


A Report on One Day National Seminar titled “Prospects in Physics at Department of Atomic Energy & Research Facilities at VECC”

Date: 20.09.2022

Organized by: Department of Physics in collaboration with Public Awareness Cell (PAC), VECC, Kolkata

One Day National Seminar
on
PROSPECTS IN PHYSICS AT DEPT. OF ATOMIC ENERGY & RESEARCH FACILITIES AT VECC (PPDRF-2022).
20th September, 2022 11.00 a.m.



Organized by
Department of Physics,
Raniganj Girls' College, Raniganj,
Paschim Bardhaman, W.B.

In Collaboration with
Public Awareness Cell (PAC),
Variable Energy Cyclotron Centre
(VECC), Kolkata, W.B.

Talk-I: Facilities and opportunities at VECC in nuclear physics research.
Speaker: Dr. Gopal Mukherjee,
Scientific Officer - G at VECC, DAE and Associate Professor at Homi Bhabha National Institute, Govt. of India. Member of the International network of Nuclear Structure and Decay Data (NSDD) evaluators, under the auspices of the International Atomic Energy Agency (IAEA). Former post-doctoral fellow at ANL, USA and GANIL, France.

Overview of the talk: Atomic nucleus is one of the basic ingredients of all elements, which consists of protons and neutrons. The investigation of the properties of the nucleus of different elements gives us important information about the forces acting in nature, the information about how all the elements are created in the nature and also the understanding on how one can utilize the tremendous energy that is available within a nucleus. One can investigate the static and dynamic properties of different nuclei by employing different techniques, many of which are available at the Variable Energy Cyclotron Centre. I will briefly introduce the powerful facilities available at VECC and their usage which make VECC as one of the leading nuclear physics laboratories in the world. Later on, I will also talk about the career opportunities at the Dept. of Atomic Energy. It is not only what you know but it is more important what question you ask based on your understanding to make a career in physics by which you will be known internationally through generations to come.

Talk-II: Research on radioactivity.
Speaker: Dr. Amlan Ray,
Retired as a Scientific Officer (H+), VECC, DAE and Professor, Homi Bhabha National Institute, Govt. of India. At present, Principal Investigator of a Research Grant from the Science and Engineering Research Board, DST, Govt. of India. Earlier Research Professor University of Tennessee and Oak Ridge National Laboratory, Tennessee, USA.

Overview of the talk: Marie Curie discovered radioactivity more than a century ago and got Nobel Prize for the discovery. Today radioactive decays are taught in high schools and all science students know about it. However, many of you may not know how radioactivity was discovered and what was the Physics scenario of that time. I shall tell you the story of discovery of radioactivity by Marie Curie and the background Physics. More than a century later, we are still studying radioactivity at Variable Energy Cyclotron Center, Kolkata. What are we studying today and why? I shall tell you about that.

Chief Patron:
Dr. Chhabi De, Principal.
Patron:
Dr. Anita Mishra, Associate Professor of Hindi & IQAC Coordinator.
Convener:
Dr. Alok Kumar De, Associate Professor of Physics.
Secretary:
Dr. Saumendra Sankar De Sarkar, Assistant Professor of Physics.
Program Coordinators:
Sri Arindam Chatterjee, State Aided College Teacher of Physics.
Sri Partha Mondal, State Aided College Teacher of Physics.
Technical Coordinators:
Smt. Purnima Banerjee, Laboratory Staff, Dept. of Physics

Talk - III : How do we measure the masses of tiny atoms and nuclei?
Speaker: Dr. Arindam Kumar Sikdar,
Scientific Officer (E), VECC, DAE, Govt. of India
Assistant Professor, Homi Bhabha National Institute, Govt. of India

Overview of the talk: Atoms are the building blocks of a substance, but it is extremely small in size. It will be discussed that how the masses of these tiny atoms can be measured with extremely high precision using state of the art facility. It is known that during the initial stage of creation of our universe, an equal amount of matter and anti-matter were created. But presently the entire universe is made up of matter only. What happened to the anti-matter, is a question that boggles every scientist's mind. It will be addressed that how measuring the masses of this tiny particles with extremely high precision will help us to understand the prevailing mystery.

Talk - IV: Nuclear Fission: To break is to grow.
Speaker: Mr. Arijit Sen,
Scientific Officer (D), VECC, DAE, Govt. of India

Overview of the talk: The periodic table of elements is constantly growing, and is presently 118 elements long. These young elements discovered by man are known as Super Heavy Elements. This talk will introduce these elements as well as discuss the means used to discover them and study them. The important role of fission research which helped in discovering these elements will also be addressed. The role of nuclear fission as the guide for the growth of periodic table as well as the growth of the nation as a means of energy production shall be presented to the audience.

Program: 1st session: 11.00 a.m. – 01.00 p.m.;
Lunch Break: 01.00 p.m. - 2.30 p.m.
2nd session (Quiz competition, Video show, Certificate & Prize distribution): 2.30 p.m. – 4.00 p.m. No Registration Fee.

A good questions during the seminar will also be rewarded with exciting prizes.

Brochure for the Seminar

Objectives

1. To make the students aware of the prospects in studying Physics at the Under Graduate level
2. To explore the career opportunities at the Department of Atomic Energy (DAE), Govt. of India.
3. To explore the facilities and opportunities at the Variable Energy of Cyclotron Centre, Kolkata, W.B.



Seminar in progress

Total Participants: 96

Resource Persons:

- Dr Gopal Mukherjee, Scientific Officer-G, VECC, DAE & Associate Professor, Homi Bhaba National Institute, Government of India
- Dr Amlan Ray, Retired as Scientific Officer (H+), VECC, DAE & Professor, Homi Bhaba National Institute, Government of India

- Dr Arindam Kumar Sikdar, Scientific Officer-E, VECC, DAE & Assistant Professor, Homi Bhaba National Institute, Government of India
- Mr Arijit Sen, Scientific Officer-D, VECC, DAE, Government of India

Outcomes:

1. Students gathered knowledge about different aided institutions and autonomous organizations under D.A.E.
2. The level of knowledge of the students on the application of nuclear and radiation physics in the field of agriculture, medicine, industry and basic research was raised.
3. Students expressed curiosity as well as interest in visiting the laboratory facilities at VECC, Kolkata with a warm welcome from the honourable speakers.