

ONE DAY INTERNATIONAL WEBINAR ON "RECENT DEVELOPMENTS ON THE UNDERSTANDING OF EPIDEMIC DYNAMICS AND STUDYING THE EVOLUTION OF OUR UNIVERSE BY PROBING THE NEUTRAL HYDROGEN DISTRIBUTION OVER THE COSMOLOGICAL TIME SCALES"

20<sup>TH</sup> JUNE, 2020

*Organized by*

*Department of Physics (UG & PG) under the Aegis of  
IQAC*



**BANWARILAL BHALOTIA COLLEGE  
ASANSOL-713303, WEST BENGAL, INDIA**

*(To Be Hosted on Zoom Web Platform)*

## **ABOUT THE INSTITUTION**

Banwarilal Bhalotia College, affiliated to Kazi Nazrul University, is one of the leading educational institutions in the area, providing both general and technology-based education. The college boasts of a beautiful campus, spacious classrooms, well-equipped laboratories, state-of-the-art computer facilities, well-stocked libraries and a large playground. It offers undergraduate courses in various subjects of Arts, Commerce and Science streams (both general and honours) along with post graduate courses in Physics, Zoology and Hindi. The college, in keeping with the changing needs of students, has introduced courses like BBA, BCA, departmental training courses for Dry Farming, Cultivation, Vermi-Composting, Sericulture Training and Soil Water Analysis. Three distance education study centers of IGNOU, NSOU and MAANU also run on the campus. We are hopeful that we will be able to nurture generations of enthusiastic learners in the years ahead. In 2010, the college was declared a “Centre with Potential for Excellence” by UGC and in 2011, it received Rs. 50,00,000/- as seed money for the Development of Basic Science Research (BSR). In 2012, the UGC introduced three effective career-oriented courses, namely, Functional English, Mobile Repairing, Vermi-composting with Organic Farming (both Certificate and Diploma Courses) for students of the college as well as outside participants. These courses have continued successfully for three years. Recently, the college was re-accredited by the NAAC with grade B<sup>+</sup> and with sincere and dedicated effort we are confident of scaling greater heights in future.

## **ABOUT THE PHYSICS DEPARTMENT**

The Department of Physics, B.B. College had started its journey in 1960 with Undergraduate courses. Since its inception, the department has been striving to impart high quality education in Undergraduate courses in physics. The department takes pride in the contribution of various distinguished, ex-faculty members and alumni towards the betterment of the department at various points of time. The Department has produced a number of brilliant students who have obtained first class degrees as well as University Rank in the University examinations. A sizeable number of our students have proved their mettle in various spheres of life, such as higher education and research in distinguished state and central Universities and institutions of repute like IIT, IISc, IISER, BARC, NIIT, TIFR etc. The department started Post Graduate course in Physics in 2002 to provide extensive and comprehensive education in the subject to create leaders and innovators and to generate new concepts, thinking, computational skills and problem solving ability and knowledge for the students of Asansol-Durgapur industrial area and beyond. Department of physics recognizes its responsibility and constantly strives to empower students to excel in discipline through creation, acquisition and dissemination of knowledge. The department has its spacious class rooms, well equipped laboratories, ICT enabled class rooms with internet facility and separate seminar libraries both for UG and PG with sufficient number of books. The department also takes pride in having distinguished, sincere and dedicated faculty members along with meritorious students.

# ABOUT THE WEBINAR

Diffusion dynamics and information spreading in multilayer networks are two of the most explored topics, with numerous applications in social, technological, and biological systems. In the first talk Dr. Sayantari Ghosh will speak on "*Understanding and predicting epidemic dynamics*". This is related with the study of infectious diseases and diffusion dynamics. In her talk, she will discuss different modelling strategies that can be related with several practical factors like population density, testing efficiency, public awareness, health-care facility, general immunity etc. which are implicit to the dynamics, and can contribute in understanding country-specific data variability.

In the next talk, Dr. Samir Choudhuri will speak on "*Measuring cosmological 21-cm signal using Radio telescope*". The focus of this talk is on modern cosmology which mainly deals with the origin and evolution of the Universe. Various observational detections (e.g., CMBR, galaxy survey) probe the Universe at different stages of time. The 21-cm signal from neutral hydrogen is another important tool which can be used to probe the Universe over a large time period. It also contains a wealth of cosmological and astrophysical information. But, the problem is particularly challenging due to the presence of strong foregrounds from Galactic and Extragalactic emissions. In this talk, the speaker will present the global effort towards the detection of this faint signal using radio telescopes. He has also led the development of a novel estimator (namely Tapered Gridded Estimator: TGE) to detect this 21-cm signal in the presence of the strong foreground sources. He will discuss the formalism and the effectiveness of the TGE, which is relevant for the present and future 21-cm studies.

## REGISTRATION DETAILS

Registration Fee: Free & open to all  the following is the registration Link:

[https://docs.google.com/forms/d/e/1FAIpQLScBOoK2ZYWxvf5e802KgHCuorzzdpWWxn392s12E\\_XDtIqSrO/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLScBOoK2ZYWxvf5e802KgHCuorzzdpWWxn392s12E_XDtIqSrO/viewform?usp=sf_link)

Last date of registration: 19th June, 2020

e-certificate will be delivered through email.

For any query please mail us at: [bbcolphydept@gmail.com](mailto:bbcolphydept@gmail.com)

## INVITED SPEAKERS



Dr. Sayantari Ghosh ,  
Assistant Professor  
Department of Physics  
National Institute of Technology Durgapur  
Durgapur, India  
**Talk title: “Understanding and predicting epidemic dynamics”**



Dr. Samir Choudhuri,  
Postdoctoral Researcher  
Astronomy Unit, Queen Mary University of  
London, London E1 4NS, United Kingdom  
**Talk title: “Measuring cosmological 21-cm signal using  
Radio telescopes.”**

## TENTATIVE SCHEDULE

1.00 PM - 1.30 PM : Opening ceremony & Welcome Address

Technical Session: 1:30 PM - 3:30 PM

1.30 PM - 2.30 PM : Invited Talk 1

2.30 PM - 3.30 PM : Invited Talk 2

3:30 PM -3.45 PM: Vote of Thanks

## ORGANIZING COMMITTEE



### **Chief Patron**

Sri Moley Ghatak, Honble Minister-In-Charge  
Department of Labour & ESI, Govt. of West Bengal &  
President, Governing Body, Banwarilal Bhalotia College, Asansol



### **Patron**

Dr. Amitava Basu, Secretary, Governing Body & Principal, Banwarilal Bhalotia College,



### **Chairperson**

Dr. Ashim Kumar Mukherjee, Associate Professor, Department of Physics



### **Joint Secretary**



Dr. Parimal Ghosh, Bursar & Associate  
Professor, Department of Physics

Dr. Kousik Mukherjee, Assistant  
Professor, Department of Physics



### **Joint Conveners**



Sri Jayanta Kumar Majhi, Assistant  
Professor & HOD, Department of Physics

Dr. Ritwik Kumar Roy, Assistant Professor,  
PG In-charge, Department of Physics



### **Technical Advisors**



Dr. Kajal Krishna Dey, Associate  
Professor & Coordinator IQAC,  
Department of Physics

Sri Kajal Maji, Assistant Professor,  
Department of Physics



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**Member  
Organizing Committee**

Dr. Abhik Ghosh, Assistant Professor,  
Department of Physics