RAMANANDA COLLEGE

BISHNUPUR * BANKURA
Pin – 722122, West Bengal
UGC Recognized & State Government Aided Constituent College
Under the Bankura University
(Accredited by NAAC at 'B' Level)

Report on Workshop / Seminar

Characterization of Nanomaterials

- Name of the organizing Department: Physics
- Collaborating Agency : Department of Physics, The University of Burdwan
- Title of the Workshop / Seminar: **"**Characterization of Nanomaterials**"**
- Funded by: University Grants Commission (Eastern Regional Office)
- Date(s): 22-23rd September, 2016
- Level: National
- Number of participants: 104 [Students: 65 + Teachers & Research Scholars: 39].
- Details of Resource person(s):

Sl. No.	Name	Topic	Affiliation
1	Prof. P. K. Chakrabarti	An overview of nanomaterials	Department of Physics, The University of Burdwan, West Bengal.
2	Prof. K. K. Chatterjee	Introduction to Characterization of Nanoscale Materials: Scanning probe microscopy and related techniques	Department of Physics, Jadavpur University, Kolkata, West Bengal
3	Prof. S. Mukherjee	Synthesis and Characterization of nano composites	Department of Physics, IIEST, Shibpur, Howrah, WB
4	Dr. A. K. Chakraborty	Characterization of nanomaterials employing X-ray photoelectron spectroscopy	Department of Physics, National Institute of Technology, Durgapur, West Bengal.
5	Dr. A. Singha	Spectroscopic Studies on Low Dimensional Systems	Department of Physics, Bose Institute, Kolkata, West Bengal.
6	Dr. S. Das	Biosynthesis of Metal Nanoparticles and its Application in Water Purification	Central Leather Research Institute, Chennai.
7	Dr. Prabir Pal	Surface and interface properties of oxide heterostructures	National Physical Laboratory, New Delhi.
8	Dr. Mrinal Pal,	Application of nanomaterials in our daily life	Central Glass and Ceramic Research Institute, Kolkata.

Objective: The fundamental of nanotechnology lies in the fact that properties of materials change dramatically when their size is reduced to the nanometer range. In this small size both surface effects become dominant and quantum size effect occur. So, there are many challenges in the research and development of nanotechnology based products. The precise control of nano-particle size, size distribution and the study of electronic and optical properties at nano level need sophisticated characterization techniques such as X-ray Diffraction (XRD), electron microscopy (SEM, TEM, HR-TEM), atomic force microscopy (AFM), UV-Visible, Photoluminescence spectroscopy (PL), Infrared spectroscopy (IR), Raman Spectroscopy, X-ray photon spectroscopy (XPS) etc. In this seminar there were vast discussions on the basic principle of various instrumental techniques and their use in the field of nano technology and nano-science. The primary objective of this seminar was to provide a theoretical back ground as well as practical aspects of the methods that are widely used to characterize nanomaterials.

Outcome: The seminar was definitely beneficial for the different strata of educationalist and students. The students took part in this seminar with great enthusiasm. Participants gathered diversified knowledge of different nano-material characterization technique. It provided a unique opportunity for the faculties of Universities, Colleges and researchers to exchange their ideas, views and information regarding the recent advancement in the field. For the undergraduate students, it was an introduction programme for introducing themselves to the various aspects of nanomaterial characterization. It was a great opportunity for them to meet resource persons of national and international repute. **Scholars, researchers, teachers have presented research papers and delivered speeches on research areas related to this topic.** This helped the students a lot to motivate themselves for pursuing research career in future.

Characterization of Nanomaterials 22.09.2016-23.09.2016