

Report of Physics Department

(2017-18)



Mehr Chand Mahajan

DAV College for Women Sector-36,

Chandigarh

www.mcmdavcwchd.in

Annual Report of Department

Session 2017-18

1. **Name of the Department:** Physics
2. **Names of Programmes/Courses offered (UG, PG, M.Phil, Ph.D, Integrated Masters etc.)**
 - i. B.Sc. Non medical
 - ii. B.Sc. Vocational
 - iii. B.Sc. Physics Hons.

3. **Faculties during session 2017-18**

1. Dr. Renu Bedi (HOD)
2. Mrs. Raman Chadha
3. Mrs. Poonam Jain
4. Dr. Yogita
5. Dr. Renu Bala
6. Ms. Meetika Goyal
7. Ms. Kirandeep Kaur

FACULTY DETAILS:

Publications:

Permanent Faculty/ Contractual faculty	Title of Paper	Title of the Journal with ISSN	Month/Year
Dr. Renu Bedi	Sustained Best Practices in Higher Education – A case study of MCM DAV College for Women Chandigarh	Academic & Administrative Audit: A Pre-Requisite for Quality Enhancement, PP 16-23.	2017
Dr. Yogita Batra	Growth of Large-Area 2D MoS ₂ Arrays at Pre-Defined Locations Using Stencil Mask Lithography	Journal of Nanoscience and Nanotechnology, Volume 18, pp. 1824-1832(9) 2018	2018

Dr. Renu Bala	Dependence of structure factor and correlation energy on width of electron wires	Eur. Phys. J. B 91: 29 (2018).	2018
Ms Meetika Goyal	Low energy oblique ion beam sputtering induced surface engineering of Polyethylene terephthalate	Journal of Ferroelectrics 84, 172 (2017).	2017
Ms Meetika Goyal	Surface structuring in polypropylene using Ar ⁺ beam sputtering: Pattern transition from ripples to dot nanostructures	Applied Surface Science (2017) <u>Volume</u> <u>439</u> , Pages 380-385	2018

Workshops/Papers Presented:

1. **Dr. Yogita** attended 110th orientation course conducted by HRDC, Punjab University from 2.5.17 to **29.5.17**
2. **Dr. Renu Bala** attended **School on Fundamentals on Quantum Transport** from 7 August-11 August 2017 at ICTP, Trieste, Italy
3. **Dr. RenuBala** presented poster in Workshop on Fundamentals on Quantum Transport from 7 August-11 August 2017 at ICTP, Trieste, Italy
4. **Dr. Meetika Garg** submitted **Ph.D. thesis** on “*Studies on Argon Ion Induced Surface Structuring of Polymers*” with Prof. Sanjeev Aggarwal and Dr. Annu Sharma from Kurukshetra University, Kurukshetra.
5. **Dr. Kirandeep Kaur** presented research paper in International conference “Computational Strategies for Next Generation Technologies (NEXTCOM- 2017)” held at CT institute of Engineering, Management and Technology. Jalandhar on 25-26 November, 2017.

Memberships/Other details:

Dr. RenuBedi:

- 1) Member of Choice based credit system (CBCS) committee in Department of Physics, Punjab University.

- 2) Member of Board of Studies, Panjab University, Chandigarh.
- 3) Appointed paper setter for under graduate classes.
- 4) Actively involved in social work with **Handicapped Society**, Sector 12-A, Panchkula.

Mrs. Raman Chadha

- 1) Pursuing PhD in the field of Nanotechnology.
- 2) Organized various medical camps and lectures by eminent doctors and medical experts in the college.

Mrs. Poonam Jain

- 1) Member of Choice based credit system (CBCS) committee in Department of Physics, Punjab University.
- 2) Pursuing PhD in the field of Nanotechnology.
- 3) Paper setter for University Examinations.

Dr. Yogita

- 1) She is a core member of Placement Cell and coordinator of Infosys placement drive.

Dr Renu Bala

- 1) Member of Arya Samaj, Horticulture, Swachhta Committee etc.
- 2) Coordinator of B.Sc II Non Medical Admissions.
- 3) Life Member of Chandigarh Vigyan Parisad.

Books:

Teachers of the Department published following books/ research publications

1. **Dr. Renu Bedi** “Statistical and Thermodynamics” for B.Sc II
2. **Ms Raman Chadha**. “Quantum Physics” for B.Sc II and “ Mechanics” for B.Sc I
3. **Ms Poonam Jain**. “Nuclear Physics” for B.Sc III
4. **Dr. RenuBedi, Ms. Raman Chadha and Ms. Poonam Jain**, Lab Manual for Practical Physics B.Sc I
5. **Dr. RenuBedi, Ms. Raman Chadha and Ms. Poonam Jain** , Lab Manual for Practical Physics B.Sc II

Activities Organized by Physics Department:

Lectures:

Department of Physics organized a lecture on the topic “New Experiments in Physics” by **Prof. Ramandeep Johal**, Professor at IISER, Mohali, on **Nov 8, 2017**.

Celebration of Physics fest. Eureka -2017:

With a vision to promote Physics as well as to provide the students a platform for showcasing their talent, Department of Physics instituted PHYSICS SOCIETY having students from all classes [B.Sc. (Non-medical and Vocational)]. An educational event EUREKA was organized by Physics Society in which activities like Poster Making, Power Point Presentations, Scientific cartoons, Working Models, Idea Contest and Nature poetry etc.

Workshops:

- One day workshop on experimental demonstration of Physics in daily life was organized by Department of Physics on **March 15, 2018** in which **Prof. M. S. Marwaha** was the resource person.
- A two day workshop of ‘automation and control’ was organized in which **Mr. Lalitesh Kumar** from Sofcon Pvt. Ltd. was the resource person.

Two day project oriented workshop on 24-25/10/2017

43 students of BSc-III NM attended two days workshop on Automation. Mr. Mithilesh Singh of SofconPvt Ltd was the resource person for the workshop. He demonstrated various projects using Arduino for automation. Students made working models of various automation related projects. Student made working projects on Arduino Night Security Alarm, Bluetooth controlled Robot, Bluetooth Home Automation, Dual tone Multi functioning Robot (DTMF), DTMF Home Automation Line Follower, Password based Door lock, Home Automation using Passive Infrared (PIR) and Light with remote control etc.



Lecture by Dr Ramandeep S. Johal, IISER Mohali on 8/11/2017

Department of Physics is organizing a special talk on the topic “Few Experiments in Physics” by Dr. Ramandeep S. Johal, Associate Professor, Department of Physical Sciences, IISER Mohali. About 60 students of Department BSc NM attended this lecture and learned about interesting experiments in Physics.



Exchange programme conducted on 14/03/2018

12 students of DAV College visited physics lab and performed new experiments purchased from DBT grant. They performed Power supply, Logic gates & flip flop, GM counter etc.



Experimental Workshop by DrMarwahaon 16/03/2018

He demonstrated various physics experiments related to optics, optical fibres, interference, diffraction, polarization, laser, corolis force, rotational motion etc. Students enhanced their experimental skills in very effective and enthusiastic manner.



Lab Safety Lecture by DrAngshuman Roy Choudary, IISER Mohali on 17/03/ 2018

Undergraduate students of nonmedical and staff of the Physics Department attended the lab safety lecture delivered by Dr. Angshuman Roy Choudary, IISER Mohali on 17 March 2018. Students learned regarding the differentsafety measures that one should carry while performing chemical realted experiments.

Eureka Fest conducted on 19/03/2018

Department of Physics conducted various activities such as Scientific sketches, Powerpoint presentations, Scientific models, Scientific poems, Scientific article writing under Eureka Physics Society. Students of BSc I, II and III participated in these competitions. Prize Distribution was held on 19th March 2018. Mr Ashok Sharma chief Executive, Cleantech International Foundation, New Delhi and Mr Gurmeet Singh Gill, Agriculture Officer, Nabha, Distt. Patiala were guest of honour.



Talk on Career Counseling by Dr Jacky on 02/04/2018

Dr. Jacky resource person provides information regarding emerging topics for research in physical sciences after graduation. He enlightened that Quantum knowledge regarding entanglement and superposition is crucial for following research in physics. He also highlighted the drawbacks of Big-Bang theory and future scope in Cosmology. Moreover, he listed various summer internship programmes in reputed institutes that students can opt for their future career along with numerous national and international fellowship programmes like JRF, DAAD, TWAS. Student learned about new opportunities and various funding schemes available after graduation and post graduation.



Visits Organized by Department

Visit to Sofcon Pvt. Ltd. On 12/10/2017

B.SC III Non medial students visited the **SOFCON INSTITUE** at Mohali. Students were taught about the basics of arduino and automation. Institution staff taught under-graduate students regarding the working of Diwali lights in different patterns. Students also learnt how machines automatically work . After that they organized a two days workshop in our college to give us detail information about arduino. On the first day they explained what is **arduino**, basics about arduinois, how it works and where we can use it. After that they assigned a small project to every group that is blinking LED using arduino, breadboard and laptop by burning program to arduino and LED's are made to blink in a pattern in every possible way. Here the first day of workshop ends and at the end of the day we all were able to explain about arduino. Next day they assigned different projects to every group that is **Bluetooth home automation**, arduino robotics, arduino sensors, line following robots etc. In this way we can operate TV, AC and other home appliances. Attending this two days workshop was really a learning experience for all students and teachers.



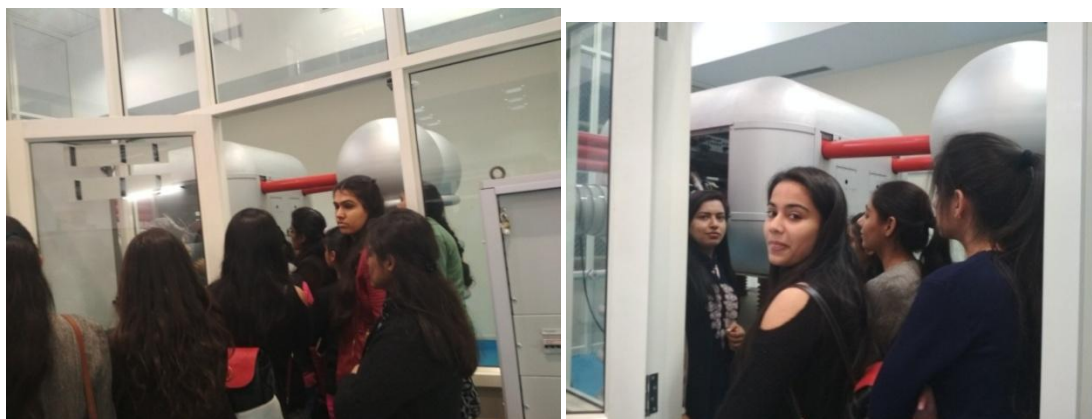
Visit to Central Scientific and Instrumentation Organization (CSIO) on 30/01/2018

Nine of students B.Sc II NM visited lab of Dr. Sachin Tyagi, Scientist, CSIO and was given demonstration of various scientific equipments such as Photoluminescence, UV-visible spectroscopy.



One day visit to Kurukshetra University for Demonstration of experiments on 03/02/2018

13 students of BSc II NM visited Ion beam Centre, Kurukshetra University, Kurukshetra where Prof. Sanjeev Aggarwal demonstrated them DST funded "200 keV Ion Accelerator" (provided by HVEE, Netherlands) worth Rs.12 crore. They got complete information about various chambers of that machine like Ion Source, Bending magnets, Beam Position monitor, Faraday Cups, Y-Steerer, X-Y Scanners, Power Generators, Vacuum pumps, Ion Acceleration tube, Corner cups, Target chamber etc.





Visit to Panjab University on 14/03/2018

12 students of B.Sc III visited cyclotron lab in department of physics, Panjab University. Students learned regarding the particle accelerators and were demonstrated the working of cyclotron.

STUDENTS' DETAILS:

University Merit Holder

University Roll Number	Name	Course	Position
15070350	ShaynaChhabra	B.ScNon Medical	12 th

- ✓ About 35 students enrolled in Post Graduate courses in Science.
- ✓ Nineteen (19) students of BSc-NM III got selected through campus placement in Infosys for the post of operation executive.
- ✓ Students of BSc-NM presented posters in CHASCON 2018, Punjab University, Chandigarh.
- ✓ Students of Department of Physics won prizes in 'Doaba Science Fest' held at DOABA college, Jalandhar on Feb 23, 2018
- ✓ Sonika Rana of BSc I year of non medical secured 1st prize in Sciencetoon.
- ✓ Students of Department of Physics participated in International workshop on Shock waves organized by PGGCG, Sector 11, Chandigarh on Feb 24, 2018 and Feb 25, 2018.
- ✓ About 40 students and all faculty members of Department of Physics took part in automation and control workshop.
- ✓ About one hundred (100) students of UG classes participated in this Physics Fest Eureka 2017