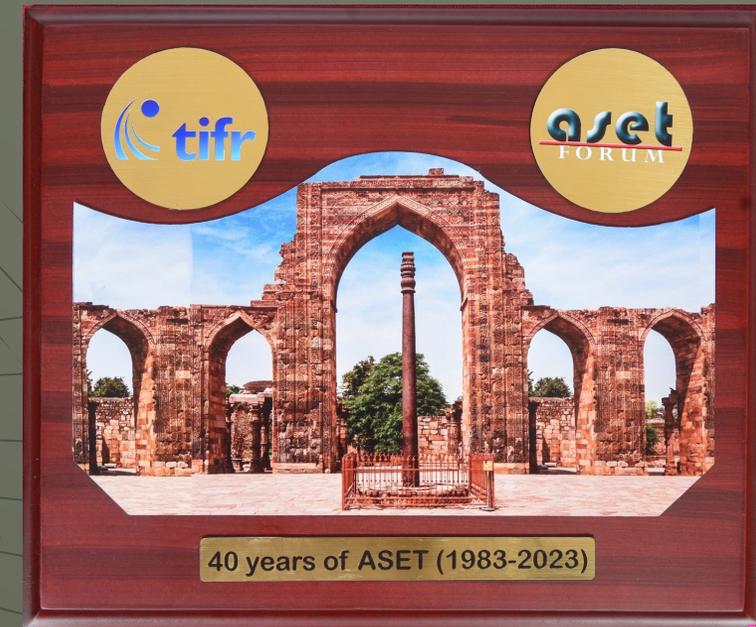


Tracking Advances in Science, Engineering, Technology and more at TIFR for 41 years



B. Satyanarayana
Tata Institute of Fundamental Research

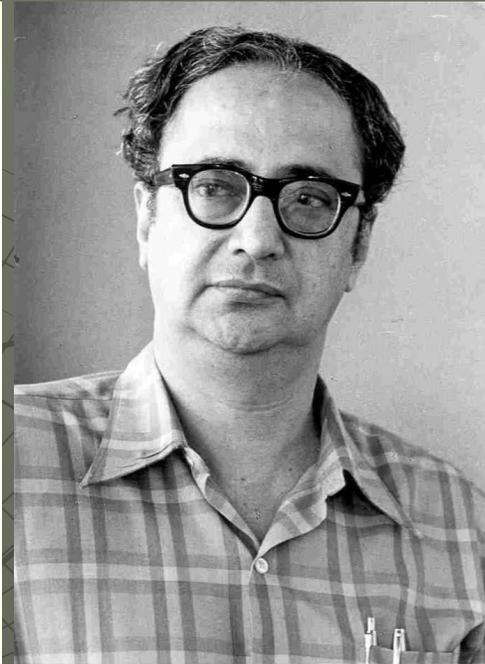
SVDAMLE

**INSTRUMENTATION AND ELECTRONICS
COLLOQUIA
1983-84**

Edited by

**Shashi Damle
Dinesh Sharma
Prakash Apte**

**TATA INSTITUTE OF FUNDAMENTAL RESEARCH
HOMI BHABHA ROAD
COLABA, BOMBAY-400 005**



FOREWORD

In the early days of TIFR, the Wednesday Colloquium which was invariably attended by Dr. Ehabha, was also the forum for presentation and discussion of developments in the field of electronics and instrumentation. I recall the colloquia which I myself gave on topics like "the Applications of Millimicrosecond Pulse Technique", "Skill and Scale of Cosmic Ray Experiments" etc. Over the years, presumably because of the wider scope of research activities, adoption of many new disciplines of research, and relatively fast developments in many of the basic sciences, it has happened that reporting on technological developments has not received the attention it deserves. I am indeed very happy that this serious lacuna has been set right and a parallel forum, the Fortnightly Friday Colloquium, has been started and has operated successfully for well over a year. What is more, special efforts have been made to bring out a written version of the proceedings of the colloquia. These proceedings not only serve the purpose of making familiar to all of us the state of art of the different advanced technologies of interest to the Institute members, but also highlights the particular achievements and status of development in the variety of electronic and instrumentation techniques undertaken in the Institute itself.

The value of any new finding in basic science is lost if it is not made known to the world with utmost speed. However, in the area of applied and technological research this is not the case because of the commercial, political and military implications that get associated with the discovery or development. Innate in these areas is also the sensitive issue of transfer and acquisition of 'know-how'. Because of these reasons

it becomes most important to embark on indigenous developmental work even in what might appear to be well established areas of technology elsewhere in the world. Only then can we avoid being at the receiving end of obsolete or even irrelevant technologies that are doled out in the name of transfer of modern technologies. Such indigenous development of high technologies cannot succeed in isolation and will necessarily have to be in institutions like TIFR that have well established parallel cultures of both pure and applied research. It has to be emphasised that the existence of high technology efforts is an added advantage to the pursuit of experimental research in basic sciences, as has been the experience of TIFR.

The Institute has nurtured and grown several areas of technology since its inception. Some of them have moved out and some are moving out over the next few years because of the size to which they have grown and also in recognition of the need and necessity for further growth to be able to play a greater role in the technological self reliant future of the country. For the health of TIFR, it is necessary that serious thought is given to the identification of other new areas of advanced technology that should be initiated and grown in the Institute in the coming years. This is yet another direction in which the Fortnightly Friday Colloquia can play an important role.

B.V. Sreekantan
Director

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PREFACE

In the course of the diverse research activities at the TIFR, a variety of techniques and instruments get developed without which, in fact, much of the research itself would not be possible. These techniques tend to remain in the laboratory/group where they are developed, and in the absence of a regular forum for presentation of the ongoing work or accomplished results, those needing the development of certain techniques/instrumentation in one group may sometimes not be aware of the relevant developmental work already carried out in another group and so be able to draw upon it. Such a forum could also enable those engaged in developmental activities to have in-depth academic discussions on the problems, going beyond their immediate tasks, thereby contributing to a continued upgradation of their professional competence in instrumentation, and thus making it possible to undertake more and more challenging tasks - and get a better job-satisfaction.

Having noticed this gap in the academic activities at the TIFR, a meeting of all scientific and technical staff was convened on February 18, 1983, under the auspices of the Group Committee V, and it was decided to organise a regular series of seminars with the objective of providing

- a. A forum for the technical staff to present their ideas and accomplishments in instrumentation,
- b. An opportunity for them for academic discussions on the development of techniques or instrumentation in specific domains, going beyond immediate tasks,
- c. An avenue for continued upgradation of professional competence in instrumentation generally, and
- d. An avenue to spread information on technical developments horizontally across groups, thereby avoiding duplication of development of subsystems/systems.

The response to these seminars has been very enthusiastic, and I am happy that brief notes on the seminars are being put together in this volume. They testify to the diverse and high level technical activities at the Institute.

I hope that participation in the seminars and writing up for this and future volumes, will increasingly encourage the scientific and technical staff to write articles for journals of instrumentation. It is also to be hoped that discussions at these seminars on Electronics and Instrumentation will help identify the need for some short-term courses or work-shops for those interested in specific developmental areas across the groups - thereby again raising the professional competence in these areas on the whole at the Institute.

B.M. UDGAONKAR
Chairman, Gr. Committee V

In the course of the diverse research activities at the TIFR, a variety of techniques and instruments get developed without which, in fact, much of the research itself would not be possible. These techniques tend to remain in the laboratory/group where they are developed, and in the absence of a regular forum for presentation of the ongoing work or accomplished results, those needing the development of certain techniques/instrumentation in one group may sometimes not be aware of the relevant developmental work already carried out in another group and so be able to draw upon it. Such a forum could also enable those engaged in developmental activities to have in-depth academic discussions on the problems, going beyond their immediate tasks, thereby contributing to a continued upgradation of their professional competence in instrumentation, and thus making it possible to undertake more and more challenging tasks - and get a better job-satisfaction.

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We are glad to present this first volume on IAE Colloquia 1983-84, to the Scientific Community of our Institute. We apologise for the somewhat incoherent set up of these proceedings; although we had given general guidelines for the manuscript, in order to save time and effort for the contributor (and also for us) we did not put special constraints on the format of the manuscripts; almost all are printed as we received them and essentially they reflect the style and personality of individuals. (We

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We like to thank all the speakers and all the participants for their excellent co-operation. Without the diligent work of Shri. Dalvi from Xerox Section under the guidance of Mrs. Vajifdar and the typing assistance of Mrs. J. Ramani, it would have been difficult to produce this volume; our thanks are due to them.

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- ◆ 930 colloquia since 2002 - did not have this information for the earlier period 😞.
- ◆ ASET speakers included Nobel Laureates, Field Medallist, Padma awardees, FRSs, Shanti Swarup awardees, heads of Institutions, national icons and other highly distinguished personalities - some became famous after their ASET talks 😊.
- ◆ Almost all the presentation materials, Podcasts, video recordings of most of them were archived.
- ◆ Many talks led to further fruitful engagements and collaborations with TIFR colleagues.
- ◆ All formalities, procedures and guidelines for smooth functioning of ASET events are in place.

ASET Colloquia

1. B.Satyanarayana, DHEP, 11/01/02, 1600, AG-80, Design and construction of radioactive source X-Y scanner
2. S.P.Pai, DCMP&MS, 08/02/02, 1600, AG-66, PLD: Past, present and future
3. P.R.Apte, IIT, Mumbai, 22/02/02, 1500, AG-69, Inventive problem solving through TRIZ
4. D.Goswami, DNAP, 15/03/02, 1600, AG-66, Ultrafast Pulse Shaping Technology
5. S.H.Advani, TMH, Mumbai, 05/04/02, 1600, AG-66, Targeted Therapy in Cancer
6. F Catarsi & A Bigongiari, CAEN S.p.A, Italy, 26/04/02, 1600, AG-80, Presentations on CAEN products
7. Sunil Kulkarni, Pelletron, BARC, 03/05/02, 1600, AG-80, Introduction to VLSI design
8. Jaydeep Gore, Pelletron, BARC, 10/05/02, 1600, AG-80, Digital Signal Processing using FPGAs
9. M.V.Pitke, Axes Technologies, 31/05/02, 1600, AG-69, From Circuits to Packets-- Moving Telecom to the IP World
10. Vikas Soni, Trident Techlabs, 10/06/02, 1430, AG-69, Presentations and demos on VLSI design tools
11. Gp Capt S.S.Phatak(Retd), TIFR, 14/06/02, 1600, AG-80, Command & Control structure of Indian Air Force
12. S.Ananthakrishnan & N.V.Nagarathinam, NCRA, 05/07/02, 1600, AG-66, Overview of GMRT
13. T.L.Venkatasubramani & A.Praveen Kumar, NCRA, 12/07/02, 1600, AG-66, The Analog Receiver of GMRT
14. R.Balasubramanian, NCRA, 19/07/02, 1600, AG-66, Control and Monitor System of GMRT

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- ◆ Hemant Adarkar (7)
- ◆ M.N. Vahia (6)
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- ◆ C.S. Unnikrishnan (5)
- ◆ Sukant Saran (4)
- ◆ Deepak Mathur (4)
- ◆ B. Satyanarayana (5)
- ◆ **Maximum speaker suggestions: 37 (by Vivek Datar)**

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Advances in Science, Engineering and Technology (ASET)

ASET@30 Commemoration event of thirty years of ASET on February 18, 2013 from 2pm to 6:30pm in



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This famous 4th century iron pillar stands in the courtyard of the Quwwatu'l-Islam mosque located in the Qutb Minar complex, Delhi. It was supposedly set up as a standard or *dhvaja* of god Vishnu on the hill known as Vishnupada, in memory of the mighty king, Chandragupta II (375-413AD) of the imperial Gupta dynasty.

The total length of this pillar is 7.2m, of which 93cm is buried below the ground. The metal of the pillar has been found to be almost pure malleable iron. The manufacture of such a massive iron pillar, which has not deteriorated much during sixteen hundred years of its existence, is a standing testimony to the Advances in Science, Engineering and Technology (ASET) of ancient India.

ASET Colloquium

The Highs and Lows of the antidepressant, Prozac

by Prof. Vidita Vaidya (DBS, TIFR)

Friday, June 27, 2014 from **16:00 to 17:00** (Asia/Kolkata)
at Colaba Campus (AG-66)

Description Fluoxetine (Prozac), a selective serotonin reuptake inhibitor, is the most commonly prescribed antidepressant. For gestational and postpartum depression, and for children and adolescents with mood disorders, Prozac is often the drug of choice because of its perceived favourable risk-benefit ratio. However, recent studies have raised concerns about perinatal and adolescent fluoxetine exposure with reports of long-lasting damaging effects on mood. In my talk I will discuss our recent results that provide mechanistic explanations of why Prozac may exert very different effects on mood when given during childhood/adolescence and adulthood. Our results have identified a role for epigenetic machinery which may be responsible for the lasting damaging effects on mood that arise when Prozac is given early in life.

About Prof. Vidita Vaidya:

Prof. Vidita Vaidya did her bachelors from St.Xavier's College, Mumbai and obtained her Ph.D. from Yale University. She has worked as a post-doctoral fellow at Oxford University, and Karolinska Institute. Currently she is a faculty member at TIFR. She has a Wellcome Trust Senior Fellowship Award and was the recipient of the National Bioscientist Award in 2012.

Material: [Slides](#) **Organised by** Dr. Satyanarayana Bheesette**PODCAST** [click here to start](#)

ASET Colloquium



Advances in Science, Engineering and Technology (ASET) Colloquia are usually held at 4pm on working Fridays in AG-66. Phone: +919987537702, Email: aset@tifr.res.in, Web: www.tifr.res.in/~aset, Facebook: [aset.tifr](https://www.facebook.com/aset.tifr), Twitter: [@ASET_TIFR](https://twitter.com/ASET_TIFR), YouTube: youtube.com/c/ASETForum

There are 1 events in the *future*. [Show them.](#)

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-  30 Apr [Prof. Hidehiro Kaneda, "Infrared Spectroscopy with Space Cryogenic Telescopes: A Mineralogical Study of Interstellar Dust"](#)
-  19 Apr [Prof. Vivek Datar, "A journey in nuclear physics and its intersections with high energy physics"](#)
-  12 Apr [Prof. D.C.V. Mallik, "K S Krishnan -- his life and work"](#)
-  05 Apr [Dr. Indranil Chakravarty, "India and Mexico: Cultural Connections"](#)

March 2024

-  28 Mar [Concluding Function of ASET@40 Celebrations](#)
-  15 Mar [Dr. Padmnabh Rai, "Single crystal diamond for quantum and industrial applications"](#)
-  08 Mar [Dr. Vishvas M. Kulkarni, "Understanding 'Pannalal Ghosh'"](#)

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India and Mexico: Cultural Connections

Scheduled for 4/5/24, 4:00 PM

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Intro

ASET is an acronym for Advances in Science, Engineering and Technology. ASET Forum at TIFR conducts colloquia, product presentations, workshops and other forms of programmes under broad spectrum of fields covered by ASET.

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Concluding Function of ASET@40 Celebrations

ASET - an acronym for Advances in Science, Engineering and Technology - took its birth as Instrumentation and Electronics (IAE) colloquia in March 1983. Need for such a forum where ideas and accomplishments in electronics and instrumentation could be discussed, was mooted in a meeting called by the then Group Committee V on February 18, 1983.

The year-long celebrations to commemorate 40 years of ASET will conclude on 28th March ... See more

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ASET (Advances in Science, Engineering, and Technology) lectures arranged by TIFR, are held every Friday at 4 pm. To be on the mailing list, aset@tifr.res.in

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ASET Colloquium on "Single crystal diamond for quantum and industrial applications" by Dr. Padmnabh Rai, UM-DAE CEBS on 15th March at 4 p.m. YouTube Live: tinyurl.com/ASETon15March

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Articles and Blogs

1. [Dental Implants: From toothless grin to perfect smile](#), Anand Kant Das and Biswarup Mukhopadhyay, TIFR, 12/06/10.
2. [The Revolutionary Road: A journey from splints to Molecular Machines](#), Anand Kant Das and Biswarup Mukhopadhyay, TIFR, 22/06/10.
3. [Lost in transition: An integrated approach to unearth and unravel our mysterious past](#), Anand Kant Das and Biswarup Mukhopadhyay, TIFR, 28/06/10.
4. ['Coherent Synergy' - An innovative and holistic approach to development](#), Anand Kant Das and Biswarup Mukhopadhyay, TIFR, 06/07/10.
5. [Celebrating a genius, The Bust of Ramanujan](#), Prof. Ramji Raghavan, Agastya International Foundation, 13/07/10.
6. [Sojourn on the moon and beyond](#) ♦♦♦ [A story of quest, excellence and truth](#), Anand Kant Das and Biswarup Mukhopadhyay, TIFR, 19/07/10
7. [Final Fate of a Massive Star](#), Prof. Pankaj S. Joshi, TIFR, 26/07/10, [English Version](#), [Hindi Version](#).
8. [Just a click away.....](#), Anand Kant Das, TIFR, 30/07/10.
9. [The Last Wish, An insight into the mysteries of the final fate of a massive star](#), Anand Kant Das, TIFR, 05/08/10
10. ['He who shows light shall not walk in darkness' Stories of unsung grass root inventors and marvelous efforts towards their cause](#), Anand Kant Das, TIFR, 09/08/10.
11. [Beyond the obvious, Open innovation transforming life](#), Anand Kant Das, TIFR, 18/08/10.
12. [Wondrous rays](#), Anand Kant Das, TIFR, 26/08/10.
13. [Motion: The very essence of life, Insights into lower back pain and right postures](#), Anand Kant Das, 25/09/10.
14. [Universal language, A peek into Mathematica for education](#), Anand Kant Das, 05/10/10.

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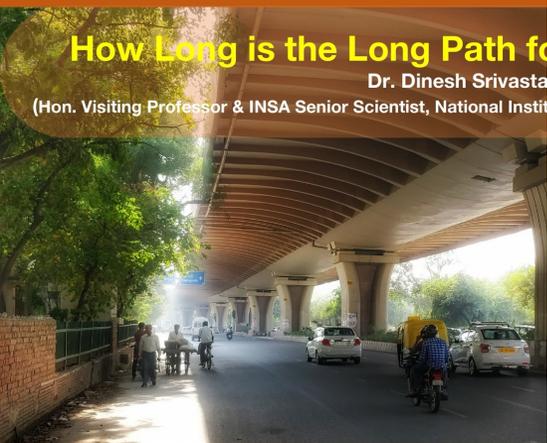
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How Long is the Long Path for India

Dr. Dinesh Srivastava

(Hon. Visiting Professor & INSA Senior Scientist, National Institute of Advanced Studies, Bengaluru)



India, over the last 60 years ago, has not considered development. We need to address this contrast, develop, and invest in these technologies. This development is a long path.

Dinesh Kumar Srivastava (b. 1952) is Honorary Visiting Professor and INSA Senior Scientist of Advanced Studies (NIAS), Bengaluru. He joined the Variable Energy Cyclotron Centre from Training School, from where he retired as Distinguished Scientist and Director. Raja Ramanna Fellow, he held the position of Homi Bhabha Chair Professor, at NIAS, the National Academy of Sciences, India, and Indian National Science Academy.

He has held visiting positions at universities in USA, Germany, Canada, and South Africa. His work on electromagnetic probes of quark gluon plasma, propagation of charm quarks, break-up of light projectiles in Coulomb and nuclear field of nuclei and medium medium interactions. His books on 'Climate Change and Energy Options' and 'Art and Science' and 3 books of stories for children to explain concepts of science have been well received.

December 29, 2023 at 4 p.m.
Hybrid: Lecture Theatre AG66, TIFR Mumbai
YouTube Live: <http://tinyurl.com/ASETon29Dec>

A joint ASET-AMA event



Understanding "Pannalal Ghosh"

Dr. Vishvas M. Kulkarni (Scientist, BARC, Mumbai)



Until mid-1930s, woodwinds had no place in Hindustani music. Pannalal Ghosh (1911 – 1960), the pioneer flautist, demonstrated supreme emotional music on the Raaga, orchestral compositions and 6-stringed popularized flute in films, and filled up the huge void of "woodwinds" in Hindusthani classical music to Pt. Ghosh's work of creating a new musical instrument at par with traditionally established instruments. His short musical life span of only 25 years, is a big contribution to the world of music.

The music this saintly artist rendered was a blend of style and Tantakari (stringed instrument style) presentation. Understanding 'Pannalal Ghosh's' intricacies.

Dr. Vishvas Kulkarni is a senior scientist at BARC, an amateur photographer, a vocalist, and a flautist who performed before elite audiences in India and abroad.

Trained in Hindusthani classical singing from Smt. Nalini Rokade, Shri. Ashok Kulkarni and Shri. Vishvas later specialized in flute playing playing Gunde initially, and then Pt. V.G. Karnad - a disciple of Pannalal Ghosh.

He continues his efforts to propagate the Ghosh tradition of flute playing via teaching as well as through information on the matchless musical contributions of Pt. Ghosh to lovers through supportive activities in association with the AMA to nurture arts. Vishvas has to his credit many information compilations pertaining to Pt. Ghosh, which are acclaimed among them being the book 'Pannalal Ghosh: A Life in Music'.



March 8 2024, 4 to 5.30 p.m.
AG-66, TIFR, Mumbai
YouTube Live: <http://tinyurl.com/ASETonMarch8>

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ASET – Advances in Science, Engineering and Technology
AMA – Amateur Music Association

ASET@TIFR

Brain-Computer Interfaces (BCIs) for speech and movement in people with neurological injury or neurodegenerative diseases



DR. MAITREYEE VAIDYA
(Department of Neurological Surgery, University of California, San Francisco)

Neurological injury or neurodegenerative diseases can lead to paralysis causing severe speech and movement impairments, dramatically reducing the quality of life and independence in millions of people. Brain-computer interfaces (BCIs) can offer a potential solution to restore lost speech and movement by bypassing damaged parts of the nervous system and directly deciphering their brain signals. The speaker will talk about her research on implanted intracortical BCIs to restore naturalistic speech to persons with ALS. She has decoded their neural signals into words or directly synthesized their voice from the activity of hundreds of single neurons recorded from surgically implanted microelectrode arrays in the speech-motor cortex. She will also give an overview of her previous neurotechnology research on non-invasive BCIs for detecting movement intention from aggregate brain waves recorded from the surface of the scalp using EEG sensors, neurotechnology for motor and language rehabilitation after stroke, and affective robotics for at-home dementia care.



Dr Maitreyee Vaidya is a neurosurgeon and neuroscientist, developing advanced BCI for restoring speech and movement in people with neurological injury or neurodegenerative diseases. She is currently a senior research associate at the University of California, San Francisco, where she is also an assistant professor. She has received numerous awards for her research, including the Nature Inspiring India UK Achievement Award.

March 1 2024 at 4 p.m.
(Hybrid) Lecture Theatre AG 66, TIFR
YouTube Live: <http://tinyurl.com/ASETonMar1>

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INDIA AND MEXICO: CULTURAL CONNECTIONS

Dr. Indranil Chakravarty



Indranil Chakravarty did BSc in Statistics from Calcutta's Presidency College, MFA in Filmmaking from the International Film School in Havana (where he studied storytelling under the Nobel Laureate, Gabriel Garcia Marquez) and did PhD in Film from Victoria University of Wellington, New Zealand. He has held professor positions in Film History and Screenwriting at India's premiere film institutions. His book publications include The New Latin American Cinema, India's Audiovisual Market: An Analysis and a book of essays in Spanish, Redescubriendo a Tagore. Currently, he is writing a biography of Octavio Paz's years in India (The Tree Within) as a Homi Bhabha Fellow.

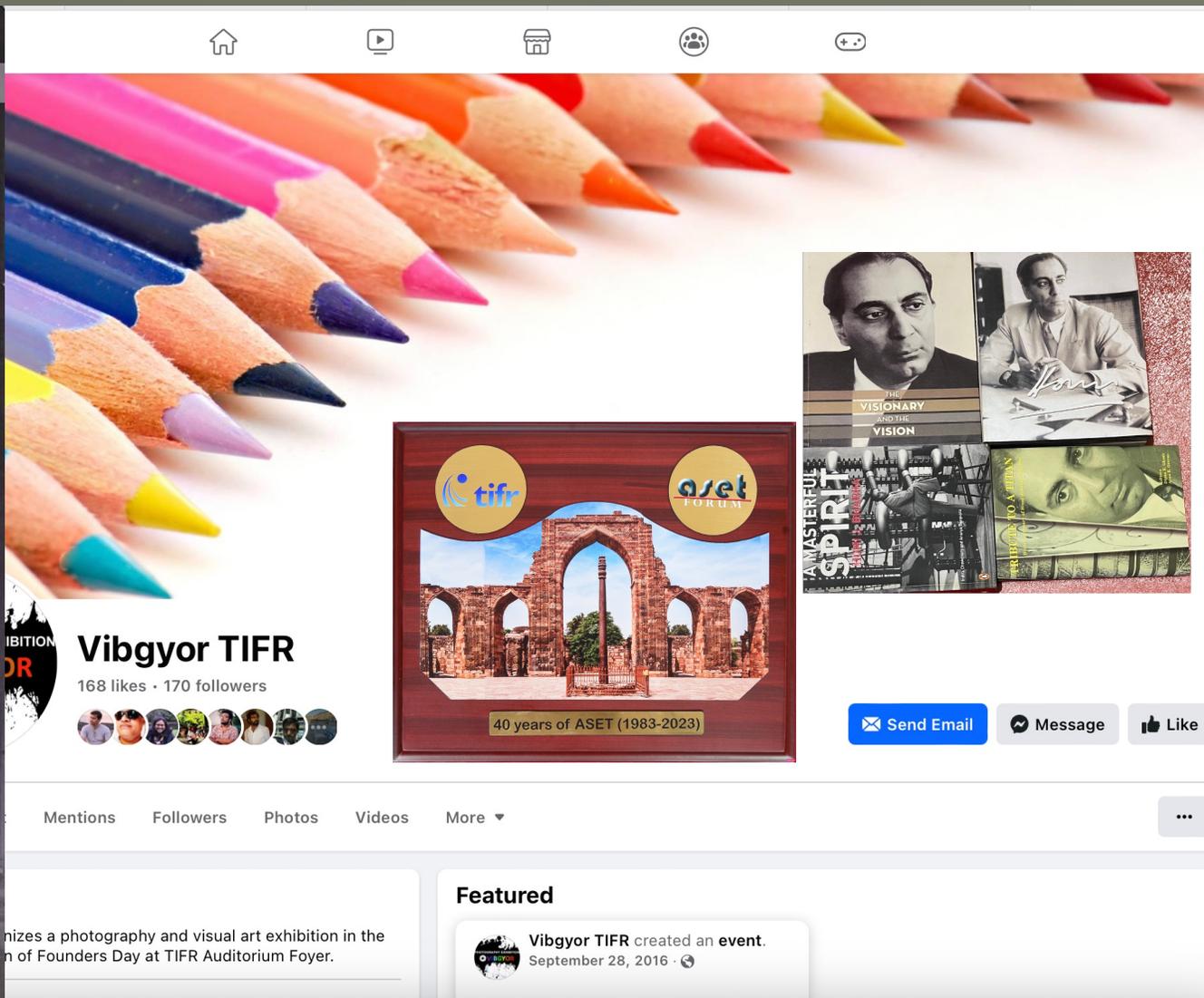
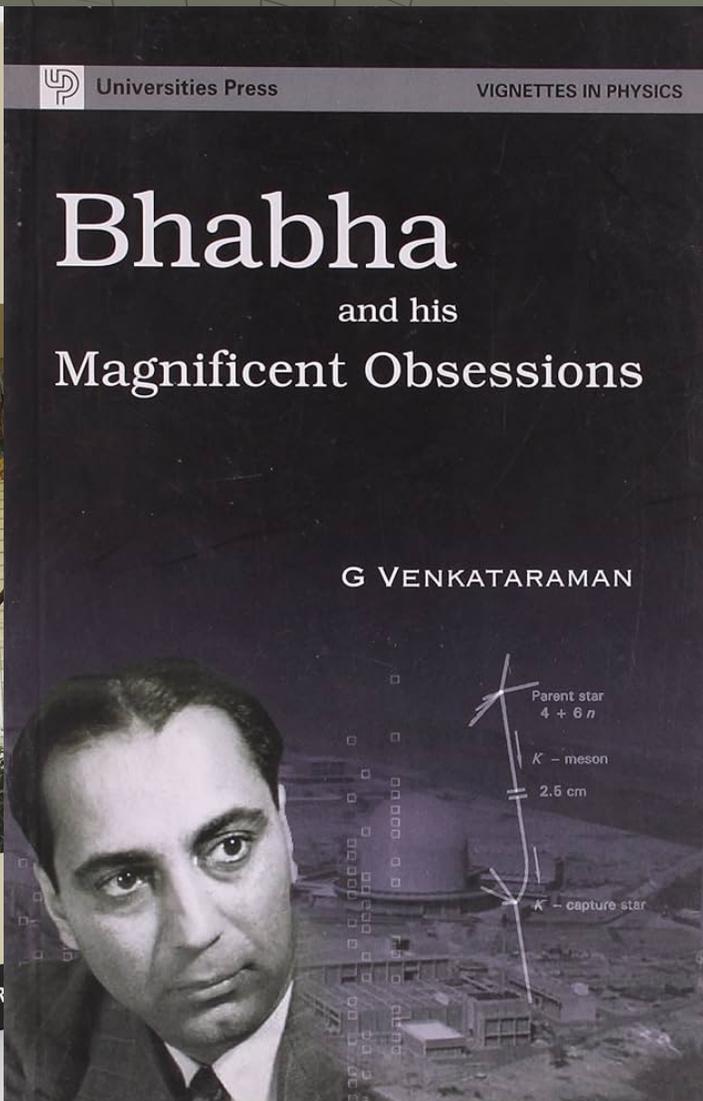


Though located on opposite sides of the globe, India and Mexico are deeply connected. India and Latin America were accidentally linked through Columbus' delusion that he had discovered the western route to India in 1492. Consequently, the Mayans and Aztecs are still called 'Indians.' In Mercator's 1596 map, Mexico was called 'New India.' Their national costume, la china poblana, is an adaptation of the 'half-sari' worn by an Indian woman who was kidnapped and sold in Mexico in the early 17th century. Mole, the traditional sauce of Mexican cuisine, was derived from India's curry while daily vegetables such as tomato, potato, chilly and even chocolate came from Mexico. Our genda phool, used for worship, were offerings made to the Virgin as 'Mary's gold.' The founder of the Mexican communist party was a Bengali revolutionary, M. N. Roy. The head of Mexico's post-Revolutionary agricultural programme was our rebel leader Pandurang Khankhoje, while Tagore left a deep impact on many Mexican writers. The battle-cry of the Mexican Revolution in 1910 was made with the Bhagavad Gita in hand, and the Nobel Laureate poet, Octavio Paz, found his deepest inspiration in India as his country's ambassador. The seeds of our Green Revolution came from Mexico, and Homi Bhabha was so impacted by his Mexican experience that it shaped TIFR in significant ways.

April 5 2024 at 4 p.m.
(Hybrid), Lecture Theatre, TIFR
YouTube Live: <http://tinyurl.com/ASETonApril5>

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- ◆ Thanks to TIFR Archives, PRO, Photography exhibitions and others.



Advances in Science, Engineering and Technology (ASET)

Concomitant event of thirty years of ASET on February 18, 2013 from 2pm to 6:30pm in the Homi Bhabha Auditorium, TIFR, Mum



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Homi Bhabha Birth Centenary Commemorative ASET Lectures



Tata Institute of Fundamental Research, Mumbai has launched the birth centenary celebrations of Dr. Homi J. Bhabha on 30th October 2008. The celebrations spanning a period of two years will go on till 30th October 2010. As mentioned by Prof Mustansir Barma, Director, TIFR, this would be an ideal period not only to renew our commitment to academic activities, but also to rededicate ourselves to the far-sighted vision and scientific and intellectual legacy of Dr. Homi Bhabha, who has set very high standards for the Institute's functioning.

ASET has been very active over the years in fulfilling its committed role as a forum for dissemination and discussion of engineering, technology and science issues. In the modern era of front-ranking experimental science, these three disciplines are often inseparable and interdependent. Dr Bhabha himself has demonstrated this by his outstanding achievements encompassing all these three areas. As a humble tribute to the great visionary and to commemorate his birth centenary, ASET is organising Homi Bhabha Birth Centenary Commemorative ASET Lectures. The lectures will be delivered by eminent personalities in the areas mentioned above. There will be 24 lectures in total – one in every month, spanning the entire period of centenary celebrations. All the lectures are usually held on working Fridays at 1600 hours in the Institute's main lecture theatre (AG-66). The lectures will be non-technical in nature and will target young students and general public, in addition to the practitioners of the above mentioned fields.

The list of lectures and other related information is given below. Please check this link often for updated information. Kindly send your suggestions, feedback, proposals for lectures etc. to aset@tifr.res.in. Thank you.

1. Prof. Yasuo Arai, KEK, Japan
2. Prof. Manjul Bhargava, Princeton University, CMI and TIFR
3. Mr. Som Mittal, President, NASSCOM
4. Prof. J.B.Joshi, Director, Institute of Chemical Technology, Mumbai
5. Prof. Govind Swarup, FRS, TIFR
6. Prof. Atsuto Suzuki, Director General, KEK, Japan
7. Dr. B.N.Suresh, Director, Indian Institute of Space Science and Technology, Thiruvananthapuram
8. Prof. M.V. Pitke, IIT, Bangalore
9. Prof. E.C. George Sudarshan, University of Texas, USA
10. Dr. Sam Pitroda, Chair, National Knowledge Commission
11. Dr. Arvind Gupta, Institute for Defence Studies and Analyses, New Delhi
12. Dr. T. Ramasami, Secretary to the Government of India, Department of Science & Technology
13. Dr. R. Ramachandran, Associate Editor (Science), Frontline
14. Prof. Thomas E. Wellems, National Institute of Allergy and Infectious Diseases, USA
15. Prof. B.V.Sreekantan, Prof. Devendra Lal and Prof. R.Vijayaraghavan
16. Dr. Chris Bowler, Tara Expeditions
17. Dr. B.K. Goyal, Director, Cardiology, Bombay Hospital
18. Dr. R.A. Mashelkar, Bhatnagar Fellow
19. Dr. R.Chidambaram, Principal Scientific Advisor, Government of India
20. Dr. Samir K. Brahmachari, Director General, CSIR and Secretary, DSIR
21. Dr. K.B. Sainis, Director, Bio-Medical Group, BARC
22. Mr. Kewal Nohria, Advisor, Crompton Greaves Ltd.
23. Prof. Ada Yonath, NL, Weizmann Institute of Science, Rehovot, Israel
24. Dr. K. Kasturirangan, Member, Planning Commission

- ◆ NSF Colloquium
- ◆ Public Lectures
- ◆ Chai and Why?
- ◆ Department Seminars
- ◆ Department Annual Talks
- ◆ TIFR Committee for Gender Harmony (TCGC)
- ◆ Indian Physics Association (IPA)
- ◆ The Gender in Physics Working Group (GIPWG)
- ◆ TIFR Organised Conferences
- ◆ IEEE and its Societies
- ◆ Amateur Music Association (AMA)
- ◆ TIFR Sports Club
- ◆ Industries

- ◆ National Technology Day (May 11)
- ◆ Engineer's Day (September 15)
- ◆ International Women's Day (March 8)
- ◆ International Day for Women & Girls in Science (February 11)

- ◆ GMRT/NCRA (Twice), Pune
- ◆ Grapes, Ooty
- ◆ HEGRO, Pachmarhi
- ◆ HAGAR, Hanle
- ◆ ASTROSAT, Mumbai
- ◆ BFH, Hyderabad



TATA INSTITUTE OF FUNDAMENTAL RESEARCH

Commemoration of ASET@30

Advances in Science, Engineering and Technology (ASET) has taken its birth in the form of Instrumentation and Electronics (IAE) colloquia in March 1983. Need for such a forum where ideas and accomplishments in electronics and instrumentation could be discussed, was mooted in a meeting called by the then Group Committee V on February 18, 1983. IAE had its share of ups and downs and somewhere down its journey changed its name to ASET to reflect its wider appeal and identity.

To commemorate 30 years of ASET, a special event showcasing some of the advances in experimental techniques, detector and instrumentation development activities at TIFR is being organized. Some of the founding members of the ASET will participate in the event.

Speakers

M. Deshmukh, S. Maiti, N.K. Mondal, R.G. Pillay, J. Radhakrishnan, B.J. Rao, K.P. Singh

MONDAY, 18TH FEBRUARY 2013: 1400 – 1830 HRS

Homi Bhabha Auditorium, TIFR, Colaba, Mumbai 400005

For details: aset@tifr.res.in, pro@tifr.res.in ; 22782368, 22782500

- ◆ 2.00 - 2.30: Welcome, Inauguration and Reminiscences
- ◆ **Session I: Chair: R.K.Manchanda**
- ◆ 2.30 - 3.00: M. Deshmukh (Experimental tools and techniques to explore condensed matter systems)
- ◆ 3.00 - 3.30: S. Maiti (Not just cheaper. Better)
- ◆ 3.30 - 4.00: N.K. Mondal (Development of Detector & Instrumentation for High Energy Physics Research at TIFR)
- ◆ **4.00 - 4.30: High Tea**
- ◆ **Session II: Chair: S.V.K.Kumar**
- ◆ 4.30 - 5.00: R.G. Pillay (In-house developments for heavy ion accelerator facility)
- ◆ 5.00 - 5.30: J. Radhakrishnan (Trust and verify)
- ◆ 5.30 - 6.00: B.J. Rao (ASET-30 years: Biology Programme)
- ◆ 6.00 - 6.30: K.P. Singh (Astronomy from Outer Space at TIFR)



Directors, TIFR

Deans, NSF

NSF office

Registrars and Administration

Proposers of ASET speakers

Highly supporting colleagues, audience

Auditorium and Lecture theatre

Public Relations, Travel

Canteen

Transport

Security

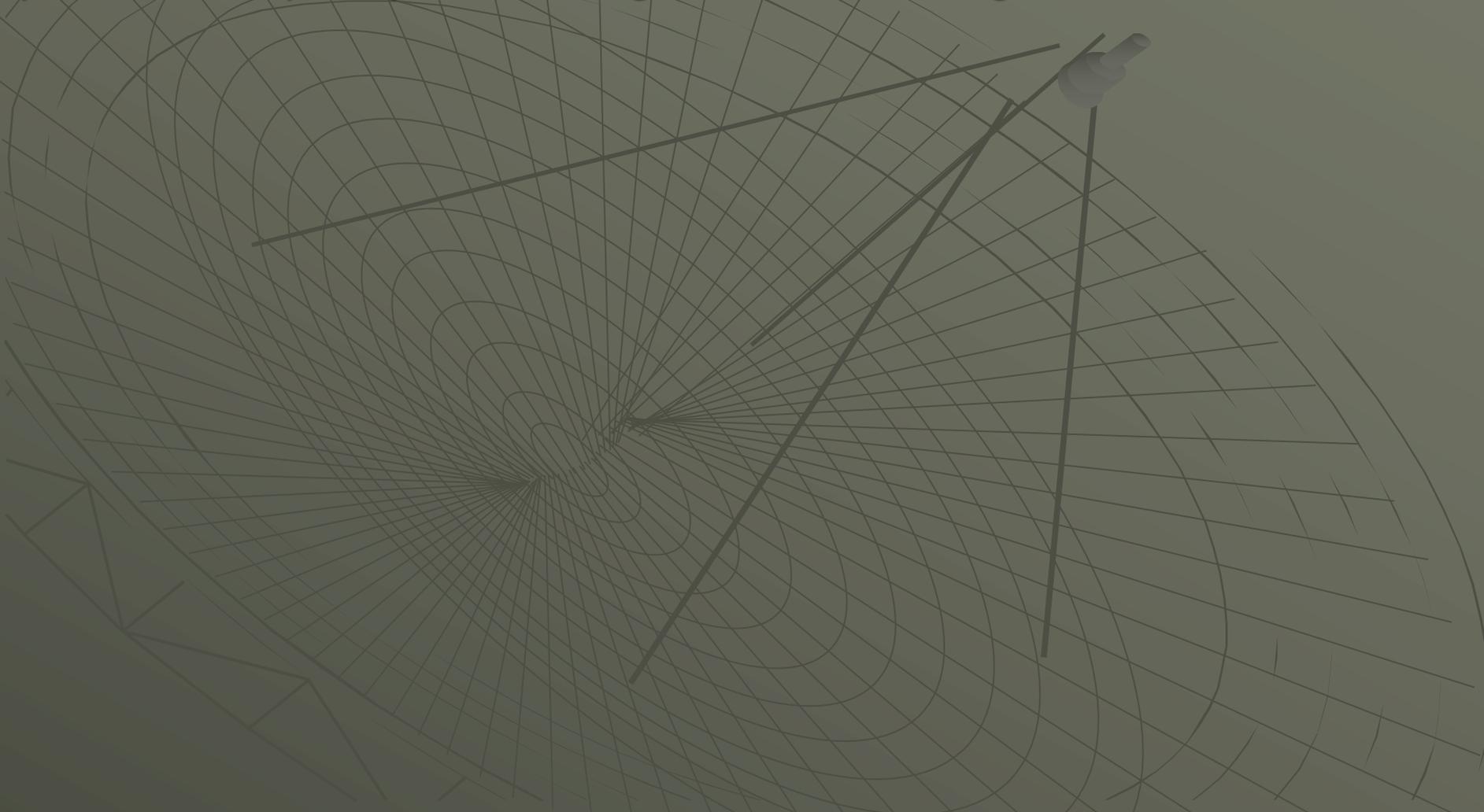
Central Workshop

Photography

Computer centre

In fact, to all colleagues of past and present 🙏

“Many congratulations to ASET on it's 40th birthday! Its enduring success owes immensely to your tenacity and determination. Alas, I shall not be able to personally attend the birthday party but I do promise to request you and Parag Shah for a slot to give an ASET talk later in the year”.



“I am afraid I shall not be able to attend in person. I shall join in VC mode through Zoom, though. I have a lab from 2 to 5 and a lecture from 5:30 to 7:00 PM. But I'll sneak out from the lab at 4:00 PM to join through the link. I'll have to sign out by 5:20 or so.

Since I shall not be able to do it in person, let me express through this message, my appreciation for your efforts to keep this colloquium active and relevant for so long”!

“Thanks for the invitation. It is really nice of both of you to have thought of 40 years of celebration of the ASET forum. I am happy that it has come a long way from what was started by Prof. Damle (if my memory serves me right) to Prof. Apte, to me, Krishnan, ... to Satya and now to Parag to continue the responsibility. I am sorry that I will not be able to be present physically in AG66 on 28th March but would participate as I usually do via the Zoom link. With best wishes to both of you and for the celebrations”.

“Congratulations on the final event of the celebrations of ASET@40.

I have enormously enjoyed the multiple range of talks organized under ASET for several decades now. And I continue to look forward to the future talks in this series. ASET serves not only the originally intended areas of Instrumentation and Electronics, but by covering multiple range of topics, humanities and social Sciences and music and art, medicine and current affairs, it is an island of excellence in letters, art and humanities in an otherwise nearly completely scientific research institute. It thus fulfills the need and important role in a Deemed University that TIFR is, for its students, faculty and the technical and administrative staff.

I am happy to note that ASET has emerged as an institution in itself in areas beyond science, comparable to or even beyond the wide variety of topics and talks covered by other eminent and veteran institutions in Mumbai, such as the Asiatic Society of Mumbai, whose programs I have the privilege of enjoying from time to time (when they are not clashing with ASET colloquia. 😊).

Unfortunately, I will not be able to come on the 28th March, as most likely I shall be on long distance travel on that day. But I wish you all good things on this happy occasion”.

“Congratulations for the successful celebrations of the year-long ASET@40 which started in March 2023. Thank you very much for your continuous effort and dedication in making ASET forum our very successful colloquium series. ASET has provided a common platform for Engineers and Scientists working in various fields of science, engineering and instrumentation to share their knowledge and discuss the recent engineering trends in building instruments for research in these fields. Thanks for giving an opportunity to our engineers from DAA and Balloon Facility to present their work during ASET colloquia which helped them a lot to grow in technical aspects of their fields. Congratulations again for all your effort and dedication”.

“Congratulations Satya. It was a great effort you put in so long specially in the early days. I was cosmic ray seminar coordinator in late 60’s and first hand know how difficult it was, even though half of TIFR faculty was working in cosmic rays. If I recall right, Seeds for technical colloquium got sown very early due to puritan nature of the physics colloquia. We four Damle, Agrawal, George Jeseph and myself shared room in early days. George and Agrawal would leave by 6 O clock buses while Damle would leave at 8 or later. I being the youngest and hostel resident was always on the receiving end of his frustrations in evenings whether it was his thesis, as prof Menon was taking his own sweet time or we were instrument builders and were not respected by the so called physicists. This dialog continued all through until his retirement. His thoughts were further strengthened when a new PARC faculty was created and our seniors were not made members of the physics faculty. That is why when the time came and our new X-ray and gamma rays program became successful and we got some visibility, that earlier avatar of ASET was born”.

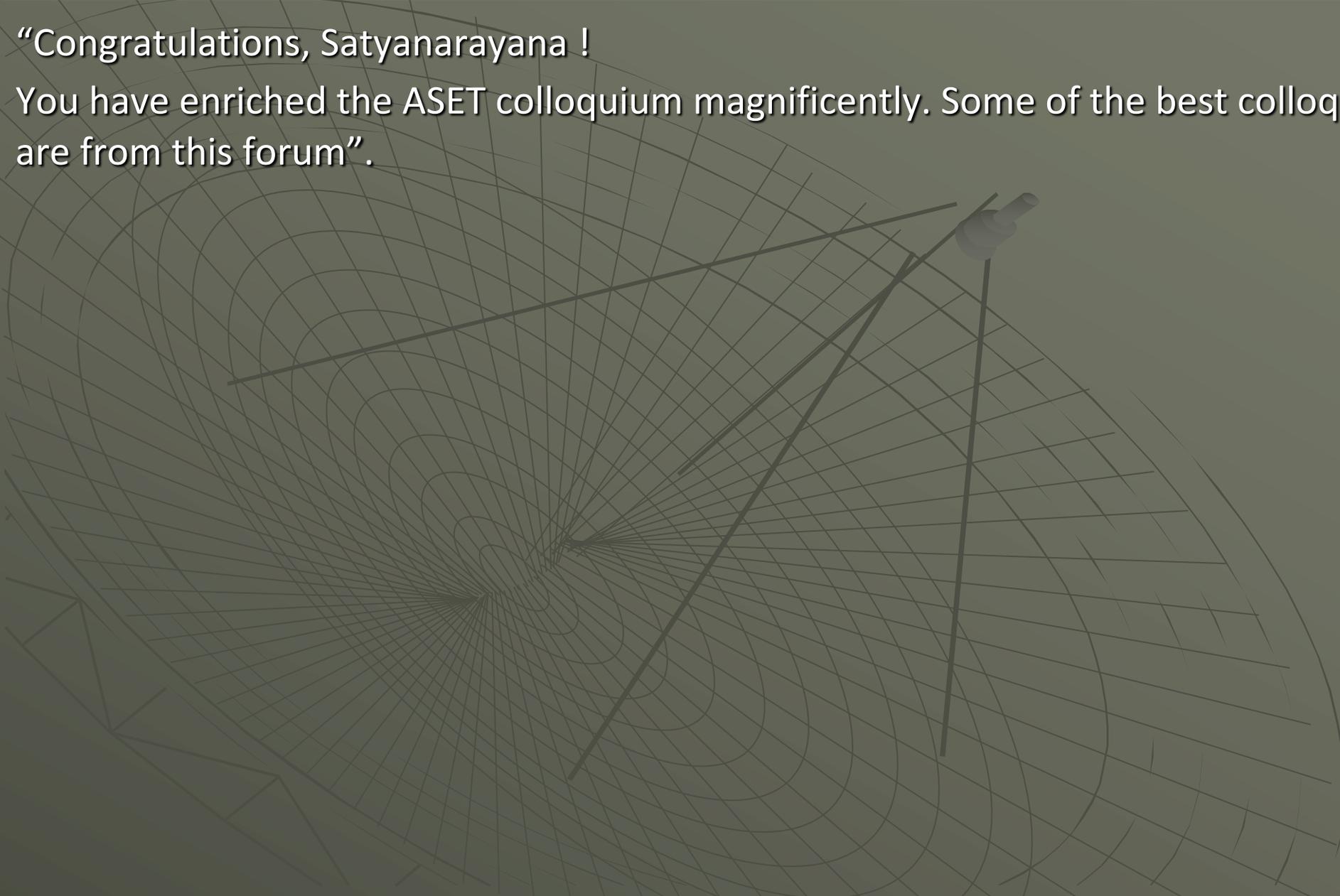
I am sorry that I could not attend the ASET@40 celebration last week, as I was preoccupied with some personal visitors. Otherwise, I would have loved to attend it physically at TIFR.

I am very happy to note that ASET Colloquia is celebrating its 40th anniversary on 28th March 2024. My heartiest congratulations to the to the teams (both present and past) for the successful organization of colloquia under ASET Forum. It started (as IAE Colloquia) with the idea of creating a platform to report and discuss the development in Scientific instrumentation at the institute, which over a period of time, attained a much broader format to include wide range of topics of interest to the institute community. The highly successful journey of ASET Forum of 40 years is commendable, and I wish it every success in the years to come.

Your passionate involvement and effort are particularly noteworthy.

“Congratulations, Satyanarayana !

You have enriched the ASET colloquium magnificently. Some of the best colloquia I have attended in TIFR are from this forum”.



“I extend my heartfelt thanks for the invitation to the event on 28th March. Unfortunately, I will be out of India during that period and cannot attend. However, I am truly honoured to have been invited. My best wishes to you and the entire ASET team for carrying the legacy of ASET for over four decades. I am certain it will be a valuable gathering, bringing back many memories, some of which I was also involved in. Wishing you and the team all the best”.

“Over the last four decades, ASET has orchestrated talks that have propelled the frontiers of knowledge forward. A testament to its enduring legacy, ASET has nurtured a community of scholars, thinkers and researchers, each contributing to the rich tapestry of human achievement. I commend Satya and his team for taking the legacy forward. I also congratulate his predecessors—three cheers to ASET”.

Thank you 🙏

Looking forward to ASET@50 🌸