Evaluative Report of the Department

1. Name of the Department;
   Department of Physics

2. Year of establishment:
   1960

3. Is the Department part of a School/Faculty of the university?
   Yes, Department of Physics is a part of PG School of Physical Sciences and Faculty of Science

4. Names of programmes offered:
   Department offers UG (Pass) and (Hons.) courses in Physics at two constituent colleges of this university while PG, M.Phil., Ph. D. and D.Sc. programmes are offered in the Department of Physics itself.

UG –	B.Sc. (Pass course)
	B.Sc. (Honours)
PG -	M. Sc. in Physics
M.Phil.	In Physics
Ph. D.	In Physics
D. Sc.	In Physics

5. Interdisciplinary programmes and departments involved:
   Department is not running any interdisciplinary programmes at present and no faculty of any other departments is involved in the programmes run by this department.

6. Courses in collaboration with other universities, industries, foreign institutions, etc.;
   Department has not designed any course in collaboration with any other university, industry or foreign institution. However department revises its course curriculum looking courses run by other reputed universities and institutes.

7. Details of programmes discontinued, if any, with reasons:
   No programme has been discontinued in past five years.

8. Examination System:
   University has adopted annual examination scheme for UG exams in Physics. For PG programmes in Physics; semester system with choice based credit system is adopted. However the programmes will be modified in the next session looking current UGC

guidelines for CBCS. Department also runs one semester Pre Ph.D. course work in Physics and two semesters M.Phil. Programme in Physics and Ph.D. programmes.

9. Participation of the department in the courses offered by other departments:
   Faculty members are involved in several interdisciplinary programmes running at other centers of this university including;
   (ι) Five year integrated M. Tech. B.Tech. Dual Degree programme in Converging Technologies at Center for Converging Technologies.
   (ιι) Two year M.Tech in Converging Technologies at Centre for Converging Technologies.
   (ιιι) M. Tech. programme in Engineering Physics run by Center for Development of Physics Education
   (ιϖ) M. Phil. Programme at Center for Nonconventional Energy Resources
   (ϖ) M. Phil. Programme at Center for Development of Physics Education

10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)
    Following is the details of faculty in this department:

	Sanctioned	**Filled**	**Actual (including CAS & MPS)**
Professor	5	---	03
Associate Professors	9	---	13
Asst. Professors	40	33	17
Others (UGC Faculty Recharge)	---	---	01

11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance
    Following is the details of faculty of this department:

Name	**Qualification**	**Designation**	**Specialization**	**No. of Years of Experience**	**No. of Ph.D./ M. Phil. students guided for the last 5 years**
Prof. Ashok K. Nagawat	M.Sc. Ph.D.	Professor	Theoretical High Energy Physics and Computational Physics	35 years	02
Prof. Deepak	M.Sc. Ph.D.	Professor	Microwave	29 yrs	10

Bhatnagar			Electronics		
Prof. Sudhir Raniwala	M.Sc. Ph.D.	Professor	Experimental High Energy Physics	29 yrs	---
Dr. Aruna Bharti	M.Sc. Ph.D.	Assoc. Professor	High Energy Nuclear Physics	30 yrs	---
Dr. H.S. Palsania	M.Sc. Ph.D.	Assoc. Professor	High Energy Nuclear Physics	21 yrs	---
Dr. J.S. Saini	M.Sc. Ph.D.	Assoc. Professor	Microwave Electronics	19 yrs	01
Dr. K.V.R. Rao	M.Sc. Ph.D.	Assoc. Professor	High Energy Spectroscopy	26 yrs	---
Dr. Mangej Singh	M.Sc. Ph.D.	Assoc. Professor	Condensed Matter Physics	19 yrs	
Dr. M.K. Mishra	M.Sc. Ph.D.	Assoc. Professor	Plasma Physics	19 yrs	
Dr. Ramvir Singh	M.Sc. Ph.D.	Assoc. Professor	Condensed Matter Physics	30 yrs	02
Dr. Rashmi Raniwala	M.Sc. Ph.D.	Assoc. Professor	Experimental High Energy Physics	26 yrs	---
Dr. R.K. Singhal	M.Sc. Ph.D.	Assoc. Professor	Condensed Matter Physics	26 yrs	
Dr. S.K. Gupta	M.Sc. Ph.D.	Assoc. Professor	High Energy Nuclear Physics	19 yrs	----
Dr. S.N. Dolia	M.Sc. Ph.D.	Assoc. Professor	Condensed Matter Physics	26 yrs	
Dr. Usha Singh	M.Sc. Ph.D.	Assoc. Professor	Condensed Matter Physics	32 years	---
Dr. V.K. Saxena	M.Sc. Ph.D.	Assoc. Professor	Microwave Electronics	26 years	04
Dr. Amanpal Singh Clair	M.Sc. Ph.D.	Asstt. Professor	Condensed Matter Physics	3 yrs	----
Mr. Arvind Kumar	M.Sc.	Asstt. Professor	Microwave Electronics	8 yrs	----
Mr. Bharat Lal Meena	M.Sc.	Asstt. Professor	Bio- Physics	16 months	----
Dr. Chhagan Lal	M.Sc. Ph.D.	Asstt. Professor	Condensed Matter Physics	4.5 years	----
Mr. Dalpat Meena	M.Sc.	Asstt. Professor	Experimental Nuclear and High Energy Physics	3yrs	----
Mr. Dinesh Kumar	M.Sc.	Asstt. Professor	Theoretical High Energy Physics	16 months	----

Ms. Kanchan Gahlot	M.Sc.	Asstt. Professor	Computational Photonics	16 months	----
Mr. Kishan Kumar	M.Sc.	Asstt. Professor	Plasma Physics	16 months	----
Mr. Mahendra Gora	M.Sc.	Asstt. Professor	Condensed Matter Physics	7 yrs	----
Mr. Mamraj	M.Sc.	Asstt. Professor	Ultra fast optics	16 months	----
Mr. Narendra Jakhar	M.Sc.	Asstt. Professor	Experimental Nuclear and High Energy Physics	16 months	----
Mr. Puraram	M.Sc.	Asstt. Professor	Electrochemical energy storage systems, Solar Energy	16 months	---
Dr. Sanjay Kumar	M.Sc. Ph.D.	Asstt. Professor	Strongly correlated electron systems	04 yrs	----
Mr. Sanjeev Kumar	M.Sc.	Asstt. Professor	Experimental High Energy Physics	16 months	----
Mr. Subhash Chandra	M.Sc.	Asstt. Professor	Condensed Matter Physics	3 yrs	----
Dr. Sarita Kumari	M.Sc. Ph.D.	Asstt. Professor	Wavelet Analysis, Material Science	9 years	----
Dr. Sunita Mahawar	M.Sc. Ph.D.	Asstt. Professor	Solar Energy	16 months	----
Chandra Shekhar Pati Tripathi	M.Sc. Ph.D.	Assistant Professor Under UGC-Faculty Recharge Programme	Condensed and Soft Matter Physics	Date of joining: 05th August 2014	---
Faculty members retired during 2009 – 2015					
Prof. B.K. Srivastava	M.Sc. Ph.D.	Professor (Retd.)	Condensed Matter Physics	----	----
Prof. Anjali Krishnamurthy	M.Sc. Ph.D.	Professor (Retd.)	Condensed Matter Physics	----	----
Prof. Usha Chandra	M.Sc. Ph.D.	Professor (Retd.)	Condensed Matter Physics	----	----
Prof. Vinod Kumar	M.Sc. Ph.D.	Professor (Retd.)	High Energy Nuclear Physics	----	----
Prof. Y.K. Vijay	M.Sc. Ph.D.	Professor (Retd.)	Condensed Matter Physics	----	----
Prof. D.C. Jain	M.Sc. Ph.D.	Professor (Retd.)	Condensed Matter Physics	----	----

Prof. Prabha Dashora	M.Sc. Ph.D.	Professor (Retd.)	Solar Energy	----	----
Prof. Kananbala Sharma	M.Sc. Ph.D.	Professor (Retd.)	Condensed Matter Physics	----	----
Dr. V.S. Kulhar	M.Sc. Ph.D.	Assoc. Professor (Retd.)	Atomic and Molecular	----	----
Dr. Nilima Singhvi	M.Sc. Ph.D.	Assoc. Professor (Retd.)	Condensed Matter Physics	----	----
Dr. Y.K. Sharma	M.Sc. Ph.D.	Assoc. Professor (Retd.)	Condensed Matter Physics	----	----

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors

No senior Visiting Fellows, Adjunct Faculty, Emeritus Professors visited this department during 2009 – 15. However following eminent persons visited this department and participated in different activities of this department during past five years:

- Bharat Ratna Prof. C.N. R. Rao
- Prof. R. Chidambram, Principal Scientific Advisor, GOI, New Delhi
- Prof. Ashutosh Sharma, Secretary, DST New Delhi
- Prof. J.K. Jain, University of Penselvania, USA
- Prof. B.V. R. Tata, IGCAR, Kalpakkam
- Dr. Shishir Deshpande, IPR, Ahmedabad
- Mr. Alok Singhal, SAC, Ahmedabad
- Prof. V.K. Tripathi, Retd. Prof. IIT, Delhi
- Dr. S.K. Sikka, BARC, Mumbai
- Dr. J.C. Pivin, French National Research Centre, France
- Prof.J.Adam, J.I.N.R., Dubna (Russia)
- Dr. Karel Katovaski, Brno Technical University, Brno, Czech Republic

Following have continued post retirement association with Department as Emeritus Scientist

- Prof. N.S. Saxena: UGC Emeritus Scientist
- Prof. Usha Chandra: CSIR Emeritus Scientist
- Prof. B.K. Sharma: UGC Emeritus Scientist

13. Percentage of classes taken by temporary faculty programme wise information

In UG courses running in Maharaja and Maharini Colleges, nearly 02% classes were engaged by guest faculty members. All the PG classes are being engaged by regular faculty members.

14. Programme-wise Student Teacher Ratio:

Following are the approximate Programme-wise Student Teacher Ratios in different courses run by department:

- Under graduate: 30:1
- Postgraduate: 2:1
- Ph.D. 2:1

15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual:

Following is the position of ministerial, technical staff and lab bearers:

	Sanctioned	**Filled**	**Actual**
Technical (Lab. Assistant and Lab bearers)	09	04	04+4*
Support staff	08	06	05+1*
Administrative staff	04	03	03
Others (Work shop superintendent & mechanic including contractual staff, Trained mechanic and instrument supervisor and through agency)	04	NIL	4*

* Employes through agency

16. Research thrust areas as recognized by major funding agencies:

Following two areas are recognized by DST as thrust area in the Department of Physics:
(i) Condensed Matter Physics
(ii) High Energy Physics and major grants are received in these areas.

17. Number of faculty with ongoing projects from

a) National
24

b) International funding agencies and
NIL

c) Total grants received.

Research projects to faculty	Rs. 578.89 Lacs
Research projects to research assistants	Rs. 42.60 Lacs
Emeritus Scientist	Rs. 47.60 Lacs
Total	**Rs. 669.09 Lacs**

Give the names of the funding agencies, project title and grants received project-wise.

The project details received by faculty members are as follows:

Funding agency	Title of the Project (Principal Investigator)	Sanctioned Amount (Rs.)	Duration
DEIT	Design and Development of Compact Co-Planar Patch and Fractal Antennas for Wideband and Ultra-Wideband Communication Systems (Prof. D. Bhatnagar, Dr. V.K. Saxena, Dr. J.S. Saini)	91.66 Lacs	2012 -15
DST	ALICE-Operation and Utilisation (Prof. S. Raniwala and Dr. R. Raniwala)	208.0 lacs	2010-14
DIT	Design and development of broad & dual band antennas for modern wireless communication system, (Dr. D. Bhatnagar, Dr. V.K. Saxena, Dr. J.S. Saini)	65.76 Lacs	2010-2012
ILTP-DST	Collaborative research work on the development of the soft ware and experiments related to the design of the target and beam window for the ADS (Prof. V. Kumar & Dr. H.S. Palsania)	34.0 lacs	2009-13
UGC	Study of magnetic and electrical transport behaviour of some rare earths substituted perovskite oxides (Prof. Anjali Krishanamurthy and Prof. B K Srivastava)	10.588 lacs	2009-11
RFBR-DST	Measurements of high order (x > 2) cross sections of (n x n) reactions of Uranium, Thorium and other nuclear materials using spallation neutrons. (Prof. V.Kumar and Dr. Aruna Bharti)	5.0 Lacs	2009-11
CSIR	To study the effect of pressure on nano structured Fe doped Rare Earth perovskite oxides using Electrical Resistivity and Mössbauer Spectroscopy (Prof. Usha Chandra)	10.32 Lacs	2008-2011
BRNS	Thermo-Mechanical Properties of Polymeric blends. (Prof.Kanan Bala Sharma, Prof. N.S. Saxena)	24.65 Lacs	2008-11
UGC	Role of Hydrogen in electrical, optical and Magnetic properties of multilayer nanostructured dilute magnetic semiconductor. (Dr. M. Singh),	7.5 Lacs	2008-11
MNRE	CNT Doped polymeric membranes for	30 Lacs	2008-10

	hydrogen purification (Prof. Y. K. Vijay, Dr. M. Singh)		
UGC	Electronic Structure Studies of Technologically Important Materials by Compton Spectroscopy, (Prof. B.K. Sharma)	11.98 Lacs	2008 - 11
NSC	SHI induced non linear optical properties (Prof. Y. K. Vijay, Dr. M. Singh)	2.6 lacs	2007-10
PLANEX	To study the nature of impacts as well as impactors through hydrostatic pressure applied to synthesized minerals by Mossbauer spectroscopy and electrical resistivity. (Prof. Usha Chandra)	8.88 lacs	2007-10
UGC-DAE-CSR	Neutron diffraction Study of $FeSb_2$ and its derivatives. (Dr Y. K. Sharma)	1.05 Lacs	2007-10
UGC	Development of polymer based gas sensors. (Prof. Y. K. Vijay)	5.40 Lacs	2007-10
DST	Development of plasma chamber setup for re-entry studies. (Dr. D. Bhatnagar, Dr. V.K. Saxena, Dr. J.S. Saini)	23.5 lacs	2007 – 11
DST	High Pressure Mossbauer & electrical resistitvity studies on Fe-based compounds (Prof. Usha Chandra)	20.0 lacs	2006-10
UGC Start up Grant	Experimental study of a Building Material Solar Water Heaters and generation of solar radiation data through the instruments purchased from other grants (Dr. Sunita Mahavar)	6.0 Lacs	2015- 17
UGC Start up Grant	Design and Fabrication of Metal Oxide Semiconductor structure using properties modulated Graphene Oxide for super capacitor application (Dr. Aman Pal)	6.0 Lacs	2015- 17
UGC Start up Grant	Hyrogen storage in Mg-based Nano-composites (Dr. Chhagan Lal)	6.0 Lacs	2015-17
UGC Start up Grant	Structural, magnetic and transport properties of Ruthenate based perovskite nanostructured thin films (Dr. Sanjay Kumar)	6.0 Lacs	2015-17
DST	Nanostructured inorganic/organic Solar cell : Fabrication and Characterization (Dr. Dinesh Patidar, Research Scientist)	20.16 Lacs	2012-15
DST	Synthesis and characterization of metal elastomer based polymer nanocomposites for	22.44 Lacs	2012-15

	application in transdermal therapeutic systems and microelectronic packaging (Dr. Mahesh Baboo, Research Scientist)		
Emeritus Scientist / Fellow Projects			
UGC	Synthesis, characterization and optical properties of (CdSe, ZnSe@SIO_2) core shell nano composites (Prof. N.S. Saxena Emeritus fellow)	5.80 Lacs	2014-16
CSIR	Study of transition metal oxides/ sulphides (bulk and nano crystalline) under high-pressure using ^{57}Fe Mössbauer spectroscopy and electrical resistivity measurements. (*EmerItus* Scientist Project: Prof. Usha Chandra).	12.0 Lacs	2010 -14
PLANEX	To Study the nature of impacts on synthesized and natural Fe-based systems using high-pressure electrical resistivity and Mössbauer Spectroscopy (*EmerItus* Scientist Project: Prof. Usha Chandra).	11.0 Lacs	2011-14
UGC	Study of Electronic Structure in Technologically Important materials by Compton Scattering Technique, (*EmerItus Fellowship Project:* Prof. B.K. Sharma)	5.80 Lacs	2009 - 11
CSIR	Synthesis, characterization and properties of semiconducting nano- materials (CdS, ZnS) and their polymer composites, (*EmerItus Scientist Project:* Prof. N.S. Saxena)	16.0 lacs	2008-11

18. Inter-institutional collaborative projects and associated grants received
    a) National collaboration
       NIL
    b) International collaboration
       ALICE and STAR collaboration experiments.

19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.
    Following projects are funded to department of Physics during 2009-15:

UGC	Center with Special Assistance	282 lacs	2015	2020
DST	FIST Phase II, (Coordinator- Head)	198 lacs	2009	2014

DST	FIST Phase III, (Coordinator- Head)	3.33 Crores	2013	2018
UGC	Departmental Special Assistance – II, (Coordinator - Prof. Kananbala Sharma)	86.0 Lacs + One research Fellow	2009	2014

20. Research facility / centre with
    - State recognition:
      NIL
    - National recognition:
      - UGC sanctioned CAS for the duration 2015 – 2020 for strengthing research facilities in Physics
      - UGC sanctioned Second phase of DSA during 2009 – 2014 for strengthening research facilities in Physics
      - DST approved third phase of FIST programme during 2013 – 2018 for strengthening research facilities in Physics
      - Major grants for equipment received / sanctioned to University with grant of UPE satus by UGC and support under PURSE intiative of DST, Government of India for strengthening research facilities and infrastructure.
    - international recognition:
      NIL

21. Special research laboratories sponsored by / created by industry or corporate bodies: Department does not have any special research laboratories sponsored by/created by industry or corporate bodies.

22. Publications:
    - Number of papers published in peer reviewed journals (national/ international) 363
    - Monographs:
      NIL
    - Chapters in Books:
    - 03
      - *Ramvir Singh:* Heat Transfer in Multi-phase Materials, Chapter 5: Predictions of Effective Thermal Conductivity of Complex Materials. Springer Germany, July/August 2010, Editors: Andreas Ochsner *et. al*.
      - *V.K. Saxena and Usha Chandra*, Microwave Synthesis: a Physical Concept, (2011), Microwave Heating, Usha Chandra (Ed.), ISBN: 978-953-307-573-0, InTech Publishers.
      - *Sunita Mahavar*: Review of Materials Used in Various Solar Thermal

Appliances, Chapter-6. Solar Engineering-I (Applications) Vol. 5, ISBN OF Volume 1-62699-066-2, Editors: Dr. Sri Sivakumar, Dr. Umesh Chandra Sharma & Dr. Ram Prasad, Studium Press LLC, USA

* Edited Books:

  01

  - *Prof. Usha Chandra*: Microwave Synthesis: A Physical Concept, (2011), Microwave Heating, ISBN: 978-953-307-573-0, ; Intech publisher

* Books with ISBN with details of publishers:

  06

  - *R.K. Singhal*, Latest Trends in Condensed Matter, Trans Tech Publications, Switzerland, 2011, ISBN-13:978-3-03785-177-7
  - *S. S. Sharma and Y. K. Vijay*, Synthesis and Characterization of Organic Photovoltaic Cells, Published by VDM Verlag Dr. Müller Aktiengesellschaft & Co. KG, Germany, 2010, ISBN-10:363925306X, ISBN-13:978-3639253061.
  - *Vipin Kumar Jain and Y. K. Vijay* "Synthesis and characterization of mixed oxides thin film" Published by VDM Verlag Dr. Müller Aktiengesellschaft & Co. KG, Germany, 2010, ISBN-10:3639274814, ISBN-13:978-3639274813.
  - *Sarita Kumari*, "Effect of Color Models on Human Visual System for imafge compression: Wavelet analysis", LAP Lambert Academic Publication, 2012 ISBN-10:3844327436, ISBN-13:978-3844327434.
  - *Sarita Kumari*, Quality Estimation in Image Processing Using Wavelet Families, LAP Lambert Academic Publication, 2012. ISBN-10: 3659185426, ISBN-13: 978-3659185427

* Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

  Details are not available with department

* Citation Index – range / average

  Maximum citations 1644 (As per scopus preview)

* SNIP

  NIL

* SJR

  NIL

* Impact Factor – range / average:

  Range 0.072 – 7.33 Average 2.38

* h-index

  60 as per scopus preview

23. Details of patents and income generated:

No patent has been registered by any faculty member of this department.

24. Areas of consultancy and income generated:
    NIL

25. Faculty selected nationally / internationally to visit other laboratories / institutions/ industries in India and abroad.
    - Prof. S. Raniwala: Visiting scientist of the Indian National Science Academy to the Department of Atomic Energy of the Govt. of India, an associate of CERN, and a senior associate of the International Centre for Theoretical Physics in Italy.
    - Dr. Mangej Singh: Selected through duly constituted ICTP committee Regular Associateship is awarded for the period January 2008 – December 2015. Visited ICTP in 2009, 2011 and visiting again in 2014.
    - Dr. Ramvir Singh: Duly selected through a committee from ICTP, Trieste, Italy visited ICTP labs during 2009, 2011 and 2013 and visited CISM Udine, Italy in 2009, 2011 and 2012.
    - Dr. K.V.R. Rao: National Cancer Institute – Nanotechnology initiative invited as visiting scientist at Roswellpark Cancer Institute, Buffalo, New York in 2009.

26. Faculty serving in

    a) National committees
       Prof. Sudhir Raniwala
       - Member of DST-DAE Task force on GRID Computing
       - Member of DST-DAE Task force to monitor the Indian participation in experiments at CERN (ALICE and CMS).

    b) International committees
       NIL

    c) Editorial Boards:
       (i) Dr. Mangej Singh is a member of editorial boards of (a) International Journal of Physics and Research (IJPR) and (b) Energy Science and Technology.
       (ii) Dr. R.K. Singhal is a member of editorial board of International Journal of Chemical Engineering and Material Science

    d) any other
       NIL

27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).
    Following programmes were organized by Department of Physics during 2009 – 2015:
    - Departmentof Physics and Chemistry jointly organized ASC supported refresher course on Physical Sciences during 07th January 2013 to 26th January 2013, at ASC, University of Rajasthan, Jaipur
    - Departmentof Physics and Chemistry jointly organized ASC supported refresher course on Physical Science on Advances in Material at the interface of Physics

and Chemistry during 15th Dec. 2014 to 3rd Jan 2015, at ASC, University of Rajasthan, Jaipur.

28. Student projects
    - percentage of students who have done in-house projects including interdepartmental projects
      1%
    - percentage of students doing projects in collaboration with other universities/ industry/ institute
      1%

29. Awards / recognitions received at the national and international level by
    - Faculty:
      NIL

    However following faculty members achieved following international honours
    - Prof. S. Raniwala, Senior Research Associateship by ICTP, Italy, for the period 2007 to 2012.
    - Dr. R.K. Singhal, TWAS-UNESCO Associate for period 2005-2008 and Renewed for 2008-2011
    - Dr. M. Singh, Regular Associateship awarded by Abdul Salam International Center for Theoretical Physics (ICTP), Italy, From Jan 2008 to Dec 2013

    - Doctoral / post doctoral fellows:
      NIL
    - Students:
      Alumni of this department Dr. Rajendra Singh Dhaka received, IIT, Delhi received INSA medal for Young Scientist -2015.

30. Seminars/ Conferences/ Workshops organized and the source of funding (national/ international) with details of outstanding participants, if any.
    Department has organized following Seminars/ Conferences/Workshops during 2009-15:

Date	Name of the event	Sponsor	Faculty
3-7 Nov, 2009.	Third DAE BRNS Theme meeting on EXFOR Compilation of Nuclear Data	BRNS	Prof. V.Kumar (Convener)
March 26 – 27, 2010	National Seminar on 'Current trends in Physics'	UGC, DSA Programme	Coordinator DSA Programme
December 22-24, 2010	12th Conference of the International Academy of Physical Sciences (CONIAPS XII)	International Academy of Physical Sciences	Prof. B.K. Srivastava (Convener)
March 28 – 29, 2011	National Seminar on 'Experimental techniques in Condensed Matter Physics'	UGC, DSA Programme	Coordinator DSA Programme

March 17 -18, 2012	National Conference on 'Current trends in Materials Research'	UGC, DSA Programme	Prof. Anjali Krishnamurthy (Convener)
July 30 to August 1, 2012	National Conference on Recent Trends in Microwave Theory and Applications	DST, INSA, ISRO	Prof. Deepak Bhatnagar (Convener)
September 2-4, 2013	Workshop on Introductory Astronomy	Sponsored by IUCAA	Convener Dr Aruna Bharti
March 12-13, 2014	National Conference Perspectives of Physics in Multi Disciplinary Research	CSIR, INSA, UGC, DST Rajasthan	Prof. Kananbala Sharma Chairperson
Nov. 24 -30, 2014	Workshop on Monte Carlo Simulation and Applications	Indo-Czech Cooperation and Univ. of Rajasthan	Dr. H.S. Palsania (Convener) & Dr.S.K.Gupta
January 16-18, 2015.	Jointly organized 17th International Conference of International Academy of Physical Sciences (CONIAPS XVII) on "Emerging Trends in Physical Sciences & Technology" with other science departments	DRDO, UGC	Prof. Deepak Bhatnagar Organizing Secretary
9-11 Feb 2015	26th AGM of MRSI-2015	UGC, DRDO	Dr. Usha Singh, Convener
31st March 2015	One day workshop on Planar antennas for Satellite and Wireless Communication Systems	DEIT. New Delhi	Prof. Deepak Bhatnagar

31. Code of ethics for research followed by the departments:

Codes of ethics for research are followed as per UGC and University of Rajasthan norms.

32. Student profile programme-wise:

Following is the student profile in PG and Ph.D. programmes of this department:

Name of the programme P.G.	**Applications received**	**Selected**		**Pass percentage**	
		Male	**Female**	**Male**	**Female**
P.G. Programme 2014-15	Through URATPG	43	34	Result awaited	Result awaited
P.G. Programme 2013-14	Through URATPG	36	41	95%	98%
P.G. Programme 2012-13	Through URATPG	35	36	96%	97%
P.G. Programme 2011-12	Through URATPG	50	25	96%	98%

P.G. Programme 2010-11	237	58	29	88%	92%
P.G. Programme 2009-10	248	53	36	90%	96%
Ph.D. Programme 2014-15	Through MPAT	13	02	---	---
Ph.D. Programme 2013-14	Through MPAT	1	3	---	---
Ph.D. Programme 2012-13	Through MPAT	NIL	01	---	---
Ph.D. Programme 2011-12	Through MPAT	NIL	NIL	---	---
Ph.D. Programme 2010-11	Through MPAT	NIL	NIL	---	---
Ph.D. Programme 2009-10	17	12	05	---	---

33. Diversity of students

Following is the average diversity of students profile in PG and Ph.D. programmes of this department during 2009-15:

Name of the Programme	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
UG	92%	----	8%	---
Master in Physics	90%	5%	5%	---
Ph.D.	81%	14%	5%	---

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

As per information gathered from the students of this department; following students have cleared different competitive exams from this centre:

NET JRF	46	GATE	11
Lecturership	14	Scientist B	03

35. Student progression

Following is the average student's progression:

Student progression	**Percentage against enrolled**
UG to PG	56%

PG to M.Phil.	---
PG to Ph.D.	65%
Ph.D. to Post-Doctoral	5%
Employed • **Campus selection** • **Other than campus recruitment**	 NIL Nearly 100%
Entrepreneurs	1%

36. Diversity of staff

Following is the diversity of staff of this department:

Percentage of faculty who are graduates	
of the same university	67%
from other universities within the State	19%
from universities from other States	11%
from universities outside the country	3%

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period:

NIL

38. Present details of departmental infrastructural facilities with regard to

a) Library:

Library of this department is having nearly 2775 books related with different areas of physics. Library also has some back volumes of journals. However with the availability of online journals through infonet, library is not subscribing printed journals. Some of the faculty members are subscribing journals in their respective laboratories as per their requirements. Internet facility is made available in the library and students are availing this facility as per requirements.

b) Internet facilities for staff and students:

The campus is Wi-Fi therefore internet facility is available to all faculty members through Infonet center. In each research lab and staff room; separate internet facility is provided for research scholars and faculty members while same is provided in library and computer lab for post graduate students.

c) Total number of class rooms:

Department has 02 class rooms with modern infrastructure.

d) Class rooms with ICT facility:

One of the class rooms is made smart class room with the availability of interactive panel while in other one is LCD projector is provided. LCD projectors are also provided in the staff room and in the room of head of department so that classes may be arranged in emergeny.

e) Students' laboratories:

At present department has four fully furnished PG labs namely *General Physics lab* comprising experiments related with Electronics & Spectroscopy, *Computer lab.*, *Advance General Lab* comprising experiments related with Nuclear Physics & Solid State Physics and *Elective Lab* comprising experiments related with Microwave Electronics and Solar Energy.

f) Research laboratories:

At present department is having research facilities in following areas and all labs are furnished with required research facilities:

- ❖ Magnetism and Electronic Structure Lab.
- ❖ Semiconductors, Polymers and Thin Films Studies Lab.
- ❖ Thermal Physics Lab.
- ❖ Electronic Structure of Solids Lab
- ❖ Sr-Exafs Laboratory
- ❖ Thin Film & Energy Science Lab
- ❖ High Pressure Physics Laboratory
- ❖ Theoretical High Energy Physics Group
- ❖ Experimental High Energy Physics Lab.
- ❖ Microwave Electronics Lab.
- ❖ Plasma Physics Group
- ❖ High Energy Nuclear Physics Lab.
- ❖ Solar Energy Lab

Following Main Equipments and sofrtwares were procured in these labs during 2009-15:

- For materials' preparation: muffle furnaces, Super Kanthal furnace, arc furnace, sputtering unit, chemical co- precipitation and sol-gel methods
- Liquid Nitrogen Plant (closed helium cycle refrigeration based)
- High resolution X-ray diffractometer for powder, thin films and small angle scattering measurements
- Scanning Probe Microscope (STM, AFM, LFM...)
- Cryogen free high field magnet (8 Tesla) with variable temperature insert (2.5K – 300K)
- Differential scanning calorimeter
- Low energy accelerator for electron and positron beams
- X-ray fluorescence set up
- 5 Ci Am(Be) Neutron Source

- n_TOF (Neutron Time of Flight setup)
- Positron Annihilation Spectroscopy Setup (PAS)
- CZT /Plastic Scintilattor/Liquid Scintillator Neutron Detectors
- HPGe Detector (Horizontal/Vertical)
- Keithley Resistivity Measurement System
- Neutron Activation Analysis Setup Using HP(Ge) Detector
- Gamma Spectroscopy Setup
- Vibrating sample magnetometer (20K - 1000K and magnetic fields upto 9.5 kOe)
- Mössbauer spectrometer with sample temperature range 80K – 1000K
- Mössbauer facility for measurements under high pressures upto 10 GPa
- ac susceptibility measurement (80K –300K)
- Positron life time measurement
- Compton spectroscopy measurement using Germanium detector
- Dynamic mechanical analyser
- Resistivity measurements (20K – 300K)
- Transient Plane source (TPS) technique
- UV-NIR spectrometer
- Ellipsometer for film thickness measurements
- Vector network analyzer (40 GHz)
- Signal generators upto 12 GHz
- Spectrum Analyzer (20 GHz)
- Power meter (20GHz)
- IE3D and CST Microwave Studio simulation Softwares
- Pyranometer
- Sunshine recorder

39. List of doctoral, post-doctoral students and Research Associates

❖ from the host institution/university

Following is the list of Ph.D. students currently registerd for their Ph.D. work:

- Priya Jadoun
- Shakunthla Gurjar
- Mukesh Kumar Dagar
- Seena Gupta
- Sandeep Bhati
- Satyaveer Dhaka
- Semant Kumar
- Snjay Kumar Saini
- Ajeet Singh Choudhary
- Devi Lal
- Mahesh Verma
- Anusaiya Kaswaa
- Kamalesh Verma
- Neelam Choudhary
- Jyoti
- Sarita Kumari
- Jagdish Prasad
- Pawan Kumar Jain
- Ram Chandra yogi
- Anju Yadav

- Ashok K. Prajapat
- Vikas Jat
- Gyan Prakash Sharma
- Dr. Mahesh Baboo
- Dr. K.C. Bhamu
- Rajveer singh
- Umesh Chejara
- Vinita Mirdha
- Dinesh K. Yadav
- Vardana Kumar
- Hemant Kumar
- Sanjay Kumar Saini

❖ from other institutions/universities

No student from other institutions is presently registered in this department for Ph.D. work..

40. Number of post graduate students getting financial assistance from the university.

No post graduate student of this department is getting financial assistance from the university.

41.Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

Before the revision of existing syllabi; discussions among faculty members particularly with newly selected faculty members (several of them have passed Masters Course in Physics in past five years from this department) was performed. Faculty members discuss the difficulties in syllabus and related experiments among themselves and with students in the class room. Based upon the feedback, the syllabi are under revision at undergraduate level. After completion of this task, revision of syllabi of P.G. course and Pre-Ph.D. course will be undertaken. The BoS and Academic Council have approved the revision of courses for the first two years of UG courses and revision of syllabi for final year will be done in next session.

42. Does the department obtain feedback from?

a. Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Yes. The feedback from faculty members of department as well as faculty members of affiliated colleges is obtained during faculty meetings by BOS. This feedback is being used for revision of syllabi for UG and PG courses.

b. Students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

Yes, during academic committee meeting as well as in staff council and staff committee meetings, it is a common practice of department that the feedback received from students about curriculum is discussed. Department also organizes regular seminars, special lectures, students counseling to discuss the difficulties students facing during their course work and tries to resolve them. However taking feedback of students on staff is not a regular practice. Few years back, such feedback was taken from the students.

c. Alumni and employers on the programmes offered and how does the department utilize the feedback?

Department has an alumni association and it provides informal feed back of the ongoing programmes of this department, curriculum etc. More than 40% students after completing their Master's programmeb joins premier institutions of this country and they also provide their feedback on different issues related with growth of department. The guides / mentors of these students provide occasional report about these students and the analysis reveals that our students are doing well in these premier organizations. One of our alumni Dr. R.S. Dhaka received INSA Medal for Young Scientist 2015. Prof. Atul H. Chokshi, IISc., Bangalore and Fellow of Royal Society has provided the feedback about our alumni Mr. Harsh Soni and he is highly setistied with his performance. It is a general opinion of students passed out from this department that the course content and teaching methods is at par with other highly reputed institutes and even in few papers it is higher than that students of other reputed institutes are studying. The constructive criticism is always welcomed by the faculty members of this department and department respects the sentiments of members of alumni association. For strengthen this association, duly elected office bearers took over the charge this year and will be responsible for interaction with other alumni association members.

43. List the distinguished alumni of the department

Following are few distinguished alumni of the department

- Prof. Jainendra Jain, UPENN, USA
- Prof. Abdul Sattar, Griffths University, Australia
- Prof. N.L. Sharma, Eastern Michigan State University, USA
- Dr. Ashok Lohar, CISCO, Australia
- Mr. Pawan Jain, IPS, IG Police, M.P. Govt.
- Mr. Gopal Baheti, Add. Director, DRDO
- Dr. Raj. Kumar Gupta, Principal, Malaviya National Institute of Technology. Jaipur
- Late Sh. M.L. Mehta, Retd. Chief Secretary, Govt. of Rajasthan
- Dr. Sudhir Verma, Retd. Principal Secretary, Govt. of Rajasthan

44. Give details of student enrichment programmes (special lectures / workshops /seminar) involving external experts.

Following student enrichment programmes are undertaken by Department during 2009-15:

Date	Resource Person	Topic
March 31, 2015	Mr. Arvind Kumar, Senior DGM (D&E Antennas), BEL, Ghaziabad	Antenna Strategic Business Unit, Ghaziabad
March 31, 2015	Mr. Alok Singhal, SAC, Ahmedabad	Antenna is satellite and SATCOM applications

October 13, 2014	Prof. B.V. R. Tata	---
October 10, 2014	Dr. Cathal Cassidy, Okinawa Inst. of Sci. & Technol. Japan	Recent advances in nanoparticle synthesis and electron microscopy
September 2014	Prof. V.K. Tripathi, IIT, Delhi	---
July 21, 2014	Prof. Ashutoah Sharma, Secretary, DST, New Delhi	Delights of Scientific Inquiry: personal lessons from Translational Nonosciences
March 12, 2014	Prof. R. Chidambram, principal scientific Advisor, GOI, New Delhi	Goldan Jubliee Oration on Crystallography, Material Science and Biology
March 26, 2010	Dr. S.K. Sikka, BARC, Mumbai	Hydrogen bond under high pressure
March 26, 2010	Prof. Hari Prakash, Allahabad University, Allahabad	Quantum optics
March 26, 2010	Prof. Ajay Gupta, UGC-DAE CSR, Indore	Kerr effect studies on thin films
March 27, 2010	Prof. Arun Nigam, TIFR, Mumbai	Exotic magnetic materials
March 27, 2010	Dr. Alok Banerjee, UGC-DAE CSR, Indore	Magnetic circular dichroism experiments
March 27, 2010	Dr. J.C. Pivin, French National Research Centre, France	Nanocomposites and swift heavy ion irradiation
March 6 2009	Dr G. Parthasarathy, Scientist, N.G.R.I., Hyderabad	Mineral physics of Carbon
March 23 2009	Dr Ranjan Gupta , Inter University centre for Astronomy and Astrophysics, Pune	Light scattering models and application to astronomy"
March 19, 2009	Prof. Raj Mal Jain, Astrophysics and Astronomy division, PRL, Ahmedabad	Dynamic Sun and SOXS mission & beyond"
January 3, 2009	Dr. S. Ganesan, Reactor Physics Design Division, BARC, Mumbai and Homi Bhabha Professor, Homi Bhabha National Institute, Mumbai	Nuclear data – importance, challenges and prospects

45. List the teaching methods adopted by the faculty for different programmes.

(i) UG programme: Normally black board teaching is preferred by faculty members of this department. However facilities for power point presentation are also made available and eminent speakers visiting constituent colleges delivers their presentation through it. Process of smart class rooms is currently underway and funds have been allocated. For weaker students, remedial classes are being arranged. Faculty members give home assignment to students and evaluate them regularly. During lab hours, interaction of teachers and students

take place and normally all faculty members discuss the theory of assigned practical to students before they perform it. During assignment of practical notebook, faculty members again assess students learning about the experiments by asking practical related questions.
(ii) PG programme: Black board teaching is preferred but several teachers are teaching their regular classes through power point presentations. Student's seminars and invited lectures by visiting faculties are regular features of this department. Interaction programmes between students and visiting guests started recently where students directly interact with visiting dignitaries to find the scope in the area of expertise of visiting dignitaries. Students are motivated to undergo industrial training and project work during their course work. Internal assessment, class room exercises are the regular feature of the course work. Students are also advised to use internet facilities to update the study material suggested by faculty and are motivated to explore internet for conceptual understanding of experiments.

46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?
Department ensures that objectives of the programme are constantly met through staff committee and staff council meetings, BOS meetings, course curriculum meetings. For this purpose time to time discussion / interaction of faculty and students with experts is organized. The head of the department ensures that regular classes are going on and students and faculty members are maintaining a peaceful and friendly environment in the class room. The understanding of subject of students is tested through internal assessment and seminars and end semester examinations. Student's advisor interacts regularly with students to resolve their difficulties.

47. Highlight the participation of students and faculty in extension activities.
The under graduate students are getting their Physics education at two constituent colleges of university namely Maharajas and Maharanis College. In these colleges, several NSS units are working and students are member of these units. These units are organizing tree plantation, blood donation camp, public awareness programmes like voter awareness programme, etc. NSS units are also adopting villages and running adult education programmes there. The undergraduate students studying Physics are also getting NCC training at both constituent colleges. Several NCC units are working at these two constituent colleges and students selecting Physics carrier are also getting proper training for armed force, air force and naval force. The postgraduate students are organizing tree plantation, activities related with National Science Day, Teachers day, Environment day etc.

48. Give details of "beyond syllabus scholarly activities" of the department.
Department has initiated interactive sessions with experts for better understanding about future scope of students in various fields / organizations. Department also organizes invited talks by eminent speakers and encourages students to learn subject in depth through seminars and conferences. Department also motivates students for their participation in co-curricular

activities like debate and essay writing competitions. Students organize sports week and cultural events and both students and faculty members actively participate in these events. Occasionally industrial visits and educational tours are also organized for the benefit of students.

49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.
NO

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.
The department is significantly contributing in generating new knowledge, basic or applied areas of Physics. The regular revision of syllabi of UG and PG courses as per requirements is an important step in this direction. Inviting experts from different organizations and organizing their expert lectures for the benefit of faculty members and students. The students completing this course are competing well with other students of prestigious institutions.

In the area of research the contribution of department is significantly high both in basic and applied researches.

- Two of its faculty members from Experimental High Energy Physics laboratory are an integral part of International QGP programme, ALICE Experiment and experiments going on at Brookhaven lab., USA.
- The group members from Microwave lab are involved in designing compact planar antennas applicable for modern wireless communication systems. Investigation of re-entry conditions and communication blackout problems are important areas in space communication studies and these studies are also underway at this center. Department has also earned name in the area of Microwave Electronics due to availability of latest highly sophisticated instruments and softwares.
- The synthesis and characterization of nano-particles, thin films & membranes and their possible application in different fields is currently underway at various laboratories of this department.
- Effect of high magnetic field on nono-ferrites is also under investigation at this center. The study of materials (synthetic bulk and nanoparticles as well as natural minerals and meteorites) under high pressure using Mössbauer spectroscopy and diamond anvil cell; the only facility available in India is well recognized. Various phase transitions occurring in the systems observed through Mossbauer parameters are supported by in-house electrical resistivity measurements and in-situ X-ray diffraction studies using Indus 2 synchrotron beam line facility.
- The research activities of basic nature in the areas of Theoretical High Energy Physics and Plasma physics are currently underway at this center.

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Following are major Strengths, Weaknesses, Opportunities and Challenges of the department:

Strengths:

1. Nationally acclaimed faculty with expertise in different branches of Physics and interdisciplinary research.
2. Centrally located with very low cost education both at UG and PG level. Attracting talented students from the sate of Rajasthan.
3. Formal international collaboration of Experimental High Energy Physics Group, High Energy Nuclesr Physics Group and Condensed matter Physics Group.
4. Advanced masters curriculum with several electiveoptions with more emphesis on Modern Physics, Quantum Mechanics and Fielf Theory.
5. State of art research and infrastructure for Material Systhesis and Characterization & IT infrastructure including grid computing.
6. National recognition as it received the status of Center for Advanced Studies (UGC), FIST (Level-II): DST, PURSE and UPE.

Weeknesses:

1. Large numbers of posts of faculty members in department are vacant.
2. Shortage of funds for general activities and students programmes and state of art class room with vedio conference facility.
3. Lack of technical staff and grant for maintenance of lab infrastructure created out of support from other funding agency.
4. Problem in orienting students with different background and with different intellengance and understanding levels of UG curriculum.
5. Lack of space for class rooms, seminar hall, recreation room, cafeteria etc.

Opportunities:

1. University of Rajasthan is emerging as a hub for interdisciplinary research in the field of Converging technologies (Nanotechnology, Biotechnology and Bioinformatics, Information and Communication Technology & Cognitive and Neuro Science). Department can play important role in strengthening of areas of research and training students in these field.
2. Opportinuity of further strengthing of National & International Collobrations and utilization of international resources in effective way so as to achieve high dreams which cannot be realized at department level.
3. Opportinuity for vacant teaching posts provides an opportunity to recruit highly talented faculty with international post doctoral experience in thrust area as well as in interdisciplinary areas like quantum computing, artificial intelegence, non-biological intelegence, cosmology and brain science.

4. Opportunity to establish academic partnership with new new institutions in close vicinity like MNIT, LNMIIT, Central University and private universities.
5. Opportunity to trap social visit of internationally reknowned Physicsts to Jaipur city for interaction and discussion for establishing collobration and academic growth.

Challenges:

1. International and national competition puts tremendous pressure on faculty to make balance in research and teaching and and face the the competition research in emerging areas.
2. Optimal utilization of resourses already created in research.
3. Resource mobilization for ambitious programmes for teaching activities.
4. Retainning and attracting talented faculty as more opportunities are available in research institutes and there is general preference for research carrier than research and teaching together.
5. Providing last semester exposure of premier institutes to talented students requires monitory support from government or from any other source.
6. One major challenge for department is to mentor students for startups.
7. Introduction of skill development programmes for UG students.
8. Industry department link establishment and training of students for research and development activities.

52. Future plans of the department.

Following are the future plans for the department:

- Department is planning to start Masters programme in Material Science and Electronics.
- Department is also planning to introduce five years integrated M.Sc. B.Sc. programme in coming time.
- Department has decided to revise its course curriculum every year looking interst of students.
- Department is planning to actively mentor its students for start-ups.
- Department is planning to organize more International and National conferences / workshops every year.
- Department is planning to establish more National and International Collobration and partnership.
- Department is planning to inter departmental colobration.
- Deaprtment is planning to motivate its faculty members to submit more research proposals for funding to different funding agencies.
- Department is planning to organize more popular talks and interactive programmes for the students.
- Department is planning to provide better infrastructure to its students and better sitting space for faculty members.

- Department os trying to establish industry department tie-ups for the training of its students.
- Deaprtment is planning to start some skill development programmes.
- Department is planning to invite scholors from the humanities and Philosophy.

Annexure -1

(A) Condensed Matter Physics

1. Modi, Kunal; Raval, P; Shah, S; Kathad, C; Dulera, S; Popat, M; Zankat, K; Saija, K; Pathak, T;Vasoya, N; Lakhani, V; Chandra, Usha; Jha, Prafulla "X-ray Diffractometry, Raman and Mossbauer Spectroscopy Studies on Quenched Copper-Ferri-Aluminates" Inorganic Chemistry. 2015, Feb16:54(4)), 1543-55.

2. Mahavar S., Rajawat P, Punia R.C., Verma M., Dashora P., Evaluating the optimum load range for box-type solar cookers., Renewable Energy, 74, 187-194, 2015.

3. R.S. Bhoopal, A.S. Luyt, P.K. Sharma and Ramvir Singh "Prediction of the mechanical properties of copper powder-filled low-density polyethylene composites. a comparison between the ann and theoretical models" Composites: Mechanics, Computations, Applications: An International Journal, Vol. 6, No. 1, pp 53-73, 2015.

4. R Verma, S Kumar, Chhagan Lal, IP Jain, "Swift heavy ion beam mixing at V/Si interface", Current Applied Physics 15 (2015) 129-134.

5. Ravi Kumar Agrawal, Narendra Kumar Agrawal, Ramvir Singh, "Cicer arietinum Leaf Extract Mediated Synthesis of Silver Nanoparticles and Screening of Their Antimicrobial Activity" Advanced Science, Engineering and Medicine, Vol. 6, No. 5, pp 203 – 207, 2014.

6. Ravi Kumar Agrawal, Narendra Kumar Agrawal, Ramvir Singh, "Low Temperature Annealing of Cadmium Sulphide Thin Films for Improving Surface-Interface Properties" Materials Focus, Volume 3, Number 4, pp. 267-271, August 2014.

7. Ramvir Singh and M. Dabas "Neural network-based prediction of effective heat storage coefficient of building materials" Defect and Diffusion Forum, Vol 354, pp. 73-78, Jun. 2014.

8. K. Verma, M. Dabas, A.Upadhyay and Ramvir Singh "Effective thermal conductivity of lithium multipurpose grease filled with metal particles" Journal of Reinforced Plastics and Composites, Vol. 33, No. 19, pp 1794 - 1801, 2014

9. K.B.Modi, S.J.Shah, C.R.Kathad, S.V.Dulera, B.B.Jethvani, M.V.Popat, V.K.Lakhani and Usha Chandra, Study on Mossbauer signature, Hyperfine Interaction parameters and removal of Delafossite phase of Al^{3+}- modified Copper Ferrite. J.Supercond.Nov. Magn. DOI.10.1007/s10948-014-2896-2 Published online 3 Dec 2014.

10. Usha Chandra, I Zubutikudis, G.Parthasarathy and B.Sreedhar "High Pressure Electrical resistivity and Mössbauer spectroscopic studies on narrow band $Co_{0.8}Fe_{0.2}S_2$ nanoparticles up to 8 GPa" Phase transition 87(5);(2014)477-90.

11. Narendra Kumar Agrawal, Mangej Singh Y. K. Vijay and K. C. Swami "Synthesis and Characterization of Colloidal TiO2 Nanoparticles: Through Titanium Chloride Rich Solutions" Advanced Science, Engineering and Medicine, Vol. 6, 1–8, 2014.

12. Rajawat P., Mahavar S., Dashora P. Fabrication and Experimental Study of a Solar Cooker with Electrical Back-Up, J. Energy Power Sources, 1(4), 225-231, 2014.

13. Sengar N., Dashora P., Mahavar S., Punia R.C., Mathematical Formalism to Study Energy Distribution Pattern in Solar Hot Boxes for Global Solar Radiation, International Journal of Innovative Research in Science, Engineering and Technology, 3(12), 18148-156, 2014.

14. Ruchita Gautam, Pravesh Singh, A. S. Verma, Sarita Kumari, Device modeling of thin film CIGS/ZnSe solar cell, Advanced Science Letters, 20(2014) 1554-1557 DOI: 10.1166 / asl. 2014.5567.

15. Sheetal Sharma, A. S. Verma, R. Bhandari , Sarita Kumari and V. K. Jindal, Ab initio studies of structural, electronic, optical, elastic and thermal properties of Ag-chalcopyrites (AgAlX2: X=S, Se), Materials Science in Semiconductor Processing, 26(2014) 187-198.

16. Sheetal Sharma, A. S. Verma, R. Bhandari , Sarita Kumari and V. K. Jindal, First principles study of the structural, electronic, optical, elastic and thermodynamic properties of CdXAs2 (X = Si, Ge and Sn) , Materials Science in Semiconductor Processing, 27 (2014) 79-96.

17. Sarita Kumari, A. S. Verma, Buffer layer selection for $CuIn_{1-x}Ga_xSe_2$ based thin film solar cells, Mater. Res. Express 1 (2014) 016202.

18. Pravesh Singh, Ruchi Gautam, Sheetal Sharma, Sarita Kumari, A.S. Verma, Computational study of copper-gallium disulphide-based solar cell devices by using CdS and ZnSe buffer layers, IET Sci. Meas. Technol., 2014, pp. 1–10, doi: 10.1049/iet-smt.2013.0168.

19. Amanpal Singh, Sonia Saini, Dinesh Kumar, P. K. Khanna , Mukesh Kumar , and B. Prasad "Influence of doping precursor on band gap and morphologies of sol-gel deposited ZnMgO thin films" Phys. Status Solidi C 11, No. 9, 1488–1492 (2014).

20. Anuj Kumar, Ashok Kumar Suhag, Amanpal Singh, Satinder K Sharma, Mukesh Kumar and Dinesh Kumar "Deposition and characterization of amorphous electroless Ni-Co-P alloy thin film for ULSI application", Material Research Express, Vol. 1, No. 3, (http://iopscience.iop.org/2053-1591/1/3/035007)

21. Amanpal Singh, B. C. Joshi, Dinesh Kumar, P. K. Khanna, and Mukesh Kumar, "Effect of Band Gap Offset on ZnO (Cd, Mg)/ZnO:P Multi Quantum Well Light Emitting Diodes: A Simulation Study" Energy and Environment Focus Vol. 3, pp. 185–188, 2014.

22. R. Verma, Chhagan Lal, I. P. Jain, "Formation of metal silicide by swift heavy ion induced mixing at Mn/Si interface", J Mater res technol. 3(3) (2014) 257-263.

23. C. Cassidy, J. Kioseoglou, Vidyadhar Singh, P. Grammatikopoulos, Chhagan Lal, and M. Sowwan, "Endotaxially stabilized B2-FeSi nanodots in Si(100) via ion beam co-sputtering", Applied Physics Letters 104, 161903 (2014); doi: 10.1063/1.4872315.

24. Chhagan Lal, G Di Santo, M Caputo, M Panighel, BA Taleatu et al., "XPS studies of the adsorption characteristics of 2H-TPP at Fe/Si interface", Optoelectronics and Advanced Materials Rapid Communications, Vol. 8 (5-6), 465-469, 2014.

25. Mangej Singh "Role of Hydrogen in Variation of Electrical, Optical and Magnetic Properties of ZnSe-Fe Bilayer Thin Films Structure" Energy Science and Technology,Vol. 6, No. 2, 2013, pp. 1-8.

26. Usha Chandra, K.Asokan and V.Ganesan "Local electronic structure of Heavy-ion irradiated nano-crystalline stoichiometric $La_{0.8}Sr_{0.2}Mn_{0.8}Fe_{0.2}O_3$ particles using high-resolution Mössbauer Spectroscopy" Advanced Materials Letters 4(11);(2013)862-68.

27. Usha Chandra, G. Parthasarathy, N.V.Chandra Shekar and P.Ch.Sahu " X-ray diffraction, Mössbauer spectroscopic and Electrical resistivity studies on Lohawat Meteorite under High-Pressure up to 9 GPa" Chemie der Erde 73(2), 2013, 197-203.

28. Mangej Singh "Effect of hydrogenation on the optical properties of Cobalt and Tantalum thin films" Energy science and technology Vol. 5 No.2 (2013) pp 8-15.

29. Deepti Chauhan, Nilima Singhvi and Ramvir Singh "Dependence of effective thermal Conductivity of composite materials on the size of filler Particles". J. of Reinforced Plastics & Composites, DOI: 10.1177/0731684413490540.

30. Ramvir Singh, Sajjan Kumar and R. S. Beniwal "Bounding of Effective Thermal Conductivity of Two-Phase Materials" Defect and Diffusion Forum Vol. 336 (2013) pp 185-193. Trans Tech Publications, Switzerland.

31. R. S. Bhoopal, P. K. Sharma Ramvir Singh and Sajjan Kumar "Correction in volume fraction of effective thermal conductivity using local fractal Techniques. Int. J. of Innovative Tech. and Exploring Engg (IJITEE) ISSN: 2278- 3075, Vol. 2, Issue-3, February 2013.

32. R. S. Bhoopal, P. K. Sharma, Sajjan Kumar, Ramvir Singh "Neural Network-based Prediction of effective thermal conductivity of loose multi- Phase systems" Ind J. Pure & Appl. Phys. 51 (2013) 118-124.

33. R. S. Bhoopal, P. K. Sharma and Ramvir Singh and R. S. Beniwal "Applicability of Artificial Neural Networks to Predict Effective Thermal Conductivity of Highly Porous Metal Foams. J. Porous Media, Begell House, 16 (7); (2013) 585-596.

34. Usha Chandra, I Zubutikudis, G.Parthasarathy and B.Sreedhar "High Pressure Electrical resistivity and Mössbauer spectroscopic studies on narrow band $Co_{0.8}Fe_{0.2}S_2$ nanoparticles up to 8 GPa" Phase transition (Submitted) July 2013

35. Usha Chandra, K.Asokan and V.Ganesan "Local electronic structure of Heavy-ion irradiated nano-crystalline stoichiometric $La_{0.8}Sr_{0.2}Mn_{0.8}Fe_{0.2}O_3$ particles using high-resolution Mössbauer Spectroscopy" Advanced Materials Letters (In Press 2013)DOI: 10.5185 / amlett. 2013.4455

36. Usha Chandra, G. Parthasarathy, N.V.Chandra Shekar and P.Ch.Sahu " X-ray diffraction, Mössbauer spectroscopic and Electrical resistivity studies on Lohawat Meteorite under High-Pressure up to 9 GPa " Chemie der Erde 73(2), 2013, 197-203

37. S. S. Sharma, Subodh Srivastava, G. D. Sharma "Fabrication and characterization of conjugated polymer P:PCBm Bulk heterojunction solar cell" Invertis Journal of Renewable Energy, vol. 3(1), 2013, 1-9

38. Farid M. Mohammed, Raid N. Razooqi, Muataz A. Mazeed, Subodh Srivastava, Yogesh K. Vijay "X-Ray mass attenuation coefficients of some 3D elements compounds at Am-241 (40mCi)" International Review of Physics, Vol 7, No.1, 95-99, 2013, API-6

39. Dinesh C. Sharma, Subodh Srivastava, Y.K.Vijay, Y.K.Sharma, "Preparation and characterization of the chromium doped ZnTe thin film". Advanced Materials Letters (2013), 4(1), 68-70.

40. Mahavar S., Verma M., Rajawat P., Sengar N. and Dashora P., Novel solar cookers: suitable for small families, International Journal of Sustainable Energy, 2013, 32(6), 574-586.

41. Sarita Kumari, A Wavelet Based Approach for Compression of Color Images, Modern Education and Computer Science, 1(2013), pp 28-35.

42. Dinesh C.Sharma Subodh Srivastava, Y.K.Vijay, Y.K.Sharma, "Effect of Mn-Doping on Optical Properties of ZnTe Thin Films" International Journal of Recent Research and Review, Vol. IV, December 2012. Page no. 14-18.

43. Dinesh C.Sharma, Subodh Srivastava, Y.K.Vijay, Y.K.Sharma "Preparation and Study of Optical Properties of ZnTe/ZnTe:Cr Bilayer Thin Films", International Journal of Recent Research and Review, Vol. II, June 2012, page no. 16-20.

44. Dinesh C.Sharma, Subodh Srivastava, Y.K.Vijay and Y.K.Sharma "Study of Optical Properties of Bilayer ZnTe: Al Film Grown on Glass Substrate by Thermal Evaporation Method" International Journal of Recent Research and Review, Vol. I, March 2012, Page no. 8-10

45. S. N. Dolia, Arun S. Prasad, P. K. Sharma, S. P. Pareek, M. S. Dhawan and Sudhish Kumar, 'Size dependent structural and magnetic behaviour of $CaFe_2O_4$' Arvind Samariya, *Current Applied Physics* 13 (2013) 830-835

46. S. N. Dolia, S. P. Pareek, P. K. Sharma, Arvind Samariya, Arun S. Prasad, M. S. Dhawan, Sudhish Kumar and K. Asokan, 'Effect of 200 MeV Ag^{+15} Ion Irradiation on Magnetic and Dielectric Properties of Nanocrystalline Zn-Cr Ferrite' *Rad. in Effects and defects in Solid*, 168 (7–8) (2013) 525–531

47. '200 MeV Ag^{+15} ion irradiation induced modifications in structural, magnetic and dielectric properties of nanoparticles of $Cu_{0.2}Zn_{0.8}Fe_2O_4$ ferrite' S. N. Dolia, P. K. Sharma, S. P. Pareek, Arvind Samariya, Arun S. Prasad, M. S. Dhawan, Sudhish Kumar and K. Asokan, *Radiation in Effects and defects in Solid*, 168 (7–8) (2013), 537–546

48. Arun S. Prasad, S. N. Dolia, S. P. Pareek, Arvind Samariya, P. K. Sharma and M. S. Dhawan, 'Sol–gel synthesized high anisotropy magnetic nanoparticles of $NiCr_xFe_{2-x}O_4$', *Journal of Sol-Gel Sci. and Tech.* 66(3) (2013); pp372.

49. Deepika, K.S. Rathore, N.S. Saxena, "Kinetics of Phase Transformations and Thermal Stabikty of $Se_{58}Ge_{42-x}Pb_x$ (x= 15, 18 & 20) Glasses", New J. Glasses and Ceramics, 2 (2012) 23-33.

50. Sonalika Agrawal, Dinesh Patidar, N.S. Saxena, Effect of ZnS nano filler and temperature on mechanical properties of Poly (methyl methacrylate), Journal of Applied Polymer Science 123 (2012) 2431–243.

51. D. Patidar, N.S. Saxena, Characterization of single phase copper selenide nanoparticles and their growth mechanism, Journal of Crystal Growth (2012), doi:10.1016/j.jcrysgro.2012.01.026

52. R.S. Bhoopal, P. K. Sharma, Sajjan Kumar, Alok Pandey, Ramvir Singh "Prediction of effective thermal conductivity of polymer composites using artificial neural network approach, STRPM, An Int Journal, 3(2) (2012) 97-105.

53. R.S. Beniwal, Manju Dabas and Ramvir Singh "Prediction of Effective Heat Storage Coefficient of Multi-phase Materials" Defect and Diffusion Forum Journal, Trans Tech Publication Inc., Switzerland, 326-328 (2012) 132-140.

54. Anupama Upadhyay and Ramvir Singh "Prediction of Effective Elastic Modulus of Biphasic Composite Materials" Int. J. Modern Mechanics & Engg., 2(2012) 6-13.

55. R. S. Bhoopal, Ramvir Singh and P. K. Sharma "Adaptive neuro fuzzy inference system for predicting effective thermal conductivity of polymer matrix composites". Modeling & Numerical Simulation of Material Science, (MNSMS), 2 (2012) 43-50.

56. R S Bhoopal, D Tripathi, Madhusree Kole, T K Dey and Ramvir Singh "Experimental and numerical investigations of effective thermal conductivity of low-density polyethylene filled with Ni and Nio particles. Composites: Mechanics, Compositions, Applications- An International Journal, (Begell House), 3(1), (2012) 1-15.

57. Deepti Chauhan, Nilima Singhvi and Ramvir Singh, "Effect of Geometry of Filler Particles on the Effective Thermal Conductivity of Two- Phase Systems. Int. J. Modern Nonlinear Theory and Application, 1 (2012) 40-46.

58. Anupama Upadhyay, R. S. Beniwal and Ramvir Singh "Elastic properties of Al_2O_3-NiAl – A modified version of Hashin-Shtrikman bounds." Continuum Mechanics and Thermodyn., 24, 3(2012)257-266.

59. S. N. Dolia, P. K. Sharma, M. S. Dhawan, Sudhish Kumar, Arun S. Prasad, A. Samariya, S. P. Pareek, R. K. Singhal, K. Asokan, Y.T. Xing, M. Alzamora and E. Saitovitach "Swift Heavy Ion Irradiation induced modifications in magnetic and dielectric properties of Mn-Ca ferrite", Applied Surface Science 258 (2012) 4207-11

60. Arun S. Prasad and S.N. Dolia "Gd substituted NiCa ferrite/poly vinyl alcohol nanocomposite" J. Magn. Magn. Mater. 324 (2012) 869-872.

61. Arun S. Prasad, S.N. Dolia, M.S. Dhawan, S. Kumar, V.R. Reddy "Synthesis, structural and magnetic properties of polypyrrole coated Ni0.2Ca0.8Fe2O4 nanocomposite" J. Supercond. Nov. Magn. 25 (6) (2012) 1921

62. M.K. Jangid, M. Singh, Hydrogenation and annealing effect on electrical properties of nanostructured Mg/Mn bilayer thin films, Int. Journal of hydrogen energy Vol.37 (2012) P378.

63. Mahesh Kumar Jangid and Mangej Singh "Effect of hydrogenation on raman spectra, structural and optical properties of mg/al thin film" International Journal of Physics & *Research (IJPR), Vol.2, Issue 4 Dec 2012 15-23*

64. S. P. Nehra, Neeraj Kumar, A. Sharma, M. S. Dhaka, M. Singh, Y. Hayashi, and Y. K. Vijay "Preparation and Characterization of Structural, Electrical, Optical and Magnetic Properties of Hydrogenated Multilayer ZnO/Mn Diluted Magnetic Semiconductor Thin Films" J. Spintron. Magn. Nanomater. 1, 28-33 (2012)

65. Awatif S. Jasim, Khalaf I. Khaleel, Mohamad A.K. Ahmed, Y. K. Vijay, Subodh Srivastava "Influence of Magnetic Nitrogen Plasma Functionalization of High Density Polycarbonate" Iraqi Journal of Applied Physics, Vol. 8 (4), 2012, 17-22

66. Garima Kedawat, Subodh Srivastava, Vipin Kumar Jain, Pawan Kumar, Vanjula Kataria, Yogyata Agrawal, Bipin Kumar Gupta, and Yogesh K. Vijay "Fabrication of Artificially Stacked Ultrathin ZnS/MgF2 Multilayer Dielectric Optical Filters" ACS Applied Materials & Interfaces,xxxxxx, dx.doi.org/10.1021/am400612q API-12

67. Subodh Srivastava, Sumit Kumar, Y.K. Vijay "Preparation and characterization of tantalum/Polyaniline composite based chemiresistor type sensor for hydrogen gas sensing application" International Journal of Hydrogen Energy 37, (2012), 3825-3832

68. Sumit Kumar, Subodh Srivastava, Balram Tripathi, Y.K.Vijay "Study of gas transport properties of multi-walled carbon nanotubes / polystyrene composite membranes" International Journal of hydrogen energy 37, (2012), 3914-3921

69. Mahesh Chand Sharma, Balram Tripathi, Sumit Kumar, Subodh Srivastava, Y.K. Vijay Low cost $CuInSe_2$ thin films production by stacked elemental layers process for large area fabrication of solar cell application" Materials Chemistry and Physics, 131 (2012), 600-604.

70. Vipin Kumar Jain, Praveen Kumar, Subodh Srivastava, Y K Vijay "Fabrication of Zinc indium oxide thin films and Effect of post annealing on structural, chemical and electrical properties" Journal of Alloys and Compounds 530 (2012), 132-137.

71. R.K. Singhal, S. Kumar, A. Samariya, M. Dhawan, S.C. Sharma, Y.T. Xing "Investigating the mechanism of ferromagnetic exchange interaction in non-doped CeO_2 with regard to defects and electronic structure" *Materials Chemistry and Physics* 132 (2012) p. 534

72. Usha Chandra "Mössbauer Spectroscopy- an important tool in extraterrestrial exploration" PLANEX news 2(2), 14-20, April 2012 (ISSN 2320-7108 online)

73. Mahavar S., Rajawat P., Marwal V.K., Punia R.C. and Dashora P., Modeling and on-field testing of a Solar Rice Cooker, Energy, 49, 404-412, 2012.

74. Mahavar S., Sengar N., Rajawat P., Verma M. and Dashora P., Design development and performance studies of a novel Single Family Solar Cooker., Renewable Energy, 47, 67-76, 2012.

75. Marwal V.K., Punia R.C., Sengar N., Mahawar S. and Dashora P., A comparative study of correlation functions for estimation of monthly mean daily global solar radiation for, Jaipur, Rajasthan (India), Indian Journal of Science and Technology, 5(5), 2729-32, 2012.

76. S. Kumari, R. Vijay, Image Quality Estimation by Entropy and Redundancy Calculation for Various Wavelet Families, Journal of Computer Information Systems and Industrial Management (IJCISIM), 4 (2012), pp 27-34.

77. S. Kumari, R. Vijay, Effect of Symlet Filter Order on Denoising of Still Images, Advanced Computing, 3 (2012), pp 137-143.

78. Arpita Saxena, Anjali Krishnamurthy, Bipin K. Srivastava and A. K. Nigam "Effect of substitution of Cr on magnetic behaviour and electrical transport in bilayered manganite $La_{1.2}Sr_{1.5}Ca_{0.3}Mn_2O_7$, Solid State Sciences 13 (2011) 1191-1196

79. B. L. Choudhary, Anjali Krishnamurthy, and Bipin K. Srivastava "Size dependence of magneto-resistive behaviour of nano-particle magnetite", Indian Journal of Pure and Applied Physics, 49 (2011) 190-194

80. Usha Chandra, Pooja Sharma and G.Parthasarathy, High –pressure Electrical resistivity, Mossbauer, Thermal analysis, and Micro-Raman spectroscopic investigations on Microwave Synthesized orthorhombic cubanite ($CuFe_2S_3$), Chemical Geology 284, 211-216, 2011.

81. Usha Chandra, Pooja Sharma and G.Parthasarathy, High Pressure Mossbauer spectroscopic studies of Lohawat (Howardite) Meteorite up to 9 GPa, Mineral. Magazine 75(3), 624, 2011 and Goldschimdt 2011 - Gold2011: abs:1527.

82. M.K.Jangid, S.P.Nehra, M.Singh, Optical, electrical and Raman properties of annealed hydrogenated Mg/Co bilayer thin films. J.Nano electron phys 3(2011)460-468.

83. S.P. Nehra, M. Singh, Effect of vacuum annealing and hydrogenation on ZnSe/Mn multilayer diluted magnetic semiconductor thin films, Vaccum 85 (2011) 719-724

84. P.U. Sharma, S.N. Dolia, Ravi Kumar and K.B. Modi "Influence of 50MeV Li3+-ion irradation on M–H loop characteristics of Y3+-substituted YIG" Radiation Effects and defects of solids 166 (8-9) (2011) 648-52

85. Sumit Kumar, Subodh Srivastava, Balram Tripathi, Y.K.Vijay "Study of gas transport properties of multi-walled carbon nanotubes/polystyrene composite membranes" International Journal of hydrogen energy, 2011, doi:10.1016/j.ijhydene.2011.05.060

86. Subodh Srivastava, Sumit Kumar, Y.K. Vijay "Preparation and characterization of tantalum/Polyaniline composite based chemiresistor type sensor for hydrogen gas sensing application" International Journal of Hydrogen Energy, 2011, doi:10.1016/j.ijhydene.2011.04.155

87. Subodh Srivastava, Sumit Kumar, Vipin Kumar Jain and Y.K. Vijay, " Effect of Temperature on the Electrical and Gas Sensing Properties of polyaniline and Multiwall Carbon Nanotube Doped Polyaniline Composite Thin Films" Advanced Materials Research Vol. 254 (2011) pp 167-170

88. Sarla Sharma, Rishi Vyas, Subodh Shrivastava, Y.K. Vijay "Effect of swift heavy ion irradiation on photoluminescence propertiesof ZnO/PMMA nanocomposite films" Physica B (condensed matter physics) 406 (2011) 3230–3233.

89. Anshu Sharma and Y. K. Vijay "The Effect of Pressure on the Dimensions of Carbon Nanotubes Obtained by the Chemical Vapour Deposition" American Scientific Publishers 4 (2011) 1–5

90. G. Sharma, K. B. Joshi, M. C. Mishra, Subodh Srivastava, Y. K. Vijay, B. K. Sharma "Electron Momentum density in Multi Walled Carbon Nanotubes." Physica-E 43, (2011) 1084–1086.

91. Aditya Sharma, K D Verma, Mayura Varshney, Abhinav Pratap Singh, Yogesh Kumar, Subodh Srivastava, Y K Vijay, K Ashokan, R. J. Choudhary, Ravi Kumar "Growth of nanofillers in SnO_2 thin films by ion irradiation and its gas sensing properties" Advanced Science Letters, Vol. 4, 1–7, 2011.

92. Satyapal Nehra, Neeraj Kumar, Anshu Sharma, Mahendra S. Dhaka, Mangej Singh, Yasunori Hayashi, and Yogesh K. Vijay, Preparation and Characterization of Electrical,

Optical and Magnetic Properties of Hydrogenated Multilayer ZnO/Co Thin Films, , Mater. Express, Vol. 1, No. 3, 2011 p237.

93. S.N. Dolia, M.S. Dhawan, Arun S. Prasad, Sudhish Kumar, A. Samariya, R.K. Singhal and Ravi Kumar "Magnetization enhancement in nanocrystalline $Co_{0.4}Zn_{0.6}Fe_2O_4$ by 200 MeV Ag^{+15} ion irradiation." Radiation Effects and defects of solids 166 (8-9) (2011) 648-52.

94. Arun S. Prasad , M.S. Dhawan , S.N. Dolia, A. Samariya, V. R. Reddy, R.K. Singhal and P. Predeep "Magnetic behaviour of functionally modified spinel $Ni_{0.4}Ca_{0.6}Fe_2O_4$ nano-ferrite." Int. J. Mod. Phys. B 25 (14) (2011) 1971-80.

95. Ramvir Singh, P. K. Sharma and R. S. Bhoopal and L. S. Verma, "Prediction of Effective Thermal Conductivity of Cellular and Polymer Composites" Ind. J. Pure & Appl. Phys. 49 (2011) 344-349.

96. Ramvir Singh and Pradeep Sharma "Effective thermal conductivity of metal filled polymer composites" Ind. J. Pure & Appl. Phys. 49 (2011) 112-116.

97. Ramvir Singh, R. S. Bhoopal and Sajjan Kumar "Prediction of effective thermal conductivity of moist porous materials using artificial neural network approach" Building & Environment (Elsevier) 46 (2011) 2603-2608.

98. Sajjan Kumar, R. S. Bhoopal, P. K. Sharma, R. S. Beniwal, Ramvir Singh "Non-Linear Effect of Volume Fraction of Inclusions on the Effective Thermal Conductivity of Composite Materials: A Modified Maxwell Model" Open J. Cond. Matter, 1 (2011) 10-18.

99. Dinesh Patidar, Sonalika Agrawal and N. S. Saxena "Storage modulus and glass transition behavior of CdS/PMMA nanocomposite" Journal of Experimental Nanoscience 6 (4) 2011, 441–449.
100. Mahesh Baboo, Manasvi Dixit, Kananbala Sharma, Narendra S. Saxena "Mechanical and thermal characterization of cis-polyisoprene and trans-polyisoprene blends" Polymer Bulletin 66 (2011) 661–672
101. S. Faheem Naqvi; Deepika; N. S. Saxena; D. Bhandari "Thermal stability and glass-forming ability of $Se_{80-x}Te_{20}Ag$ (x = 0, 3, 5, 7 and 9) chalcogenide glasses" Philosophical Magazine Letters 2011, 1–8
102. Vinodini Shaktawat, N.S.Saxena and Kananbala Sharma "Study of the structure and mechanical properties of pure and doped polyaniline" Phase transitions 84 (2011) 215-224.
103. Mahesh Baboo, Manasvi Dixit, Dinesh Patidar, Kananbala Sharma, Narendra Sahai Saxena "Thermo-mechanical properties and thermal conductivity of CDS-trans-polyisoprene, polymer nanocomposite", J Polym Eng 31(2011) 181-184

104. Sengar N., Dashora, P., Gupta M., Mahavar S., Experimental studies, energy saving and payback period of a cylindrical Building Material Housing Solar Cooker., International Journal of Energy, Information and Communications. 2(3), 75-84, 2011.
105. Mahavar S., Sengar N., Verma M., Dashora, P., Extensive experimental studies of a Single Family Solar Cooker., International Journal of Energy, Information and Communications. 2(4), 169-179, 2011.

106. Mahesh Baboo, Kananbala Sharma, Narendra S. Saxena "Study of thermal and mechanical properties of cis- and trans-polyisoprene blends implanted by carbon ions" Nuclear Instruments and Methods in Physics Research B 269 (2011) 2479-2486

107. N. S. Saxena, D. Patidar "II-VI Semiconductor-Polymer Nanocomposites: Mechanical and Thermal Properties" International Review of Chemical Engineering 3 (2011) 500-514.

108. S. Faheem Naqvi, N.S. Saxena "Role of additive (Zn) incorporation on the glass/crystal thermodynamics and stability Se80−xTe20Znx (x=2, 4, 6, 8 and 10) glassy alloys" Journal of Non-Crystalline Solids 357 (2011) 1804-1810.

109. Mahesh Baboo, Kananbala Sharma and N.S. Saxena "Viscosity, glass transition and activation energy of solid cis-polyisoprene and trans-polyisoprene blends" Phase Transitions, 84(2011) 901-907

110. Sonalika Agrawal, Dinesh Patidar and N.S. Saxena "Glass transition temperature and thermal stability of ZnS/PMMA Nanocomposites' Phase Transitions 84 (2011) 888-900

111. Sonalika Agrawal, Dinesh Patidar, N.S. Saxena "Investigation of temperature dependent mechanical properties of CdS/PMMA Nanocomposites" Journal of Composite Materials, 45 (24) 2011, 2507 - 2514.

112. D. Patidar, Sonalika Agrawal, N.S. Saxena "Glass transition activation energy of CdS/PMMA nano-composite and its dependence on composition of CdS nano-particles" Journal of Thermal Analysis and Calorimery, (2011) 106:921–925

113. Mahesh Baboo, Kananbala Sharma, N.S. Saxena "Study on Mechanical and Thermal Properties of Composites of cis- and trans- Polyisoprene Blends" Polymer Composite, 32 (2011) 2028-2037.

114. Deepika, N. S. Saxena "Structural and thermal analysis of overlapping phases of $Ge_{0.7}Sn_{0.3}Se_{2.5}$ Glass" Global J. Analy. Chem. 2 (2011) 72-80.

115. Dinesh Patidar, Sonalika Agrawal and N. S. Saxena, Storage modulus and glass transition behavior of CdS/PMMA nanocomposites, Journal of Experimental Nanoscience 6 (4) 2011, 441–449.

116. Mahesh Baboo, Manasvi Dixit, Kananbala Sharma, Narendra S. Saxena, Mechanical and thermal characterization of cis-polyisoprene and trans-polyisoprene blends, Polymer Bulletin 66 (2011) 661–672.

117. S. Faheem Naqvia; Deepika; N. S. Saxena; D. Bhandari, Thermal stability and glass-forming ability of $Se_{80-x}Te_{20}Ag$ (x = 0, 3, 5, 7 and 9) chalcogenide glasses, Philosophical Magazine Letters 2011, 1–8,

118. Vinodini Shaktawat, N.S.Saxena and Kananbala Sharma, Study of the structure and mechanical properties of pure and doped polyaniline, Phase transitions 84 (2011) 215-224.

119. Mahesh Baboo, Manasvi Dixit, Dinesh Patider, Kananbala Sharma, Narendra Sahai Saxena, Thermo-mechani properties and thermal conductivity of CDS-trans-polyisoprene, polymer nanocomposite, J Polym Eng 31(2011) 181-184.

120. Mahesh Baboo, Kananbala Sharma, Narendra S. Saxena, Study of thermal and mechanical properties of cis- and trans-polyisoprene blends implanted by carbon ions, Nuclear Instruments and Methods in Physics Research B 269 (2011) 2479-2486

121. N. S. Saxena, D. Patider, II-VI Semiconductor-Polymer Nanocomposites: Mechanical and Thermal Properties, International Review of Chemical Engineering 3 (2011) 500-514.

122. S. Faheem Naqvi, N.S. Saxena, Role of additive (Zn) incorporation on the glass/crystal thermodynamics and stability Se80−xTe20Znx (x=2, 4, 6, 8 and 10) glassy alloys, Journal of Non-Crystalline Solids 357 (2011) 1804-1810.

123. Mahesh Baboo, Kananbala Sharma and N.S. Saxena, Viscosity, glass transition and activation energy of solid cis-polyisoprene and trans-polyisoprene blends, Phase Transitions, 84(2011) 901-907.

124. Sonalika Agrawal, Dinesh Patidar and N.S. Saxena, Glass transition temperature and thermal stability of ZnS/PMMA Nanocomposites, Phase Transitions 84 (2011) 888-900.

125. Sonalika Agrawal, Dinesh Patidar, N.S. Saxena, Investigation of temperature dependent mechanical properties of CdS/PMMA Nanocomposites, Journal of Composite Materials, 45 (24) 2011, 2507 - 2514.

126. D. Patidar, Sonalika Agrawal, N.S. Saxena, Glass transition activation energy of CdS/PMMA nano-composite and its dependence on composition of CdS nano-particles, Journal of Thermal Analysis and Calorimery, (2011) 106:921–925.

127. Mahesh Baboo, Kananbala Sharma, N.S. Saxena, Study on Mechanical and Thermal Properties of Composites of cis- and trans- Polyisoprene Blends Filled with Polyaniline, Polymer Composite,DOI 10.1002/pc.21238.

128. Deepika, N. S. Saxena, Structural and thermal analysis of overlapping phases of $Ge_{0.7}Sn_{0.3}Se_{2.5}$ Glass", Global J. Analy. Chem. 2 (2011) 72-80.

129. R. K. Singhal, S. Kumar, P. Kumari, Y. T. Xing, E. Saitovitch, "Evidence of defect-induced ferromagnetism and its "switch" action in pristine TiO_2 bulk", *Applied Physics Letters* 98 (2011) p. 092510

130. R.K. Singhal, S.Sharma, P.Kumari, S.Kumar, Y.Xing, U.P. Deshpande, T.Shripathi, E. Saitovitch, "Study of electronic structure and magnetization correlations in hydrogenated and vacuum annealed Ni doped ZnO" *J. of Applied Physics* 109 (6) (2011) p. 063907

131. R.K. Singhal, "A comparative study of Pr substitution at Y and Ba sites in $YBa_2Cu_3O_{7-\delta}$" *Materials Letters* 65 (2011) p. 325

132. S.P. Nehra and M. Singh, Hydrogenation effect on electrical, optical and magnetic properties of ZnSe/Co bilayer DMS thin films, Solid State Communications 150 (2010) 1587_1591

133. S.P. Nehra, Deepshikha, M.Singh, Y.K.Vijay "Preparation and characterization of vacuum thermal evaporated trilayer Cu/Se/Al thin films" Journal of Alloys and Compounds 502 (2010) 220-224

134. B L Choudhary, Anjali Krishnamurthy & Bipin K Srivastava, "Size dependence of magnetoresistive behaviour of nano-particle magnetite" Indian Journal of Pure and applied Physics 49 (2010)190-194.

135. Neha Sharma, Bipin K. Srivastava, Anjali Krishnamurthy, A.K. Nigam A Magnetic behaviour of the orthochromite $La_{0.5}Gd_{0.5}CrO_3$, *Solid State Sciences* 12 (2010), 1464 – 1468.

136. Arun S. Prasad, S. N. Dolia, P. Predeep and V. R. Reddy, "Magnetic behavior of functionally coated superparamagnetic $Ni_{0.5}Cu_{0.5}Fe_2O_4$ polypyrrole nanocomposites." Mod. Phys. Lett. B 24 (18) (2010) 1987-1995.

137. N. Mehta, K. Singh, N.S. Saxena, "Co-relation between pre-exponential factor and activation energy of non-isothermal crystallization for virgin and irradiated Fe78B13Si9 metallic glass" Physica B: Condensed Matter 404 (2010) 2184-2188.

138. N.S. Saxena, Thermal and mechanical behavior of polymer nanocomposites, Journal of Polymer Engineering 30 (9) 2010 575-586.

139. Dinesh Patidar, Sonalika Agrawal and N. S. Saxena, Stress-strain behavior of CdS/PMMA nanocomposites, Journal of Polymer Engineering 30 (9) (2010) 565-573.

140. V.Shaktawat, K.Sharma, N.S.Saxena. Structural and electrical characterization of protonic acid doped polypyrrole, Journal of Ovonic Research 6 (6) (2010) 239-245.

141. Mukesh Kumar Atal, Veena Dhayal, Meena Nagar, Rakesh Bohra, Kuldeep S. Rathore, Narendra S. Saxena Synthesis and characterization of glycol-modified vanadium(V) oxoisopropoxide and their oximato derivatives: sol – gel transformations, of [VO(OPri)3], [VO{OCH2CH2OCH2CH2O}{OPri}] and [VO{OCH2CH2OCH2CH2O}{ON=C(CH3)(C4H3S-2)}] to vanadia, J Sol-Gel Sci Technol 53:67–78 DOI 10.1007/s10971-009-2057-4.

142. S. Faheem Naqvia, N.S. Saxena, Deepika, D. Bhandari, Thermodynamics and Thermal Stability of Phase Transformations in Se_{80}-$Te_{20}Ag_x$ (x=0, 3, 5, 7 and 9) Glasses, J. Ame. Ceram. Soc. DOI: 10.1111/j.1551-2916.2010.04225.x (2010) 1-7.

143. Mahesh Baboo, Manasvi Dixit, Kananbala Sharma, N.S. Saxena, "Activation energy and thermo-mechanical properties of trans-polyisoprene and liquid cis-polyisoprene blends" Thermochimica Acta 512 (2010) 47-50.

144. Manasvi Dixit, Deepika, Mahesh Baboo, Kananbala Sharma, N. S. Saxena, D.K. Avasthi and Pawan K. Kulriya "Effect of 50 MeV Li^{+3} ion beam irradiation on thermo-mechanical properties of PMMA/PC blend films" International Journal of Polymeric Materials 59 (2010) 873-890.

145. Vinodini Shaktawat, Laly A. Pothan, N.S.Saxena, Kananbala Sharma & T.P.Sharma, Temperature dependence of thermo-mechanical properties of banana fiber reinforced polyester composites" Adv. Comp. Mater Adv. Comp. Mater 17 (2008) 89-99, 2010.

146. S. Faheem Naqvia,, Deepikaa, N.S. Saxena,, Kananbala Sharmaa, D. Bhandari, Glass-crystal transformations in Se80−xTe20Agx (x = 0, 3, 5, 7 and 9) glasses, Alloys and Compound. 506, (2010) 956

147. Deepika and N.S. Saxena, "Therrmodynamics of glass crystal transformation in $Se_{58}Ge_{42-x}Pb_x$ ($9 \leq x \leq 20$) glasses" J. Phys. Chem. B, 114 (2010)28-35.

148. Manasvi Dixit, V. MAthur, S. Gupta, M. Baboo, K. Sharma, N.S. Saxena, "Morphology, Miscibility and mecvhnaical properties of PMMA/PC blends" Phase Transitions 26 (2010) 45-51.

149. Faheem Naqvi, Deepika and N.S. Saxena, "Kinetics of phase transformations of $Se_{71}Te_{20}Ag_9$ glassy alloy" Chalcogenide Lett. 7 (2010) 39-48.

150. Deepika, K.S. Rathore, N.S. Saxena "Kinetics of glass transition and thermal stability of $Se_{58}Ge_{42-x}Pb_x$ ($9 \leq x \leq 20$) glasses" Appl. Phys. A, 98 (2010) 441-448.

151. H. Kumar, N. Mehta, K. Singh. N. S. Saxena Effect of Li ion irradiation on the glass transition kinetics of Se98In2 chalcogenide glass." Phase Transitions 83, 1(2010), 1-9.

152. Usha Chandra, Pooja Sharma and G.Parthsarthy Syntetic Cubanite $CuFe_2S_3$: Pressure Induced transformations to isocubanite. *Canadian Minerologist,* Vol 48, 1137-1147 (2010).

153. Pooja Sharma, Usha Chandra and G. Parthasarathy ^{57} Fe Mössbauer spectroscopy and electrical resistivity studies on naturally occurring Native iron under high –pressure up to 9.1 GPa, *American Mineralogist*. 95, 870-5, 2010.

154. Usha Chandra, G. Parthsarthy and Pooja Sharma *High Pressure Phase Transition in Microwave Synthesized $CuFe_2S_3$: Resistivity Studies up to 9 GPa Geochemica et Cosmochimica Acta* 74(11), A 159, 2010.

155. Usha Chandra, Pooja Sharma and G. Parthsarthy *Electrical Resistivity of a PreCambrian native iron sample at high pressures up to 9 GPa. Geochemica et Cosmochimica Acta* 74(11), A 158, 2010.

156. R. K. Singhal, P. Kumari, A. Samariya, S. Kumar, S.C. Sharma, Y. T. Xing, E. Saitovitch, Role of electronic structure and oxygen defects in driving ferromagnetism in non-doped CeO2, *Applied Physics Letters* 97 (17) (2010) p. 172503

157. R. K Singhal, Comments on Effect of annealing temperature on structure, magnetic properties and optical characteristics in $Zn_{0.97}Cr_{0.03}O$ nanoparticles by Liu et al., Appl. Surf. Sc. 256 (2010) 3559, *Applied Surface Science*, 257 (2010) p. 1808.

158. R.K. Singhal, A. Samariya, S. Kumar, S.C. Sharma, Y.T. Xing, U.P. Deshpande, T. Shripathi, A close correlation between induced ferromagnetism and oxygen deficiency in Fe doped In_2O_3, *Applied Surface Science* 257 (2010) p. 1053.

159. R.K. Singhal, How the substitution of Zn for Cu destroys superconductivity in YBCO system? *J. Alloys and Compounds* (2010) 495 (2010) p. 1

160. R. K. Singhal, A. Samariya, S. Kumar, Y. T. Xing, D. C. Jain, S. N. Dolia, U. P. Deshpande, T. Shripathi, and Elisa B. Saitovitch Study of defect-induced ferromagnetism in hydrogenated anatase TiO_2:Co, *J. Applied Physics* 107 (2010) p. 113916.

161. R.K. Singhal, A. Samariya, S. Kumar, Y.T. Xing, U.P. Deshpande, T. Shripathi, E. Saitovitch, On the longevity of H-mediated ferromagnetism in Co doped TiO2: A Study of Electronic and Magnetic Interplay, *Sol. St. Comm.* 150 (2010) p. 1154.

162. R.K. Singhal, A. Samariya, Y.T. Xing, S. Kumar, S.N. Dolia, T. Shripathi, U.P. Deshpande, Elisa Saitovitch Electronic and magnetic properties of Co-doped ZnO diluted magnetic semiconductor, *J. Alloys and Compounds 496* (2010) p. 324

163. R K Singhal, A. Samariya, Y T Xing, S N Dolia, S. Kumar, U P. Deshpande, T Shripathi and E. Saitovitch, Study of Room Temperature Ferromagnetism for Cobalt and Manganese doped ZnO Diluted Magnetic Semiconductor, *Journal of Physics: Con. Ser. (IOP Publ.)* 200 (2010) p. 062029

164. Arvind Samariya, R. K. Singhal, S. Kumar, Y. T. Xing, D. C. Jain, S. N. Dolia, U. P. Deshpande, T. Shripathi, Elisa Saitovitch, Defect-induced reversible ferromagnetism in Fe-doped ZnO semiconductor: An electronic structure and magnetization study, *Materials Chemistry and Physics* 123 (2010) p. 678

165. R.K. Singhal, Arvind Samariya, Sudhish Kumar, Y.T. Xing, Elisa Saitovitch, Influence of ageing on H-induced ferromagnetism in $Zn_{1-x}M_xO$ (M = Co, Fe, Mn), *Materials Letters*, 64 (2010) p. 1846

166. R. K. Singhal, A.Samariya, S. Kumar,Y. Xing, U. P. Deshpande, T. Shripathi, S. N. Dolia, E. Saitovitch Switch *'on'* and *'off'* ferromagnetic ordering *vis à vis* inducing and removing of oxygen vacancies and carriers in doped ZnO: A magnetization and electronic structure study, *Phys. Status Solidi A*, (2010) / DOI 10.1002/pssa.200925637

167. K B Garg, S K Gaur, R K Singhal, P Pal, B R Sekhar, P.Norblad, S. Carlson, 'Mechanism of quenching of superconductivity in the $YBa_2Cu_3O_7$ system on substitution of Zn for Cu ', *International J. of Mod. Physics* B 24, (2010) 2135

168. M. S. Dhaka, G. Sharma, K. B. Joshi, M. C. Mishra, R. K. Kothari, and B. K. Sharma A study of electronic structure of CdSe using Compton scattering technique, Physica B, 2010.

169. M. S. Dhaka, U. Paliwal, G. Sharma, K. B. Joshi, M. C. Mishra, R. K. Kothari, and B. K. Sharma, Ab-initio determination of X-ray structure factors and the Compton profiles of CdO, *Journal of alloys and compounds* 501, 136 (2010).

170. B. L. Ahuja, B.K. Sharma, V. Purvia, S. Tiwari, Akihisa koizumi, Nagao, Yoshiharu Sakurai, N. Sakai, "Spin dependent Compton scattering study of magnetic transitions in Ir doped CeFe2" J. of Applied Physics, 2010

171. K.B. Joshi, U. Paliwal and B.K. Sharma, Hybrid functionals and electronic structure of high-pressure phase of CdO, Phys. Status Solidi B, 1-5 (2010).

172. S. N. Dolia, Size dependent magnetic behavior of nanocrystalline $Ni_{0.8}Cu_{0.2}Fe_2O_4$ ferrite, *Journal of Physics: Conference Series* 200 (2010) 072026.

173. P. Predeep, Arun. S. Prasad, S. N. Dolia, M. S. Dhawan, D. Das and S. Choudury and Vipasha Ghose, Nanocrystalline Spinel $Mn_xCu_{1-x}Fe_2O_4$ ferrites – Synthesis and Structural Elucidation using X-ray Diffraction and Positron Annihilation Techniques, *IEEE Transactions on Magnetics*, 46 (3) (2010) 847.

174. Pooja Sharma, Usha Chandra and G. Parthasarathy "^{57} Fe Mössbauer spectroscopy and electrical resistivity studies on naturally occurring Native iron under high –pressure up to 9.1 GPa", *American Mineralogist*. 95, 870-5, 2010.

175. Subodh Srivastava, S.S. Sharma, Shweta Agrawal, Sumit Kumar, M. Singh, Y.K. Vijay "Study of chemiresistor type CNT doped polyaniline gas sensor" *Synthetic Metals*, Volume 160, Issues 5-6, pp 529-534, 2010.

176. B. Tripathi, K.Awasthi, V. Kulshrestha, A.Sharma, S.Agarwal, S.Kumar, S.Sharma, A.Garg, M.Singh & Y.K.Vijay "Optical and dynamic characterization of thin film

polymer nanocomposite International" Journal of Modern physics B Vol.24,Issues 1-2 (2010) 57-63.

177. Vaibhav Kulshrestha, Garima Agarwal, Kamlendra Awasthi, Balram Tripathi , N.K. Acharya, Devendra Vyas, Vaibhav K. Saraswat, Y.K. Vijay, I.P.Jain "Microstructure change in poly (ethersulphone) films by swift heavy ions" *Micron* 41 (2010) 390–394.

178. Balram Tripathi, Y.K. Vijay "Engineering nanoporosity for TiD6 ion irradiated Mylar (PET) polymer by positron beam" International Journal of hydrogen energy XX (2010) 1-4.

179. Balram Tripathi, Kamlendra Awasthi, Vaibhav Kulshrestha, Anshu Sharma, Shweta Agrawal, Sumit Kumar, S S Sharma, M Singh, Y. K. Vijay "Optical and Dynamic Mechanical characterization of thin film polymer Nanocomposite" International Journal of Modern Physics B 24 (2010) 57-63.

180. Kamlendra Awasthi, Vaibhav Kulshrestha, D.K. Awashi, Y.K. Vijay "Optical, chemical and structural modification of oxygen irradiated PET" Radiation Measurements (2010)1-6

181. Sumit Kumar, Anshu Sharma, Subodh Srivastava, Balram Tripathi, Shweta Agrawal, M.Singh, Kamlendra Awashti, Y.K.Vijay "Enhancement of hydrogen gas permeability in electrically aligned MWCNT-PMMA composite membranes" Journal of Micron 41(7), 2010, 909-914.

182. Anshu Sharma, BalramTripathi, Y.K.Vijay "Dramatic Improvement in properties of magnetically aligned CNT/polymer nanocomposites" Journal of MembraneScience 361 (2010) 89–95

183. Anil Kumar, S. S. Sharma, Subodh Srivastava, S. P. Nehra, Vaibhav Kulshrestha, M Singh, Y K Vijay "Study of Junction Charactrisic of MWNT and PMMA composite films" Optoelectronics and Advanced Materials, Rapid Communications 4 (11), November 2010, 1701-1704.

184. Vipin Kumar Jain, Praveen Kumar, Deepika Bhandari, Y.K. Vijay "Growth and characterization of transparent conducting nanostructured zinc indium oxide thin films" Thin Solid Films 519 (2010) 1082–1086

185. Vaibhav Kulshrestha, G Agarwal, K Awasthi, B. Tripathi, D. Vyas, Y.K.Vijay, I. P. Jain "Characterization of asymmetric polymeric membranes by gas permeation" *Micron 41 (*2010) 390-394.

186. John A. Mikroyannidis, G. D. Sharma, S. S. Sharma, Y. K. Vijay "Novel Low Band Phenylenevinylene Copolymer with BF_2 azopyrrole complex units: Synthesis and use for efficient bulk heterojunction solar cells" J. Phys. Chem.C. (2010)

187. John A. Mikroyannidis, S. S. Sharma, Y. K. Vijay, G. D. Sharma "Novel Low Band Gap Small Molecule and Phenylenevinylene Copolymer with Cyanovinylene 4-Nitrophenyl Segments: Synthesis and Application for Efficient Bulk Heterojunction Solar Cells" ACS, Applied Materials & Interfaces (2010)

188. G. D. Sharma, P. Suresh, S. S. Sharma,, Y. K. Vijay, John A. Mikroyannidis "Effect of Solvent and Subsequent Thermal Annealing on the Performance of Phenylenevinylene Copolymer: PCBM Solar Cells" ACS, Applied Materials & Interfaces (2010)

189. J.A. Mikroyannidis, A.N. Kabanakis,Anil Kumar S. S. Sharma, Y. K. Vijay and G. D. Sharma "Synthesis of a Low –Band –Gap Small Molecule Based on Acenaphthoquinoxaline for Efficient bulk Heterojunction Solar cells" Langmuir Article (American chemical Society) 2010

190. J.A. Mikroyannidis, D.V.Tsagkournos, S. S. Sharma, Anil Kumar, Y. K. Vijay and G. D. Sharma "Efficient bulk heterojunction solar cell based on low band disazo dyes containing anthracene and/or pyrrole units" Solar Enegry Materials & Solar Cells (2010)

191. J.A. Mikroyannidis, D.V.Tsagkournos, S. S. Sharma, Y. K. Vijay and G. D. Sharma "Conjugated small molecules with broad absorption containing pyridine and pyran units: Synthesis and application for bulk heterojunction solar cells" Organic Electronics (2010)

192. S. P. Nehra and M Singh, Effect of hydrogen on interface of metal-semiconductor schottky diode, *Journal of material science in semiconductor processing*, 13 (2010)119-123.

193. S. P. Nehra and M Singh Hydrogenation effect on electrical, optical and magnetic properties of ZnSe/Co bilayer diluted magnetic semiconductor thin films, *Journal of solid state communication*, 150 (2010)1587-1591

194. S. P. Nehra and M Singh, Effect of hydrogen on electrical properties of ZnTe/Mn multilayer diluted magnetic semiconductor thin films, Journal of optoelectronics and Advanced Materials, 12(5), p1125, 2010

195. S. P. Nehra, Deepshikha Sharma, M. Singh, Y. K. Vijay, Preparation and characterization of vacuum thermal evaporated trilayer Cu/Se/Al thin films journal of alloys and compounds, Vol. 502, p 220-224, 2010.

196. M. K. Jangid, S.P. Nehra and M.Singh "Hydrogenation Effect on Mg/Co Multilayer Thin Films." International Journal of Engineering Science and Technology, Vol. 2(11), 2010, 6131-6135.

197. M. K. Jangid, S.P. Nehra and M.Singh "Optical and electrical properties of Mg/Co bilayer thin film metal hydrides." International Journal of Engineering Science and Technology, Vol. 2(12), 2010, 7841-7846.

198. M Singh, S Srivastava, S Agarwal, S Kumar and Y K Vijay "Optical properties of d.c. magneto sputtered tantalum and titanium nanostructure thin film metal hydrides." Bull. Mater. Sci., Vol. 33, No. 5, October 2010, pp. 569–573.

199. A. Kumar, S. S. Sharma S. Srivastava, S. P. Nehraa, V. Kulshrestha, M. Singh, Y. K. Vijay, Study of the junction characteristics of MWNT doped polymer composite films. Optoelectronics and Advanced Materials – Rapid Communications Vol. 4, No. 11, November 2010, p. 1701 – 1704

200. Sengar N., Dashora P., Mahavar S., Low cost solar cooker: Promising solution towards reducing indoor air pollution from solid fuel use, Indian Journal of Science and Technology. 3(10), 1038-1042, 2010.

201. K. S. Rathore, Y. Janu, Deepika, K. Sharma, N. S. Saxena, "Structural, optical band gap and photoluminescence studies of chemically capped (ZnS, ZnS:Mn) nanophosphors", *Optoelectronics and Advanced materials-Rapid Communications* , 3 (4) (2009) 313-316.

202. Vishal Mathur, Manasvi Dixit, K.S.Rathore, N. S. Saxena and Kananbala Sharma "Tensile Study of PVC-CdS Semiconducting Nanocomposite" *Optoelectronics and Advanced materials-Rapid Communications,* 3 (7) (2009) 685-687.

203. Manasvi Dixit, Vishal Mathur, Sandhya Gupta, Mahesh Baboo, Kananbala Sharma and N. S. Saxena, "Investigation of Miscibility and Mechanical Properties of PMMA/PVC Blends" *Optoelectronics and Advanced materials-Rapid Communications*, 8 (10) (2009)1099-1105.

204. Deepika, P. K. Jain, K.S. Rathore and N. S. Saxena, 'Determination of glass forming ability of $Ge_{1-x}Sn_xSe_{2.5}$ ($0 \leq x \leq 0.5$) alloys using differential scanning calorimetry', *Phil. Mag. Letters,* Vol. 89, No. 3 (2009) 194-200.

205. Praveen K. Jain, Deepika, K.S. Rathore, Nidhi Jain, N. S. Saxena, 'Activation Energy of Crystallization and Enthalpy Released of $Se_{90}In_{10-x}Sb_x$ (x = 0, 2, 4, 6, 8, 10) Chalcogenide Glasses', *Chalcogenide Letters* Vol. 6, No. 3, March 2009, p. 97 – 107.

206. Manasvi Dixit, S. Gupta, V. Mathur, K.S. Rathore, K. Sharma, N.S. Saxena, 'Study of glass transition temperature of PMMA and CdS – PMMA composite', *Chalcogenide Letters* Vol. 6, No. 3 p. 131-136 (2009).

207. Rashmi Saxena, Kananbala Sharma, N.S. Saxena, T.P. Sharma, Effect of annealing on structural and optical properties of Polypyrrole doped with different acids, *Polymer Composites,* 30 (6) (2009) 820-826.

208. P.K. Jain, Deepika, N.S. Saxena, Glass Transition, thermal stability and glass forming ability of $Se_{90}In_{10-x}Sb_x$ (x = 0, 2, 4, 6, 8, & 10) chalcogenide glasses, *Philosophical Mag. B,* 89 (2009) 641-650.

209. Deepika, Praveen K. Jain, K.S. Rathore, N. S. Saxena, Structural Characterization and Phase Transformation Kinetics of $Se_{58}Ge_{42-x}Pb_x$ (x = 9, 12) Chalcogenide Glasses, *Journal of Non-crystalline Solids*, 355 (2009) 1274-1280.

210. Deepika, K.S. Rathore, N. S. Saxena, A kinetic analysis on non-isothermal glass crystal transformation in $Ge_{1-x}Sn_xSe_{2.5}$ ($0 \leq x \leq 0.5$) glasses, *Journal of Physics: condense Matter*, 21 (2009) 335102.

211. Deepika, K.S. Rathore, N.S. Saxena, Evaluation of specific heat and related thermodynamic properties of $Ge_{1-x}Sn_xSe_{2.5}$, ($0 \leq x \leq 0.5$) glasses., *J. Therm. Anal. Calorim*., 98 (2009) 725-730.

212. Sandhya Gupta, Manasvi Dixit, Kananbala Sharma, N.S. Saxena, Mechanical study of metalized Polyethylene terphthalate (PET) films, *Surface & Coatings Technology*, 204 (2009) 661-666.

213. V. Kishore, V.K. Saraswat, R. Sharma, N.S. Saxena, K.B. Sharma and T.P.Sharma, Structural and Thermal Transport Properties of Zn_x Te100-x (x= 5, 10, 30 & 50) Alloys, *Thermochimica Acta* 491 (2009) 5-9

214. V. Shaktawat, D. Patidar, K. Sharma, N.S. Saxena, T.P. Sharma, Investigation of Electrical properties of PANI//Chalcogenide junctions, *Central European Journal of Chemistry* 7 (2009) 769-773.

215. N. Mehta, K. Singh, N.S. Saxena, Effect of ionic irradiation on the pre-exponential factor of thermally activated crystilisation in Co66Si16B12Fe4Mo2 metallic glasses. *Journal of Physics and Chemistry of Solids* 70 (2009) 811-815.

216. Mahesh Baboo, Manasvi Dixit, Kananbala Sharma, N.S. Saxena, The Structure and thermomechanical properties of blends of Trans-polyisoprene with Cis-polyisoprene. *International Journal of Polymeric Materials*, 58, 1-11 (2009)

217. Sandhya Gupta, Manasvi Dixit, Mahesh Baboo, Kananbala Sharma, N.S. Saxena, Thickness dependent mechanical behavior of Aluminium coated Polyethylene terephthalate (PET) films, *Polymer- Plastics Tech. Engg* 48 (12) (2009) 1-5.

218. N.Mehta, K.Singgh, N.S. Saxena, Comparative analysis of thermal characterization in $Cu_{50}Ti_{50}$ and $Cu_{50}Zr_{50}$ metallic glasses" *Physica B: Condensed Matter* 403 (2009) 3928-3931.

219. H. Kumar, N.Mehta, K.Singh and N.S. Saxena, Effect of lithium ion irradiation on they crystallization kinetics of glassy $Se_{98}In_2$. *Phil. Mag. Lett.* 89 (2009) 126-135

220. Vishal Mathur, M. Dixit, N.S. Saxena, Kananbala Sharma Morphological effects on mechanical properties of Polystyrene- Polyvinylcvhloride blends" *Phase Transitions* 11 (2009) 769-779.

221. Mahesh Baboo, Manasvi Dixit, Kananbala Sharma, N.S. Saxena, The structure and thermomechanical properties of blends of Trans-polyisoperene with Cis-polyisoperene" *Journal of Polymeric Materials*, 58 (12) (2009) 1-11.

222. Sandhya Gupta, dinesh Patidar, N.S.Saxena, Kananbala Sharma, Electrical study of thick film Al/n-CdS Schotky junction" Chalcogenide Letters, 6(12)2009, 705-713

223. Manasvi Dixit, Sandhya Gupta, Vishal Mathur, Kananbala Sharma and Narendra S Saxena, Activation energy of α- and β- relaxation process of PMMA and CdS-PMMA nanocomposite" *Journal of Nanostructured Polymers and Nanocomposite*, 6 (1) (2009) 28-35

224. Usha Chandra, N.V.Chandra Shekhar and P. Ch. Sahu, 'Pressure-induced phase transition on nano-crystalline $La_{0.9}Mn_{0.8}Fe_{0.2}O_{3.15}$ by Mössbauer Spectroscopy', *Phil. Mag. Lett.* 89(3), p220-229 (2009).

225. Usha Chandra and G. Parthasarathy, 'Magnitude of Precambrian impact experienced by native iron sample through high pressure Mössbauer spectroscopy', Geochimica et Cosmochimoca acta 73, A 208, 2009

226. Usha Chandra, *Pressure induced phase transitions in vacancy-doped nanocrystalline anganites through High pressure Mössbauer Spectroscopy*: CP1195 "Shock compression of Condensed Matter-2009", ed. M. I. Evert, W.T.Butler, M.D. Furnish, W. W .Anderson and W. G. Proud, p1275-8, 2009

227. Usha Chandra and G. Parthasarathy, *Study of naturally occurring Precambrian native iron through High pressure Mössbauer Spectroscopy up to 10 GPa*, C : CP1195 " Shock compression of Condensed Matter-2009" ,ed. M. I. Evert, W.T.Butler, M.D. Furnish, W. W .Anderson and W. G. Proud, p886-9, 2009

228. Anshu Sharma, S. Kumar, B. Tripathi, M. Singh & Y.K.Vijay, 'Aligned CNT/polymer nano composite membranes for hydrogen separation', *International Journal of Hydrogen Energy* 34, Issue 9, 3977 (2009).

229. S.S. Sharma, B. Tripathi, M. Singh, D. Bhatnagar & Y. K. Vijay, Junction characteristics of C60/polycarbonate blend on Si substrate', *Applied surface science* 225, Isue 15, 7070 (2009).

230. S.P. Nehra, M.K.Jangid, Subodh Srivastava, Anil kumar, Balram Tripathi, M.Singh and Y.K.Vijay, 'Role of hydrogen in electrical and structural characteristics of bilayer CdTe/Mn diluted magnetic semiconductor thin films' *International journal of hydrogen energy*, Volume 34,Issue17, p7306, 2009.

231. S.P.Nehra and M.Singh, Role of hydrogen in CdTe-Mn thin film bilayer structure, *Journal of Alloys and compounds*, Vol.88 Issue1, p356, 2009.

232. Subodh Srivastava, S.S.Sharma, Sumit kumar Shweta Agarwal, M.Singh, Y.K.Vijay, Characterization of gas sensing behavior of multiwalled carbon nanotube composite films, *International Journal of Hydrogen Energy, Volume 34, Issue 19, p 844, 2009*

233. Shweta Agrawal, Subodh Srivastava, Sumit Kumar, S S Sharma, B. Tripathi, M Singh and Y K Vijay, Swift heavy ion irradiation effect on Cu-doped CdS nanocrystals embedded in PMMA, *Bull. Mater. Sci.*, Vol 32,No.6, pp1-5, 2009.

234. Anshu Sharma, Sumit Kumar, Balram Tripathi, M. Singh, Y.K. Vijay, Aligned CNT/Polymer nanocomposite membranes for hydrogen separation, *International journal of hydrogen Energy*, Vol.34, Issue 9, p3977, 2009

235. B.Tripathi, K.Awasthi, V.Kulshrestha, S.S. Sharma, S.Agarwal, S.Kumar, S.Sharma, M.Singh & Y.K.Vijay Optical and dynamic characterization of thin film polymer nanocomposite, *International Journal of Modern physics* B, Vol.24, Issues 1-2, p-57, 2009

236. R K Singhal, M S Dhawan, S K Gaur and Elisa Saitovitch An Electronic Structure Study of Mn Doped ZnO Diluted Magnetic Semiconductor Using x-Ray Absorption and Photoemission Techniques, *Solid State Phenomena* 155 (2009) p. 163

237. R K Singhal, S K Gaur, D R Sanchez, Elisa Saitovitch and K B Garg, 'Temperature and field Dependent Mössbauer Study of $CeSn_3$ and $CeSn_{3.1}$ Crystals. International J. of Mod. Physics B 23 No. 2 (2009) p. 265

238. R K Singhal, S N Dolia, M S Dhawan, S Kumar, K B Garg, Y Xing, Elisa Saitovitch, 'Room temperature Ferromagnetism in Mn doped ZnO semiconductor' , International J. of Mod. Physics B 23 No. 8. (2009) p. 2029

239. R K Singhal, M S Dhawan, S K Gaur, S N Dolia, S Kumar, T Shripathi, U P Deshpande, Y T Xing, Elisa Saitovitch and K B Garg, 'Study of Ferromagnetism in Mn Doped ZnO Dilute Semiconductor System, 'Journal of Physics: Conference Series 153 (2009) p. 012065

240. Shubhra Mathur, Rishi Vyas, S. N. Dolia, K. Sachdev and S. K. Sharma "Corrosion Behaviour of Amorphous and Nanocrystalline $Ti_{60}Ni_{40}$ in Aqueous HNO_3 Solution" Advanced Materials Research 67 (2009) 173-178.

241. Shubhra Mathur, Rishi Vyas, S. N. Dolia, K. Sachdev and S. K. Sharma "A Comparative Study of Corrosion Behaviour of Amorphous and Nanocrystalline $Ti_{60}Ni_{40}$ in 0.5 M H_2SO_4 and 0.5 M HNO_3 Aqueous Media" Advanced Materials Research 67 (2009) 179-184.

242. Usha Chandra and G. Parthasarathy, 'Magnitude of Precambrian impact experienced by native iron sample through high–pressure Mössbauer spectroscopy', Geochimica et Cosmochimoca acta 73, A 208, 2009 Goldschimdt 2009, June 21-26, 2009 Davos, Switzerland (GOLD 2009: Abs:171).

243. K. B. Joshi, R. K. Pandya, R. K. Kothari, and B. K. Sharma, 'Electronic structure of BeTe and ZnTe', Phys. stat. solidi (b), 1 (2009)

244. G. Sharma, M. Sharma, M. C. Mishra, R. K. Kothari, K. B. Joshi and B. K. Sharma, 'Electron momentum distribution in SnS', Phys. Stat. solidi B 246, 2263 (2009).

245. G. Sharma, K. B. Joshi, M. C. Mishra, R. K. Kothari, Y. C. Sharma, V. Vyas and B. K. Sharma, Electronic structure of AlAs: A Compton profile study:, Journal of alloys and compounds 485, 682 (2009).

246. A. K. Shrotriya, S.K. Jain, Ramvir Singh and D. R. Chaudhary, Effect of porosity and grain size on heat storage coefficient of marble powder. J. Optoelectronics and Advanced Materials-Rapid Communications, 3 (2009) 75-76.

247. Shubhra Mathur, Rishi Vyas, S. N. Dolia, K. Sachdev and S. K. Sharma, 'Corrosion Behaviour of Amorphous and Nanocrystalline $Ti_{60}Ni_{40}$ in Aqueous HNO_3 Solution', *Advanced Materials Research* Vol. 67 (2009) pp 173-178

248. Shubhra Mathur, Rishi Vyas, S. N. Dolia, K. Sachdev and S. K. Sharma, 'A Comparative Study of Corrosion Behaviour of Amorphous and Nanocrystalline $Ti_{60}Ni_{40}$ in 0.5 M H_2SO_4 and 0.5 M HNO_3 Aqueous Media', *Advanced Materials Research* Vol. 67 (2009) pp 179-184

249. R K Singhal, M S Dhawan, S K Gaur, S N Dolia, S Kumar, T Shripathi, U P. Deshpande, Y T Xing, Elisa Saitovitch and K.B. Garg, 'Room temperature ferromagnetism in Mn doped dilute ZnO semiconductor; an electronic structure study using x-ray photoemission', *Journal of Alloys and Compounds* 477 (2009) 379–385

(B) High energy physics and High energy nuclear physics

250. S.Raniwala and R. Raniwala "Effect of event selection on jetlike correlation measurement in d + Au collisions at √sNN = 200 GeV" , Physics Letters, Section B, 2015

251. S.Raniwala and R. Raniwala K∗(892)0 and φ(1020) production in Pb-Pb collisions at sNN =2.76 TeV, Physical Review C, 2015

252. S.Raniwala and R. Raniwala Multiplicity dependence of jet-like two-particle correlation structures in p-Pb collisions at sNN=5.02 TeV Physics Letters, Section B, 2015

253. S.Raniwala and R. Raniwala Λ Λ correlation function in Au+Au collisions at sNN =200GeV, Physical Review Letters, 2015-04-21

254. S.Raniwala and R. Raniwala Measurement of electrons from semileptonic heavy-flavor hadron decays in pp collisions at s =2.76TeV, Physical Review D, 2015

255. S.Raniwala and R. Raniwala Production of Σ(1385)± and Ξ(1530)0 in proton–proton collisions at √s = 7 TeV, European Physical Journal C, 2015

256. S.Raniwala and R. Raniwala "Measurement of charged jet suppression in Pb-Pb collisions at √s NN = 2.76 TeV" (2014) *Journal of High Energy Physics* (3).

257. S.Raniwala and R. Raniwala, Dielectron azimuthal anisotropy at mid-rapidity in Au+Au collisions at sNN =200 GeV , Physical Review C, 2014

258. S.Raniwala and R. Raniwala, Exclusive J /ψ photoproduction off protons in ultraperipheral p -Pb collisions at sNN =5.02TeV, Physical Review Letters, 2014

259. S.Raniwala and R. Raniwala, Measurement of prompt D -meson production in p-Pb collisions at sNN =5.02TeV, Physical Review Letters, 2014

260. S.Raniwala and R. Raniwala, Freeze-out radii extracted from three-pion cumulants in pp, p-Pb and Pb-Pb collisions at the LHC, Physics Letters, Section B, 2014

261. S.Raniwala and R. Raniwala, STAR Collaboration, Nuclear Physics A, 2014

262. S.Raniwala and R. Raniwala, ALICE Collaboration, Nuclear Physics A, 2014

263. S.Raniwala and R. Raniwala, Beauty production in pp collisions at s=2.76 TeV measured via semi-electronic decays, Physics Letters, Section, 2014

264. S.Raniwala and R. Raniwala, Multiparticle azimuthal correlations in p -Pb and Pb-Pb collisions at the CERN Large Hadron Collider, Physical Review C, 2014

265. S.Raniwala and R. Raniwala, Measurement of visible cross sections in proton-lead collisions at √sNN = 5.02 TeV in van der Meer scans with the ALICE detector, Journal of Instrumentation, 2014

266. S.Raniwala and R. Raniwala, Suppression of ϒ{hooked}(1S) at forward rapidity in Pb-Pb collisions at sNN=2.76 TeV, Physics Letters, Section B, 2014

267. S.Raniwala and R. Raniwala, CBM Collaboration, Nuclear Physics A, 2014

268. S.Raniwala and R. Raniwala, Observation of D0 meson nuclear modifications in Au+Au collisions at sNN =200GeV, Physical Review Letters, 2014

269. S.Raniwala and R. Raniwala "Energy dependence of moments of net-proton multiplicity distributions at RHIC" (2014) *Physical Review Letters* 112 (3)

270. S.Raniwala and R. Raniwala "Neutral pion cross section and spin asymmetries at intermediate pseudorapidity in polarized proton collisions at s = 200 GeV" (2014) *Physical Review D - Particles, Fields, Gravitation and Cosmology* 89 (1)

271. S.Raniwala and R. Raniwala "Fluctuations of charge separation perpendicular to the event plane and local parity violation in s NN = 200 GeV Au + Au collisions at the BNL Relativistic Heavy Ion Collider" (2013) *Physical Review C - Nuclear Physics* 88 (6)

272. S.Raniwala and R. Raniwala “Multiplicity dependence of the average transverse momentum in pp, p-Pb, and Pb-Pb collisions at the LHC” (2013) *Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics* 727 (4-5) PP. 371 - 380

273. S.Raniwala and R. Raniwala “Directed flow of charged particles at midrapidity relative to the spectator plane in Pb-Pb collisions at √sNN=2.76 TeV” (2013) *Physical Review Letters* 111 (23)

274. S.Raniwala and R. Raniwala “Charmonium and e+e- pair photoproduction at mid-rapidity in ultra-peripheral Pb-Pb collisions at √sNN = 2.76 TeV” (2013) *European Physical Journal C* 73 (11) PP. 1 - 18

275. S.Raniwala and R. Raniwala “Jet-hadron correlations in sNN =200GeV p+p and central Au+Au collisions” (2013) *Physical Review Letters* 112 (12)

276. S. Raniwala and R. Raniwala “Energy dependence of the transverse momentum distributions of charged particles in pp collisions measured by ALICE” (2013) *European Physical Journal C* 73 (12) PP. 1 - 12

277. S. Raniwala and R. Raniwala “KS0 and Λ production in Pb-Pb collisions at √s NN=2.76 TeV” (2013) *Physical Review Letters* 111 (22)

278. S. Raniwala and R. Raniwala “J/ψ elliptic flow in Pb-Pb Collisions at √sNN=2.76 TeV” (2013) *Physical Review Letters* 111 (16)

279. S. Raniwala and R. Raniwala “Centrality determination of Pb-Pb collisions at √sNN=2.76 TeV with ALICE” (2013) Physical Review C - Nuclear Physics 88 (4)

280. S. Raniwala and R. Raniwala “Centrality dependence of π, K, and p production in Pb-Pb collisions at √sNN=2.76 TeV” (2013) Physical Review C - Nuclear Physics 88 (4)

281. S. Raniwala and R. Raniwala “Multiplicity dependence of two-particle azimuthal correlations in pp collisions at the LHC” (2013) Journal of High Energy Physics 2013 (9)

282. S. Raniwala and R. Raniwala “Performance of the ALICE VZERO system” (2013) Journal of Instrumentation 8 (10)

283. S. Raniwala and R. Raniwala “Centrality dependence of the pseudorapidity density distribution for charged particles in Pb-Pb collisions at √sNN=2.76TeV” (2013) Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics 726 (4-5) PP. 610 - 622

284. S. Raniwala and R. Raniwala “Freeze-out dynamics via charged kaon femtoscopy in √s NN=200 GeV central Au + Au collisions” (2013) Physical Review C - Nuclear Physics 88 (3)

285. S. Raniwala and R. Raniwala “D meson elliptic flow in noncentral Pb-Pb collisions at √s NN=2.76 TeV” (2013) Physical Review Letters 111 (10)

286. S. Raniwala and R. Raniwala “Long-range angular correlations of π, K and p in p-Pb collisions at sNN=5.02 TeV” (2013) Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics 726 (1-3) PP. 164 - 177

287. S. Raniwala and R. Raniwala “Measurement of J/ψ AZIMUTHAL ANISOTROPY in Au+Au collisions at √sNN=200 GeV” (2013) Physical Review Letters 111 (5).

288. V.Kumar, Nagendra Singh Raghaw and H.S. Palsania, “A Monte Carlo code for radiation damage by neutrons”, Nuclear Science and Engineering, Vol. 172, No. 2, 151-163 (2012).

289. Chitra Bhatia, J. Adam, V. Kumar, K.Katovsky, M. Majerle, A.A. Solnyshkin, V.M. Tsoupko-Sitnikov, “Study of Non-Elastic Reaction Rates for the A.D.S. Materials in the Environment of Spallation Neutrons Produced by 1.6 GeV d-Beam”, Published in “Radiation and Radioisotope Measurement” 2012.
290. Rashmi Raniwala and Sudhir Raniwala “Centrality dependence of the charged-particle multiplicity density at mid-rapidity in Pb-Pb collisions at sqrt(sNN) = 2.76 TeV”. By ALICE Collaboration (K. Aamodt *et al.*). Phys.Rev.Lett.106:032301, 2011.

291. Rashmi Raniwala and Sudhir Raniwala “Strange particle production in proton-proton collisions at sqrt(s) = 0.9 TeV with ALICE at the LHC”. By ALICE Collaboration (K. Aamodt *et al.*). CERN-PH-EP-2010-065, Eur.Phys.J.C71:1594,2011.

292. Rashmi Raniwala and Sudhir Raniwala “Two-pion Bose-Einstein correlations in central Pb-Pb collisions at $sqrt(s_NN)$ = 2.76 TeV”. By ALICE Collaboration (K. Aamodt *et al.*). CERN-PH-EP-ALICE-2010-006, Phys.Lett.B696:328-337,2011.

293. Rashmi Raniwala and Sudhir Raniwala “Femtoscopy of pp collisions at sqrt{s}=0.9 and 7 TeV at the LHC with two-pion Bose-Einstein correlations”. By ALICE Collaboration (K. Aamodt *et al.*). CERN-PH-EP-2010-083, Phys.Rev.D84:112004, 2011.

294. Rashmi Raniwala and Sudhir Raniwala “Production of pions, kaons and protons in pp collisions at sqrt(s)= 900 GeV with ALICE at the LHC”. By ALICE Collaboration (K. Aamodt *et al.*). CERN-PH-EP-2010-085, Eur.Phys.J.C71:1655, 2011.

295. Rashmi Raniwala and Sudhir Raniwala “High pT non-photonic electron production in p+p collisions at sqrt{s} = 200 GeV”. By STAR Collaboration (H. Agakishiev *et al.*). Phys.Rev.D83:052006, 2011.

296. Rashmi Raniwala and Sudhir Raniwala “Studies of di-jet survival and surface emission bias in Au+Au collisions via angular correlations with respect to back-to-back leading hadrons”. By STAR Collaboration. Phys.Rev.C83:061901, 2011.

297. Rashmi Raniwala and Sudhir Raniwala "Event-by-event charged-neutral fluctuations in Pb+Pb collisions at 158 A~GeV". M.M. Aggarwal *et al.* Phys.Lett.B701:300-305, 2011.

298. Rashmi Raniwala and Sudhir Raniwala "Observation of the antimatter helium-4 nucleus". By STAR Collaboration (H. Agakishiev *et al.*). Nature 473:353, 2011, Erratum-ibid.475:412, 2011.

299. Rashmi Raniwala and Sudhir Raniwala "Rapidity and transverse momentum dependence of inclusive J/psi production in pp collisions at sqrt(s) = 7 TeV". By ALICE Collaboration (K. Aamodt *et al.*). CERN-PH-EP-2011-057, Phys.Lett.B704:442-455, 2011.

300. Rashmi Raniwala and Sudhir Raniwala "Evolution of the differential transverse momentum correlation function with centrality in Au+Au collisions at sqrt{s_{NN}} = 200 GeV". By STAR Collaboration (H. Agakishiev *et al.*) Phys.Lett.B704:467-473, 2011.

301. J. Adam, C. Bhatia, K. Katovsky, V. Kumar, M. Majerle, V.S. Pronskikh, A.M. Khilmanovich, B.A. Martsynkevich, I.V. Zhuk, V.M. Golovatiouk,W. Westmeier, A.A. Solnyshkin, V.M. Tsoupko-Sitnikov and A.S.Potapenko , "A study of reaction rates of (n,f), (n,g) and (n,2n) reactions in ^{nat}U and ^{232}Th by the neu-tron fluence produced in the graphite set-up (GAMMA-3) irradiated by 2.33 GeV deuteron beam", Eur. Phys. J. A (2011) 47: 85

302. V.Kumar, Nagendra Singh Raghaw and H.S. Palsania, "Monte Carlo simulation of radiation damage and the nano structures in Nickel by the intermediate and high energy neutrons" Nano Trends: A Journal of Nanotechnology and Its Applications, Nov.,2011, ISSN 0973-418X NSTC 2011.

303. Rashmi Raniwala and Sudhir Raniwala "Midrapidity antiproton-to-proton ratio in pp collisions at $\sqrt{s} = 0.9$ and 7~TeV measured by the ALICE experiment". By ALICE Collaboration (K. Aamodt *et al.*). Phys.Rev.Lett.105:072002, 2010.

304. Rashmi Raniwala and Sudhir Raniwala "Two-pion Bose-Einstein correlations in pp collisions at sqrt(s)=900 GeV". By ALICE Collaboration (K. Aamodt *et al.*). Phys.Rev.D82:052001, 2010.

305. Rashmi Raniwala and Sudhir Raniwala "Transverse momentum spectra of charged particles in proton-proton collisions at $\sqrt{s} = 900 GeV with ALICE at the LHC". By ALICE Collaboration (K Aamodt *et al.*). Phys.Lett.B693:53-68,2010.

306. Rashmi Raniwala and Sudhir Raniwala "Elliptic flow of charged particles in Pb-Pb collisions at 2.76 TeV". By The ALICE Collaboration (K Aamodt *et al.*). Phys.Rev.Lett.105:252302, 2010.

307. Rashmi Raniwala and Sudhir Raniwala Charged-particle multiplicity density at mid-rapidity in central Pb-Pb collisions at sqrt{s_{NN}} = 2.76$ TeV. By ALICE Collaboration (B Abelev *et al.*). Phys.Rev.Lett.105:252301, 2010

308. V.Kumar, Nagendra Singh Raghaw and H.S. Palsania, "Monte-Carlo Simulation of Radiation Damage and the Nano Structures in Nickel by the Intermediate and High Energy Neutrons", Indraprastha International Conclave on Nano Science and Technology held at GGS Indraprastha University, Delhi, Nov. 16-17, 2010.

309. J. Adam, K. Katovsky, M. Majerle, M.I. Krivopustov, V. Kumar, Manish Sharma, Chitra Bhatia, A.A. Solnyshkin, V.M.Tsoupko-Sitnikov, "Transmutation of Th and U with Neutrons Produced in Pb-Target and U-Blanket System by Relativistic Deuterons", published in the Proceedings of the First workshop on Accelerator Radiation Induced Activation (ARIA08), PSI, Switzerland. (2009-01) (ISSN no. 1019-0643) p148-156, Jan. 2009. Also published as preprint of JINR E12-2008-118 and published in to EPJ A 43(2) (2010) 159.

310. C. Bhatia and V.Kumar, "Determination of neutron multiplication coefficients for fuel elements irradiated by spallation neutrons", PHYSICAL REVIEW C 81, 024614 (2010).

311. J. Adam, K. Katovsky, M. Majerle, M.I. Krivopustov, V. Kumar, Chitra Bhatia, Manish Sharma, A.A. Solnyshkin1, and V.M. Tsoupko-Sitnikov, "A study of nuclear transmutation of Th and natU with neutrons produced in a Pb target and U blanket irradiated by 1.6 GeV deuterons", Phys. J. A 43, 159–173 (2010)

312. H.Kumawat, V.Kumar and P.Srinivasan, 'Extension of the CASCDE.04 to estimate neutron fluence and dose rates and its validation', Pramana-Jn. Phys. 72(3), 601 (2009)

313. V.Kumar, N.S.Raghaw and Chitra Bhatia, "A code for the neutron transport in beam window and the spallation target", preliminary description presented at the IAEA Technical Meeting at Vienna, Nov. 16-19, 2009.

314. V.Kumar, Chitra Bhatia and H.Kumawat, 'Validation of CASCADE code using the monitor reactions', Eur. Phys. Jn. A40, 231 (2009)

315. Vinod Kumar, About the first experiment on investigation of I^{129}, Np^{237},Pu^{238} and Pu^{239} transmutation at the Nuclotron 2.52 GeV deuteron beam in neutron field generated in U/Pb assembly Energy + Transmutation' Jn. Radioanalytical Chemistry 79, 567 (2009).

316. J. Adam and V.Kumar et al., A study of nuclear transmutation of Th and ^{nat}U with neutrons produced in Pb-target and U-blanket irradiated by 1.6 GeV deuteron, revised for Eur. Phys. Jn. In Sep. 2009

317. Rashmi Raniwala and Sudhir Raniwala, Measurement of D* Mesons In Jets From p+p Collisions At Ps = 200-Gev, STAR Collaboration, Phys.Rev.C79 (2009) 112006

318. Rashmi Raniwala and Sudhir Raniwala, Observation of Two-Source Interference in the Photoproduction Reaction AuAu → AuAuρ^0 STAR Collaboration, Phys.Rev.Lett.102 (2009) 112301

319. Rashmi Raniwala and Sudhir Raniwala, Energy and System Size Dependence of φ Meson Production in Cu+Cu and Au+Au Collisions. STAR Collaboration, Phys.Lett.B 673 (2009), 183

320. Rashmi Raniwala and Sudhir Raniwala, Measurements of Φ Meson Production in Relativistic Heavy-Ion Collisionsa at RHIC, STAR Collaboration, Phys.Rev. C 79 (2009) 64903

321. Rashmi Raniwala and Sudhir Raniwala Systematic Measurements of Identified Particle Spectra in pp, d+Au and Au+Au Collisions From Star, STAR Collaboration, Phys.Rev. C79 (2009) 34909

322. Rashmi Raniwala and Sudhir Raniwala "Beam-Energy and System-Size Dependence of Dynamical Net Charge Fluctuations" Star Collaboration, Phys.Rev.C 79 (2009) 24906

323. Rashmi Raniwala and Sudhir Raniwala "Indications of Conical Emission of Charged Hadrons at RHIC", Star Collaboration, Phys.Rev.Lett.102 (2009) 52302

(C) Solar energy, Atomic physics, Plasma physics, Microwave electronics and Computer Application

324. A. Sharma, R. Sisodia, D. Bhatnagar, V.K. Saxena, "Spatial memory and learning performance and its relationship to protein synthesis of Swiss albino mice exposed to 10 GHz microwaves" *International Journal of Radiation Biology* 90 (1) pp. 29 - 35 (2014).

325. Archana Sharma, D. Bhatnagar and Rashmi Sisodia, [2014] "10 GHz Microwaves Induced Biochemical, Learning and Memory Alterations in Swiss Albino Mice Brain" *Indian Journal of Applied Research*, Volume: 4, Issue: 5, May 2014, ISSN - 2249-555X.

326. Neelam Choudhary, Ajay Tiwari, J.S. Saini and D. Bhatnagar, [2014] Compact CPW fed modified circular patch antenna, ISTP *Journal of Research in Electrical and Electronics Engineering* (ISTP-JREEE), pp 19-22.

327. Brajraj Shrama, Vijay Sharma, K. B. Sharma, and D. Bhatnagar [2014] "Broadband Semielliptical Patch Antenna with Semicircular Ring Slot for WiMax Application" *Chinese Journal of Engineering*, Article ID 379073, pp 1-7.

328. K. Meel, R. Gopal and D. Bhatnagar, [2013] "Three-dimensional analytical subthreshold current model of fully depleted SOI MOSFETs", *International Journal of Electronics and Communication Engineering & Technology (IJECET)*, vol. 4, No. 7, pp.74-79.

329. J.K. Chawla and M.K. Mishra "Obliquely propagating ion-acoustic double layers in magnetized electron-positron-ion plasma" *Astrophysics and Space Science* 343, 629 (2013)

.

330. S.K. Jain and M.K. Mishra "Ion acoustic double layers in electron-positron-ion plasmas with finite ion temperature" *Journal of Plasma Physics* 79, 661 (2013).

331. S.K. Jain and M.K. Mishra "Arbitrary amplitude ion-acoustic solitons in two-electron temperature warm ion plasma" *Astrophysics and Space Science* 346, 395 (2013).

332. M.K. Mishra and S.K. Jain "Linear and nonlinear obliquely propagating ion acoustic waves in magnetized negative ion plasma with non thermal electrons" *Journal of Plasma Physics* 79, 893 (2013).

333. J.K. Chawla, M.K. Mishra and R.S. Tiwari "Modulational instability of ion-acoustic waves in electron-positron-ion plasmas" *Astrophysics and Space Science* …..(On line published on 12th June, 2013).

334. Sarita Kumari, A Wavelet Based Approach for Compression of Color Images, Modern Education and Computer Science, 1(2013), pp 28-35.

335. M.K. Mishra, R.S. Tiwari and J.K. Chawla Ion-acoustic Solitons in negative ion plasma with two-electron temperature distributions" Physics of Plasmas 19, 062303 (2012).

336. S.L. Jain, R.S. Tiwari and M.K. Mishra "Ion-acoustic cnoidal wave and associated non-linear ion flux in a dusty plasma" Physics of Plasmas 19, 103702 (2012).

337. Vijay Sharma, V.K. Saxena, K.B. Sharma and D. Bhatnagar [2012], "Radiation performance of Circularly Polarized Broadband Gap Coupled Elliptical Patch Antenna" FREQUENZ, ISSN: 0016-1136 Vol. 66, Issue.3, pp. 69-74.

338. Vijay Sharma, V.K. Saxena, K.B. Sharma and D. Bhatnagar [2012] "Multi-Band Elliptical Patch Antennas with Narrow Sector Slot for *Wi-MAX* Applications" *International Journal of Microwave And Optical Technology*, Vol. 7, No. 2, pp. 89-96, March 2012.

339. S. Kumari, R. Vijay, Image Quality Estimation by Entropy and Redundancy Calculation for Various Wavelet Families, Journal of Computer Information Systems and Industrial Management (IJCISIM), 4 (2012), pp 27-34.

340. S. Kumari, R. Vijay, Effect of Symlet Filter Order on Denoising of Still Images, Advanced Computing, 3 (2012), pp 137-143.

341. Vijay Sharma, V. K. Saxena, K. B. Sharma and Deepak Bhatnagar [2011], Radiation Performance of an Elliptical Patch Antenna with Three Orthogonal Sector Slots, *Romanian Journal of Information Science And Technology*, Volume 14, Number 2, 2011, 123–130.

342. Pratibha Sekra, S. Shekhawat, D. Bhatnagar, V.K. Saxena, J.S. Saini and L.M. Joshi [2011] "Broadband Circularly Polarized Gap Coupled Arrangement of Rectangular Patches for Modern Communication Systems." *Microwave and Optical Technology Letters*, Vol. 53, No. 12, December 2011, pp2935 – 2939.

343. Garima, D Bhatnagar, J S Saini, V K Saxena & L M Joshi [2011] "Design of broadband circular patch microstrip antenna with diamond shape slot" Indian *Journal of Radio and Space Physics* Vol. 40, October 2011, pp 275 - 281.

344. Pratibha Sekra, Sumita Shekhawat, Manoj Dubey, D. Bhatnagar, V.K. Saxena and J.S. Saini, [2011] "Design of circularly polarized edge truncated elliptical patch antenna with improved performance." *Indian Journal of Radio and Space Physics* Vol. 40, August 2011, pp 227 – 233.

345. Pratibha Sekra, Manoj Dube, Sumita Shekhawat, D. Bhatnagar, V.K. Saxena and J.S. Saini [2011] "Broadband Rectangular Patch Antenna with Orthogonal Crossed Slits" *International Journal of Microwave and Optical Technology,* Vol. 6, No.4, pp179-184, July 2011.

346. Krishna Meel, R. Gopal and D. Bhatnagar "Three-dimensional analytic modelling of front and back gate threshold voltages 3 for small geometry fully depleted SOI MOSFET's" Solid-State Electronics, Vo. 62, pp 174 – 184, 2011.

347. Ritu Jain, Nidhi Bhargava, K. S. Sharma and D. Bhatnagar "Microwave dielectric measurements of binary mixtures of Nicotinamide and 1-Propanol in Benzene solutions at a constant temperature." Indian Journal of Pure and Applied Physics, Vol. 49, June 2011, pp 401 – 405.

348. Sumita Shekhawat, Pratibha Sekra, V.K. Saxena, J.S. Saini and D. Bhatnagar "Circular Microstrip Antenna with Off-Centered Y-Slot." International Journal of RF & Microwave Computer Aided Engineering Vol. 21, No. 4, July 2011, pp 407-412.

349. Pratibha Sekra, Sumita Shekhawat, D. Bhatnagar, J.S. Saini and V.K. Saxena "Stacked Arrangement of Edge Truncated Elliptical and Conventional Circular Patches for Modern Communication Systems." *Microwave and Optical Technology Letters* Vol. 53, No. 4, April 2011.

350. Vijay Sharma, V.K. Saxena, J.S. Saini, D. Bhatnagar, K.B. Sharma and L.M. Joshi "Broadband Gap Coupled Assembly of Patches Forming Elliptical Patch Antenna." *Microwave and Optical Technology Letters,* Vol. 53, No.2, February – 2011.

351. R.S. Tiwari, S.L. Jain and M.K. Mishra "Large amplitude ion-acoustic solitons in dusty plasmas" *Physics of Plasmas* 18, 083702, 2011.

352. Suresh Kumar, Papendra Kumar, Manoj Gupta, Ashok K. Nagawat " Performance of Filters in Image Denoising Using Different Noise"*3rd IEEE International Conference on Machine Learning and Computing (ICMLC 2011),*Singapore, pp 454-458, 2011.

353. Manoj Gupta, Suchi Upadhyay, S.K.Singh, Ashok K. Nagawat "Camera Calibration Technique using TSAI's Algorithm" International Journal of Enterprise Computing & Business System (ISSN: 2230-8849), Vol 1(2), 2011.

354. Suchi Upadhyay, S.K.Singh, Manoj Gupta, Ashok K. Nagawat "Linear and Non-linear Camera Calibration Techniques" Journal of Global Research in Computer Science (ISSN:2229-371X) , Vol 2 (5), 2011.

355. S. Kumari and R. Vijay, Analysis of Orthogonal and Biorthogonal Wavelet Filters for Image Compression, International Journal of Computer Applications, 23 (2011), pp17-19.

356. S. Kumari and R. Vijay, Image Quality Estimation by Entropy and Redundancy Calculation For Various Wavelet Families, Journal of International Academy of Physical Sciences, Vol 15, No.1, (2011), p1-8.

357. S. Kumari, R. Vijay, Image Quality Prediction by Minimum Entropy Calculation for Various Filter Banks, International Journal of Computer Applications, 7(5), September 2010, pp 27-34.

358. J.K. Chawla and M.K. Mishra "Ion-acoustic nonlinear periodic waves in electron-positron-ion plasma" *Physics of Plasmas* 17, 102315, 2010.

359. Sumita Shekhawat, Pratibha Sekra, D. Bhatnagar, V.K. Saxena and J.S. Saini "Stacked Arrangement of Rectangular Microstrip Patches for Circularly Polarized Broadband Performance." *IEEE Antennas and Wireless Propagation Letters*, Vol. 9, pp 910-913, 2010.

360. Vijay Sharma, Brajraj Sharma K.B. Sharma, V.K. Saxena, D. Bhatnagar "A Novel Dual Frequency S -Band Rectangular Microstrip Antenna for Radar and Space Communication", *Journal of Theoretical and Applied Information Technology,* Vol. 17, No.2, pp 129 – 135, 2010.

361. Garima, D. Bhatnagar, J.S. Saini and V.K. Saxena Modified circular patch antenna with key shape slot for wireless communication systems. *International Journal of Microwave and Optical Technology,* Vol. 5, No.6, pp396-401, Nov. 2010.

362. Kamaljeet Singh, K. Nagachenchaiah and Deepak Bhatnagar "Novel ultra-wide band stop filter on silicon and alumina." *International Journal of Microwave and Optical Technology,* Vol. 5, No. 4, pp 183-185, July 2010

363. Kamaljeet Singh, Surendra Pal and Deepak Bhatnagar "Notch Implementations in Planar Band Stop Filter using Step Impedance Resonator Approach." *Journal of Microwaves, Optoelectronics and Electromagnetic Applications,* Vol 9,No1, June 2010, pp 50-56

364. Kamaljeet Singh, K. Nagachenchaiah, Deepak Bhatnagar and S. Pal "Notch Implemented Dual Behavior Resonator (DBR) Filter and Diplexer at Ku-Band." *Microwave Journal,* Vol. 53, No.4, April 2010, pp 206-216.

365. Vijay Sharma, V.K. Saxena, J.S. Saini, D. Bhatnagar, K.B. Sharma, D. Pal and L.M. Joshi "Wide band Dual Frequency Right Triangular Microstrip Antenna with Parallel Narrow

Slits." *Microwave and Optical Technology letters,* Vol. 52, No. 5, pp 1082 – 1087, May 2010.

366. Dheeraj Bhardwaj, Komal Sharma, D Bhatnagar, S Sancheti and B Soni, Design and analysis of a gap coupled split circular patch with elliptical slot filled with elliptical patch, *Indian Journal of Radio and Space Physics*, Vol. 39, (2010) pp. 107 – 113.

367. Suresh Kumar, Papendra Kumar, Manoj Gupta, Ashok K. Nagawat "Performance Comparison of Median and Wiener Filter in Image Denoising" International Journal of Computer Application (ISSN: 0975-8887), Vol 12 (4), pp 27-31, 2010

368. Pawan Patidar, Manoj Gupta, Sumit Srivastava, Ashok Kumar Nagawat "Image Denoising by Various Filters for different Noise" International Journal of Computer Application(ISSN:0975-8887) , Vol 9 (4), pp 45-50, 2010

369. Suchi Upadhyay, S.K. Singh, Manoj Gupta, Ashok Kumar Nagawat "Improvement in Performance of the VOIP over WLAN" International Journal of Computer Application(ISSN:0975-8887) , Vol 12 (4),pp 12-15, 2010

370. Vijay Sharma, S. Shekhawat, V.K. Saxena, J.S. Saini, K.B. Sharma, B. Soni and D. Bhatnagar, Right Isosceles Triangular Microstrip Antenna with Narrow L-Shaped Slot, Microwave and Optical Technology letters, Vol. 51, No.12, [2009] pp3006 – 3010.

371. Kamaljeet Singh, K. Nagachenchaiah and Deepak Bhatnagar, Electromagnetic Modeling of Conductor backed-CPW based RF MEMS capacitive shunt switch. I*nternational Journal of Electronics*, 96 (08), [2009] pp. 887 – 893

Annexure -2

1. *Ramvir Singh:* Heat Transfer in Multi-phase Materials, Chapter 5: Predictions of Effective Thermal Conductivity of Complex Materials. Springer Germany, July/August 2010, Editors: Andreas Ochsner *et at*.
2. *V.K. Saxena and Usha Chandra*, Microwave Synthesis: a Physical Concept, (2011), Microwave Heating, Usha Chandra (Ed.), ISBN: 978-953-307-573-0, InTech Publishers.

Annexure -3

1. R.K. Singhal, Latest Trends in Condensed Matter, Trans Tech Publications, Switzerland, 2011

2. S. S. Sharma and Y. K. Vijay Synthesis and Characterization of Organic Photovoltaic Cells, Published by VDM Verlag Dr. Müller Aktiengesellschaft & Co. KG, Germany, 2010

3. Vipin Kumar Jain and Y. K. Vijay "Synthesis and characterization of mixed oxides thin film" Published by VDM Verlag Dr. Müller Aktiengesellschaft & Co. KG, Germany, 2010

4. R. K. Jain, G.Saxena, P. Sharma and S. Kumari, "Engineering Physics-I", Genius Publication, I Edition, 2009.

5. Sarita Kumari, "Effect of Color Models on Human Visual System", Lambert Publishing House, 2012.

6. Sarita Kumari, Quality Estimation in Image Processing Using Wavelet Families, Lambert Publishing House, 2012. ISBN 3659185426, 9783659185427

Annexure 4

STUDENTS QUALIFIED NET/JRF (Partial List)

S.No.	Name	NET/JRF passing year
1.	**Priya Jadon**	NET & JRF
2.	**Anju Yadav**	NET & JRF
3.	**Dinesh Yadav**	NET & JRF
4.	Rajpal Ruhela	JRF (December 2014)
5.	Krishan Meena	NET-2013
6.	Deepak Kumar Chawla	NET-2013
7.	Varinda Godara	NET (December 2012, June 2013)
8.	Sanjay Kumar Saini	NET & JRF- 2012
9.	Kishan Kumar	NET & JRF- 2012
10.	Omprakash Meena	NET-2012
11.	Ramnaresh Meena	NET-2012
12.	Ashok Kumar	NET (Dec 2012)
13.	Ram Naresh Meena	NET (2012)
14.	Sushila	JRF (December 2012)
15.	Dinesh Kumar	NET (2011)
16.	Inderjeet Singh	NET-2011
17.	Sunil Soni	NET-2011
18.	Swati Modi	NET & JRF 2010
19.	Poonam Rajawat	NET & JRF 2010
20.	Raghunandan Sharma	NET (June 2010)
21.	Neelam Choudhary	JRF (December 2010)
22.	Anil Kumar	NET (June 2010)
23.	Lokesh Kumar Sharma	NET (June 2010), Scientist at BARC
24.	Nand Lal Sharma	NET (June 2010) persuing Ph.D. from Germany
25.	Ashish Vyas	NET & JRF -2010, Selected in RFS
26.	Mangi Lal	NET (June 2010),
27.	Sudhir Kumar	NET (June 2010) Scientist at R.R. CAT, Indore
28.	Shailesh kumar Singh	NET (December 2009)
29.	Dalpat Meena	NET & JRF 2009, Now in UOR

30.	Sunita Parewa	NET & JRF 2009
31.	Priyanka Chikara	NET & JRF 2009
32.	Santosh Kundara	NET & JRF 2009
33.	Manisha Verma	NET & JRF 2009
34.	Sarita kumari	NET & JRF 2009
35.	Khan Mohmmad Khan	NET & JRF 2009
36.	Sourabh Jain	NET-2009
37.	Gagan Sharma	NET & JRF -2009
38.	Vandana Kumari	NET & JRF -2009
39.	Sanjay Kumar Kedia	JRF (December 2009)
40.	Sanjeev Kumar	JRF (December 2009)
41.	Satya Prakash Singhal	NET (December 2009)
42.	Shailesh kumar Singh	NET (December 2009)

Annexure 5A

DETAILS OF Ph.D. COMPLETED DURING 2009 – 15

From host university

Follwing students were awarded Ph.D. degree in Physics by University of Rajasthan during 2009 – 2015 while working in the Department of Physics of this university.

Name of the Candidate	Name of the Supervisor	Date of award
Mr Sunil Kumar Gaur	**Dr R. K. Singhal**	**2009**
Title: Study of anomalous temperature and doping dependence of itinerant holes and their correlation with charge aggregation and cooper pair formation in cuprate perovskites superconductors.		
Ms Bhavna Dalela	**Dr R. K. Singhal**	**2009**
Title: Study of electronic structure of cuprate perovskites to comprehend the mechanism of high transition temperature superconductivity		
Ms. Namrata Sengar	**Dr. P. Dashora**	***2009***
Title: Utilization of solar energy in low-grade applications.		
Mr Rabindra Kumar Sharma	**Dr. Y.K. Sharma**	***2009***
Title: XRD, Magnetic and Mossbauer spectroscopic investigations on $Fe_{1-y}T_yX_2$ systems; y = 3d metal and x = Sb,Te etc.		
Ms. Rashmi Saxena	**Prof. Kananbala Sharma**	**2009**
Title: Thermal and optical characterization of some conducting polymers		
Ms. Deepika	**Prof. N.S. Saxena**	**2009**
Title: Phase transformations and structural relaxation in Ge – Se – M (M = Pb, Sn) glasses		
Ms. Vinodini Shaktawat	**Prof. N.S. Saxena**	***2009***
Title: Study of polyaniline through mechanical and electrical characterization		
Mr. Dheeraj Bhardwaj	**Prof. D. Bhatnagar**	**2009**
Title: Design and development of microstrip antennas for new generation wireless systems		
Mr. Kamaljeet Singh	**Prof. D. Bhatnagar**	**2009**
Title: Novel design in planar active and passive circuits at microwave frequencies		
Ms. Meenal Bafna	**Dr. Prabha Dashora**	**2010**
Title: A study of thermal properties of potential polymeric materials and their use in solar thermal appliances.		
Mr. Mahavir Prasad Sharma	**Prof. B.K. Srivastava**	**2010**
Title: Study of ordered and disordered magnetic behaviour of substituted perovskites and some 3d – metal alloys		
Mr. Mahendra Singh Dhaka	**Prof. B.K. Sharma**	**2010**
Title:Electronic structure studies of some compounds of transition metals by Compton scattering technique		
Mr. Ghanshyam Sharma	**Prof. B.K. Sharma**	**2010**
Title: Study of electronic structure in some technologically important alloys and compounds by		

Compton scattering technique		
Mr. Shyam Sunder Sharma	**Prof. Y.K. Vijay and Prof. D. Bhatnagar**	**2010**
Title: Synthesis and characterization of organic photo voltaic cells		
Mr. Kamaljeet Singh	**Prof. D. Bhatnagar and Dr. S. Pal**	**2010**
Title: Novel design in planar active and passive circuits at microwave frequencies		
Mr. Arun S. Prasad	**Dr. S. N. Dolia**	**2010**
Title: Synthesis characterization and Mossbauer studies of ferrite-polymer hybrid nano-composites		
Mr. Kuldeep S. Rathore	**Prof. N.S.Saxena**	**2010**
Title: Investigation of optical and electrical properties of CdS and ZnS nanomaterials		
Mr. Vishal Mathur	**Prof. Kananbala Sharma**	**2010**
Title: Thermal and Mechanical study of polystyrene based polymeric blend and their CdS-nanocomposites		
Ms. Manasvi Dixit	**Prof. Kananbala Sharma**	**2010**
Title: Study of mechanical and thermal proprties of some thermoplastic polymer blends		
Ms. Ritu Jain	**Dr. D. Bhatnagar**	**2010**
Title: High frequency response and energy absorption behavior of polar aromatic compounds and their mixtures."		
Mr. Manoj Kumar	**Prof. Usha Chandra**	**2010**
Title: High-Pressure study of nanocrystalline vacancy-doped manganites by Mossbauer spectroscopy.		
Mr. Chitra Bhatia	**Prof. Vinod Kumar**	**2010**
Title: A study of role of (n, xn) reactions in Accelerator Driven Sub Critical System.		
Mr. Manish Sharma	**Prof. Vinod Kumar**	**2010**
Title: Transmutation of long lived isotopes of conventional reactor using ADS concept.		
Ms. Manasvi Dixit	**Prof. Kananbala Sharma**	***2010***
Title: Study of Mechanical and Thermal Properties of some Thermoplastic Polymer Blends		
Mr. Vishal Mathur	**Prof. Kananbala Sharma**	**2010**
Title: Thermal and mechanical study of polystyrene based polymeric blends and their CdS nanocomposites		
Mr. Kuldeep Singh Rathore	**Prof. N.S.Saxena**	**2010**
Title: Investigation of Optical and electrical properties of Cds and ZnS Nanomaterials		
Ms Aradhana Kimothi	**Dr. D. Bhatnagar and Dr. V. K. Saxena**	**2010**
Title: Microstrip antennas for mobile and satellite communication systems.		
Mr. Anil Kumar Budania	**Prof. Y.K. Vijay and Dr.**	**2011**

	Mangej Singh	
Title: Optimization of single layer polymer solar cell parameters and junction characteristics		
Vipin Kumar Jain	**Prof. Y.K. Vijay**	**2011**
Title: Synthesis and characterization of mixed oxide thin films		
Mr. Satyapal Nehra	**Mangej Singh**	**2011**
Title: Role of hydrogen in optical ,electrical and magnetic properties of zinc based multilayer thin films of diluted magnetic semiconductors		
Mr. Subodh Srivastava	**Prof. Y.K. Vijay and Dr. Mangej Singh**	**2011**
Title: Development of Ti,Ta,CNT polymer composite based hydrogen gas sensors		
Mr. Sumit Kumar	**Prof. Y.K. Vijay**	**2011**
Title: Study of carbon nanotubes (CNT's) polymer composite membranes of Poly methyl methacrylate (PMMA), Polystyrene (PS) and Poly ether sulphone (PES) for gas separation		
Ms. Sandhya Gupta	**Prof. Kananbala Sharma**	2**011**
Title: Electrical study of Mechanically Viable Metal-Chalcogenide Junctions on Polymer Substrate		
Mr. Mahesh Baboo	**Prof. N.S.Saxena**	**2011**
Title: Study of Thermal Transport and Mechanical Properties of Polyisoprene (Cis & Trans) Blends with Fillers		
Ms. S. Faheem Naqvi	**Prof. N.S.Saxena**	**2011**
Title: Thermodynamics and Structural Relaxation of Se-Te-M (M= Ag, Zn) Glasses		
Mr. M.S. Dhawan	**Dr. S.N. Dolia and Dr. R.K. Singhal**	**2011**
Title: Study of electronic and magnetic properties of some nano-crystalline spinel ferrites and some spintronics materials Zn1-xMnxO (M=Mn, Fe, Co etc.)		
Mr. Vijay Sharma	**Dr V. K. Saxena**	**2011**
Title: Broadband microstrip antennas and antenna array for an automotive radar sensor and mobile communications		
Mr. Arvind Samariya	**Dr. R.K. Singhal and Dr. S.N. Dolia**	**2011**
Title: Study of electronic and magnetic properties of some dilutely doped semiconductors Zn1-xTMnxO (M = Mn, Fe, Co etc.) and some nano-crystalline spinel ferrites coated with poly-anilyne and poly-pyrole		
Pradeep Sharma	**Dr. Ramvir Singh**	**2011**
Title: Multi-scale Modeling and Thermal Coefficients of Complex Systems		
Ms. Shweta Agrawal	**Prof. Y.K. Vijay**	**2011**
Title: Optical properties of polymer nanocomposites thin films		
Ms. Anshu Sharma	**Prof. Y.K. Vijay**	**2011**

Title: Synthesis of aligned CNT polymer composites and study of their mass transport properties		
Mrs. Manjari Gupta	**Prof. P. Dashora**	**2011**
Title: Development and modeling for efficient utilization of solar energy in relation to small scale appplliances		
Ms. Sarla Sharma	**Prof. Y.K. Vijay**	**2012**
Title: Optical properties of polymer nano-phospher composites.		
Ms. Sonalika Agrawal	**Prof. N.S.Saxena**	**2012**
Title: Mechanical and Thermal Properties of Poly (Methyl Methacrylate) and Polystyrene Based CdS, ZnS Embedded Nanocomposites.		
Banwari Lal Choudhary	**Prof. B.K. Srivastava**	**2012**
Title: Studies of certain substituted magneto-resistive and ferroic oxides.		
Mahesh Kumar Jangid	**Dr. Mangej Singh**	**2012**
Title: Optical, Electrical and Structural properties of nano structured Mg.based thin film metal hydrides		
Mahesh Kumar Mishra	**Prof. Y.K. Vijay**	**2012**
Title: Study of defects in technologically important alloys and compounds.		
Mr. Manoj Dubey	**Prof. D. Bhatnagar**	**2012**
Title: Radiation performance of microstrip patch Antennas under re-entry conditions		
Ms. Garima	**Prof. D. Bhatnagar & Dr. J.S. Saini**	**2012**
Title: Computer aided design, fabrication and testing of microstrip patch geometries for modern communication systems."		
Ms. Komal Sharma	**Prof. D. Bhatnagar**	**2012**
Title: Design and development of modified broadband dual frequency microstrip patch antennas for future generation communication systems		
Mr. Ashish Bhargava	**Prof. P. Dashora**	**2012**
Title: Study of optical properties of selected polymers and their development for use in solar appliances		
Ms Arpita Saxena	**Prof. Anjali Krishanmurthy**	**2013**
Title: Magnetic and Electrical Studies of some Substituted bi-layered Perovskites		
Ms Neha Sharma	**Prof. Anjali Krishanmurthy**	**2013**
Title: Study of magnetic and electric behavior of some rare earth and transition metal substituted pervoskite oxides		
Mr. Dinesh Chandra Sharma	**Dr. Y. K. Sharma**	**2013**
Title:" Preparation and characterization of doped and substituted ZnTte thin films		
Ms. Sumita Shekhawat	**Prof. D. Bhatnagar and Dr. V.K. Saxena**	**2013**
Title: Study of radiation characteristics and designing of S and C band microstrip antenna geometries		

for re-entry plasma conditions.		
Mr. Ramchandra Punia	**Prof. P. Dashora**	**2013**
Title: Modelling, design development and study of some non-concentrating community solar thermal applainces		
Mr. Vikas Kumar Marwal	**Prof. P. Dashora**	**2013**
Title: Study of solar radiation and novel building materials, housing flat plate solar collector for Hybrid applications		
Ms. Sunita Mahavar	**Prof. P. Dashora**	**2013**
Title: Modelling, development and testing of improved components for specific purpose solar thermal appliances		
Mr. Pramod Kumar Sharma	**Dr. S.N. Dolia and Dr. R.K. Singhal**	**2013**
*Title:*Study of magnetic, dielectric and electronic propertiesof some nanocrystaline spinel ferrites and some Pr and Zn doped YBCo(123) cuprate perovskites		
Mr. Rajpal Singh Bhopal	**Dr. Ramvir Singh and Dr. Nilima Singhvi**	**2013**
*Title:*Study of thermal conduction in metal / non-metal filled polymer composites		
Mr. Mahesh Chandra Sharma	**Prof. Y.K. Vijay**	**2013**
Title: Study of $CuInSe_2$ (CIS) thin films for solar cell application		
Mr. Shiv Charan Sharma	**Dr. R.K. Singhal**	**2014**
Title: Study of electronic and magnetic properties of defect induced ferromagnetism in some dilute magnetic semiconductors $Zn_{1-x}M_xO$ and $(In_{1-x}M_x)_2O_3$ (M = some 3d elements)		
Ms. Pratibha Sekra	**Prof. Deepak Bhatnagar and Dr. V.K. Saxena**	**2014**
Title: Simulation and design of microwave components for application in plasma conditions		
Ms. Anupma Upadhyay	**Dr. Ramvir Singh**	**2014**
Title: A theoretical study of elastic properties of composite materials with spherical and non-spherical inclusions.		
Ms. Garima Kedawat	**Prof. Y.K. Vijay**	**2014**
Title: Study of optical properties of thin films of metal and metal sulfides as optical filters.		
Mr. Brajraj Sharma	**Prof. D. Bhatnagar and Dr. K.B. Sharma**	**2014**
Title: Design and development of compact broadband dual frequency microstrip antennas.		
Mr. Ashwini Mathur	**Prof. Y.K. Vijay**	**2014**
Title: Optimization and analysis of mini power plants: Solar, Hydro and Wind.		
Mr. Surendra Kumar Jain	**Dr. M.K. Mishra**	**2014**
Title: Double layers modulational instability and other nonlinear structure in plasmas.		
Ms. Dronika Solanki	**Dr. Rashmi Raniwala**	**2014**

Mr. Rajesh Kumar Sharma	**Prof. B.K. Sharma**	**2015**
Title: Electronic structure studies of some II and VI group intermatellic compounds in bulk and nanophase		

Annexure 5B

From other institutions

Follwing students were awarded Ph.D. degree in Physics by University of Rajasthan during 2009-15 while working in affiliated institutions of this university (Partial list as per available information in this department)

Name of Candidate	Supervisor and Institution	Year of Award
Ms. Jaishree Mathur	**Dr. Manish Gupta R.R. College, Alwar**	**2013**
Mr. Mahaveer Singh Yadav	**Dr. S.C. Deorani R.R. College, Alwar**	**2013**
Mr. Shyam Prakash Pareek	**Dr. K.B. Sharma S.S. Jain Subodh P.G. College, Jaipur**	**2013**
Mr. Vivek Yadav	**Dr. S.C. Deorani R.R. College, Alwar**	**2014**
Mr. Anand Rawat	**Dr. Paramjeet Singh M.S.J. College, Bharatpur**	**2014**
Mr. hemant Kumar Mahavar	**Dr. Paramjeet Singh M.S.J. College, Bharatpur**	**2014**
Mr. Parminder Singh	**Dr. S.C. Deorani R.R. College, Alwar**	**2015**

Annexure 6

EXPERIMENTAL FACILITIES AVAILABLE

- For materials' preparation: muffle furnaces, Super Kanthal furnace, arc furnace, sputtering unit, chemical co- precipitation and sol-gel methods
- Liquid Nitrogen Plant (closed helium cycle refrigeration based)
- High resolution X-ray diffractometer for powder, thin films and small angle scattering measurements
- Scanning Probe Microscope (STM, AFM, LFM...)
- Cryogen free high field magnet (8 Tesla) with variable temperature insert (2.5K – 300K)
- Differential scanning calorimeter

- Low energy accelerator for electron and positron beams
- X-ray fluorescence set up
- Vibrating sample magnetometer (20K - 1000K and magnetic fields upto 9.5 kOe)
- Mössbauer spectrometer with sample temperature range 80K – 1000K
- Mössbauer facility for measurements under high pressures upto 10 GPa
- ac susceptibility measurement (80K –300K)
- Positron life time measurement
- Compton spectroscopy measurement using Germanium detector
- Dynamic mechanical analyser
- Resistivity measurements (20K – 300K)
- Transient Plane source (TPS) technique
- UV-NIR spectrometer
- Ellipsometer for film thickness measurements
- Vector network analyzer (40 GHz)
- Signal generators upto 12 GHz
- Power meter (20GHz)

Annexure 7A

FROM THE HOST INSTITUTION / UNIVERSITY

S. No.	Year	Name
1.	2009	Davendra Kumar Sharma
2.	2009	Suman Sharma
3.	2009	Sarla Sharma
4.	2009	Sayeed Faheem Naqvi
5.	2009	Kuldeep Bhati
6.	2009	Deen Dayal Garg
7.	2009	Nihal singh
8.	2009	Rajesh Kumar

S.No.	Name	NET/JRF passing year
9.	2009	Pooja Sharma
10.	2009	Shyam Prakash Pareek
11.	2010	Shubhra Mathur
12.	2010	Shiv Charan Sharma
13.	2010	Pramod Kumar Sharma
14.	2010	Poonam Kumari
15.	2010	Richa Sharma
16.	2010	Garima Kedawat
17.	2010	Nagendra Sigh Raghaw
18.	2010	Jyoti Parashar
19.	2010	Anupama Upadhyay
20.	2010	Sajjan Kumar
21.	2010	Rajeev Goyal
22.	2010	Sonalika Agrawal
23.		Asif Rampurwala
24.		Manoj Gupta
25.	2010	Dronika Solanki
26.	2011	Aditya Nath Mishra

1.	Anupama Upadhya	NET & JRF -2009
2.	Ashish Vyas	NET & JRF -2010
3.	Dalpat Meena	NET & JRF 2009
4.	Deepak kumar Chawla	NET-2013
5.	Gagan Sharma	NET & JRF -2009
6.	Garima Kedawat	NET & JRF -2009
7.	Inderjeet Singh	NET-2011
8.	Joyti Joshi	NET & JRF -2009
9.	Khan mohmmad Khan	NET & JRF 2009
10.	Kishan kumar Jindal	NET & JRF- 2012
11.	Krishan Meena	NET-2013
12.	Manisha Verma	NET & JRF 2009
13.	Narendra Jhakhad	NET & JRF -2008
14.	Omprakash Meena	NET-2012
15.	Poonam Rajawat	NET & JRF 2010
16.	Priyanka Chikara	NET & JRF 2009
17.	Ramnaresh Meena	NET-2012
18.	Sanjay Kumar Saini	NET & JRF- 2012
19.	Santosh Kundara	NET & JRF 2009
20.	Sarita kumara	NET & JRF 2009
21.	Sourabh Jain	NET-2009
22.	Sunil Soni	NET-2011
23.	Sunita parewa	NET & JRF 2009
24.	Swati Modi	NET & JRF 2010
25.	Shailja Chaudhry	NET & JRF -2009
26.	Vandana Kumari	NET & JRF -2009
27.		
28.		