

Science Academies' Lecture Workshop on Condensed Matter Physics: 7-9 March 2018



Prof. S. N. Kaul, Senior Scientist & INSA fellow, Hyderabad University, inaugurating the workshop













Dr. Shajumon



Prof. S. N. Kaul



Dear Sir/Madam, Greeting

The Department of Physics, Bishop Moore College, Mavelikara strives to organize, connect, create and communicate concepts of Physics effectively, through the 4D's: Dedication, Discipline, Direction and Determination. Realizing the necessity to strengthen the Postgraduate and Under graduate programmes in Physics, we are hosting a three day workshop on the topic "Advances in Condensed Matter Physics" organized jointly by the Indian Science Academies. It is our pleasure to invite the M.Sc. and B.Sc. Physics students from your college to participate in this workshop. We look forward to have your collaboration for a fruitful workshop.

Nature of the Workshop

The workshop is designed as a Lecture Workshop – a programme promoted by the three national academies of science: Indian Academy of Sciences, Bangalore; Indian National Science Academy, New Delhi and The National Academy of Sciences, Allahabad under 'Science Academies' education programmes" and is sponsored by the three Science academies. The workshop will be from 9:30 am to 4:30 pm.

About the College

Bishop Moore College, Mavelikara, a college affiliated to the University of Kerala, is emerging as a leading educational and research institution in Kerala with 11 undergraduate and 4 postgraduate courses and two research Departments. The institution aims to be a centre of excellence and a catalyst in facilitating holistic development of youth with international standards and to update and create new knowledge through research.

About the Department

The Department of Physics, Bishop Moore College, Mavelikara, has a glorious history of over four decades with many golden feathers in its cap. It is the first Post Graduate department in the college, having started the B.Sc. course in 1967 and the M.Sc. course in 1983. Prof. (Rev.) K.C. Mathew, the first Head of the Department, is also the founder Principal of Bishop Moore College. The Department of Physics became an approved Research Centre of the University of Kerala in 2012. The department is now emerging as a flourishing centre of research in the field of Spectroscopy and Non linear Dynamics, with three

major research projects in this field, funded by the CSIR, KSCSTE and DST. The Department has become a DST-FIST sponsored department in 2014 with a sponsorship for five years. The Ministry of Science and Technology, Government of India has sanctioned the project for upgrading the standard of postgraduate teaching and research facilities through this project. The KSCSTE has sanctioned the SARD project to the Department in 2016. The Department is selected under DBT STAR Scheme in 2017 by Department of Biotechnology, Government of India.

Lecture Workshop Objectives

The Department of Physics, Bishop Moore College, Mavelikara, is hosting a Science Academies' Lecture workshop on "Advances in Condensed Matter Physics" during 07 - 09 March 2018, organised jointly by the three Science Academies of India (IASc, Bangalore; INSA, New Delhi & NASI, Allahabad). This lecture-workshop is specifically meant for the local/regional M.Sc. students and college teachers, with a view to make them gain in depth knowledge in the field of Condensed Matter Physics. The Lecture sessions will cover the basics as well as the advances and recent trends in the field. The workshop is also aimed at building a platform for interactive learning where the M.Sc. students of different colleges can have discussions among themselves and with teachers. The participants will also get ample chance for interaction with the speakers. Since the venue has a limited seating capacity of 125, participation in the lecture sessions will be based on a first come, first served basis.

Who Can Attend the Workshop

UG & PG students, teachers and research scholars with physics/material science background can participate in this workshop.

Topics Covered

- Rudiments of Magnetism
- Dielectric and Optical properties of materials
- Magnetic Properties of materials
- Introduction to nano science
- Preparation techniques of Nano material
- Introduction to Spintronics
- Characterisation techniques of Nano materials

Resource Persons:

Prof. P.S. Anillumar

(Associate Professor, Department of Physics, Indian Institute of Science Bangalore-560 012, INDIA India)

Dr. M. M. Shaijumon

(Associate Professor, School of Physics, IISER Thiruvananthapuram)

Dr. Rajeev Shesha Joshi

(Assistant Professor, School of Physical Sciences, Central University of Karnataka)

Program Schedule

DAY 1 07 March 2018 Wednesday

- 9.45-10.00 am : **Inaugural Function**
- 10.00-11.15 am : Lecture-1
Dr. M. M. Shaijumon
Topic : **Introduction to Nano Science**
- 11.15-11.30 am : **Tea Break**
- 11.30-12.45 pm : Lecture-2
Prof. S. N. Kaul
Topic : **Rudiments of Magnetism-1**
- 12.45-01.30pm : **Lunch Break**
- 01.30-02.45 pm : Lecture-3
Dr. M. M. Shaijumon
Topic : **Preparation techniques of Nano material**
- 02.45 - 03.00 pm : **Tea Break**
- 03.00 - 04.15 pm : Lecture-4
Dr. M. M. Shaijumon
Topic : **Characterisation techniques of Nano materials**

DAY 2, 08 March 2018 Thursday

9.30 – 10.45 am : Lecture-5

Prof. S. N. Kaul

Topic : **Rudiments of Magnetism-II**

10.45 – 11.00 am : **Tea Break**

11.00-12.15 pm : Lecture-6

Dr. Rajeev Shesha Joshi

Topic : **Dielectric and Optical properties of materials-I**

12.15-01.00 pm : Lunch Break

01.10-02.15 pm : Lecture-7

Prof.S.N.Kaul

Topic : **Rudiments of Magnetism-III**

02.15 - 02.30pm : **Tea Break**

02.30 - 03.45 pm : Lecture-8

Dr. Rajeev Shesha Joshi

Topic : **Dielectric and Optical properties of materials-II**

DAY 3, 09 March 2018 Friday

9.30 – 10.45 am : Lecture-9

Prof. P.S Anilkumar

Topic : **Magnetic Properties of materials-I**

10.45 - 11.00 am : **Tea Break**

11.00-12.15 pm : Lecture-10

Prof. P.S Anilkumar

Topic : **Topic: Introduction to Spintronics-I**

12.15-01.10 pm : Lunch Break

01.10-02.15 pm : Lecture-11

Dr. Rajeev Shesha Joshi

Topic : **Dielectric and Optical properties of materials-III**

02.15 - 02.30 pm: **Tea Break**

02.30 - 03.45 pm: Lecture-12

Prof. P.S Anilkumar

Topic : **Introduction to Spintronics-II**

03.45 – 04.00 pm : **Feed back Session**

Registration

- There is NO registration fee to attend this lecture workshop.
- Lunch and refreshments will be provided to all the participants.
- Only 150 participants will be permitted to register and registration is done on "First come First Serve" basis.
- Interested students/teachers are requested to download the application form available at www.bishopmoorecollege.org and send the filled in form in the following address on or before 3rd March, 2018.

Head of the Department of Physics
Bishop Moore College
Mavelikara, Alappuzha (Dist)-690110
Email Id: hodbmcphysics@gmail.com
Mobile: 9447946947

Convenor:
Prof. S.N. Kaul
(INSA Senior Scientist, School of Physics,
University of Hyderabad, Hyderabad
500 046, A.P)

Local Coordinator:
Dr. Arun Aravind
Assistant Professor
Department of Physics
Bishop Moore College, Mavelikara, Kerala
Email Id: hmcarrun@gmail.com



**SCIENCE ACADEMIES'
LECTURE WORKSHOP**

on

Advances in Condensed Matter Physics

Jointly Organised by
Indian Academy of Sciences, Bengaluru
Indian National Science Academy, New Delhi
The National Academy of
Sciences India, Allahabad



Hosted by
Post Graduate & Research Department of Physics
Bishop Moore College, Mavelikkara, Kerala - 690110

Date : 7-9 March 2018
Venue : Seminar Hall, Bishop Moore College