VIGYAN
SAMAGAM

PUSHING THE FRONTIERS OF SCIENCE

Vigyan Samagam
"Scientre Stage"

In order to highlight the value and impact of fundamental research to a broad cross-section of audience including students, academicians and industry, and to further strengthen India's participation in mega-science projects, Department of Atomic Energy (DAE), Department of Science and Technology (DST) and National Council of Science Museums (NCSM) are jointly organising a multi-venue mega-science exhibition, Vigyan Samagam.

The following eight mega-science collaborations will be showcased in Vigyan Samagam:

- European Organisation for Nuclear Research (CERN)
- Facility for Antiproton and Ion Research (FAIR)
- India-based Neutrino Observatory (INO)
- International Thermonuclear Experimental Reactor (ITER)
- Laser Interferometer Gravitational-Wave Observatory (LIGO)
- Major Atmospheric Cerenkov Experiment (MACE)
- Square Kilometer Array (SKA)
- Thirty Meter Telescope (TMT)

A first-of-its-kind, Vigyan Samagam shall be hosted in a caravan mode at four major Indian cities as per the following schedule:

- Mumbai: 8th May to 7th July, 2019
- Bengaluru: 29th July to 28th September, 2019
- Kolkata: 4th November to 31st December, 2019
- Delhi: 21st January to 20th March, 2020

"Scientre Stage" is the inaugural science event at each of the four cities, including the formal inauguration ceremony itself.

Inauguration

Welcome address
Mr. Ranajit Kumar, Head, NCPW, DAE, Mumbai

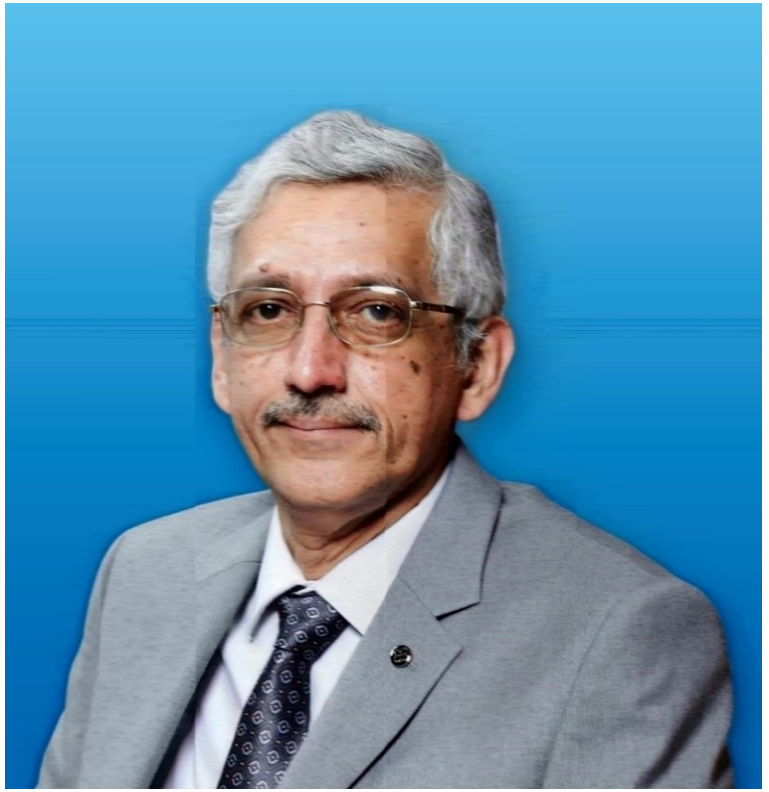
About the Speaker:

- Ranajit Kumar is an Outstanding Scientist & Head of Nuclear Controls & Planning Wing in the Department of Atomic Energy (DAE). He is a leading specialist with outstanding contribution in the area of international nuclear safeguards, nuclear security and nuclear safety. He is leading DAE in the area of international civil nuclear cooperation, international cooperation on nuclear science & technology including cooperation on mega sciences projects, negotiation and implementation of international safeguards in all obligated facilities of DAE, nuclear security policy formulation and implementation etc. He is also leading the cooperation on cutting edge mega science projects with various international organizations like International Thermonuclear Experimental Reactor (ITER), The European Organization for Nuclear Research (CERN), world's third Laser Interferometer Gravitational Wave Observatory (LIGO) in India, Square Kilometre Array (SKA), Thirty Meter Telescope (TMT), India based Neutrino Observatory (INO) and Facility for Anti-proton Research (FAIR). He is leading a team responsible for technical evaluation and grant of export / import and handling license of prescribed substances, equipment and technologies as well as nuclear related dual use goods, equipment and technology as covered under SCOMET list. He is also leading the activities of the Global Centre for Nuclear Energy Partnership (GCNEP), an institute established for promoting R&D, training and human resource development with a vision to promote safe, secure and sustainable nuclear energy, in partnership with countries like USA, France, UK and international organization like IAEA.
- He serves as a member in the Council of Management of Tata Institute of Fundamental Research (TIFR), in the International Thermonuclear Experimental Reactor (ITER) Council, in the BRIT (Board of Radiation & Isotope Technology) Board, DAE and in the "Standing Advisory Group of Safeguards Implementation (SAGSI)" of the Director General (DG) of International Atomic Energy Agency (IAEA). He served as a member from India to the Nuclear Security Guidance Committee (NSGC) of IAEA during 2012 – 2017.
- Ranajit Kumar obtained his Bachelor of Engineering (Electronics & Tele-Communication Engineering) from Bengal Engineering College, Calcutta University (presently known as IIEST - Indian Institute of Engineering, Science and Technology, Shibpur) in the year 1984. After completion of 1 year Orientation Course in Nuclear Engineering in Bhabha Atomic Research Centre (BARC) Training School (September, 1984 – August, 1985), he joined Reactor Control Division in BARC as R&D electronics engineer. In BARC, he has spent more than 31 years' in designing computer and microprocessor based system for application in Nuclear Safety and Nuclear Security. He was responsible for design, development, planning and implementation of nuclear security systems for different types of nuclear fuel cycle facilities including nuclear power plant, reprocessing and waste management plant, research laboratory etc.
- Shri Ranajit Kumar was awarded Technical Excellence Award of DAE in the year 2011. He was also awarded several group achievement awards of DAE.

Address by the Guest of Honour
Mr. K.N.Vyas, Chairperson, AEC and Secretary, DAE, Mumbai

About the Speaker:

- Mr. K.N. Vyas is a Mechanical Engineering Graduate of MS University, Vadodara and a graduate of the 22nd Batch of BARC Training School. Joining the Department in 1979, he commenced his career with forays into nuclear reactor fuel designs. He developed programmes to carry out fuel performance analysis of nuclear fuels, which modeled fuel design aspects like irradiation swelling, fission gas generation and release, pellet-clad interaction, etc.. The insights gained by these studies led to the design of the 7×7 cluster for BWR fuel having superior performance characteristics. As a fuel design engineer, he provided key inputs to fuel manufacturing units like Atomic Fuels Division and Nuclear Fuels Complex.
- Mr. has played an important role in indigenisation of special materials as well as several fabrication & test equipment used in fuel fabrication. His expertise was useful in evolving the design of Test Blanket Module and associated systems, planned to be installed at the ITER project.
- Mr. K.N. Vyas is a recipient of Indian Nuclear Society Outstanding Service Award, Homi Bhabha Science and Technology Award and the Dr. N. Kondal Rao Memorial Award. He and his team have won Group Achievement Awards in the years 2007, 2008, 2012 and 2013 in the field of design and development of critical reactor system equipment, as well as successful erection and commissioning of various reactor systems. He is a Fellow of Indian National Academy of Engineering, 2015.



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Address by the Guest of Honour
Prof. Ashutosh Sharma, Secretary, DST, New Delhi

About the Speaker:

- Ashutosh Sharma is the Secretary to the Government of India since January 2015, heading the Department of Science and Technology (DST), where he helped initiate several new programs.
- Ashutosh received his PhD from the State University of New York at Buffalo (SUNYAB; 1988), his MS from the Pennsylvania State University (1984) and B.Tech. from IIT Kanpur (1982). He has been a professor (1997-), an Institute Chair Professor (2007-) and the Head (2003-05) of Chemical Engineering, and the founding Coordinator of Nanosciences Center and Advanced Imaging Center at the Indian Institute of Technology at Kanpur.
- He has published over 340 peer reviewed papers, filed over 15 patents, given over 150 invited or key note conference presentations and mentored a successful nanotechnology startup.
- Ashutosh is a recipient of numerous honors and awards including the inaugural Infosys Prize in Engineering and Computer Science, TWAS Science Prize of the World Academy of Sciences, Bessel Research Award of the Humboldt Foundation, J. C. Bose Fellowship, Bhatnagar Prize, Homi J. Bhabha Award of UGC, The Syed Husain Zaheer Medal and the Meghnad Saha Medal of INSA, Distinguished Alumni Awards of IIT Kanpur and SUNY Buffalo, Firodia Award and the Life-time Achievement Award of the Indian Science Congress.
- Ashutosh is an elected Fellow of The Indian National Science Academy, The Indian Academy of Sciences, The National Academy of Sciences, India and Indian National Academy of Engineering, The World Academy of Sciences (TWAS) and the Asia-Pacific Academy of Materials. He has also served on the Councils of the first two. He has been an associate editor of ACS Applied Materials and Interfaces, Proceedings of Indian National Science Academy and ASME Journal of Micro- and Nano-Manufacturing and has been on the editorial boards of several journals: Carbon; ACS Industrial and Engineering Chemistry Research; Current Science; Nanomaterials and Energy; Chemical Engineering Science; Journal of Colloid and Interface Science; Canadian Journal of Chemical Engineering and Indian Chemical Engineer.

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Address by the Guest of Honour

Mr. Yogendra Tripathi, Secretary, Ministry of Culture, New Delhi

About the Speaker:

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Address by the Guest of Honour
Dr. R.Chidambaram, DAE-Homi Bhabha Professor, BARC

About the Speaker:

- Dr. Rajagopala Chidambaram became the Director of the Bhabha Atomic Research Centre(BARC) in 1990. He was Chairman, Atomic Energy Commission from 1993 to 2000. He was the Principal Scientific Adviser to the Govt. of India and the Chairman of the Scientific Advisory Committee to the Cabinet from 2001 to 2018. He is presently the DAE-Homi Bhabha Professor in BARC. He has D.Sc Degrees (h.c) from thirty Universities from India and abroad. He has more than 200 research publications in refereed journals and all his research work has been in India. He was Chairman of the Board of Governors of the IAEA during 1994-95. During 1990-99, he was a member of the Executive Committee of the International Union of Crystallography, the last three years as its Vice-President. He has been Chairman, Board of Governors of IIT Bombay(1994-97) and of IIT Madras (2008-2011) and Member, Space Commission(2009-2014). Dr. Chidambaram is currently Chairman of the Board of Governors of IIT, Jodhpur.
- Dr. Chidambaram is a Fellow of all the major Science Academies in India and also of the National Academy of Engineering and the World Academy of Sciences Trieste (Italy). He has received many awards and honours, notable among them are the C.V. Raman Birth Centenary Award of the Indian Science Congress Association in 1995, the Distinguished Materials Scientists of the Year Award of the Material Research Society of India (MRSI) in 1996, R.D. Birla Award of the Indian Physics Association in 1996, Homi Bhabha Lifetime Achievement Award of the Indian Nuclear Society(2006), The Lifetime Achievement Award of the Indian National Academy of Engineering (2009) and the C.V. Raman Medal of the Indian National Science Academy (2013). Lifetime Achievement Award of A.P. Academy of Sciences (2014), Lifetime Achievement Award of the Council of Power Utilites (2014). Dr. Chidambaram was awarded the Padma Vibhushan, the second highest civilian award in India, in 1999.
- His initiatives as Principal Scientific Adviser to Government of India, include the setting up of the Core Advisory Groups for R&D in various technology sectors, the creation of RuTAG (Rural Technology Action Group) centered in 7 IITs, the establishment of SETS (Society for Electronic Transactions and Security), helping nucleate the Centres of Excellence in Nanoelectronics, the National Knowledge Network and initiating an R&D programme on the design of the Advanced Ultra Supercritical Thermal Plant, through a consortium of IGCAR, BHEL and NTPC.

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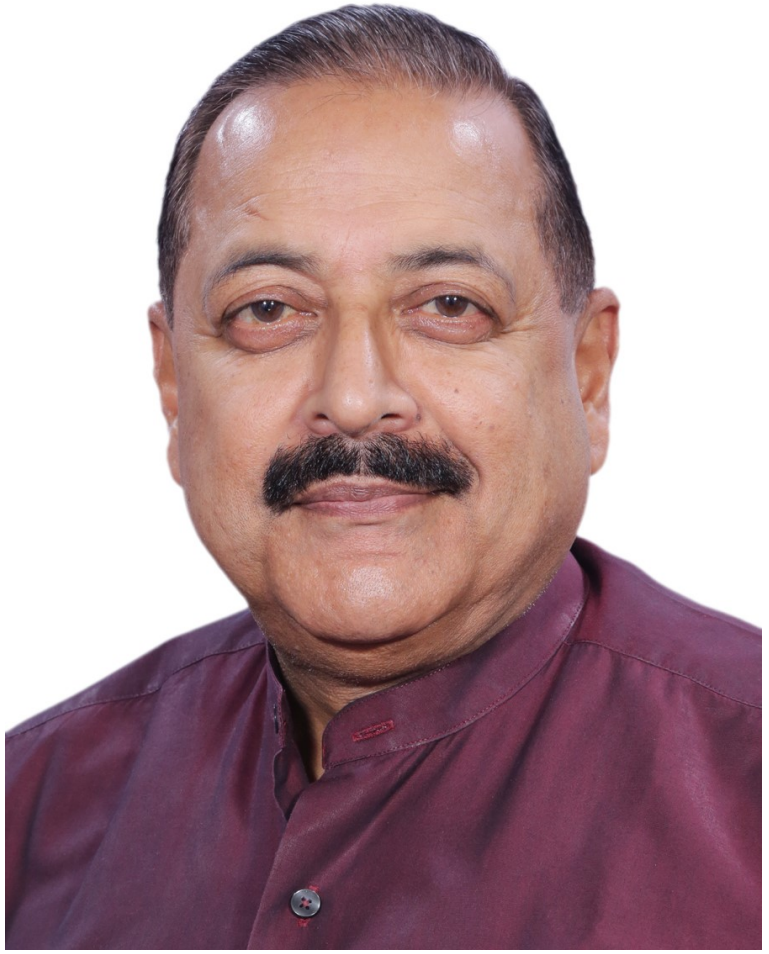
Address by the Chief Guest
Dr. Jitendra Singh, MoS in PMO, DoPT, DoS and DAE

About the Speaker:

- Dr. Jitendra Singh is a MBBS and M.D. (Medicine) with Fellowship (Diabetes) and MNAMS (Diabetes and Endocrinology). He is author of 8 Books including Monograms on Diabetes and World Book Fair "Best Seller", "Diabetes Made Easy"; Author of Chapters on Diabetes consecutively in around dozen successive editions of API Text Books for Post Graduate Course (Medicine); Syndicated weekly column "Tales of Travesty". He published over 10,000 articles in newspapers & journals; Awarded coveted "Jamna Devi Gian Devi Award for Journalism, Gold Medal for Oration at JIPMER, Puducherry, and Outstanding Personality Award, 2009. He is an elected member of 16th and 17th Lok Sabha's and held a number of important portfolios in the Union Governments.



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Keynote Address

Prof. Paul T.P. Ho, East Asian Observatory, Hilo, Hawaii, USA

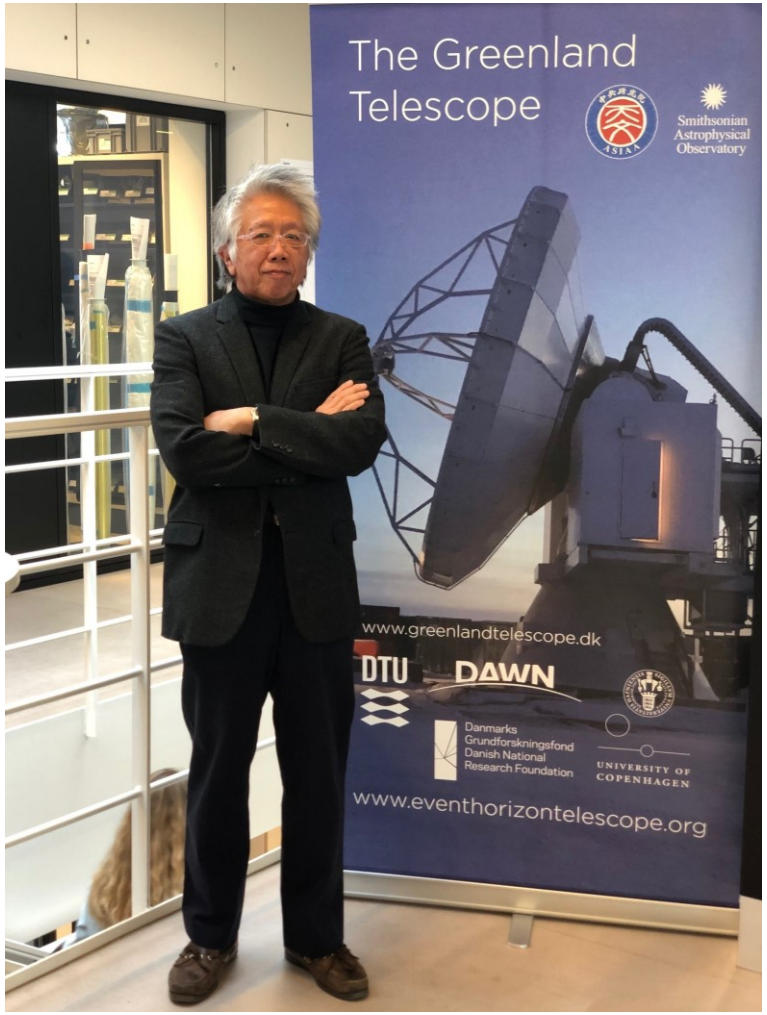
First Image of a Supermassive Black Hole

Abstract:

- The Event Horizon Telescope, a network of 8 radio telescopes, operating at millimeter-wavelengths, and spanning the surface of the earth, has successfully produced the first picture of a black hole. We achieved the highest angular resolution in astronomy by using the Very Long Baseline Interferometry. This Supermassive Black Hole, in the nucleus of the M87 galaxy, is the first case where we can resolve the event horizon, where even light itself cannot escape from the gravity of the black hole. This first picture also demonstrates directly Einstein's General Relativity on the distortion of space in the presence of strong gravity. In addition, we detect the glow of material swirling around the black hole in the form of an accretion disk, where material gather before falling inside the black hole.

About the Speaker:

- Paul was born in Hong Kong, and immigrated to the United States at the age of 11. He received his S.B. (1972) and Ph.D. (1977) degrees in physics at MIT. Paul was a faculty member at Harvard University before becoming SMA Project Scientist and Senior Astrophysicist at the Smithsonian Astrophysical Observatory. He has served as ASIAA Director for 10 years in Taiwan. He is currently the Director General of the East Asian Observatory. His scientific interests include star and planet formation, magnetic field structures, and supermassive black hole as the definitive probe of high gravitational fields. Paul focuses on the development of instrumentation for forefront fields in astronomy. These include the SMA, AMiBA, ALMA, GLT, TAOS, WIRCam, HSC, PFS, ERG, SPICA, and EHT. Paul is an academician of the Academia Sinica, and a Fellow of The World Academy of Sciences.



Vote of Thanks

Dr. Praveer Asthana, Head, Mega Science Division, DST, New Delhi

About the Speaker:

- Dr. Praveer Asthana, an Adviser/Scientist-G in DST, is currently the Head of INSPIRE and Mega Science Divisions of DST. He did his Ph.D. in Theoretical Particle Physics from the University of Alberta, Canada and he joined DST in April 1989. Some of the major responsibilities handled by him in DST are – adoption of Science and Technology Policy 2003 by the Government, Nano Mission, establishment of SERB, KVPY, INSPIRE, the Women Scientists Scheme, scientific, administrative and budgetary affairs of 25 DST autonomous institutions and mega science projects like collaborations with CERN, Fermilab, KEK, Elettra, FAIR, DESY, TMT, INO and so on.

Mega Science Projects

Project: India-based Neutrino Observatory (INO)

Prof. Md. Naimuddin, Dept. of Physics & Astrophysics, University of Delhi

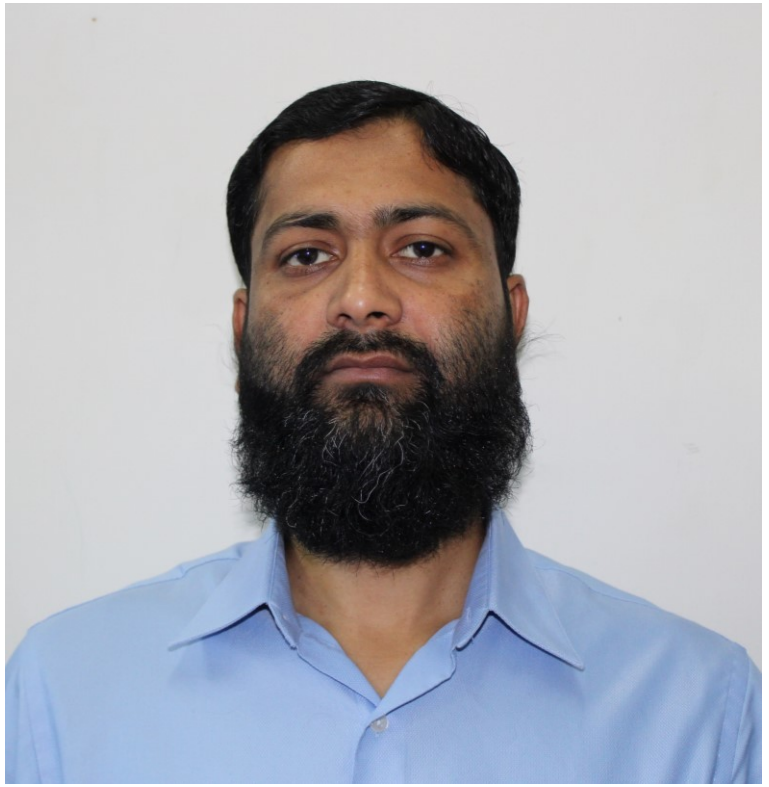
The elusive neutrinos and the INO Program

Abstract:

- Almost a decade less than a century has passed when neutrinos (actually he named it neutron) were first postulated by W. Pauli which was later formalised by Enrico Fermi. Three decade after its postulation the neutrinos were discovered by Cowan and Reines. A little more than six decades has passed since the neutrinos were first discovered but this particle continues to be as intriguing as before. Many phenomena related with neutrinos have been discovered and measured since its discovery, which has led to quite a few Nobel Prizes, but there still remains a lot that is not known about this elusive particle. Many experiments are currently underway and several proposed across the globe to study this particle. India has a rich history of carrying out experimental research on neutrinos. Continuing the legacy Indian scientists have also proposed an underground experimental facility called as India-based neutrino Observatory (INO) to study primarily neutrinos. The INO facility will house many experiments including the flagship ICAL (Iron Calorimeter) detector. I will discuss briefly the history of neutrino physics and the salient features of INO physics along with its current status.

About the Speaker:

- Md. Naimuddin is currently working as an Assistant Professor of Physics at University of Delhi. He did his Ph.D. on the measurement of oscillations between particle and anti-particle in the mesons knows as Bs mesons at the D0 detector of Fermilab Tevatron in USA. After Ph.D., he worked as a Research Associate at the Fermilab, IL, USA where he carried out research on the searches of Higgs boson and physics beyond standard model at the D0 experiment. Dr. Naimuddin currently collaborate at the CMS experiment at CERN, Geneva and ICAL experiment at INO. Dr. Naimuddin's primary interest is to search for the physics beyond standard model in collider as well as neutrino sector. In addition, Dr. Naimuddin is also involved in the R&D of particle detectors and their applications in the high energy physics as well as medical imaging.



European Organisation for Nuclear Research (CERN)

Prof. Brajesh Choudhary, Spokesperson, India-CMS collaboration

About the Speaker:

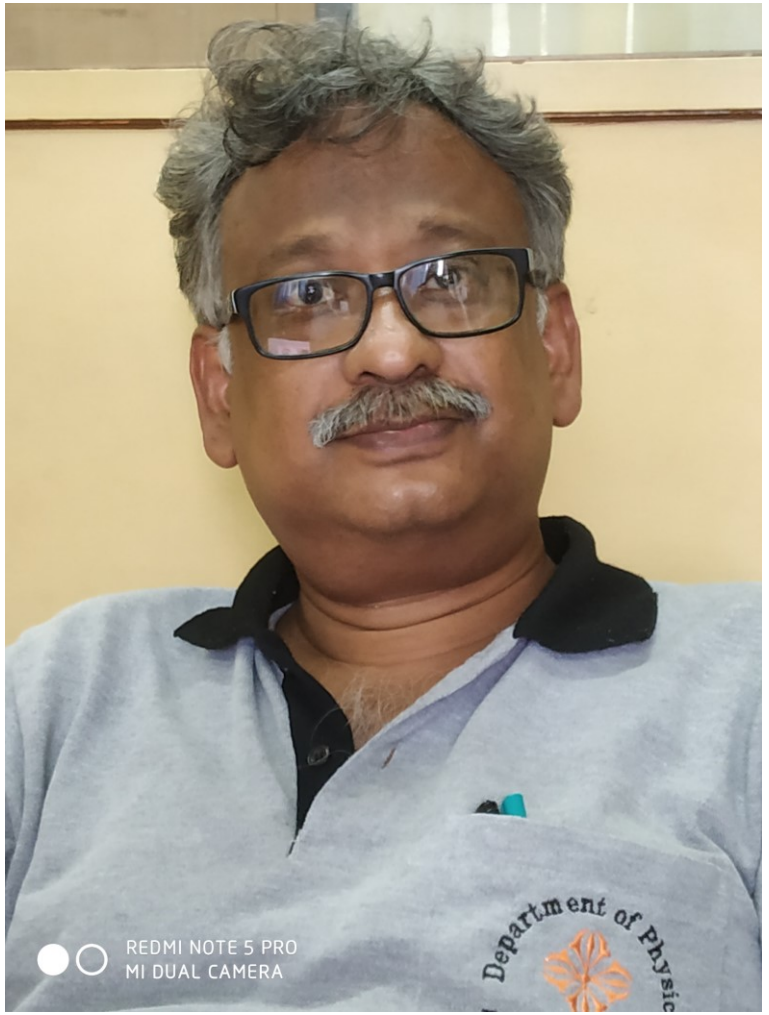
- Dr. Brajesh Chandra Choudhary is a Professor of Physics in the Department of Physics & Astrophysics, University of Delhi and the Spokesperson of the India-CMS collaboration at CERN. He is also a member of the Management Board and Finance Board of the CMS collaboration. He has served on the expert committee for Project reviews for D.O.E (USA) as well as the European Union. He has been a visiting faculty at Durham University, UK from 2014 to 2016.
- Prof. Choudhary's interest lies in understanding the fundamental nature of matter through the study of particle physics. He has been associated with several experiments over last three decades. These include the E706 and the Tevatron at Fermilab, LHC (CMS) at CERN as well as with the MACRO experiment at LNGS, Italy, Long-baseline Neutrino Physics with MINOS, NOvA and LBNE/DUNE at Fermilab, USA.
- Prof. Choudhary did his B.Sc (Physics Honors) and M.Sc (Physics) with Gold medals from Science College, Patna. After finishing his Ph.D from the University of Delhi he did a postdoctoral fellowship at UC Riverside, USA. He has worked as a research faculty at California Institute of Technology, Pasadena and as a Scientist at Fermilab before returning to India as a Professor of Physics at University of Delhi. He has made significant contributions to the understanding of Direct Photon Physics at E706 and CMS. He also played a seminal role in the discovery of the "top quark" with the D0 detector. Among his other major contributions are the discovery of multi-boson physics at D0 as well as an understanding of the quark substructure at CMS. He was part of the team that discovered the "Higgs Boson" in 2012. He has also led a multi-institutional India-Fermilab Neutrino Collaboration at Fermilab since 2012 and is one of the recognized experts on long-baseline neutrino physics and neutrino detectors.

Project: Facility for Antiproton and Ion Research (FAIR)

Prof. Sanjay Ghosh, Bose Institute, Kolkata

About the Speaker:

- Prof. Sanjay K. Ghosh completed his doctoral research at Institute of Physics, Bhubaneswar in 1996, He then joined Bose Institute as CSIR, Research Associate. He worked in TRIUMF, Canada and VECC before joining Bose Institute as Sr. Lecturer in 2002. He is currently working in areas of particle physics, nuclear astrophysics and atmospheric sciences. Prof. Ghosh has also been looking after the activities of Indo FAIR Coordination Centre (IFCC) at Bose Institute.



Project: Square Kilometre Array (SKA)

Dr. William Garnier, Director of Communications, SKA Organisation, UK

Big science for peace and development: the SKA exemplar

Abstract:

- There will be a before and an after SKA. The Square Kilometre Array Observatory, which will run vast arrays of astronomical telescopes in Australia and South Africa, is a global endeavour which promises to impact society in a number of ways both at a micro and macro level: through the game-changing science it aims to deliver, the cutting-edge innovation it depends upon, the spinoffs it will likely produce, the inspiration it provides, the societal challenges it will address in a number of disciplines, and the growth it will bring to local and national economies. Bridging and uniting diverse nations and cultures under a peaceful banner, the SKA project offers a canvas on which a new kind of science diplomacy takes place. One that has the potential to support development agendas in a progressive and sustainable way, empowering nations and people through training, education and access to and exposure to new technology.

About the Speaker:

- William Garnier is Director of Communications at the Square Kilometre Array (SKA) Organisation. In his position, William is in charge of developing and delivering the overarching SKA Communications and Outreach strategy for the project. This is done in close coordination with communications experts from the global SKA partnership, including candidate member countries. William has been working in science communication and stakeholder engagement for over 15 years. He first started as a freelance journalist in France and then as a science communicator in major international astronomy organisations. After two years at ESO (European Southern Observatory) in Chile, he set up and led the communications department of the then world's largest radio telescope, ALMA (Atacama Large Millimeter Array) in 2007. In November 2012, William took on the challenge to lead the global communications effort of one of the most ambitious scientific adventures of the 21st century: the SKA.

Project: Thirty Meter Telescope (TMT)

Prof. Sivarani Thirupathi, Indian Institute of Astrophysics, Bengaluru

Abstract:

- Thirty Meter Telescope (TMT) is one of the most ambitious optical and infrared observatories that will be operational during the 2030s. TMT project is a partnership between Canada, China, India, Japan, and the USA. The 30-meter primary mirror will use segmented mirror technology that is scalable for the future larger telescopes on the ground and in space. TMT will have one of the most advanced multi-conjugate adaptive optics system that will provide 12-times sharper images of the sky compared to the Hubble space telescope. TMT will address the most fundamental questions in astronomy, the nature and composition of the Universe, First Stars and galaxies, the relationship between blackholes and galaxies, star and planet formation and signs of life elsewhere in the Universe. In this talk, we present an overview of the scientific capability of the TMT observatory and discuss India's role in science and technology development.

About the Speaker:

- Sivarani Thirupathi is an associate professor at Indian Institute of Astrophysics, Joined IIA in 2009. Before joining IIA she was CNRS-postdoc. in France, INAF-postdoc at Observatory Trieste, Joint institute for nuclear astrophysics (JINA) research associate at Michigan State and SDSS postdoc. at U.Florida. She was awarded as an architect of SDSS-III-MARVELS project for her significant contribution to the pipeline. She is one of the science working group lead for the Maunakea Spectroscopic Explorer project. She is currently member of TMT Science advisory committee and co-chair from India. She was a project manager for the Hanle High resolution Echelle spectrograph and work package manager for the TMT first light instrument WFOS until 2019. Currently she leading the development of TMT high resolution optical spectrograph collaboration as a principle investigator. Her science interests are early chemical evolution of the Galaxy and its First stars. She has more than 160 research Publications and 13800 citations.

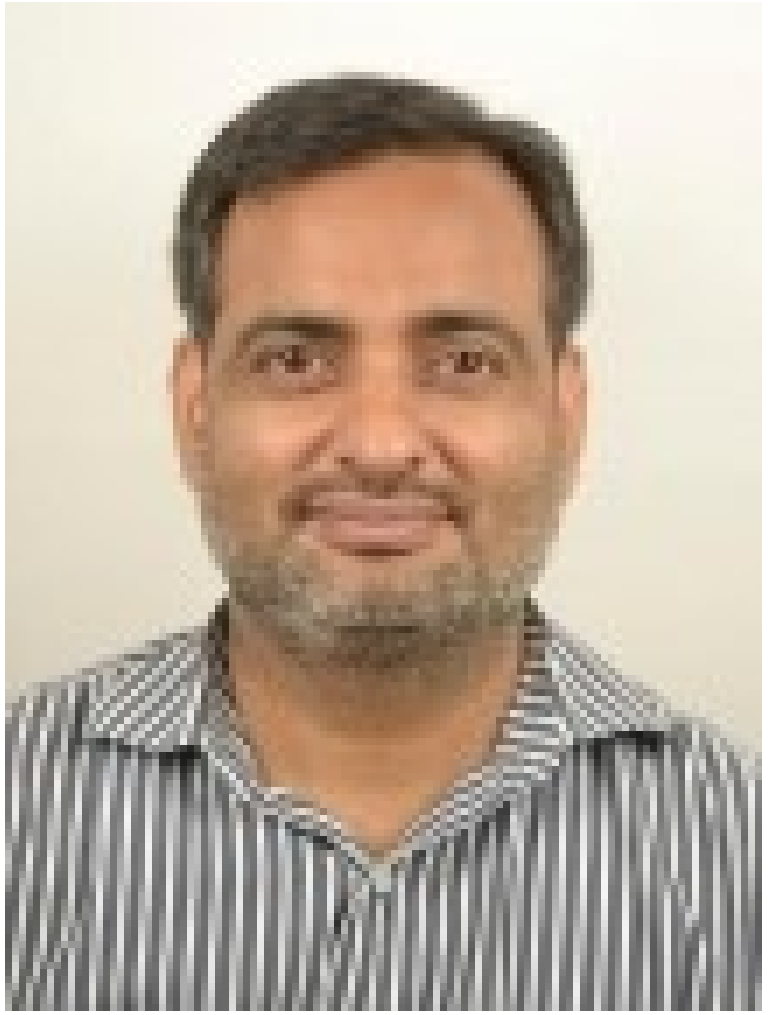
Project: Major Atmospheric Cherenkov Experiment (MACE)

Dr. K.K. Yadav, BARC, Mumbai (for HiGRO collaboration)

MACE gamma-ray telescope

Abstract:

- MACE (Major Atmospheric Cherenkov Experiment) is a 21-m diameter imaging atmospheric Cherenkov telescope which has been recently installed by the HiGRO (Himalayan Gamma-Ray Observatory) collaboration comprising BARC, TIFR and IIA at Hanle in Ladakh region of North India. The telescope is designed to study very high energy cosmic gamma-ray sources in the unexplored energy region of ~20 GeV and beyond with high sensitivity. The light collector of MACE comprises 356 mirror panels of size ~1m x 1m where each panel consists of 4 indigenously developed diamond turned aluminium mirror facets. The imaging camera of the telescope consists of 1088 photomultiplier tubes with a resolution of ~0.125^{o} and a field of view of ~4.0^{o} x 4.0^{o}. Expected to operate at a trigger threshold energy ~20 GeV, the telescope will play an important role in understanding the nature of cosmic accelerators and the radiation emission processes in extreme environments. Scientific objectives of the MACE, its key design features and current status of the telescope will be presented in the talk.



About the Speaker:

- Dr. K.K. Yadav joined the very high energy gamma-ray astronomy programme of BARC after graduating from BARC Training School in 1997 and has participated in the development of India's first imaging gamma ray telescope TACTIC which is operational at Mount Abu. He obtained his Ph.D degree from Mumbai University in 2011. Currently he is involved with the various developmental aspects of the 21m-diameter MACE (Major Atmospheric Cherenkov Experiment) telescope which has been recently installed at a high altitude (4200 m) astronomical site Hanle in North India.

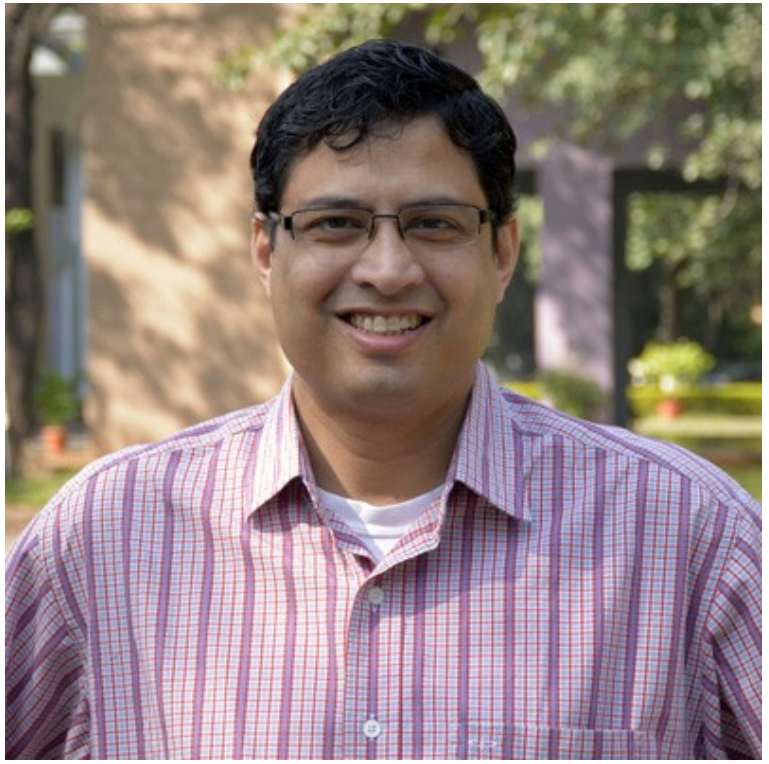
Project: Laser Interferometer Gravitational-Wave Observatory (LIGO)

Prof. Sukanta Bose, IUCAA, Pune

India's role in the newly launched era of multi-messenger astronomy with gravitational waves

Abstract:

- The planned mega-science project LIGO-India will boost our understanding of the densest objects in the universe, such as black holes, as well as test Einstein's predictions about the nature of gravity. Building the observatory on Indian soil and using it to probe cosmic phenomena will involve Indian scientists, engineers and technicians from various fields. This talk will discuss how LIGO-India will contribute significantly to these exciting scientific discoveries.



About the Speaker:

- Professor Sukanta Bose is the Project Coordinator of LIGO-India at IUCAA, and the chair of the LIGO-India Scientific Collaboration (LISC). He is an elected member of the International Society of General Relativity & Gravitation’s Committee. Since 2013, Prof. Bose has worked on training several LISC (formerly IndIGO) scientists in gravitational wave research, particularly, using LIGO data, and on guiding their contributions in LSC science. His primary research interest is in addressing some of the outstanding problems in relativistic astrophysics and cosmology by exploiting information from the newly launched field of gravitational-wave astronomy and combining it with electromagnetic and particle signals.

Project: International Thermonuclear Experimental Reactor (ITER)

Sr. Prof. P.I. John (Retd.), Padma Shri

ITER and fusion technology development in India

Abstract:

- ITER is a ‘first of its kind’ experimental reactor with an aim of demonstrating fusion as an alternate source of energy with the construction being shared by seven members. The machine under construction in south of France aims at demonstrating nuclear fusion with Q ≥10. India is contributing nine packages like the cryostat, in-wall shields, cooling water systems, cryogenics, IC and EC RF heating systems, diagnostic neutral beam and diagnostics. Each of this package has special requirements related to materials, precision machining, jointing technologies for similar and dissimilar materials and RF technologies. Enormous experience has been gained during the course of ensuring these deliverables to ITER with the Indian industry and to bring the industry to the state of industrial readiness for future needs. The present status of the ITER and the technologies developed shall be presented and discussed.

About the Speaker:

- Prof. P. I. John held the Meghnad Saha Chair in Plasma Science and Technology at the Institute for Plasma Research, Gandhinagar. He joined the Physical Research Laboratory in Ahmedabad in 1972 to establish a modern Plasma Physics Laboratory. He helped establish the Plasma Physics Programme in 1982, which evolved into the Institute for Plasma Research in 1986. In 1997, Prof. John set up the Facilitation Centre for Industrial Plasma Technologies, to link IPR with industries. Prof. John was a member of the Science and Technology Advisory Committee of ITER and represented India on the ITER Council. In 2008, he developed the National Fusion Programme for funding universities and educational institutions in research in Fusion Sciences. His book “Plasma Sciences and the Creation of Wealth”, was published by Tata McGraw-Hill in 2005. Another, "Plasma Processes for Energy and Environment" was published by Lambert Publishers in November 2017.
- Prof. John is a Fellow of the Indian Academy of Sciences. The Government of India honoured him with Padma Shri in 2010.

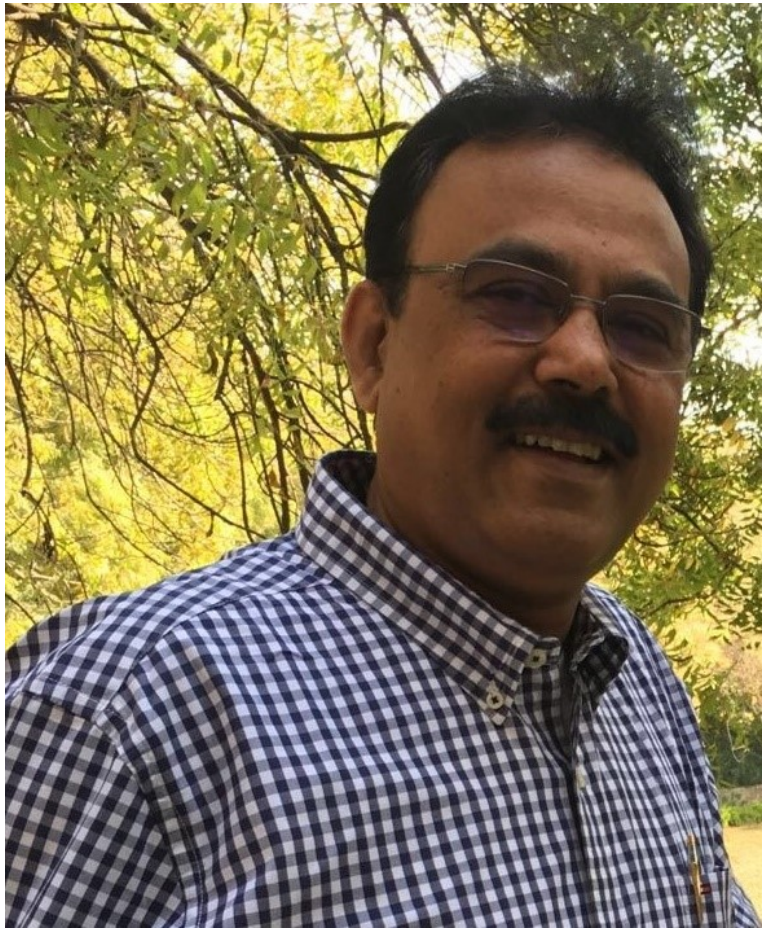
Industry Session

Industry Session

Mr. Arun Srivastava, Secretary, AEC & Head, ICPD, DAE, Mumbai

About the Panel Moderator:

- Mr. Arun Srivastava, Secretary, Atomic Energy Commission and Head, Institutional Collaborations & Programs Division, is a 1983 batch Chemical Engineering graduate from Laxminarayan Institute of Technology (LIT), Nagpur. He has also completed postgraduate Diploma in Management Studies from Mumbai University in 1992 and Chartered Financial Analyst (CFA) course from Institute of Chartered Financial Analyst of India, Hyderabad in 1996.
- He is from the 27th batch of BARC training school (1983-84). He has worked in Heavy Water for the design, fabrication / construction and commissioning of Heavy Water Plant, Manuguru. In July 1999, Mr. Srivastava joined Department of Atomic Energy (DAE). He has been involved in the strategic planning and analysis related activities for the DAE. In DAE, he is presently heading the Institutional Collaborations and Programs Division of NCPW. He is responsible for all Mega Science Projects in which DAE along with DST are participating and is holding various positions in the Boards/Executive Councils of these projects.
- Since July 2010, Mr. Srivastava is holding the position of Secretary, Atomic Energy Commission, the highest policy making body for the Atomic Energy. Mr. Srivastava is currently the Chairman of the ITER Council, which is the Governing body of the ITER Project.
- Chairman, Atomic Energy Commission has conferred ‘Special Contributions Award 2006’ in recognition of his valuable contributions in the field of Nuclear Science & Technology and to the program of the Department of Atomic Energy under the Excellence in Science, Engineering and Technology Award Scheme of DAE. LIT, from where Mr. Srivastava has completed his graduation, has recently conferred him ‘Jewel of LIT’ Award, as an illustrious Alumni. He is the youngest recipient of this award, since the establishment of LIT.



VIGYAN SAMAGAM
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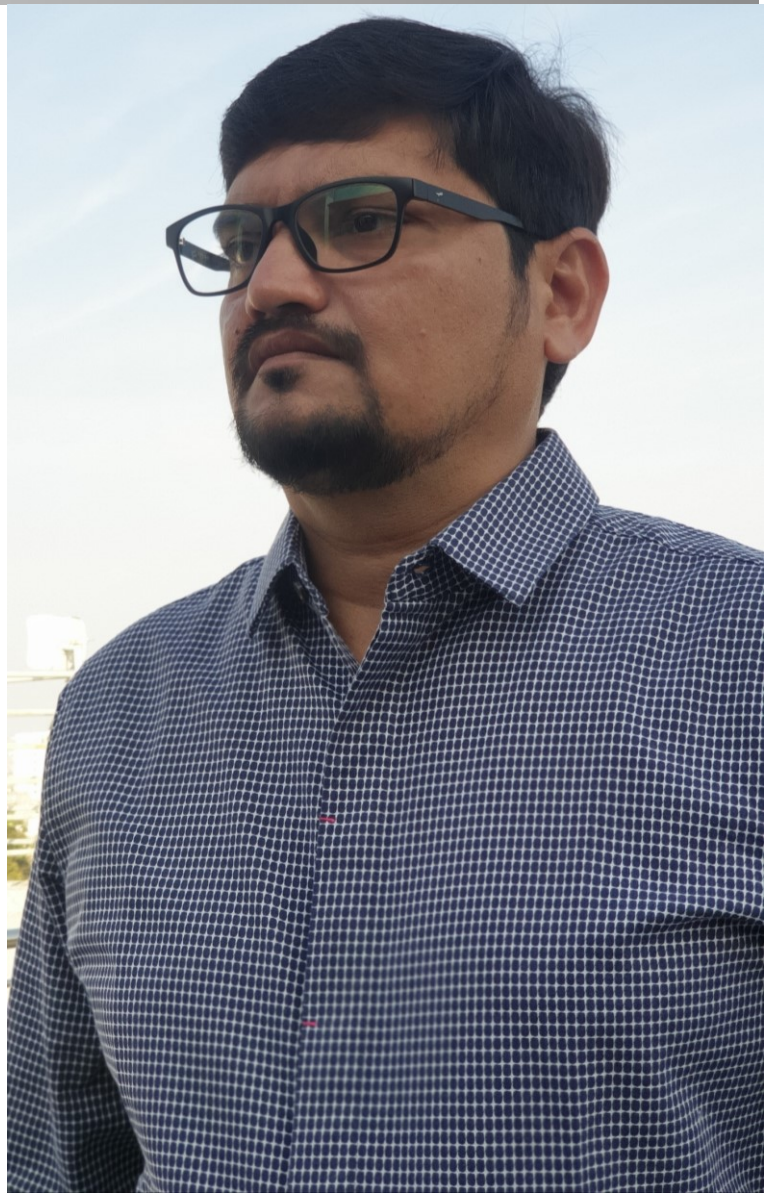
Industry Session
Mr. Mitesh Gohil, Director, MJ Enterprises, Vadodara

About the Panel Member:

Mr. Mitesh Gohil is a Mechanical Engineer by academics and Entrepreneur by profession. He is a trend setter in manufacturing excellence for the last 25 years with intensive hands on R & D capabilities in exotic-super alloys, non metals and composites as well strategic input Materials and advanced technology, ultra high precision processes and assemblies and testing solutions. He was a critical supplier partner to key sectors in nation building and is instrumental in saving enormous forex outflow of GoI institutions.

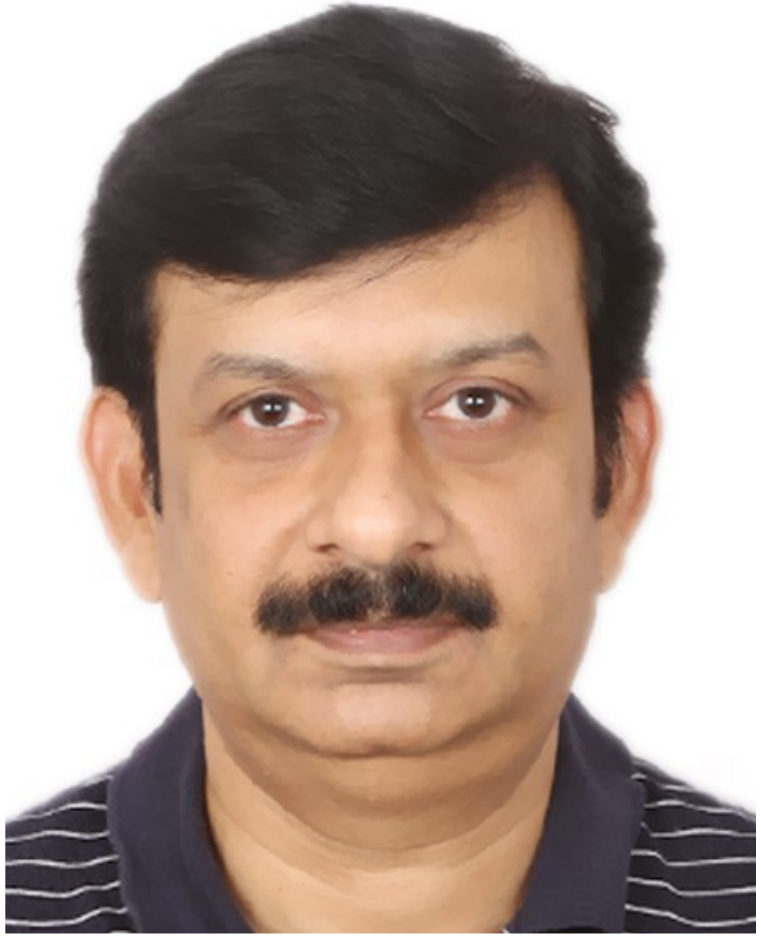


Industry Session

Mr. Sanjiv Singh Basisth, DGM, Blue Star Engineering & Electronics Limited, Mumbai

About the Panel Member:

- Mr Sanjiv Singh Basisth is a BE and PGDBA He possesses total of 25 years industry work experience and 20 years in NDT Automated System Development Working with M/s Blue Star Engineering Electronics Limited, Mumbai since Feb 2000 currently as Deputy General Manager Projects in NDT Systems and Industrial Automation vertical He was involved in new ultrasonic inspection system development like LSAW /HSAW Automatic Weld Inspection System, Coil/Plate UT Inspection System, CNG Cylinder Inspection systems, Railway Axle Inspection System, Railway Wheel inspection System, Immersion UT System for Aerospace application, Immersion UT system for steel industry for application like steel inclusion assessment and HIC.



VIGYAN SAMAGAM
PUSHING THE FRONTIERS OF SCIENCE

Industry Session

Mr. Vikas Kumthekar, Engineering and Industrial Services division, TCS, Pune

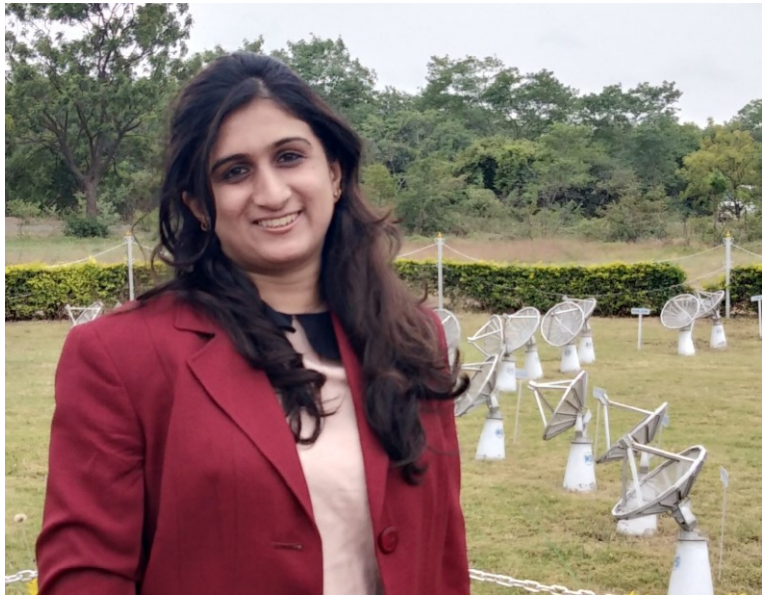
About the Panel Member:

- Vikas Kumthekar is senior associate from Engineering and Industrial Services division of Tata Consultancy Services. He leads the real time system development programs. He has diverse 15+ years of professional experience in working with real time systems, process control and industrial automation systems in various domains including the radio astronomy. A graduate engineer in Electronics, has his key strengths in the solution design and architecture for complex systems involving integration of automation, control and business systems. Apart from his present role of relationship manager, he is deeply involved in the development of software system for SKA pathfinder- Giant Metrewave Radio Telescope.

Industry Session
Ms. Snehal Valame, Persistent Systems, Pune

About the Panel Member:

- Snehal presently leads the astronomy domain projects at Persistent Systems. After her bachelor's degree in Computer Engineering and Master's in Software Engineering, Snehal Valame started her career with Persistent Systems. Snehal has been working on various projects across the entire life-cycle of an observatory ranging from telescope execution software - data management - science operations systems - support systems. She spent a short period of her career as a project scientist at Côte d'Azur Observatory in France.



Industry Session
Mr. Vikas Bhatia, Executive Director, M/s Kelvion India Private Limited

About the Panel Member:

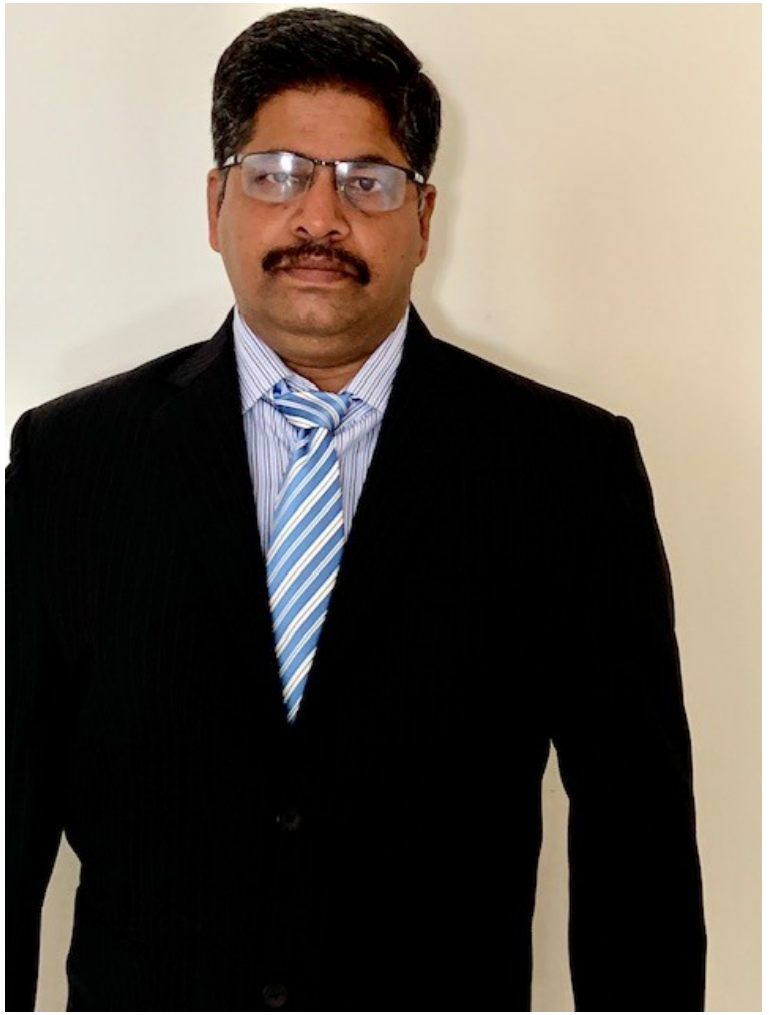
- He graduated from IIT Varanasi (IT BHU) in year 1991 in Mechanical Engineering and since then he has been handling heat transfer equipment starting with M/s Thermax Limited Pune in design department and then in Sales in Delhi. Since 1993 he has been handling Sales which technical sales. In 1996 he started handling Plate type heat exchanger and since then he has been in the field of Plate type and compact air-fin heat exchanger. Currently, he is the Executive Director of M/s Kelvion India Private Limited.

Industry Session

Mr. N. Rambabu, ED (Nuclear), Electronic Corporation of India Ltd, Hyderabad

About the Panel Member:

- Shri N. Rambabu has completed his Graduation in Electronics Engineering from Bengaluru University and joined NPCIL as Graduate Engineer Trainee in 1990. Subsequently he worked at Kaiga Generating Station, TAPS-3&4, Mumbai and KAPP-3&4 in various capacities. He joined ECIL on 1st July-2018 as Executive Director (Nuclear).
- Before joining ECIL, Shri Rambabu was Head, Control and Instrumentation Division at KAPP-3&4 NPP. He was the youngest Section Head in NPCIL and made responsible for Construction and Commissioning of Control & Instrumentation systems of TAPP 3&4.
- Shri Rambabu was instrumental in achieving Criticality of TAPP-4 in record time. Shri Rambabu conferred with NPCIL High Performance Awards for his outstanding contribution.
- Shri Rambabu is a seasoned Instrumentation Engineer and expert in construction, commissioning, maintenance, performance review and design of C&I systems. Presently he is responsible for business development of Control & Instrumentation, Nuclear instrumentation, Telecom division, Corporate R&D, Electronic Voting machines and Strategic Electronic systems in ECIL.



Industry Session

Mr. Sameer Sharda, New Age Instruments & Materials Pvt. Ltd.

About the Panel Member:

- He is with New Age Since year 1999 and he is heading In-House R&D Lab recognized by Department of Scientific & Industrial Research (DSIR).
- He has done Masters in Science with Specialization in Laser and Modern Optics and MBA.
- He received his initial training from M/s Avantes Netherland on RAMAN, LIBS, LEDs, Gems testing and other spectroscopy application, LIBS by M/s LTB Berlin, Optics designing and fundamentals at LINOS Germany, Solar Simulators, Monochromators (Sciencetech Inc. Canada), Laser Diagnostics (Ophir Optronics. Israel), Detectors, Light sources (Hamamatsu Photonics UK). Etc.
- Under his able hands and supervision, he has formed a team of 15 strong technocrats who are solely focused on application design and are well experienced in the field of lasers, optics, spectroscopy, embedded electronics, power electronics, Software designing and mechanical designing.
- Along with his team he have successfully developed 5 different variant of RAMAN system which includes Standoff RAMAN (upto 2 meters), Fiber probe based RAMAN, TE cooled RAMAN, Microscopic RAMAN, Handheld RAMAN(just 800gms). Our RAMAN systems are now formally handed over to IB by Defense Parliamentary Committee after rigorous both in Labs as well as in Field.
- His team is focusing on developing applications in the field of Defense, Atomic Energy, Space, & agriculture.