



Prof. M. S. Sinha Colloquium 2021

August 07, 2021 (11:00 AM-12:30 PM)

A tribute to Late Prof. M. S. Sinha, who was the Founder Head of the Department of Physics (REC, Durgapur) and also an eminent Nuclear Physicist of the country

Organized by:
Department of Physics
NIT Durgapur

M G Avenue, Durgapur – 713 209



Free on-line Registration

Last date of on-line Registration: August 5, 2021 (06:00 PM, IST)
Registration Form (Google Form) is available at the following link:

Coordinator:

Dr. Hirok Chaudhuri
Associate Professor
Physics Department
NIT Durgapur



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https://docs.google.com/forms/d/e/1FAIpQLSdYoFHobHSOKwXZS7vYBn5pGMjie91xlFFtIIxuayAWvjGREQ/viewform?usp=pp_url

Meeting link will be shared immediately after the completion of registration process

Eminent Speaker: Prof. Satyanarayana Bheesette

Satyanarayana Bheesette, Ph.D.

Scientific Officer (H), Tata Institute of Fundamental Research (TIFR), Mumbai
Project Coordinator, India-based Neutrino Observatory (INO), Pottipuram
Visiting Professor, Department of Applied Science, American College, Madurai
AICTE-INAE Distinguished Visiting Professor, Symbiosis Institute of Technology, Pune
Coordinator, ASET Forum, TIFR & Chairperson, IEEE Bombay Section
Homi Bhabha Road ▪ Navy Nagar ▪ Colaba ▪ Mumbai ▪ INDIA ▪ 400005



Title of the Talk: “Detector and instrumentation for the magnetised iron calorimeter experiment of the INO project”

Programme

Time	Event
11:00 am – 11:05 am	Introduction to the Theme of the Event by Dr. Hirok Chaudhuri , Coordinator: “Prof. M. S. Sinha Colloquium” and Associate Professor, Physics Department, NIT Durgapur
11:05 am – 11:10 am	Welcome Speech by Dr. S. Sahoo , Head, Physics Department, NIT Durgapur
11:10 am – 11: 15 am	Speech by Prof. A. K. Meikap , Dean Research and Consultancy, NIT Durgapur
11:15 am – 11:20 am	“Interaction with Prof. M. S. Sinha” by Prof. P. Kumbhakar , Dean Academic Research, NIT Durgapur
11:20 am – 11:30 am	“Prof. M. S. Sinha – an exceptional teacher.” by Prof. Biswajit Halder , Dean Student Welfare, NIT Durgapur
11:30 am - 12:15 pm	Colloquium Talk : “Detector and instrumentation for the magnetised iron calorimeter experiment of the INO project” by Prof. Satyanarayana Bheesette , Scientific Officer (H), Department of High Energy Physics, Tata Institute of Fundamental Research, Mumbai
12:15 pm - 12:25 pm	Interaction session
12:25 pm - 12:30 pm	Felicitation and Vote of Thanks

Details of the Colloquium Talk:

Title: Detector and instrumentation for the magnetised iron calorimeter experiment of the INO project

Abstract:

The India-based Neutrino Observatory (INO) is a multi-institutional project aimed at building a world-class underground laboratory at the Bodi West Hills near Madurai in Tamil Nadu. The collaboration is deeply engaged in design and construction of a mega science experiment called Iron Calorimeter (ICAL) for studying many key open questions involving the elusive particles called neutrinos. The magnetised ICAL will consist of more than 50000 tons of iron plates arranged in stacks with gaps in between where around 28,800 Resistive Plate Chambers (RPCs) would be inserted as active detectors. A total of about 3.6 million high-speed detector signals needs to be instrumented in this detector.

A conscious and consistent effort at developing local components and solutions for all the engineering aspects has been undertaken. A large-scale detector R&D effort was undertaken to design, develop, characterise and produce RPCs of 2 m × 2m in size successfully. The electronics comprising of indigenously developed custom ASICs and high-end FPGAs as well as programmable trigger and high-speed data acquisition systems are in the advanced stages of development, production and deployment. In this talk I will dwell upon the indigenous research and development of detectors, gas systems, instrumentation and electronics needed for the ICAL experiment. I will also briefly mention about career opportunities for the young and motivated students in this prestigious project.

Short Bio-data of Prof. Satyanarayana Bheesette :

Dr. B. Satyanarayana did his B. Tech in Electronics and Communication Engineering from J.N.T. University, Hyderabad and Ph.D. in Physics from IIT Bombay. He is a Scientific Officer (H) in the Department of High Energy Physics, TIFR and Project Coordinator of INO. He is a Visiting Professor at the Applied Science Department of the American College, Madurai and AICTE-INAE Distinguished Visiting Professor at the Symbiosis Institute of Technology, Pune. His areas of interest include 'Detectors and Instrumentation for high energy and nuclear physics experiments'. Dr. Satyanarayana has published about 250 research papers and proceedings in national and international journals and conferences, besides scores of invited talks.

Dr. Satyanarayana is a Fellow of Institution of Electronics and Telecommunication Engineers (IETE) and Institute of Engineers (IE). He is a Life member of the Instrument Society of India (ISOI), a Member of Indian Physics Association (IPA) and a Senior Member of IEEE. He is currently the Chair of the IEEE Bombay Section. He guided a large number of doctoral, master and undergraduate students. He served on many of doctoral and expert committees as well as academic councils, boards of studies and advisory boards on colleges, universities and many national organisations of eminence. He is on the editorial and refereeing teams of several prestigious science and engineering journals. He won IETE's Gowri Memorial Award for the best paper (1988), IEEE Bombay Section's Outstanding Volunteer Award (2014), IEEE MGA Achievement Award (2016) and Homi Bhabha Award in Science Education (2020).