

# Department of Physics

## Guest Lecture

on

“Latest developments in Material Science”

by

Sathish Kumar, Scientific officer, SSCU, IISc, Bangalore

Date: 25<sup>th</sup> September 2018



### **Structure determination by Single crystal x-ray diffraction - Mr. Sathish Kumar**

With the development in material science, advanced materials are being produced for variety of engineering applications. The electrical, mechanical, thermal properties are being enhanced through doping, modification of the crystal structure using Crystallography techniques. Sri Sathish Kumar, Senior Scientific officer, Indian Institute of Science had delivered a talk on "Latest developments in Material Science" at CMR Institute of Technology. He had elaborated the applications of crystallographic techniques such as X ray Diffraction which is used for characterization of crystals, semiconductors, nanomaterials. This technique is particularly important in Materials chemistry to analyze the structure of chemical compounds, drug materials. He also narrated how the great scientists William Roentgen and Sir William Bragg developed the field of X ray crystallography.

# Department of Physics

## Guest Lecture

on

“SOLAR HOUSE – PRACTICAL APPROACH”

by

**Vignesh Nalchand**, 5<sup>th</sup> Sem Computer Science Engg Student,  
CMRIT, Bangalore

Date: 11<sup>th</sup> October 2018



**HARNESSING SOLAR ENERGY FOR SOLAR HOUSE: Vignesh Nalchand**

Mr. Vignesh has setup 1000W solar plant at his house making it self-sufficient in electricity. He narrated his experiences in this project. He elaborated on various factors to be considered before setting up of the plant. The factors such as location, area available, maximum utility time of the day are important. He observed thin film solar cells are cheaper and being used in large scale these days. Answering questions on maintenance charges, he mentioned that MPPT Inverter is a better choice.

# Department of Physics

## Tech Talk

on

“Interview skills”

by

Mr. Dhruv, 7<sup>th</sup> sem Computer science Engg student,  
CMRIT, Bangalore

Date: 23<sup>rd</sup> Oct, 2018



Mr.Dhruv, 7th semester Computer science engineering student who has secured job offer from Delphi with a package of 8.1LPA interacted with first year students shared his experiences on facing the interview. He mentioned that coding background is an advantage. He stressed that good score in the VTU exam is necessary to become eligible for good companies. He suggested students to avail certification courses offered in the college. Projects on latest software's helps to upgrade knowledge. He said, Our role in conducting a group project is taken note of in the interview. Finally our ability to work-in a group under pressure situation is very important, he said.

# Department of Physics

## Quiz Competition

Organized by Physics department on 15th Nov. 2018.

We congratulate the Participants and Winners



### **The Prize Winners**

#### **First Prize**

Aditi Sudhkar (A-07)

#### **Second Prize**

Morjaria Jigar (D-20)

Shanthanu Singh (F-06)

#### **Third Prize**

Aman Kapoor (A-13)

# Department of Physics

## TECH TALKs by Faculty of Physics Department

### *Applications of Shock waves in Radio Astronomy*

by

**Dr. Raveesha K H**

*on 1<sup>st</sup> feb. 2018*

Shock waves are high pressure disturbances set up in a medium due to the passage of objects with speed greater than that of sound. SUN, a magneto hydrodynamic laboratory is a large reservoir of plasma matter. Due to reconnection of magnetic flux lines, large amount of magnetic energy is released which projects plasma matter with great speed of the order of  $0.01c$ . The passage of this matter sets up shock waves in SUNs atmosphere and get transformed to electromagnetic waves through plasma oscillations. Radio waves from SUN could be the signatures of shock waves which can be used to make space weather predications necessary to protect space borne/ Earth instruments.



### *Lemaitre -Hubble's Law and Expansion of Universe*

by

**Dr Rajesh Gopal**

on


*5th Oct. 2018*

The large scale structure and evolution of the Universe can be studied within the framework of Einstein's general theory of relativity. One of the implications of this, is the discovery of the expanding Universe model (popularly called the Big Bang Model) by George Lemaitre and Edwin Hubble in the 1920s. Recently the International Astronomical Union (IAU), in a meeting, put forward a draft resolution and renamed the Hubble law as Hubble-Lemaitre Law. In this context, I will be elucidating on the contribution of Edwin Hubble and Georges Lemaitre towards the idea of expanding Universe and the observations confirming the idea.



# Department of Physics


Congratulation to Faculty of Physics  
Scored Top 5% in the MOOC -NPTEL course



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Prof. A. Ramesh  
Chairman  
Center for Continuing Education, IITM


Aug-Sep 2018  
(8 week course)



Prof. Andrew Thangaraj  
NPTEL Coordinator  
IIT Madras




Indian Institute of Technology Madras



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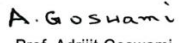
Online Assignments	24.17/25	Proctored Exam	55.5/75
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Total number of candidates certified in this course: **966**




Prof. Anupam Basu  
NPTEL Coordinator  
IIT Kharagpur

Aug-Sep 2018  
(4 week course)



Prof. Adrijit Goswami  
Dean  
Continuing Education, IIT Kharagpur



Indian Institute of Technology Kharagpur



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# Mini Project

## Robots – Rural technology – security systems Catch attention in Science and Technology Exhibition



Innovative Projects on Blind man's stick, Blue tooth controlled robot, Gas leakage sensors and smart city projects caught the attention of budding engineers at Science and Technology Exhibition 2018 at CMR Institute of Technology. Rohan Raj of Information Science Engineering exhibited Blind Man's Stick which is a multipurpose tool to assist blind people in physical movements and communication highlighted that it is low cost device. Ashwin of Computer science engineering demonstrated solar powered Power bank mentioned that he is currently working on improving the efficiency. Gowri of of Computer Science showed Vacuum cleaner which needs a low voltage power source. Alex if First year exhibited detector system for identifying Gas leakage, Fire and smoke, alcohol. We plan to upgrade this to identify drowsiness of drivers to prevent accidents- he said. Variety of robots such as mobile controlled, Bluetooth controlled, voice controlled, IR sensor controlled robots caught the attention of all the students. Sai charita of Electronics Engineering has developed a system to measure pesticide content in food items. Mathematics projects involving applications of differential equations to making Tomato Soup was exhibited by Vaishnavi Dinesh of Computer Science. We are extending this work to study many other natural processes –she said. Anusha explained how Bayers Theorem could be used to predict Election results. Many first year students showed their prowess in making Drone. Music editing software, water cleaning boat, Chemistry related Computational method to study of crystal structures, Mechanical devices like Mini Lathe were also exhibited. Raja Nandini of Electronics and Communication built a Hovercraft which moves with a good speed. Nisha of Electronics engineering created high pressure water jet which is an essential rural technology. Nemitesh of first year Information Science showed vibration sensor which he is planning to extend to detect people buried under debris, snow. Nithin of Computer science explained low cost Air cooler which

does not use CFCs. Budding engineers displayed over 100 innovative projects providing solutions to real life problems in the field of Robotics, Rural technology, Water Purification, Electricity generation, communication, programming and many such vital areas necessary for society.

Many Students displayed their mini project on that day, the DRC members Dr.A.Suvitha, Dr.Tukaram shet, Dr.Rajesh, Dr.Shamsundar Hegde and Dr.Ramdas balan have evaluated the project based on several criteria. This exhibition became a unique platform for college students, teachers to interact with innovators on their inventions. Earlier K.C.Ramamurthy, CMR group of institutions chairman Dr Sanjay Jain, Principal and Dr B Narasimha murthy inaugurated the event.

