development Organization (DRDO), Delhi University Grants Commission (UGC), Delhi • Memorandum of understanding with various scientific institutions.
4. Infrastructure and Learning Resources	• We have more than 100 computers for students and faculties • Our students having complete freedom to access of any laboratory equipments and chemicals • We have 17 well equipped laboratories
5. Student Support and Progression	• Most of the students absorbed in national and international research institutes • Students avail of Hostel, internet and Health facilities of the University • Grievances redressal mechanism exists and counseling is

	provided to students by conducting teachers-student meetings • Remedial classes are arranged for weak students • Special Guidance is given to students aspiring to National or International level research publications • Students participated in University Cultural and Sports activities and also part of our every committee
6. Governance & leadership	• Full academic autonomy • Faculty involved in Selection, Examination and Professional Development activities of the Universities • Consultancy and support to Schools in conducting Selections, Management and Professional Development activities • Academic Calendar is strictly followed. Teaching schedule is adhered to and syllabus is covered on time • Strong emphasis on classroom teaching • Results declared on time • Assessment of students is undertaken through regular and continuous evaluation and end semester examination • Student feedback system is followed for continuous improvement
7. Innovative practices	• Faculties provide a vision to become good human being along with the success in professional and personal fronts • Students are encouraged to develop scientific skills to understand and undertake research activities in the frontline area of research.

Part B: Action Taken during the Year

<table>
<tr><td>01</td><td>Activities reflecting the goals and objectives of the institution</td><td>a. Regular teaching with teaching aids
b. Syllabi coverage: 100 % and full promotion of research activities
Timely declaration of results</td></tr>
<tr><td>02</td><td>New academic program initiated (UG and PG)</td><td>None during 2011-12</td></tr>
<tr><td>03</td><td>Innovations in curricular design and transaction</td><td>Syllabus of M Phil, M Tech was updated in 2012- 2013 and revised . The experts opinion and Student feed back was considered to update the syllabus. Student feed back was taken after every six months, in May and in December.</td></tr>
<tr><td>05</td><td>Examination reforms implemented</td><td>Semester system is followed and the answer sheets were shown to the students after evaluation.</td></tr>
<tr><td>06</td><td>Candidates qualified NET/SLET/GATE etc.</td><td>GATE: 1
JEST: 1</td></tr>
<tr><td>08</td><td>Total number of seminars/workshops conducted</td><td>All the students have to deliver seminar in the department.</td></tr>
<tr><td>09</td><td>Ongoing Research projects</td><td>Dr. Ashutosh Mishra
University Grants Commission UGC – DAE Consortium for Scientific research | Effect of doping on structural, magnetic, electrical and dielectric properties of sol-gel prepared nano particles and pulse laser deposit thin films of doped $BaTiO_3$ | 2012–2015 | Rs. 06.18.000/- | ONGOING
Dr.Pratima Sen
UGC – DAE Consortium for Scientific research | Electronic and Optical properties of ZnO based multilayered thin films | 2011–2014 | Rs. 04.50. 600/- | ONGOING
Department of Science and technology (DST) | Electronic and Optical properties of pure and doped II-VI semiconductor nanostructures | 2012–2015 | Rs. 14.35.200/- | ONGOING
Dr.D.Varshney
University Grants Commission (UGC), Delhi | Structural, electrical and magnetic properties of doped $BiFeO_3$ multiferroics | July 2011 – June 2014 | Rs. 07.30.000/- | ONGOING
University Grants Commission UGC – DAE Consortium for Scientific research | Structural, and physical properties of pure and doped $BiFeO_3$ multiferroics | June 2012 – May 2015 | Rs. 07.90.000/- | ONGOING
Dr.G.Mishra</td></tr>
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		1. **University Grants Commission (UGC), Delhi** — Design and theory of hybrid undulator for free electron Laser — 2012-2015 — **Rs.10.23.800/-** — ONGOING 2. **Defense Research and Development Organization (DRDO), Delhi** — Fabrication of undulator, x-y position sensor, straightness interoferometer, laser micrometer — 2012-2015 — **Rs.32.00.000/-** — ONGOING 3. **Department of Science and technology (DST)** — Optimization of permanent and electromagnet undulator for free electron laser — 2011-2014 — **Rs.23.70.000/-** — ONGOING Dr.Mandira Banerjee **University Grants Commission UGC – DAE Consortium for Scientific research** — Study of the melting behavior of soft condensed matter thin films — 2012-2014 — **Rs. 03,34,300/-** — ONGOING Dr.S.N.Kane **UGC – DAE Consortium for Scientific research** — Study of ferrite thin films prepared by pulse laser deposition — 2011 – 2014 — **Rs. 05.56.200/-** — ONGOING **Madhya Pradesh Council of Science and Technology**, Bhopal — Synthesis, structural and magnetic studies of nanocrystalline Mg based Ni-Cu-Zn ferrite — 2013 – 2014 — **Rs. 02.24.000/-** — ONGOING Dr.Y.Choyal **Council of Scientific and Industrial research (CSIR), New Delhi** — Analysis of beam-wave interaction to support the development of plasma cathode electron gun driven X-band plasma assisted BWO — **Apr 2013– March 2016** — **Rs. 28.18.000/-** — Ongoing
10.	Patents generated if any	None
14.	Citation index of Faculty members and impact factor	S.No — Name — **Impact factor (approx)** 1 — Dr.A.Mishra — 1.801 2 — Dr.A.K.Dutta — 3.341 3 — Dr.P.Sen — 3.942 4 — Dr.D.Varshney — 2.662 5 — Dr.G.Mishra — 1.31 6 — Dr.M.Banerjee — 2.2 7 — Dr.S.N.Kane — 3.75 8 — Dr.Y.Choyal — 2.369

17.	Details of departments getting SAP, FIST, etc assistance/recognition	None
18.	Community services	We always provide career guidance without any charge to students of all classes and we always are in forefront to help the down people of the society.
19.	Teachers and officers newly recruited	None.
20.	Teaching-Non-teaching staff ratio	2:3
21.	Improvements in the library services	New Books with latest titles have been added in the Departmental Library.
23.	Courses in which Student Assessment of Teachers is introduced and the action taken on student feedback.	M.Sc. Physics, Physics (Material Science), M Phil, M Tech(Lasers and Applications) . Student's Feedback was analyzed. Overall rating about the department and teachers was very good.
25.	Computerization and Administration and the process of Admissions and examination, result issue of certificates.	Administration, Admissions, examination,result, issue of certificates are all computerized.
26.	Increase in the infrastructural facilities.	CCTV, Water Cooler & RO, Networking, UPS Batteries, Inverter were purchased and installed.
27.	Technology up gradation.	Networking facility through IT center with 40 Computers and 03 LCD projectors are available.
28	Computer and internet excess and training to teacher and students.	Yes
29.	Financial aid to students.	Post Metric fellowship is given to OBC/SC/ST candidates.
30.	Activities and support from the Alumni Association.	Alumni help students to find vacancies and research programmes.
31.	Activities and support from the parent Teacher Association.	We conducted meetings of parent teacher association and the next meeting is scheduled on Dec, 2013. We give feedback to parent about their wards and also listen if they have any grievances and try to remove the same.
32.	Health Services.	Students are provided Health Centre facility by the University.
33.	Performance in sports activities.	Students participated in Inter Departmental Sports activities.
34.	Incentives to outstanding sports persons.	We have given free hands to students deciding about schedule of class tests and semester examinations as per their convenience.

35.	Students achievements and awards.	01student qualified GATE and 1 qualified JEST exam Many students placed in Ph.D. through various National and International research programmes. After Ph.D all students get good placement (PDFs) internationally and nationally.
36.	Activities of the Guidance and Counseling Units.	Discussion with students and research scholars is held to provide information and to encourage them in various scientific activities during regular student teachers meetings.
39.	Healthy practices of the institution.	Regular and quality teaching Active participation in research activities Departmental harmony in working ambience. For quality assurance, self analysis and feedback from students was practiced.
40.	Linkages developed with National/ International, Academic/Research bodies.	Collaborations and MOUs exist with institutes of national and International repute like: Institute for Plasma Research, Physical research laboratory (Gujarat), RRCAT, Indore, UGC-DAE-CSR, Indore, IUAC New Delhi, CEERI, Pilani, Rajasthan, Ecole Normale Superioure de Cachan, France etc
41.	Any other relevant information the institution wishes to add	Department works for the overall development of the students through regular teaching and discussion with the students.

Part C: Detail the plans of the institution for the next year:

- Development of laboratory equipments for Programmes run by school.
- An international conference namely ICRTP2014 is proposed to be organized in the month Feb 2014.
- Students will be send for summer training Programmes conducted at various scientific organizations like IPR, Ahmadabad, PRL, Gandhinagar, IUCCA Pune, IUAC, New Delhi, RRCAT, Indore, UGC DAE CSR, Indore.
- Strengthen the placement, guidance, counseling and extension service for students.
- To increase the number and titles of books in departmental library.
- To strengthen research activities, new research projects will be submitted to various funding agencies.
- Faculty participation in Seminars, Conferences and visits will be encouraged
- Collaborative research activities at Global level will be promoted.
- Proposal for new science Bhawan likely to be submitted to university administration.

Name & Signature of the Coordinator IQAC

Name & Signature of the HEAD, UTD