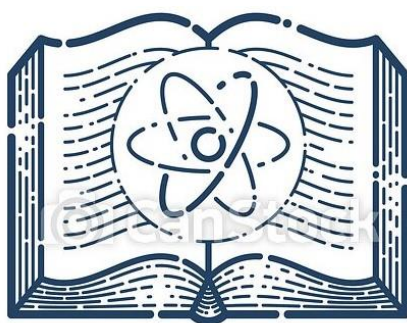


**KAMALA NEHRU WOMEN'S COLLEGE,**

**BHUBANESWAR**



**DEPARTMENT PROFILE**  
**OF**  
**DEPARTMENT OF PHYSICS**



**PHYSICS**

**YEAR - 2021**

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## **INTRODUCTION:-**

- Name Of Department -: PHYSICS
- Year Of Establishment -: PASS (1998), HONOURS (2009)
- Name Of Programme/Courses offered -: UG – B.Sc (Pass- 1998) & B.Sc (Hons-2009)
- Students Examination process -: choice Based Credit System
- Total number Of Staff -:

Type of Post	No. of Staff
Lecturer	02
Demonstrator	02
Lab Attendant	01

- Name Of Staff -: Lecturer – (a) Mrs. Sharon Pradhan (M.Sc, M.Phil)  
(b) Mr. Prashanta Kumar Subudhi (M.Sc , M.Phil)  
Demonstrator – (a) Mr. Amit Kumar Prusty (M.Sc)  
(b) Mr. Swaraj Mohammod (B.Sc)  
Lab Attendant – (a) Mr. Pravakar Baral (10<sup>th</sup>)

## **DEPARTMENT OF PHYSICS AND ITS VISION :-**

Main vision of department of physics is to impart state-of-the-art knowledge of Physics to create competency and skills. Our department should be in the core of the academical life taking place in our university. Not only the scientific traditions are attached importance to, but also social, democratic and ethical values, the sharing of humankind's common values, critical reasoning and its programs aimed at reinforcing the motivations and skills of its students are considered top priority.

The Physics Department aims at projecting the scientific and technological developments to the society, bring up its students as educated individuals who are adeptly equipped for the life and able to apply for privileged graduate studies.

Employees of the Department of Physics are conducting many physics model exhibition and physics workshop. Our faculty also involved and encouraged the students to do different innovative physics model. Their scientific work is connected with innovative teaching techniques, thus providing a creative and stimulating environment for the education of future generations of physicists.

Department of Physics promotes science at the local community level, it also participates in the developing of educational program for teaching of physics in primary and secondary education, and contribute to the technological development with the objective of sustainable development of economy and society as a whole.

## **DEPARTMENT OF PHYSICS AND ITS MISSION :-**

The physics department is committed to impart quality education both in theoretical as well as experimental physics with special emphasis on 'learning by doing' for socio-economic growth.

Physics Department considers its mission within the scope of academical excellence and leadership in physical sciences. In this frame, the department's mission is to accumulate the physics knowledge, developing and sharing it in a scientific community that shares common principles; agrees on its goals, is open to innovations; respects and cares for each other as well as bears social responsibility. The department has dedicated itself for lifelong learning through academical and social programs; acquirement of new knowledge through research activities; becoming a strong center of attraction in the national arenas with its undergraduate and M.Sc course.

The Department of Physics also encourages the development of educational physics through primary and secondary education by participating in the development of the curriculum, developing methodology of physics education, teaching aids and textbooks, through lifelong learning programs and training of teachers, and particularly through continued work with students that were recognized as extremely talented.

## **Programme Educational Objectives (PEOs):-**

The PEOs of Physics Department are compatible with the vision and mission of the institute and are as following:

- ◆ To impart quality education in physics to students so as they become globally competitive physicist.
- ◆ To make the students to accept the challenges in physics
- ◆ Effectively disseminate the physics knowledge to coming generations.
- ◆ To create strong interest in physics so as students can further develop themselves through self-study.
- ◆ To create a sense of ethical responsibilities among students.
- ◆ Improve the student's skills (professional, communication, transferable skills).
- ◆ Improve the fundamental concepts and advanced techniques of Physics and scientific methodology.
- ◆ Enhance intellectual, computational, experimental, communication and analytical skills of the students.

- ◆ Provide the students with the currently modern techniques in Physics.
- ◆ Enhance the ability of the students to seek and process data from different sources using library and internet.
- ◆ Offering new and advance research programs.
- ◆ Improve the post graduate programs offered by the department.
- ◆ Enhance the collaboration with other universities and research centres.

### **Programme Outcomes (POs):-**

The outcomes of the various programs offered by the Department of Physics are as follows:

- ◆ Apply principles/laws of physics to solve the physical problems.
- ◆ Identify/formulate the complex physics problems.
- ◆ Design the solutions for physics problems.
- ◆ Conduct experiments in physics and interpret the data.
- ◆ Use the modern tools to learn the physics.
- ◆ Take the responsibility for physics practice.
- ◆ Demonstrate the physics knowledge for sustainable development.
- ◆ Use ethical principles and norms of physics practice.
- ◆ Function effectively as individual as well as in a team.
- ◆ Communicate the physics effectively.
- ◆ Demonstrate the knowledge in physics to manage the physics projects effectively.

### **TEACHER'S and STAFF'S PROFILE:-**

**(1) NAME OF THE TEACHER-: Mrs. SHARON PRADHAN**

**(HEAD of Department of PHYSICS)**



- ✓ **DATE OF JOINING IN THIS SERVICE--:**9<sup>th</sup> September 1996
- ✓ **PRESENT PLACE & DESIGNATION--:** HOD & Lecturer in Physics, Dept. of Physics, Kamala Nehru Women's college, Bhubaneswar
- ✓ **TEACHING EXPERIENCE--:**25 years
- ✓ **HIGHEST QUALIFICATION--:** M.Sc, M.Phil
- ✓ **SPECIALIZATION--:** Space Physics

### **OTHER ACADEMIC DUTIES -:**

- ✓ **Member of Board of Studies, Ramadevi Women's University**

### **(2) NAME OF THE TEACHER -: Mr. PRASHANTA KUMAR SUBUDHI**



- ✓ **DATE OF JOINING IN THIS SERVICE--:** 25<sup>th</sup> August 2011
- ✓ **PRESENT PLACE AND DESIGNATION--:** Lecturer in Physics, Dept. of Physics, Kamala Nehru Women's college, Bbsr
- ✓ **HIGHEST QUALIFICATION -:** M.Sc, M.Phil
- ✓ **SPECIALIZATION--:** Plasma Physics, Quantum Mechanics
- ✓ **TEACHING EXPERIENCE -:** 10 years

### **DUTIES OTHER THAN TEACHING IN THE COLLEGE -:**

- ✓ **Lecture in charge of Science exhibition society.**
- ✓ **Lecture in charge of electrical department.**
- ✓ **Lecture in charge of college construction committee.**
- ✓ **Deputy Superintendent of our college Hostel.**

## **SEMINAR AND WORKSHOP ATTENDED (NATIONAL SEMINAR):-**

- ✓ Attending the Science Outreach Programme organized by Institute Of Physics at IOP on 01.02.2015
- ✓ Participated Two-week shortterm Training (STTP) on Engineering Physics at GIFT, KHURDA conducted by INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY under MHRD, GOVT. OF INDIA from 08/12/2015 to 18/12/2015.
- ✓ Participated Refresher Course in EXPERIMENTAL PHYSICS at INDIAN ACADEMY OF SCIENCES, BENGALURU organized by INDIAN ACADEMY OF SCIENCES, BENALURU (IASc), INDIAN NATIONAL SCIENCE ACADEMY, NEW DELHI (INSA) and THE NATIONAL ACADEMY OF SCIENCES, INDIA, ALLAHABAD (NASI) from 10/03/2017 to 25/03/2017.
- ✓ Participated NATIONAL SEMINAR ON RECENT ADVANCES IN PHYSICS AND ITS APPLICATION & 35<sup>th</sup> CONVENTION OF ORISSA PHYSICAL SOCIETY Conducted by Dept. of Physics, BJB Autonomous college, Bhubaneswar on 10<sup>th</sup> and 11<sup>th</sup> February 2018.
- ✓ **MEMBER IN NATIONAL COMMITTEE:-**
  - Life member of INDIAN ASSOCIATION OF PHYSICS TEACHERS (IAPT) bearing membership number L6850.
  - Life member of ORISSA PHYSICAL SOCIETY.
  - Life member of ORISSA MATHEMATICAL SOCIETY

**(3) NAME OF THE DEMONSTRATOR -: Mr. AMIT KUMAR PRUSTY**



- ✓ DATE OF JOINING IN THIS SERVICE-: 14<sup>th</sup> September 1990
- ✓ PRESENT PLACE AND DESIGNATION-: Demonstrator in Physics, Dept. of Physics, Kamala Nehru Women's college, Bbsr
- ✓ HIGHEST QUALIFICATION -: M.Sc
- ✓ SPECIALIZATION-: Material Science 6
- ✓ TEACHING EXPERIENCE -:31 years

## **DUTIES OTHER THAN TEACHING IN THE COLLEGE :-**

- ✓ Asst. zone officer (+3 exam).
- ✓ In charge of +3 exam section.
- ✓ In charge of +3 admission.
- ✓ In charge of college construction.
- ✓ In charge of college beautification.

### **(4) NAME OF THE DEMONSTRATOR -: Mr. SWARAJ MOHAMMOD**



- ✓ DATE OF JOINING IN THIS SERVICE-: 5<sup>th</sup> December 2012
- ✓ PRESENT PLACE AND DESIGNATION-: Demonstrator in Physics, Dept. of Physics, Kamala Nehru Women's college, Bbsr
- ✓ HIGHEST QUALIFICATION -: B.Sc
- ✓ TEACHING EXPERIENCE -: 9 years

## **DUTIES OTHER THAN TEACHING IN THE COLLEGE :-**

- ✓ In charge of admission (+2)
- ✓ In charge of examination (+2)
- ✓ NAME OF THE LAB ATTENDANT -: Mr. PRAVAKAR BARAL



- ✓ DATE OF JOINING IN THIS SERVICE-: 14<sup>th</sup> September 1990



- ✓ **PRESENT PLACE AND DESIGNATION:-**Lab Attendant in Physics, Dept. of Physics ,Kamala Nehru Women's college ,Bbsr
- ✓ **HIGHEST QUALIFICATION -:** 10th
- ✓ **TEACHING EXPERIENCE -:** 31 years

### **List Of Eminent Academicians and senior Visiting Faculty:-**

- ✓ **Late Prof. Laxmidhar Moharana, Ex-Prof. of Physics, Utkal University.**  
Director , Trident Engineering college, Bhubaneswar.  
Director, Krupajala Engineering College And Visiting Prof. of CET.
- ✓ **Prof. Gourisankar Roy, Ex-Prof. of Physics Ravenshaw University.**  
Ex-Chairman of Council of Higher Secondary Education And Visiting Prof. of CET.
- ✓ **Dr. Pravati Mishra, Reader of Begunia College , Author of B.Sc Practical physics.**
- ✓ **Prof. Sarmistha Sahu, HOD (M.Sc) And Prof. of Maharani Lakshmi Ammanni College for Women,Bengaluru And Author of Concise Physics for Degree students.**  
Vice President of IPA (Indian Physics Association) ana IAPT (Indian Association of Physics Teachers)

### **STUDENTS PROJECTS:-**

- **ARPITA MISHRA (SESSION 2013-2016)**
- **Red @ home IOP , Bhubaneswar Workshop , June 23<sup>rd</sup> – 29<sup>th</sup> 2014.**
- **Co-author in the poster presentation on “Tracking cosmological Accretion on to clustors” at ICTP, ITALY, August 2014.**
- **Radio Astronomy Winter school (RAWSC) at IUCAA-NCRA, PUNE 22<sup>nd</sup> -31<sup>st</sup> December 2014.**
- **Summer Associate Research Programme (SARP) at CBS, Mumbai, may-june 2015.**
- **She is continuing Ph.D in Poland from 2019.**

### **STUDENT'S PROGRESSION:-**

<b>Student Progression</b>	<b>% of students enrolled</b>
<b>UG to PG</b>	<b>60%</b>
<b>PG to M.Phil/Ph.D</b>	<b>30%</b>
<b>Employed</b>	<b>80%</b>

## **STUDENT'S MARK DATABASE:-**

Academic session	Sanctioned Strength	No. of students enrolled & appeared final exam	No. of students Passed	% of students passed
2009-12	16	13	13	100%
2010-13	16	15	15	100%
2011-14	16	12	10	83.33%
2012-15	16	12	12	100%
2013-16	16	15	15	100%
2014-17	16	14	14	100%
2015-18	19	19	19	100%
2016-19	16	16	10	62.5%
2017-20	16	15	14	93.33%
2018-21	16	12		

## **STUDY TOUR:-**

The students of department of physics visited two times to INDIAN INSTITUTE OF TECHNOLOGY, BHUBANESWAR as study tour in 2019 & 2020 to learn different science project and science experiment inside and beyond the syllabus. Due to Study tour to IIT, BBSR the knowledge of students towards physics has enhanced. These study tours have provided valuable educational opportunities away from the classroom and syllabus. These study tours helps the students to make new project in their last (6<sup>th</sup>) semester which carry 100 mark.

## **STUDENTS ALUMNI:-**

The Department of Physics has creat a whatsapp group named “KNWC PHYSICS ALUMNI” for students alumni in which all the physics honours students (starting from admission batch 2009 to recent year) are there and with this group we are updated about the improvement or updation of students time to time. Beside this whatsapp group we have maintained a register in which the full data of a student has recorded.

## **PARENTS-TEACHER ASSOCIATION:-**

The Department of Physics organize Parents-Teacher meeting in every regular interval to identify their child's current strengths and weakness.

## **EXTRA MURAL SEMINAR AND WORKSHOP ORGANIZED BY THE DEPARTMENT:-**

- An extra mural seminar on Dr. A.P.J. Abdul Kalam: A Missile Man by Prof. Gourisankar Roy, Ex-Prof. of Physics Ravenshaw University, Ex-Chairman of Council of Higher Secondary Education And Visiting Prof. of CET was organized.
- An extra mural seminar on BIG BANG THEORY by Late Prof. Laxmidhar Moharana, Ex-Prof. of Physics, Utkal University, Director, Trident Engineering college, Bhubaneswar, Director, Krupajala Engineering College And Visiting Prof. of CET was organized.
- An extra mural seminar on FUNDAMENTALS OF QUANTUM MECHANICS by Late Prof. Laxmidhar Moharana, Ex-Prof. of Physics, Utkal University, Director, Trident Engineering college, Bhubaneswar, Director, Krupajala Engineering College And Visiting Prof. of CET was organized.
- An extra mural seminar on QUANTUM TUNNELING by Prof.Sarmistha Sahu, HOD (M.Sc) And Prof. of Maharani Lakshmi Ammanni College for Women, Bengaluru And Author of Concise Physics for Degree students,Vice President of IPA (Indian Physics Association) ana IAPT (Indian Association of Physics Teachers) was organized.
- A workshop on APPLICATION OF PHYSICS IN EXCEL by Prof.Sarmistha Sahu, HOD (M.Sc) And Prof. of Maharani Lakshmi Ammanni College for Women,Bengaluru And Author of Concise Physics for Degree students,Vice President of IPA (Indian Physics Association) ana IAPT (Indian Association of Physics Teachers) was conducted by dept.of physics.

## **Details of Infrastructural and Academic Facilities:-**

- ✓ Seminar Library
- ✓ Internet facility for staffs and students using dongal , mobile net & jiofi and Wi-Fi system.
- ✓ Class room with ICT facility using LED Projector during seminar.
- ✓ Separate well Laboratories
- ✓ Students enrichment programmes with external exports by doing (a)Remedial classes (b) Extra Mural Seminar & (c) Science Exhibition.

- ✓ Lecturer method & demonstration method with simple examples adopted to improve student learning.
- ✓ Participating NSS programme to aware about social responsibility organized by college.

## **SWOC Analysis:-**

### **STRENGTH:**

- Experienced & qualified Faculties.
- Intelligent & dedicated students.
- Equipped Laboratories
- Organizing science exhibition and study tour for academic exposure to students beyond syllabus.

### **WEAKNESS:-**

- Inadequate space for laboratories.
- Insufficient Faculties.

### **OPPORTUNITIES:-**

- Students can promoted for higher studies in different Universities.
- Students can attend & employ in campus recruitment.

### **CHALLENGES:-**

- To open P.G. course.
- To prepare the students for IIT JAM and different M.Sc entrance exam.

## **FUTURE PLAN:-**

- To open P.G. course.
- To organize National /Inter-National Seminar, Workshop and conference
- Extension of departmentl library.
- Improvement of teacher-student ratio for better academic development.
- To set up more laboratory equipments.

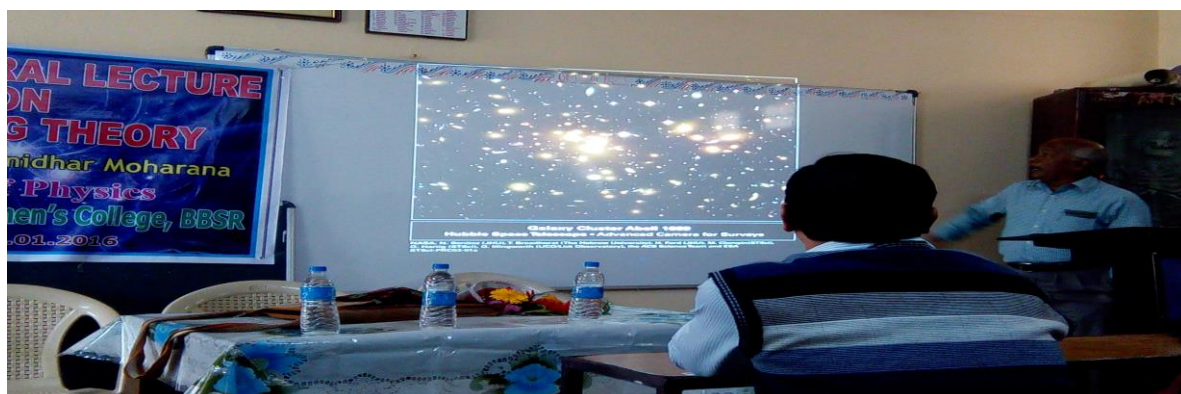
# PHOTO GALLERY

Extra Mural seminar on Dr. A.P.J. Abdul Kalam: A Missile Man BY PROF.G .ROY (CHSE)





## EXTRA MURAL SEMINAR ON BIG BANG THEORY BY PROF. L.MOHARANA (UTKAL UNIVERSITY)



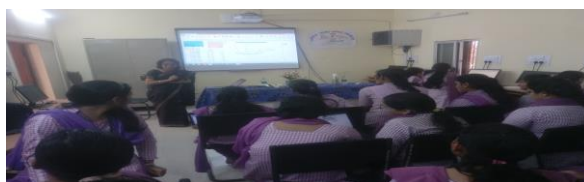
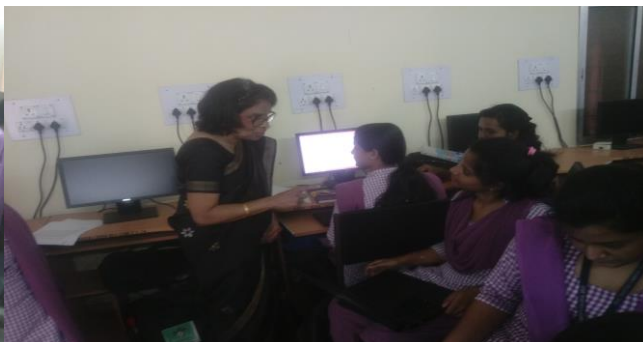


## EXTRA MURAL SEMINAR ON FUNDAMENTAL OF QUANTUM MECHANICS BY PROF. L. MOHARANA





## WORKSHOP ON APPLICATION OF EXCEL ON PHYSICS BY PROF. S. SAHU (FROM BENGALURU) ,2020





**MODEL PRESENTED BY PHYSICS HONOURS STUDENTS IN SC.EXHIBITION 206, 2017,2018**

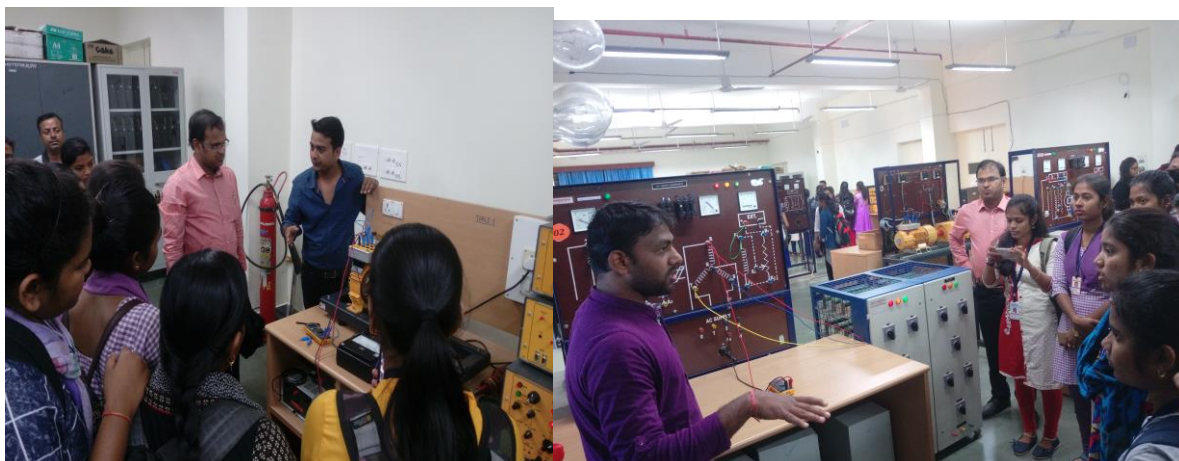








## STUDY TOUR OF DEPT.OF PHYSICS TO IIT BHUBANESWAR, 2019



**PHOTO OF PHYSICS HONOURS STUDENTS WITH DIRECTOR OF IIT BBSR PROF.R.V. RAJA KUMAR**



## STUDY TOUR OF DEPARTMENT OF PHYSICS TO IIT BHUBANESWAR 2020









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