



Rajiv Gandhi University
Rono Hills, Arunachal Pradesh

Department of Physics

presents

1st | Prof. Hiralal Das Memorial Lecture

on

**Nanostructures:
Fundamentals & Quantitative Analysis**

by

Prof. Purushottam Chakraborty

Senior Professor,
Saha Institute of Nuclear Physics, Kolkata, India
&

Former Adjunct Professor,
University of Pretoria, South Africa

Thursday, 11th November 2021 | 10.30 am

CLICK HERE TO JOIN THE LECTURE

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Late Prof. Hiralal Das

*An eminent personality in Condensed Matter Physics
and Founder Head, Department of Physics,
Rajiv Gandhi University*

About the Speaker



Prof. Purushottam Chakraborty

Senior Professor,
Saha Institute of Nuclear Physics, Kolkata, India
&
Former Adjunct Professor,
University of Pretoria, South Africa

Prof. Purushottam Chakraborty is a leading expert on Ion-Beam Analysis of Materials and Secondary Ion Mass Spectrometry (SIMS). Prof Chakraborty has served as a Visiting Professor in many renowned universities and research institutes of the world; to name a few, FOM-Institute for Atomic & Molecular Physics – Netherlands; Padova University – Italy; ICTP – Italy; University Laval – Canada; Osaka University - Japan; Friedrich Schiller University – Germany; University of Pretoria – South Africa, etc. Prof Chakraborty's work on 'layered Synthetic Microstructures (LSM)' was recognized as a pioneering contribution in the "realization of optical devices for the extreme ultraviolet to soft X-rays". Further, for his outstanding research contribution in the field of Mass Spectrometry, he was adjudged the "Most Eminent Mass Spectrometrists of India" by the Indian Society for Mass Spectrometry (ISMS) and conferred with "Gold Medal" by the Chairman, Atomic Energy Commission, Government of India. Prof Chakraborty is a Premchand Roychand Scholar (PRS) of Calcutta University and Fellows of the Indian Chemical Society and the West Bengal Academy of Science and Technology.

Chief Patron



Prof. Saket Kushwaha

Vice Chancellor
Rajiv Gandhi University

Patrons



Prof. Amitava Mitra

Pro Vice Chancellor
Rajiv Gandhi University



Prof. Sanjeev Kumar

Dean, Faculty of Basic Sciences
Rajiv Gandhi University



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Abstract

An innovative approach, based on “alkali-based molecular Secondary Ion Mass Spectrometry (SIMS)” has been proposed for the accurate quantification in materials and Molecular Beam Epitaxy (MBE)-grown low-dimensional structures. The ‘matrix effect’ in SIMS has been shown to be completely suppressed irrespective of impurity elements present in the matrix. The methodology has successfully been applied for direct quantitative composition analysis of various thin film, multilayers and quantum structures. The talk will address the basics of nanostructures in terms of ‘Density of States’, SIMS and potential applications of “alkali-based molecular ion-SIMS” approach in direct chemical analysis of low-dimensional materials and quantum structures.

Program Details

10.30 am

Welcome Address

10.35 am

Inaugural speech by Head of the Department

10.40 am

Address by close associate of Prof. Hiralal Das

10.45 am

Address by Dean, Faculty of Basic Sciences

10.55 am

Address by Pro-Vice-Chancellor

11.05 am

Address by Vice-Chancellor

11.15 am

Introduction of the Speaker

11.20 am

Invited Lecture

12.45 pm

Interaction with audience

01.00 pm

Vote of thanks

Convenor

Prof. Pradip Kumar Kalita
Head, Department of Physics
Rajiv Gandhi University