Outreach Progamme….Contd. From Page 1

The programme began with a lot of enthusiasm in the students as well as the interns. Their daily schedule started with yoga sessions followed by a lecture in English and Mathematics. After a short refreshment break, students were involved with Do it Yourself Activities which was followed by a lecture on science and the day concluded reporting their experiences and feedback on their diaries.

In the English lecture, creative games were used which made the topics interesting for the students. In the Mathematics lecture, basics in the subject were covered keeping in mind their difficulties. Next, all the interns had to present Do it Yourself Activities in which Science behind those activities was demonstrated to the students. The students were very active during this session and thoroughly enjoyed the activities. In the Science lecture, the students were taught using videos and demonstrations. The outreach programme concluded with the valedictory function in which Principal Dr. N. N. Sawant was the Chief Guest.

Wesey D'souza demonstrating the concept of oxidization to the students during the Do it Yourself Activities.

Overall, this outreach programme was a wonderful experience not only for the students but also for the interns. We enjoyed interacting with the kids, teaching them, making them understand, solving their difficulties, and having them to enjoy the process of learning which made this programme a success.

-Dehlia Redker (T. Y. B. Sc. Mathematics)

Workshop…… Contd. From Page 1

Some of our students who had completed the Refresher Course on Experimental Physics at Goa University participated as volunteers for this workshop. Undergraduate Physics students along with their professor Mr. Avadhut Purohit from Gogate Jogalekar College participated in this workshop. Faculty of our college Mrs. Malati Dessai and Mrs. Pallavi Dalvi also participated in this workshop.

After the theory lectures, the practical session started in the afternoon session of the second day of the workshop. The resource material of all the modules was provided, which made it easier for them to understand and work on the experiments.

The last day of the workshop started with the practical sessions in the morning and was ended with a valedictory function. The Chief Guest of the valedictory function was Shri H. S. S. Nadkarni, Vice Principal of Chowgule College. The exposure to the theory of these experiments along with analysis will be beneficial to the students pursuing higher education. The success of the workshop was visible by the enthusiastic participation of the participants in the theory and practical sessions. We look forward to having more collaborative activities with the Gogate-Jogalekar College, Ratnagiri.

-Avney Rodrigues (T. Y. B. Sc. Physics)

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RIPPLES

Newsletter of Department of Physics

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Workshop on Experimental Physics

A workshop on "Experimental Physics" was organized by the Department of Physics of Parvatibai Chowgule College, Margao in association with the Gogate-Jogalekar College, Ratnagiri from April 28, 2017 to April 30, 2017. The objective of the workshop was to familiarize students with important experiments in Heat.

Prof. Priolkar delivering a talk on Thermal Diffusivity.

The workshop started with an inaugural function in which Prof. Kaustubh Priolkar, Goa University was the Chief Guest and Principal of this College Dr. N. N. Sawant was the Guest of Honour. Prof. Kaustubh Priolkar and Mr. S. M. Sadique along with resource persons from the department Mr. Yatin Desai and Dr. Ashish Desai delivered series of talks which were required to understand the theoretical background of the experiments.

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Educational Outreach Programme

An Educational Outreach Programme was conducted by the Department of Physics from May 24, 2017 to June 10, 2017 at the Parvatibai Chowgule College of Arts and Science, Margao. The objective of the outreach programme was to provide guidance and increase the interest in Mathematics and Science by making learning easy and fun for the students of Govt. Multipurpose High School, Margao. Another objective of this workshop was also to provide an opportunity for some undergraduate students to gain experience in teaching in the form of an internship. During the programme an attempt was made to give attention to each student in order to address their difficulties in Mathematics and Science and also to enhance their understanding of the subjects.

Akash Kundaikar explaining to the students of Multipurpose High School during a lecture session.

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Contents:

Upcoming Event

The Department of Physics will be organizing a talk on Marine Robotics by Shri Pramod Kumar Maurya, Senior Scientist , National Institute of Oceanography, Goa on August 23, 2017.

Winners of Patriotic Singing Competition

Second Year B. Sc. Students who won the First place in the singing competition performing during the Independence Day Celebration.

A patriotic singing competition was organized by N.S.S. on August 14, 2017 at Parvatibai Chowgule College, Margao. Sixteen groups participated in the competition. Second-year B. Sc. Physics students along with students from Chemistry and Mathematics won the First place in the Competition. Third-year B. Sc. Physics students secured second place in the competition. Congratulations to all the winners.

New Faculty of the Physics Department

Mr. Bhawani Singh

A hearty welcome to Mr. Bhawani Singh who has joined the Department of Physics as an Assistant Professor in Physics. Mr. Bhawani Singh earned his B. Sc. (Hons) in Physics from ARSD college, Delhi and his Masters of Science in Physics with specialization in Material Science from Jodhpur University, Rajasthan. His research interests lie in Cosmology and Arrow of Time.

Results of Third Year B.Sc. Physics

The result of the Department of Physics at the Third Year University examination for the academic year 2016-17 is 80%. Out of fifteen students, four students secured Distinction and six students got First Class. Angelo George scored the highest among them securing 82%. Congratulations to all and best wishes for their future career.

Spoken Tutorial

The Spoken Tutorial Project is about teaching and learning a particular FOSS (Free and Open Source Software) offered by the IIT Mumbai.

This year we will be organizing a training on Python for the Third Year B.Sc. Physics students. Students who will clear the exam will get a course passing certificates from IIT, Mumbai.

Physics Quote

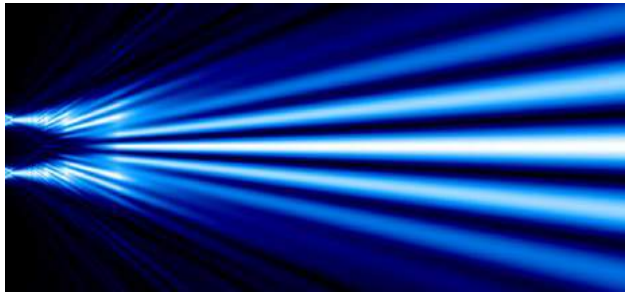
Trying to understand the way nature works involves a most terrible test of human reasoning ability. It involves subtle trickery, beautiful tightropes of logic on which one has to walk in order not to make a mistake in predicting what will happen. The quantum mechanical and the relativity ideas are examples of this.

-Richard P. Feynman

Feynman's Double-Slit Experiment brought to life

The precise methodology of Richard Feynman's famous double-slit thought-experiment – a cornerstone of quantum mechanics that showed how electrons behave as both a particle and a wave – has been followed in full for the very first time.

Although the particle-wave duality of electrons has been demonstrated in a number of different ways since Feynman popularised the idea in 1965, none of the experiments have managed to fully replicate the methodology set out in Volume 3 of Feynman's famous Lectures on Physics.



"The technology to do this experiment has been around for about two decades; however, to do a nice data recording of electrons takes some serious effort and has taken us three years," said lead author of the study Professor Herman Batelaan from the University of Nebraska-Lincoln.

"Previous double-slit experiments have successfully demonstrated the mysterious properties of electrons, but none have done so using Feynman's methodology, specifically the opening and closing of both slits at will and the ability to detect electrons one at a time.

In Feynman's double-slit thought-experiment, a specific material is randomly directed at a wall which has two small slits that can be opened and closed at will – some of the material gets blocked and some passes through the slits, depending on which ones are open. Based on the pattern that is detected beyond the wall on a backstop – which is fitted with a detector – one can discern whether the material coming through behaves as either a wave or particle.

When particles are fired at the wall with both slits open, they are more likely to hit the backstop in one particular area, whereas waves interfere with each other and hit the backstop at a number of different points with differing strength, creating what is known as an interference pattern.

In 1965, Feynman popularised that electrons – historically thought to be particles – would actually produce the pattern of a wave in the double-split experiment. Unlike sound waves and water waves, Feynman highlighted that when electrons are fired at the wall one at a time, an interference pattern is still produced. He went on to say that this phenomenon "has in it the heart of quantum physics [but] in reality, it contains the only mystery."

Source: https://phys.org/news/2013-03-feynman-double-slit-brought-life.html