

10 Glorious Years of NASI Delhi Chapter



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Edited and Compiled By
Manoj Saxena and Ajoy Ghatak




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Dedicated to

Professor Vinod Prakash Sharma
Founder Chairman, NASI Delhi Chapter

Contents

Messages

<i>Dr. Anil Kakodkar</i>	<i>xi</i>
<i>Dr. M.S. Swaminathan</i>	<i>xii</i>
<i>Dr. Manju Sharma</i>	<i>xiii</i>
<i>Dr. P.N. Tandon</i>	<i>xiv</i>
<i>Dr. Jai Pal Mittal</i>	<i>xv</i>
<i>Dr. V.P. Kamboj</i>	<i>xvi</i>
<i>Dr. Ashok Misra</i>	<i>xvii</i>
<i>Dr. Asis Datta</i>	<i>xviii</i>
<i>Dr. K. Kasturirangan</i>	<i>xix</i>
<i>Dr. Akhilesh K. Tyagi</i>	<i>xx</i>
<i>Dr. Ajoy Ghatak</i>	<i>xxi</i>
<i>About Prof. Vinod Prakash Sharma</i>	<i>xxiii</i>

April 01, 2008 - March 31, 2009

• April 30, 2008 - Inaugural Function “History of Mathematics in India: Some Interesting Features” at IIT Delhi	1
• “Safe Water for Community Health” - Book Release in the Inaugural Function	1
• May 24, 2008 - Dr. B.P. Pal Memorial Lecture by Dr. Prem Narain at IARI, New Delhi	1
• September 06, 2008 - Symposium on “Inventing to Transform India” at IIT Delhi	2
• September 20, 2008 - One-Day Workshop on “Fundamentals and Application of Optics” at Jaypee Institute of Information Technology University, Noida	2
• November 21-22, 2008 - Two-Day Workshop on “Quantum Mechanics: Theory and Applications” at Deen Dayal Upadhyaya College, University of Delhi	2
• December 18-20, 2008 - An Interactive Session with Children at AIIMS, New Delhi	2

April 01, 2009 - March 31, 2010

• April 10-11, 2009 - Two-Day Workshop on “Quantum Mechanics: Theory and Applications”	3
• October 20, 2009 - Special lecture on “Applying the Tools of Nanoscience to Understanding Human Diseases such as Alzheimers” by Prof. Mark Welland, NASI Foreign Fellow at IIT Delhi	3
• October 24, 2009 - One-Day Workshop on “Einstein & Special Theory of Relativity” at IIT Delhi	3
• November 06-07, 2009 - One-Day Workshop on “Einstein & Special Theory of Relativity” at Deen Dayal Upadhyaya College, University of Delhi	3

- November 28-29, 2009 - Two-Day Workshop on “Fiber Optics” at University of Delhi South Campus 4
- November 30, 2009 - One-Day Seminar to Celebrate the 151st Birth Anniversary of Acharya Jagadish Chandra Bose at IIT Delhi 5
- December 01, 2009 - Special Lecture on “From Practicing Science to Stimulating Future Scientists” by Prof. Nicole Ostrowsky at NCERT, New Delhi 5

April 01, 2010 - March 31, 2011

- April 24, 2010 - Dr. P. Sheel Memorial Award Lecture at AIIMS, New Delhi 6
- September 11, 2010 - One-day short-course on “Einstein & Special Theory of Relativity” at IIT Delhi 6
- October 22-23, 2010 and October 29-30, 2010 - Workshops On “Quantum Mechanics: Theory and Applications” at Deen Dayal Upadhyaya College, University of Delhi 6

April 01, 2011 - March 31, 2012

- October 31, 2011 - Interactive Session for School Students at Defence Institute of Physiology and Allied Sciences, Delhi 8
- November 18, 2011 - Short course on “Einstein & Special Theory of Relativity” at Kendriya Vidyalaya, Delhi Cantt 8
- December 01-02, 2011 - International Conference on Optics and Photonics (IONS-1) at IIT Delhi 8
- December 08-09, 2011 - Lectures at Kendriya Vidyalaya (in JNU) on “Polarization of Light” 9
- February 22, 2012 - Popular Lecture on “Radio Astronomy” by Prof. R.K. Shevgaonkar at IIT Delhi 10
- March 02-03, 2012 - National Symposium on “Innovations in Polymers Towards Sustainability and Growth” at Bhaskaracharya College of Applied Sciences, University of Delhi 11

April 01, 2012 - March 31, 2013

- July 16-20, 2012 - Robotics Workshop at Kendriya Vidyalaya, JNU Campus 12
- October 11, 2012 - Workshop for School Teachers on “Enrichment Programme: Physics” at Delhi Public School Dwarka Campus 13
- October 30, 2012 - Special Lecture on “Nobel Laureate S. Chandrasekhar: His Perception of Evolution of Stars from White Dwarfs to Black Holes” by Prof. Bimla Buti at IIT Delhi 13
- January 19, 2013 - Workshop on “Teacher Training” held at Ahlcon International School, New Delhi 15
- January 21-23, 2013 - Workshop on “Emerging Trends in Development of Drug & Devices” at Department of Chemistry, University of Delhi 15
- February 18, 2013 - One-Day Workshop on “Photonics and other Areas in Physics” at Dyal Singh College, University of Delhi 16

April 01, 2013 - March 31, 2014

- April 18-19, 2013 - Two-Day Workshop on “Quantum Mechanics and its Applications” at JIIT Campus 18
- May 19-21, 2013 - Robotics Workshop at Student Activity Center, IIT Delhi 20

- January 15, 2014 - A Special Public Lecture on “Diabetes in India” by Prof. Nikhil Tandon at IIT Delhi 21
- March 08-10, 2014 - National Workshop on “Basic Optics, Fiber Optics and Optical Communication” at Maharaja Agrasen College, University of Delhi 24
- March 19, 2014 - Lecture on “Development of Science in India: A Brief History & Einstein & His Famous Equation $E = mc^2$ ” by Prof. Ajoy Ghatak at MIRAMBIKA School in Sri Aurobindo Ashram, New Delhi 26

April 01, 2014 - March 31, 2015

- September 14, 2014 - Prof. Sri Ranjan Memorial Award Lecture (2012) by Prof. Akhilesh Tyagi and Prof. B.K. Bachhawat Memorial Award Lecture (2011) by Prof. Debi Sarkar at Miranda House, University of Delhi 27
- September 24, 2014 - One-Day Workshop on “Einstein & his year of Miracles” at Kalindi College, University of Delhi 30
- January 21, 2015 - Prof. Meghnad Saha Memorial Award Lecture (2013) by Prof. Bimla Buti at Deen Dayal Upadhyaya College, University of Delhi 31
- May 17, 2014 - Technical Lecture by Prof. V.P. Sharma at Graphic University, Dehradun 33
- December 16, 2014 - Technical Lecture by Prof. V.P. Sharma at Pune University 33
- February 20-22, 2015 - Virtual laboratory project on “Innovative Approach to Practicals in Physics Laboratory” at Kalindi College, University of Delhi 33
- Student Project on Solar Energy at Dyal Singh College, University of Delhi 34
- Book Writing Project on Experiments with Light 35

April 01, 2015 - March 31, 2016

- September 29, 2015 - Special Lecture on “Sunlight and Human Health” by Prof. V.P. Sharma at IIT Delhi 36
- February 17, 2016 - Prof. B.P. Pal Memorial Lecture (2015) by Prof. Jitendra P. Khurana at Deen Dayal Upadhyaya College, University of Delhi 37
- February 29, 2016 - Prof. R.C. Gupta Endowment History of Science Lecture (2014) by Prof. P.N. Tandon, President, National Brain Research Centre Society at NIPGR, New Delhi 38
- March 16, 2016 - Prof. A.C. Banerjee Memorial Award Lecture (2015) by Prof. Ajoy Ghatak and Prof. B.K. Bachhawat Memorial Lecture Award (2015) by Prof. Rajesh S. Gokhale at JIIT, Noida 40
- March 21, 2016 - Prof. Meghnad Saha Memorial Award Lecture (2015) by Dr. Anil Kakodkar at NIPGR, New Delhi 41
- Books Published Celebrating the International Year of Light 41
- One-Day Workshops Organized to Celebrate International Year of Light 2015 42
- March 13-14, 2016 - Workshop on “Quantum Mechanics: Theory & Applications” at Deen Dayal Upadhyaya College, University of Delhi 44
- Student Projects Fully Supported by NASI Delhi Chapter 45

April 01, 2016 - March 31, 2017

- September 29, 2016 - Meeting of the Executive Committee 46
- October 01, 2016 - One-Day Workshop on “Optics and its Applications in Information Technology” at Benett University, Greater Noida 46
- October 20, 2016 - Dr. Mridula Kamboj Memorial Award Lecture (2016) by Dr. M.V. Padma Srivastava and 2016 Award Lecture in the field of Toxicology by Dr. Pramod Garg at National Institute of Immunology, New Delhi 47
- October 26-27, 2016 - Two-Day Workshop on “Quantum Physics and Quantum Optics” at Dyal Singh College 47
- November 04, 2016 - Dr. P. Sheel Memorial Award Lecture (2016) by Dr. Shelly Praveen at Miranda House, New Delhi 47
- November 25, 2016 - Prof. R.N. Tandon Memorial Lecture Award and Prof. B.K. Bachhawat Memorial Young Scientist Lecture Award at University of Delhi South Campus 48
- January 10, 2017 - Prof. N.R. Dhar Memorial Award Lecture by Dr. R.A. Mashelkar at IIT Delhi 49
- January 21, 2017 - Workshop on ‘Optics’ for school teachers at Mother's International School 50
- February 18, 2017 - Workshop on “Observing Nuclear Processes from Zeptosecond to Picosecond Time-Scale” at Inter-University Accelerator Centre, New Delhi 50
- March 23, 2017 - Workshop on “Physics for Society” at Gargi College, University of Delhi 51
- March 25, 2017 - One-Day Workshop on “Nuclear Physics and its Applications” at IIIT University 52
- Undergraduate Student Projects 53

April 01, 2017 - March 31, 2018

- April 07, 2017 - Prof. N.R. Dhar Memorial Lecture (2015) by Prof. P. Balaram at NII, New Delhi 56
- April 21, 2017 - Prof. M.G.K. Menon Award Lecture by Prof. P.N. Tandon at NII, New Delhi 56
- September 02, 2017 - Seminar on “Journey of Science and Technology in India: A Historical Perspective” at NIPGR, New Delhi 56
- October 25-26, 2017 - Two-Day Workshop on “Quantum Physics: An Insight” at Kalindi College, University of Delhi 57
- December 07, 2017 - Meeting of the Executive Committee 59
- January 23, 2018 - One-Day Workshop on Quantum Mechanics and Applications held at Amity University Haryana 59

Dr. Anil Kakodkar

President, National Academy of Sciences India

Chairman, Rajiv Gandhi Science & Technology Commission

Chairman, Technology Information, Forecasting & Assessment Council

August 10, 2018

Message

I am happy to note that the Delhi Chapter of NASI is celebrating completion of ten years of its vibrant existence. I would like to convey my greetings and compliments to all Fellows and Members associated with the Delhi Chapter on this occasion.

NASI the oldest and the largest academy of science in the country has distinguished itself by the holistic approach that it pursues in its programmes. Mission 'Science and Society' has been the hall mark of NASI right since its inception.

I for one believe that pursuit of excellence necessitates work on important problems that encompass both pushing the knowledge envelope forward as well as enriching the society and the environment around through leveraging of that knowledge. Competitiveness and impact of our national scientific research effort in my view is dependent on addressing important problems along the entire science and society spectrum ahead of others. I believe, this is what driving all of us at NASI.

Delhi Chapter has been a very vibrant chapter with active involvement of Fellows and Members. I was fortunate enough to participate in some of the activities of the Chapter. The one that made a strong impression on me was the event to commemorate 200 years of Presidency College, Kolkata, the oldest liberal arts and modern science institution in the country. The discussion during the event was very enlightening both in the context of past as well as future.

Once again, my best wishes to everyone connected with the Delhi Chapter on this occasion.



Anil Kakodkar

President NASI, 2017-2018

M.S. SWAMINATHAN RESEARCH FOUNDATION**Dr. M.S. Swaminathan**

Founder Chairman

Ex-Member of Parliament (Rajya Sabha)

August 13, 2018

Message

I congratulate all the members of the Delhi Chapter of National Academy of Sciences, India (NASI) on completing 10 years and celebrating this occasion as well as bringing out a souvenir which is a fine collection of activities especially covering programmes for popularisation of Science in schools and colleges. I had the privilege to be the President of NASI from 1989-1990 and have closely watched the growth of the Chapter and its contributions towards the mandate of the Academy by organizing outstanding lectures by the stalwarts of Science. It is nice to see that the release of the souvenir coincides with the 125th Anniversary of Prof. Meghnad Saha and 90th Birth Anniversary of Prof. M.G.K. Menon. The chapter has organized activities covering nearly all branch of science and technology i.e. Quantum Mechanics, Nanoscience, Neuroscience, Radio Astronomy, Innovations in Polymers, Development of Drugs and Devices, Gene Therapy of Jaundice Using Animal Virus and Plant Genomes for forward and reverse genetics to name a few.

My hearty congratulations to the Delhi Chapter for their achievements and I wish them all success in the years to follow.

**M.S. Swaminathan**

President NASI, 1989-1990

Dr. (Mrs.) Manju Sharma

Distinguished Women Scientist Chair, NASI, Allahabad

Former Secretary to the Govt. of India

Department of Biotechnology

Principal Advisor to the Dept. Science and Technology, Gujarat

August 06, 2018

Message

The National Academy of Sciences, India Allahabad established in 1930 by Prof. Meghnad Saha, is the oldest of the science academies. Its mandate is Science and Society. During the last two decades particularly, the academy has taken up a large number of science and society related programs and the Local Chapters have played a pivotal role in implementing these activities and have tried to reach every strata of the society – men, women, young students, population in rural areas and Scheduled Tribes.

Delhi Chapter has done exceeding well in the last 10 years; to organize high level lectures and sensitization of scientific community in and around Delhi region. The officials have been very committed and have set up an example for other Chapters.

Through the activities of the Academy our effort has to be to ensure great impact of Science and Technology interventions on the socio-economic development of the country. NASI is trying to involve its large Fellowship and Membership to contribute towards this endeavor. This year we are celebrating the 125th Anniversary of Prof. Meghnad Saha, our Founder. I am sure all the Chapters and the Fellows would dedicate themselves to fulfill the dreams of the Founder and bring academy to the pinnacle of excellence and relevance.

Manju Sharma

President NASI, 1995-1996



Professor P.N. Tandon
Former PRESIDENT

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Prof. P.N. Tandon

FRCS, FNA, FNASc, FTWAS, FAMS, FASc

August 06, 2018

Message



I am happy to learn that our Local Chapter of NASI is going to celebrate ten years of its contributions to the Objectives of the Academy. I am reminded of the reasons, Prof. Megh Nad Saha, a doyen of Indian Science renaissance had to establish this first Science Academy of the country in 1930. Besides other things his major concerns were the problems faced by the Indian scientific community in publishing their research and the need for the scientists to be able to use it for the welfare of the society. Owing to the involvement of my respected father, his teachers and colleagues with the Academy in the early formulative years, I have been familiar with its activities long before I was elected its Fellow. However, it was not till Prof. M.G.K. Menon accepted to be its President (1987-88) that the Academy was converted into a vibrant body. Among the expanded activities was first to convert it from a virtual provincial entity to a truly national one, enhancing its Fellowship to represent the whole country. At the same time to spread its activities to all regions through establishing local chapters.

In the past decade, Delhi was fortunate to have dynamic leadership of Late Dr. V.P. Sharma along with Prof. Ajoy Ghatak and currently Dr. (Mrs.) Manju Sharma to provide us one of the most active Local Chapters, pioneering new activities. I take this opportunity to congratulate them for their selfless service and wish the Local Chapter and the Academy itself a bright future ahead in the service of science, scientists and society.

P.N. Tandon

President NASI, 1997-1998

Prof. (Dr.) Jai Pal Mittal

FNA, FASc, FNASc, FTWAS

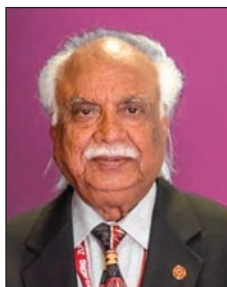
Former, M.N. Saha Distinguished Professor (NASI)

Former, DAE Raja Ramanna Fellow

Former, Director, Chemistry & Isotope Group

Bhabha Atomic Research Centre, Mumbai

August 07, 2018

Message

I am pleased to note that NASI Delhi Chapter has completed a decade of excellent work in promoting and strengthening the most important mandate of the National Academy of Sciences, India “To ensure greater impact of Science towards the socio-economic development of the country”. Delhi Chapter was indeed very fortunate to have dynamic leadership of my dear friend Dr. V.P. Sharma and of Prof. Ajoy Ghatak. I am very happy to congratulate Delhi Chapter of NASI and wish the Chapter and the Academy greater success towards their future endeavors in the popularisation of Science and to encourage the involvement of more number of younger Scientists in its activities. I wish Delhi Chapter of NASI a bright future.

Prof. (Dr.) Jai Pal Mittal

President NASI, 2002-2003



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Dr. V.P. Kamboj, Ph.D, D.Sc., FNA, FNASc.

Chairman

Former Director, Central Drug Research Institute, Lucknow

Former Chairman, Bharat Immunologicals & Biologicals Corp. Ltd., Bulandshahr,

Former President, National Academy of Sciences, India

Hon. Professor, BBAU, Lucknow & Panjab University, Chandigarh

Message



I am extremely happy to note that Delhi Chapter of the National Academy of Sciences, India (NASI) is bringing out a souvenir “10 Glorious Years of NASI Delhi Chapter” in the memory of its Founder Chairman and my close friend Prof. Vinod Prakash Sharma, pioneer of Malaria Research, Founder Director of National Malaria Research Centre, New Delhi and India’s Malaria Control Campaigner who left us for his heavenly abode on 9th October, 2015. The Souvenir is being brought out on the birth anniversary of late Prof. M.G.K. Menon, doyen and architect of Indian Science, mentor of most of us and who is the only scientist in India to have served as Secretary to Govt. of India of all the Science & Technology Departments and President of all the three premier science academies of our country; also served as Planning Commission Member and Union Minister for Science & Technology.

I am pleased to note that Delhi chapter under the guidance of its Dynamic Chairman late Prof. V.P. Sharma and energetic Convenor Prof. Ajoy Ghatak has been highly active in organizing NASI award lectures, hands on workshops and quiz competitions in institutions, colleges and schools of NCR of Delhi every year since its inception. It is discernable from the write up and photographs that the events were well attended. Its current Chairman Prof. Ajoy Ghatak who took over in late 2015 after the untimely demise of Prof. Sharma has continued the activities with same vigour and dynamism.

I am delighted to note that Delhi chapter of NASI has maintained excellent records with photographs of all the events and is releasing the Souvenir on 28th August, 2018. I am confident that NASI Delhi Chapter will continue to motivate students in science through its activities and I wish it success in the times to come.

Lucknow: Dated: 7th August, 2018

V.P. Kamboj

President NASI, 2005-2006

Prof. Ashok Misra

FNASc and FNAE

Former Director, Indian Institute of Technology, Bombay

Former Chairman-India, Intellectual Ventures

NASI-Platinum Jubilee Chair Distinguished Professor, IISc, Bangalore

August 10, 2018

Message

I am delighted to learn that the Delhi Chapter of the National Academy of Sciences, India (NASI) has completed 10 years since its inception and is celebrating the occasion as well as bringing out a souvenir. I had the privilege to be the President of NASI from 2007 to 2008 and it was during this period that I had chance meeting with Prof. Ajoy Ghatak at IIT Delhi. He wanted to hold a workshop in Physics for college faculty and students.

I suggested that we may do so under the aegis of NASI, which he did. Subsequently during one of the Council meetings of NASI we were discussing activities of various Chapters and realised that there was no chapter in the Delhi region even though we had many Fellows from there, several being former Presidents. The Council approved the formation of the Delhi Chapter with Dr. V.P. Sharma as its Chairman and Prof. Ajoy Ghatak as the Secretary. The Chapter was inaugurated in April 2008 and I was happy that this happened during my tenure as President. Over the 10 year period the activities of the Delhi Chapter have been very impressive and all this was possible due to dynamic leadership provided by Dr. V.P. Sharma and Prof. Ajoy Ghatak. The support and participation of Prof. M.G.K. Menon, Prof. P.N. Tandon and Dr. Manju Sharma contributed greatly to the success story of the Delhi Chapter. NASI is the oldest Science Academy in India started by Prof. Megnad Saha in 1930 with the mandate of connecting Science with society and hold programmes for popularisation of Science in schools and colleges.

The Delhi chapter has lived up to the expectations and organised several excellent programmes in the colleges of Delhi. Further, it has organised outstanding lectures by the stalwarts of Science. Clearly the Delhi Chapter of NASI has been vibrant and a role model for other chapters. It is nice to see that this coincides with the 125th Anniversary of Prof. Megnad Saha. My hearty congratulations to the Delhi Chapter for their achievements and I wish them all success in the years to follow.

Ashok Misra

President NASI, 2007-2008

Prof. Asis Datta

D.Sc., FNA, FASc., FNASc, FTWAS

Distinguished Scientist Formerly:

Founder Director & Prof. of Eminence,

National Institute of Plant Genome Research and Vice-Chancellor,

Jawaharlal Nehru University, (New Delhi)

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August 09, 2018

Message

It is my immense pleasure to go down the memory lane and recall the journey which NASI Delhi Chapter has completed. It has been a decade and there is a deluge of memories. The contribution of the Delhi Chapter is beyond explanation and needs no words of praise. For the last one decade, the Delhi chapter has been a pioneer in achieving the major objectives of the Academy. The various bottlenecks faced by the scientific community in getting their work published were eased out to a remarkable extent. The significant contribution of Prof. M.G.K. Menon left a sparkle to the academy all together. The other towering milestones are Prof. P.N. Tandon, Late Prof. V.P. Sharma along with Prof. Ajoy Ghatak and Prof. (Mrs.) Manju Sharma require a special mention. I shared an extremely warm and amicable relation with all. Our bond was strengthened even more while organizing the high-level popular science lectures for the implementation of Science to the Society.

We have been working incessantly on a plethora of enterprises, both for the progress of Science and Society. Significant endeavors by the Delhi Chapter have shown commendable achievements at the grass-root level and every sector of the society has been majorly benefited both in the urban as well as the rural areas. I wish to see the Delhi Chapter at the acme of contribution towards the upliftment of the scientific community. I extend my best wishes to all the leaders and staff for their work with resilience and dedication and many more years of this journey forward.

Asis Datta

President NASI, 2009-2010

Prof. K. Kasturirangan

Former Chancellor, Jawaharlal Nehru University
F.A.Sc., F.N.A., FNA, FNASc, FTWAS, FNAE
Trustee, Board of Trustees, Raman Research Institute Trust,
V. Raman Avenue, Sadashivanagar, Bangalore-560 080

August 06, 2018

Message

I am delighted to note NASI Delhi chapter has completed a decade of eventful activities on April; 30 2018. The different chapters of NASI located in different parts of the country have been very active in terms of promoting scientific activities such as examining local issues and providing scientific inputs to the local government, identifying potential scientists and providing them with necessary support and also organizing inspirational lectures by eminent people. I find that the NASI chapter in Delhi has been proactive in the various roles it has played in promoting and strengthening the broader goals and objectives of NASI. I should particularly say that this chapter has been taking due advantage of the extraordinary environment that Delhi presents in terms of availability of intellectuals, institutions of higher learning, as well as strong social and cultural inputs.

I am sure that Delhi chapter will scale higher levels of performance in the coming decade. I use this opportunity to congratulate all the Members of the Delhi chapter on this august occasion and wish the very best to all those providing vision and leadership to this chapter in expanding and strengthening their activities.

K. Kasturirangan

President NASI, 2013-2014

Dr. Akhilesh K. Tyagi

FNASc, FASc, FNAAS, FNA, FTWAS

Prof. & J.C. Bose National Fellow

Department of Plant Molecular Biology

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August 8, 2018

Message

It is a pleasure to learn that Delhi Chapter of the National Academy of Sciences, India (NASI) has completed 10 years of its activities. In partnership with its 18 Local Chapters, NASI has served Science & Society through its numerous nation-wide activities like science communication, entrepreneurship development, science education program, empowerment of women, tribal welfare and nutrition among others. Through these, NASI reaches out to thousands of children, women, rural & tribal people and members of the scientific community every year.

Under the leadership of its founder Chairman Late Dr. V.P. Sharma, and subsequently Prof. Ajoy Ghatak and other learned members, Delhi Chapter of NASI has done a yeoman service in propagating the philosophy and vision of the Founder of NASI, Late Prof. Meghnad Saha. It has organized lectures of scientific and social relevance, workshops & educational projects for students, and interaction meetings with children with great enthusiasm. Congratulations to all members of Delhi Chapter on completion of 10 glorious years of journey towards well-being of the local community and addressing its issues with scientific temper while following the path of excellence. I hope Delhi Chapter of NASI will continue to hold to high standards, meet expectations and reach new horizons in the years to come.

Akhilesh K. Tyagi

President NASI, 2015-2016



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Prof. Ajoy Ghatak

Chairman, NASI Delhi Chapter

August 14, 2018

Message



The Delhi Chapter of The National Academy of Sciences, India (NASI) was created by the Council of NASI in April 2008 with an annual grant of Rs 1 Lakh; details about the creation of this chapter has been nicely described in the message by Dr. Ashok Misra. Dr. V.P. Sharma was the Founder Chairman of the Delhi Chapter and I was asked to be the Secretary. We requested Dr. Anup Ghosh to be the Treasurer of the chapter.

The NASI Delhi Chapter was inaugurated on April 30, 2008 at IIT Delhi by Dr. Ashok Misra, who was then President of NASI. The inauguration ceremony was followed by the Dr. R.C. Gupta Endowment History of Science Award Lecture delivered by Dr A.K. Bag (Senior Scientist at INSA) on *History of Mathematics in India*; this was followed by the release of a book on *Safe Water for Community Health* (edited by Dr. K.J. Nath and Dr. V.P. Sharma). Since then, Dr. V.P. Sharma guided us to organize numerous workshops, memorial lectures, special lectures by renowned Professors on scientific and social relevance mainly to create greater interest and also to motivate the younger generation to various important issues in Science & Technology. For example, UNESCO had declared 2015 as the International Year of Light (IYL) and that year we had organized many seminars in different colleges of Delhi University celebrating the IYL. As a part of the celebration, we also published 2 books: the first one had the title *Experiments with Light* and the second one was an edited book with the title *Light & Its Many Wonders*. Both books have been well received and in the first year, NASI received a royalty of about Rs. 45000.

A major event was a two-day (weekend) workshop on *Quantum Theory* that was organized by Dr. Manoj Saxena. The response was so overwhelming that we had to repeat it during the next weekend. Then there was another two-day (weekend) workshop in the general area of *Photonics* (which was again organized by Dr. Manoj Saxena) where there were over 250 registered participants from various institutions – mainly in Northern India.

Another major event was the one-day seminar on *Journey of Science and Technology in India: A Historical Perspective* that we had organized in September 2017; this was to commemorate 200 years journey of Hindu College to Presidency University. Lectures were delivered by prominent academicians and was attended by over 350 persons. It was coordinated by Dr. Subhra Chakraborty and was a great success. We are planning to publish the proceedings of the seminar.


We have organized numerous other workshops, seminars and Memorial Lectures in a variety of areas as detailed in this booklet. These workshops and seminars were held in institutions like (all in alphabetical order!): Amity University, Manesar; Bennett University, Greater Noida; Delhi University; IUAC (Inter University Accelerator Center), New Delhi; IIT Delhi; IIIT (Jaypee Institute of Information Technology), Noida; Mirambika, New Delhi; National Council of Educational Research and Training (NCERT), New Delhi; National Institute of Immunology (NII), New Delhi; National Institute of Plant Genome Research (NIPGR), New Delhi; VIDYA School, Gurgaon; and also in the following Colleges associated with Delhi University: Bhaskaracharya College of Applied Sciences, Deen Dayal Upadhyaya College, Dyal Singh College, Gargi College, Kalindi College, Maharaja Agrasen College and Miranda House. Thus we interacted with institutions in all parts of the NCR: Delhi, Haryana and Noida/Greater Noida. Our effort was primarily to enthuse students, researchers and teachers. I must mention the names of Dr. A.K. Yadav, Dr. Ayan Khan, Dr. Dinakar Kanjilal, Dr. Madhavan Narayanasamy, Dr. P.N. Prakash, Dr. Anirban Pathak, Dr. Papia Chowdhury, Dr. Anurag Sharma, Dr. Anup Ghosh, Dr. Sanghamitra Ghosh, Dr. Ved Srivastava, Dr. Chandrima Shaha, Dr. Subhra Chakraborty, Dr. V Suprabha, Dr. Manoj Saxena, Dr. Poonam Kasturi, Dr. Navina Mehan, Dr. Vandna Luthra, Dr. Punita Verma, Dr. Pushpa Bindal, Dr. Geetika Saxena and Dr. Pratibha Jolly who (along with their colleagues) had put in tremendous efforts in coordinating various workshops and seminars and were responsible for their great impact on the younger generation.

And in September 2018, Dr. Anirban Pathak and Dr. Papia Chowdhury will be organizing a one-day seminar celebrating the 125th birth anniversary of Prof. M.N. Saha and Prof. S.N. Bose where we are expecting about 250 participants. Very well-known academicians will be speaking on the great contributions made by Prof. M.N. Saha and Prof. S.N. Bose and students are being encouraged to prepare posters on the life and works of the 2 legendary scientists. We are hoping the seminar will be of great value to the younger generation.

One of the very significant contributions of the Delhi Chapter has been to give full financial support for quite a few student projects in Delhi University colleges. Some of the projects were: (i) Making a 8 inch (reflecting) telescope from scratch (under the supervision of Dr. Punita Verma); (ii) making of a sensor based on fiber optics (under the supervision of Dr. Pushpa Bindal & Dr. Triranjita Srivastava); (iii) making a solar collector (under the supervision of Dr. Navina Mehan) and (iv) preparing manuals, power point presentations, movies of laboratory experiments (under the supervision of Dr. Punita Verma). All these projects were fully supported by the NASI Delhi chapter. It was indeed very gratifying to see the sense of achievement of the many students (and their supervisors) associated with such projects.

On October 9, 2015, Dr. V.P. Sharma suddenly passed away. In spite of his many health issues, he was always there to be of great help to each one of us. Often he would talk on issues related to the events when he was undergoing dialysis in a hospital. He was not only an outstanding scientist but also a great human being with exceptional qualities. Two weeks before his death, he had delivered a very nice public lecture on *Sunlight & Human Health* at IIT Delhi which was organized by Dr. Anurag Sharma. We continue to miss him very much and we feel that the best way to pay him our homage will be to contribute to the best of our ability to the vision of NASI.

In the end, I must express my grateful thanks to past and present Presidents of NASI for their continuous support and help. My sincere appreciation to all coordinators of various seminars and workshops, and also to members of the Executive Committee for working so hard towards the success and achievements of the Delhi Chapter. Special thanks to Dr. Manoj Saxena for his great effort in bringing out this booklet. Also for all our events we got full support and cooperation of Dr. Neeraj Kumar and his colleagues from the NASI Head Quarters in Allahabad; in many of our events, Dr. Neeraj Kumar (and his colleagues) came over to Delhi and took over a major part of the responsibility. Finally, our sincere gratitude to Dr. Manju Sharma for her continuous support and advice.



Ajoy Ghatak

Chairman, NASI Delhi Chapter

About Prof. Vinod Prakash Sharma



1938-2015

Founder Chairman-NASI Delhi Chapter
(2008-2015)

Vinod Prakash Sharma was born on 6th April 1938, in Bulandshahar, Uttar Pradesh. After obtaining early education in his native town, he joined Allahabad University from where he obtained his Masters in 1960, Ph.D. in 1964 and D.Sc. in 1979. In 1965, he left for South Bend, Indiana, USA and joined the University of Notre Dame as a Post-Doctoral Research Associate, and later shifted to Purdue University, USA. After returning from abroad, Dr. Sharma joined Forest Research Institute, Dehradun as Pool Officer in 1969. From 1970-1975, he worked as a senior scientist in the projects of World Health Organization and Indian Council of Medical Research at Genetic Control of Mosquito's Unit (GCMU), New Delhi. After the bifurcation of GCMU, Dr. Sharma joined the then Malaria Research Centre (now NIMR) under ICMR in 1978 as Deputy Director and rose to the post of Director in 1982. He continued working there until his superannuation in 1998. For a brief period, Dr. Sharma also served as Additional Director General of ICMR in 1998. Later on, his contribution to science was recognized by the National Academy of Sciences, India (NASI) by electing him as the Meghnad Saha Distinguished Fellow of NASI. As Meghnad Saha Distinguished Fellow, he worked at the Centre for Rural Development and Technology, IIT Delhi from 2005 to 2010. He was subsequently honored by NASI with the NASI-ICMR Chair on Public Health Research which he held until his death on 9th of October, 2015.

Dr. Sharma realized that without field work, the dynamics of malaria cannot be understood and consequently the disease cannot be controlled. This was why, he set up the Integrated Disease Vector Control project under the aegis of Science & Technology Mission mode project envisioned by the then Prime Minister of India, in 1986 at 13 sites in the country and demonstrated control of malaria in different ecoepidemiological paradigms through environment friendly approach. He flagged the issue of true malaria burden in the country in 1983 and finally his publication in the Lancet in 2010 led to the setting up of a multicentric study to estimate malaria burden in the country.

Dr. Sharma was a voracious reader and writer and used to send latest updates in the field of malaria to his colleagues. Always in quest for implementing new ideas for malaria control, Dr. Sharma pioneered in evaluation of insecticide treated nets for personal protection from mosquitoes in the country, development of expanded polystyrene beads from thermocol as a physical barrier in water bodies for preventing egg laying by mosquitoes, use of neem oil for prevention of mosquito bites and sandflies, application of satellite remote sensing and GIS for microstratification, demonstration of usefulness of biolarvicides and larvivorous fish in vector control, evaluation of alpha beta arteether, clinical trial leading to development of antirelapse drug, Bulaquine, etc. The National programme has adopted most of the tools for vector control evaluated and developed under the regime of Dr. Sharma.

Dr. Sharma worked for many international organizations-including Panel of Experts on Environmental Management (PEEM), WHO and Global Fund as consultant/advisor. It was only Dr. Sharma who revived the Indian Journal of Malariology in 1981 (now renamed as Journal of Vector Borne Diseases). For his contribution in science, over 20 awards have been conferred on him. His idea of bioenvironmental approach for malaria control was recognized by the Centre for Science & Environment by honouring him with Green Scientist Award in 2001. The Government

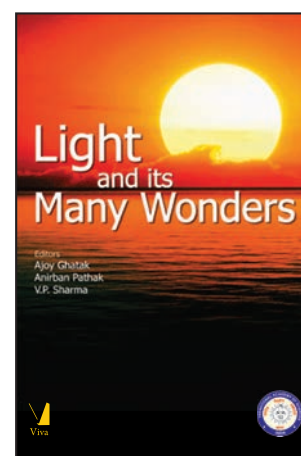
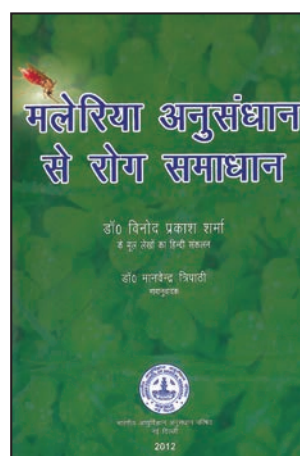
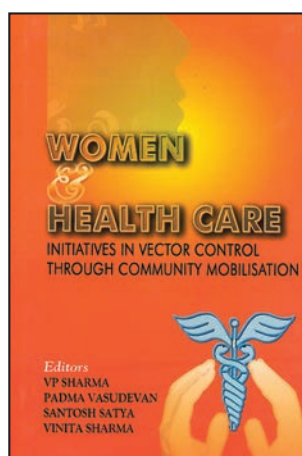
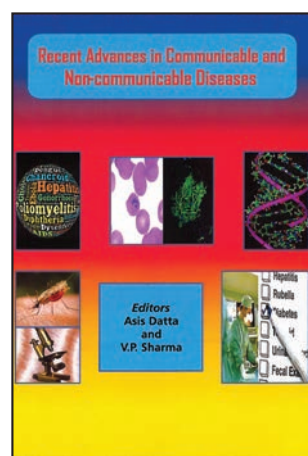
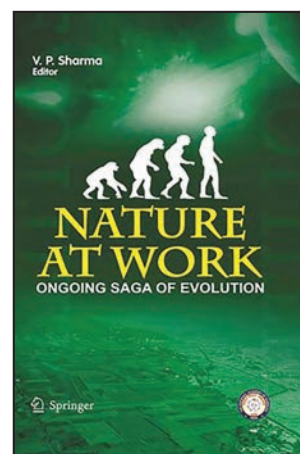
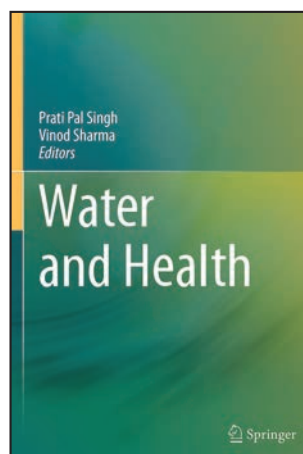
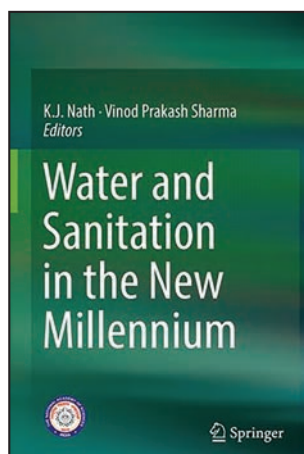
of India honoured Dr. Sharma with Padma Shri in 1992 and Padma Bhushan in 2014. World Health Assembly bestowed him with 'Darling Foundation Prize' in 1999.

He was also interested in climate change, environment, safe water for Community Health, Women & Development, and Nature at work and energy, etc. This is evidenced by publication of his books on diverse subjects. As a nationalist, he contributed two books on Malaria and Dengue in Hindi language. He was Fellow of three most distinguished Academies of India. He edited Journal of Parasitic Diseases and served as the Distinguished Professor at Centre for Rural Development and Technology, IIT Delhi, New Delhi.

Dr. Sharma was President of NASI during 1st January 1999 to 31st December 2000. He was also the founder Chairman of NASI Delhi Chapter. He served as the Chairman of NASI Delhi Chapter from 2008-2015. He was a constant source of encouragement to everyone connected to this chapter, and his enthusiasm and encouragement played an extremely important role in organizing the numerous activities associated with the Delhi Chapter of NASI.

Mostly adapted from <http://www.mrcindia.org/journal/issues/Obituary-FINAL.pdf>

His Significant Contributions:



April 01, 2008 - March 31, 2009

The NASI – Delhi Chapter committee was constituted with following core members.

- Prof. V.P. Sharma, Chairman,
- Prof. Ajoy Ghatak, Secretary
- Prof. A.K. Ghosh, Treasurer
- Prof. A.P. Dash, Member
- Prof. Akhilesh Kumar Tyagi, Member
- Prof. Ranjan K. Mallik, Member
- Prof. Anurag Sharma
- Prof. V.P. Srivastava,

NASI gave an initial grant of Rupees One Lakh which was deposited to State Bank of India, IIT Delhi Campus.

April 30, 2008 - Inaugural Function “History of Mathematics in India: Some Interesting Features” at IIT Delhi

The Delhi Chapter of the National Academy of Sciences, India was inaugurated by Prof. Ashok Misra on April 30, 2008 at IIT Delhi. This was followed by the *Prof. R. C. Gupta Endowment History of Science Lecture Award Lecture* delivered by Dr. A.K. Bag, Senior Scientist at INSA. Dr. Bag delivered a very illuminating lecture on “*History of Mathematics in India: Some Interesting Features*”. Dr. Bag was the recipient of the 2004 *Prof. R. C. Gupta Endowment History of Science Lecture Award* by NASI. The inaugural function was attended by the Council members and a large number of Fellows and members of NASI, invited guests and faculty and students of IIT Delhi.

“Safe Water for Community Health” - Book Release in the Inaugural Function

In the inaugural function a book entitled “*Safe Water for Community Health*” (edited by Prof. K.J. Nath and Prof. V.P. Sharma) was released by the President, Prof. Ashok Misra. Prof. Nath and Prof. Sharma briefly described the contributions made in the book. The book was published under the public private partnership of the The National Academy of Sciences, India and the Hindustan Unilever limited, Mumbai. The book on Safe Water was the outcome of the “*Proceedings of the National symposium on Drinking water and Community Health: Standards, Surveillance and Management*” held in INSA premises, New Delhi during February 10-11, 2006.

May 24, 2008 - Dr. B.P. Pal Memorial Lecture by Dr. Prem Narain at IARI, New Delhi

The *Dr. B.P. Pal Memorial Lecture* was delivered by Dr. Prem Narain (Former director, IASRI) on “*The Genetic Architecture of Quantitative Variation*” on May 24, 2008 at the B.P. Pal Auditorium, IARI (Pusa Institute) New Delhi. A large number of faculty members, scientists, students and invited guests attended the lecture.

September 06, 2008 - Symposium on “Inventing to Transform India” at IIT Delhi

On September 06, 2008 the NASI Delhi Chapter (in collaboration with Intellectual Ventures, Bangalore) organized (at IIT Delhi) an extremely well attended symposium on “*Inventing to Transform India*”. The speakers were Prof. M.G.K. Menon, Prof. Ashok Misra (President NASI), Dr. Nathan Myhrvold (Founder & CEO, Intellectual Ventures) and Mr. Edward Jung (Founder & Chief Technology Officer, Intellectual Ventures).

September 20, 2008 - One-Day Workshop on “Fundamentals and Application of Optics” at Jaypee Institute of Information Technology University, Noida

The first thematic workshop was a One-Day Workshop on “*Fundamentals and Application of Optics*” which was held at JIIT (Jaypee Institute of Information Technology University) in Noida on Saturday, September 20, 2008. The workshop was organized by Dr. Anirban Pathak, Associate Prof. in the Department of Physics and Materials Science & Engineering at JIIT. The keynote speakers were:

- Prof. Ajoy Ghatak and Prof. Anurag Sharma (from IIT Delhi)
- Prof. Rupa Manjari Ghosh (from Jawahar Lal Nehru University in New Delhi)
- Dr. Anirban Pathak (from JIIT, Noida).

The topics covered were *Basic Wave Optics, Holography, Fiber Optics, Quantum Optics and Quantum Computing*. The workshop was attended by over 100 participants and was extremely well received. The participants were students (both undergraduate and postgraduate) and also young faculty members.

November 21-22, 2008 - Two-Day Workshop on “Quantum Mechanics: Theory and Applications” at Deen Dayal Upadhyaya College, University of Delhi

The success of the first workshop encouraged us to organize a Two-Day Workshop on “*Quantum Mechanics: Theory and Applications*” at Deen Dayal Upadhyaya College (University of Delhi) which was attended by 125 registered participants. Nine lectures were delivered by Prof. Ajoy Ghatak (from IIT Delhi) and two lectures were delivered by Dr. Anirban Pathak (from JIIT, Noida). The lectures covered: *Basic concepts in quantum mechanics, Schrödinger equation and its solutions to many problems of practical interest, Dirac’s bra – ket algebra, the angular momentum problem, the Stern Gerlach and magnetic resonance experiments, Entangled states and Quantum Optics*. A numerical method to obtain solutions of the Schrödinger equation was discussed. A software to understand basic concepts in quantum mechanics was also demonstrated. Macmillan India Ltd. Provided partial financial support to the workshop.

December 18-20, 2008 - An Interactive Session with Children at AIIMS, New Delhi

An interactive session with children was held as an integral part of the “*Conference on Translational Pharmacology & 41st Annual Conference of Indian Pharmacology Society*” from 18-20 December 2008. From Delhi, 10 students from each school (total 100 boys and girls) were invited for interaction with scientific luminaries on 20th December 2008 at the All India Institute of Medical Sciences, New Delhi; all students were at the 10+2 level. The theme of the session was “*Process of Drug Development from Concept to Clinic*”. Faculty made brief presentations on various topics e.g., *introduction to Drug discovery; preclinical toxicity assessment of Drugs; testing Drugs in humans: introduction to clinical trials; safety assessment of Drugs in humans; regulations in Drug development; and Career options in the pharmaceutical industries*. These presentations were followed by questions from the students. There was high excitement and appreciation of this interactive session. Following this awareness campaign, several schools requested for similar sessions in subjects of medical importance.

April 01, 2009 - March 31, 2010

April 10-11, 2009 - Two-Day Workshop on “Quantum Mechanics: Theory and Applications”

A two-day workshop on “*Quantum Mechanics: Theory & Applications*” was organized by Prof. Anurag Sharma at IIT Delhi during April 10-11, 2009. There were about 75 registered participants.

October 20, 2009 - Special lecture on “Applying the Tools of Nanoscience to Understanding Human Diseases such as Alzheimers” by Prof. Mark Welland, NASI Foreign Fellow at IIT Delhi

On October 20, 2009 (at IIT Delhi) a special lecture by Prof. Mark Welland, Head, Nanoscience Centre at Cambridge University we organized. Prof. Welland is a NASI Foreign Fellow and also Fellow of the Royal Society. The lecture was on “*Applying the tools of nanoscience to understanding human diseases such as Alzheimers*”. The lecture was coordinated with the British High Commission and was chaired by Prof. Asis Datta, President of NASI. It was an extremely well attended lecture and at the end there were lot of discussions.

October 24, 2009 - One-Day Workshop on “Einstein & Special Theory of Relativity” at IIT Delhi

A one-day short course on “*Einstein & Special Theory of Relativity*” was organized on October 24, 2009 at IIT Delhi. Prof. Ghatak delivered a course of 4 lectures. The workshop was extremely well coordinated by Prof. Anurag Sharma. The response was very good and there were 145 registered participants for the course.

November 06-07, 2009 - One-Day Workshop on “Einstein & Special Theory of Relativity” at Deen Dayal Upadhyaya College, University of Delhi

A one-day short course on “*Einstein & Special Theory of Relativity*” was organized by Dr. Manoj Saxena on November 6, 2009 at Deen Dayal Upadhyaya College, University of Delhi. The short course was supported by IEEE EDS Delhi chapter and was inaugurated by Prof. L.S. Kothari. Prof. Ghatak delivered a course of 4 lectures. The response was so overwhelming that we had to repeat the course on November 7; there were 102 registered participants on November 6 and 91 registered participants on November 7.



Prof. L.S. Kothari (second from Left) inaugurating the workshop on Einstein & Special theory of Relativity at Deen Dayal Upadhyaya College on November 6, 2009.



Dear Dr. Saxena,

I would like to send very best wishes for the success of the 'Workshop' which you are organising. It's a fine contribution to the global celebrations of the 'Year of Astronomy'. I hope some of the young scientists who participate will be inspired to pursue further study and research in a subject which is really the grandest of the environmental sciences as well as a fundamental science.

With regards

Prof. Martin Rees

President of the Royal Society, UK

Lord Baron Rees of Ludlow,

15th Astronomer Royal, Master of Trinity College

Professor of Cosmology and Astrophysics, University of Cambridge

Date: October 17, 2009

Dear Dr. Saxena,

Sorry for delay in replying. I realize it may be too late to be useful, but in case not: "I would like to encourage physics students and faculty to attend the short course on Einstein and Special Theory of Relativity to be given by Dr. Ajoy Ghatak. Special relativity is one of the pillars of modern physics, and probably the most unshakeable; it is also one of the most beautiful theories ever developed by the human mind. Every physicist, whatever his/her specialty, should appreciate its coherence and elegance."

With best wishes,

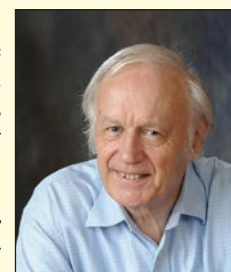
Sir Anthony J. Leggett, Nobel Laureate

The John D. and Catherine T. MacArthur Professor

Knight Commander, Order of the British Empire (KBE),

Center for Advanced Study Professor of Physics, Dept. of Physics

University of Illinois at Urbana-Champaign



Date: November 09, 2009



Dear Dr. Saxena,

I am happy to send a few words of encouragement! Einstein's theory of relativity is to me one of the most astonishing discoveries of all time, and remarkably one which was made possible by thought-experiments. I encourage the students to learn the details of its conceptual simplicity and extraordinary implications throughout modern life.

Best wishes,

Dr. John Cromwell Mather, Nobel Laureate

Senior Astrophysicist and Goddard Fellow

Senior Project Scientist, James Webb Space Telescope

Astrophysics Science Division, NASA/GSFC

Code 665, Observational Cosmology, Greenbelt, MD 20771

Date: November 12, 2009

November 28-29, 2009 - Two-Day Workshop on "Fiber Optics" at University of Delhi South Campus



(From L-R) Prof. Ajoy Ghatak, Prof. Enakshi Sharma, Dr. Nandan Bisht, Prof. K. Thyagarajan and Dr. Manoj Saxena at the Workshop on November 29, 2009.



Prof. Ajoy Ghatak with participants of the workshop.

A two-day workshop on “*Fiber Optics*” was held at S.P. Jain Center at University of Delhi South Campus during November 28-29 2009 which was coordinated by Dr. Manoj Saxena, Department of Electronics, Deen Dayal Upadhyaya College, University of Delhi. The speakers were: Prof. Ajoy Ghatak, Prof. Bishnu Pal, Prof. K Thyagarajan and Prof. Anurag Sharma (all from IIT Delhi). In addition, there was a demonstration by EAGLE PHOTONICS Ltd from Bangalore. The workshop was also supported by the IEEE EDS Delhi Chapter and was attended by over 185 undergraduate and postgraduate students and few faculty members.



A group photo of most of the participants of the Workshop on Fiber Optics at the University of Delhi, South Campus on November 29, 2009.

Nine lectures were delivered by Prof. Ajoy Ghatak (from IIT Delhi). The lectures covered: *Basic concepts in quantum mechanics, Schrödinger equation and its solutions to many problems of practical interest, Dirac's bra – ket algebra, the angular momentum problem, the Stern Gerlach and magnetic resonance experiments, Entangled states and Quantum Optics*. A numerical method to obtain solutions of the Schrödinger equation was discussed. A software to understand basic concepts in quantum mechanics was demonstrated.

November 30, 2009 - One-Day Seminar to Celebrate the 151st Birth Anniversary of Acharya Jagadish Chandra Bose at IIT Delhi

In collaboration with the OSA Delhi Chapter at IIT Delhi, NASI - Delhi Chapter organized a seminar on November 30, 2009 to celebrate the 151st Birth Anniversary of Acharya Jagadish Chandra Bose at the Seminar Hall of IIT Delhi. Prof. P.K. Bhattacharya, (former director of NCERT), spoke on “*Acharya J.C. Bose: A Video Presentation*”; Prof. Martin Richardson, Director, Townes Laser Institute, CREOL, University of Central Florida in USA spoke on “*Two anniversaries, J.C. Bose and the Laser*” and there was a Video Talk on “*Nanophotonics for Nano-imaging and Nano-fabrication*” by Prof. S. Kawata, University of Osaka, Japan.

December 01, 2009 - Special Lecture on “From Practicing Science to Stimulating Future Scientists” by Prof. Nicole Ostrowsky at NCERT, New Delhi

NCERT New Delhi & The NASI Delhi Chapter organized a special lecture on by Prof. Nicole Ostrowsky, Prof. Emeritus, Université de Nice Sophia Antipolis, France on December 01, 2009 at the NCERT Auditorium. Prof. Krishna Kumar, Director, NCERT presided over the function. It was coordinated by Prof. Ved Srivastava of NCERT and Prof. Ajoy Ghatak from IIT Delhi. The lecture was based on Prof. Nicole Ostrowsky's most recent book and was extremely well attended. It was broadcast live to all NCERT centers in India.

April 01, 2010 - March 31, 2011

April 24, 2010 - Dr. P. Sheel Memorial Award Lecture at AIIMS, New Delhi

On April 24, 2010, Prof. Sneh Bhargava (former Director of AIIMS and currently Medical Director and Consultant Radiologist at Sita Ram Bhartia Institute) delivered the Dr. P. Sheel Memorial Award Lecture at the AIIMS auditorium. The title of her talk was "*Tobacco & Health Issues: Challenges in India*". The lecture was presided over by Prof. V.P. Sharma.

September 11, 2010 - One-day short-course on "Einstein & Special Theory of Relativity" at IIT Delhi

On September 11, 2010, a one-day short course on Einstein & Special Theory of Relativity was organized by Prof. Anurag Sharma at IIT Delhi. The short course consisted of 4 lectures by Prof. Ajoy Ghatak and covered the following topics: Brief life sketch of Einstein, The two postulates of The Special Theory of Relativity, Time dilation, Length contraction, The mu-meson experiment, the twin paradox, Doppler Effect, $E=mc^2$, Lorentz transformations and applications. The short course was attended by about 80 participants.

October 22-23, 2010 and October 29-30, 2010 - Workshops On "Quantum Mechanics: Theory and Applications" at Deen Dayal Upadhyaya College, University of Delhi



Prof. Ajoy Ghatak delivering his lecture in workshop during October 22-23, 2010.

A Two-day workshop on “*Quantum mechanics: Theory and Applications*” was organized at Deen Dayal Upadhyaya College, University of Delhi, New Delhi on October 22-23, 2010 by Dr. Manoj Saxena, Department of Electronics, Deen Dayal Upadhyaya College, University of Delhi. The response was overwhelming and the number of participants far exceeded the capacity of the lecture theater where the workshop was organized. As such a repeat workshop was organized during October 29-30, 2010. In all, about 230 participants participated in the workshop. In each workshop, there were eight lectures on *Basic Quantum Mechanics* by Prof. Ajoy Ghatak, two lectures on *Application of Quantum Mechanics in Nanoscale Electronics* by Dr. Manoj Saxena (Delhi University) and two lectures on *Quantum Computing and Quantum Cryptography* by Dr. Anirban Pathak (JIIT University, Noida). The 84 pages proceeding for the workshop containing full course material was distributed at the time of registration to all the registered participants.



Group Photograph of some of the participants who attended workshop on October 29-30, 2010.
First Row (Standing at the center) – From R-L – Prof. Ajoy Ghatak, Dr. Poonam Kasturi, Secretary-Workshop, Dr. Manoj Saxena, Convenor-Workshop and Dr. Anirban Pathak, JIIT University.

April 01, 2011 - March 31, 2012

October 31, 2011 - Interactive Session for School Students at Defence Institute of Physiology and Allied Sciences, Delhi

“Interactive Session for Students during XXIX Annual Conference of Indian Academy of Neurosciences” held at Defence Institute of Physiology and Allied Sciences, Delhi on October 31, 2011. The Delhi chapter of NASI organized a special interactive session for students of Class 10, 11 and 12 of Delhi schools during the XXIX Annual Conference of Indian Academy of Neurosciences held at Defence Institute of Physiology and Allied Sciences, Delhi on October 31, 2011. The session was chaired by Prof. P.N. Tandon and the students got an opportunity to interact with eminent neuroscientists and understand the recent trends of neuroscience research in the country. The students greatly enjoyed the interactive session.

November 18, 2011 - Short course on “Einstein & Special Theory of Relativity” at Kendriya Vidyalaya, Delhi Cantt

A three hour short course on *“Einstein & Special Theory of Relativity”* was organized at Kendriya Vidyalaya No. 3 in Delhi Cantonment on November 18, 2011. The course was very nicely organized by their PG Teacher Ms. Aparajita Acharya. The short course was delivered by Prof. Ajoy Ghatak. It was attended by over 100 students and teachers.

December 01-02, 2011 - International Conference on Optics and Photonics (IONS-1) at IIT Delhi

IONS-1, Delhi was the *“First International OSA Network of Student (IONS) Conference”* in Asia in a series of conferences for young scientists and researchers in Optics and Photonics. This conference was organized at IIT Delhi during December 01-02, 2011 and was actively supported by the Delhi chapter of NASI. The conference was very nicely coordinated by Ms Kanchan Gehlot and her colleagues. IONS Project, since its launch in 2006 has grown into a large student-run conference cycle and has spread in many continents around the globe. IONS is a global network for young scientists that enables mutual interactions, exchange of ideas, building network and experiencing new cultures. It provides an opportunity to visit leading institutes, learn from acknowledged leaders of science and industry and create a network and collaboration opportunities. IONS conferences are organized and managed by students with participation from undergraduates, graduates and post-docs, covering broad areas of Optics and Photonics. Young researchers took part in the conference and 52 abstracts were received for the technical session of the conference. The list of plenary speakers (from both academics and industry) are given below:

- Prof. Chris Dainty, Prof. of Applied Physics at National University of Ireland gave his plenary lecture on *“Adaptive Optics: Past and Future”*.
- Prof. Prem Kumar, Prof. of Information Technology, Northwestern University, Evanston gave his plenary lecture on *“Beam Me Up, Scotty.” Fact or Fiction?”*
- Prof. Ajoy Ghatak, Formerly Prof. of Physics at IIT Delhi and Secretary Delhi Chapter of NASI, gave his plenary lecture on *“Fiber Optics: A Brief History”*

- Prof. Ajoy Kar, Prof. of Physics Heriot-Watt University, Edinburgh gave his plenary lecture on *“Ultrafast Laser Inscription: Science Today and Technology Tomorrow”*
- Dr. Kumar N. Sivarajan, CTO, Tejas Networks, Bangalore gave his plenary lecture on *“Holistic Networking”*
- Dr. Atul Srivastava CTO, NTT Electronics, USA gave his plenary lecture on *“Integrated Photonics”*
- Dr. Ishwar D. Aggarwal, Research Prof. at University of North Carolina gave his plenary lecture on *“Optical Research Challenges”*



Participants at IONS 1 held at IIT Delhi on December 01-02, 2012.



Prof. Chris Dainty, Prof. of Applied Physics at National University of Ireland delivering his plenary lecture on Adaptive Optics: Past and Future.

December 08-09, 2011 - Lectures at Kendriya Vidyalaya (in JNU) on “Polarization of Light”

A short course on *“Polarization of Light”* was given by Prof. Ajoy Ghatak at Kendriya Vidyalaya in JNU on December 8, 2011. In the same program, Dr. V.P. Sharma delivered a talk on *“Potable water”* in the context of water shortages and prevalence of water borne/related diseases; this talk was delivered on December 9, 2011. Both were attended by PG Teachers of different schools and were very well received. This talk was important as the awareness among the teachers will help the students of various schools/colleges in understanding the cause and effect relationship of unsafe water and undertake remedial measures.

February 22, 2012 - Popular Lecture on “Radio Astronomy” by Prof. R.K. Shevgaonkar at IIT Delhi

NASI Delhi Chapter & Prof. Anurag Sharma, Member of the Golden Jubilee Committee of IIT Delhi organized a special lecture on “*What is Radio Astronomy?*” by Prof. R.K. Shevgaonkar, Director-IIT Delhi on February 22, 2012 at the Seminar Hall of IIT Delhi. The lecture was presided by Dr. V.P. Sharma, Chairman-NASI Delhi Chapter. Radio astronomy is truly multi-disciplinary in nature as it integrates the basic sciences and engineering. The Seminar Hall was packed and the talk beautifully covered the basic principles of radio astronomy and the contribution of radio observations to the advancement of astrophysics.



Prof. R.K. Shevgaonkar, Director, IIT Delhi delivering a talk on “What is Radio Astronomy?” to a packed Seminar Hall at IIT Delhi. The seminar was organized by the NASI Delhi chapter on February 22, 2012 at IIT Delhi.



Prof. V.P. Sharma, Chairman NASI Delhi Chapter presenting a memento as a token of appreciation to Prof. R.K. Shevgaonkar, Prof. Ajoy Ghatak is on extreme left.

March 02-03, 2012 - National Symposium on “Innovations in Polymers Towards Sustainability and Growth” at Bhaskaracharya College of Applied Sciences, University of Delhi

A two-day national symposium on “*Innovations in Polymers Towards Sustainability and Growth*” was organized by the Department of Polymer Science, Bhaskaracharya College of Applied Sciences, University of Delhi in association with National Academy of Sciences (NASI) and Polymer Processing Academy (PPA) during March 2-3, 2012 in the college premises. Eminent scientists and professionals from various organizations and from a number of plastic industries delivered lectures in the symposium. The Chief Guests of the symposium Dr. R.K. Khandal (Director, Shriram Institute of Industrial Research), Prof. A.K. Bakhshi (VC, U.P.R.T. Open University, Allahabad) and Prof. V.P. Sharma (Chairman, NASI Delhi chapter) and the Chairman for the inaugural ceremony Prof. Monika Datta (DU, Chairman, Governing Body) along with the Principal of the college Dr. Jai Prakash inaugurated the seminar on March 2, 2012. Prof. V.P. Sharma spoke about the activities of NASI and Prof. A.K. Ghosh talked on the Vision & activities of PPA.



Prof. Anup Ghosh, Prof. V.P. Sharma and others at the inauguration of the two-day national symposium on “Innovations in Polymers Towards Sustainability and Growth” at Bhaskaracharya College of Applied Sciences, University of Delhi.

The 1st session was chaired by Prof. S.M.S. Chauhan, Head, Department of Chemistry, University of Delhi and the main attraction was the lecture of Dr. Khandal on “*Innovation, Sustainability and Growth*” and the other lecture by Prof. Bakhshi on “*Conducting Polymers*”. The 2nd session was chaired by Prof. A.K. Ghosh, from IIT, Delhi and the lectures were delivered by Prof. N.B. Singh from Sardar University and Dr. P. Thavamani from IRMRA, Mumbai. The second day also had two sessions. The 1st session was chaired by Dr. V.B. Lall, SCJ Polymers and there were two lectures on PU chemistry by Dr. Ruchin Shrivastava from Bayer Material Science Pvt. Ltd. and by Dr. Joseman Jacob from IIT Delhi. The 2nd session was chaired by Prof. G.L. Verma, Head, Department of Applied Chemistry and Polymer Technology, Delhi Technological University. The attractions of this session were the lectures of Dr. Kinkar Mukherjee from Reliance Industries and Dr. B.D. Malhotra from Delhi Technological University. There was a big response from various plastic Industries.

April 01, 2012 - March 31, 2013

July 16-20, 2012 - Robotics Workshop at Kendriya Vidyalaya, JNU Campus

The Robotics Club of IIT Delhi conducted a workshop on Robotics at Kendriya Vidyalaya, JNU Campus, during July 16-20, 2012. The workshop was sponsored by NASI, Delhi Chapter and was supported by Kendriya Vidyalaya, JNU Campus and was coordinated by Prof. Subir Saha of Mechanical Engineering Department of IIT Delhi. The workshop was for Class XI students and lasted about 10 hours (2 hours per day). The purpose of the workshop was to expose students to the basic electrical and mechanical aspects of robotics and to give them a hands-on experience in making one. The workshop was a great success and we hope that this would give them the required initial push and interest in the area of science and technology, and provide them the necessary skill in knowing how things work in real-life rather than studying from the book only. Such activities made their learning fun too, as obvious from their enthusiasms during the workshop and the demand for similar workshop in future.



Students at the Robotic Workshop (coordinated by Prof. Subir Saha, IIT Delhi) at the Kendriya Vidyalaya in the JNU Campus.

The team consisted of several on-going and one past students of IIT Delhi: Ms. Harveen Kaur, Mr. Piyush Dane, Mr. Piyush Gupta, Mr. Mayank Raj, and Mr. Manish Chauhan (Ex-student) under the guidance of Prof. S.K. Saha and Mr. Arun Dayal Udai (Ph.D. student and faculty of BIT-Meshra). About 30 Kendriya Vidyalaya (JNU) students were divided into smaller groups and each group had an IIT mentor so that better individual attention could be provided to each student. In addition to

Prof. Subir Saha and his colleagues, the inaugural function was attended by Prof. V.P. Sharma, President, NASI Delhi Chapter, Prof. Ajoy Ghatak, Secretary, NASI Delhi Chapter and Principal of the Kendriya Vidyalaya.



Students building a robot with wheels (Mentor in Pink). A team's robot is maneuvering a trajectory.

October 11, 2012 - Workshop for School Teachers on “Enrichment Programme: Physics” at Delhi Public School Dwarka Campus

A workshop for school teachers on “*Enrichment Programme: Physics*” was held on October 11, 2012 at Delhi Public School Dwarka Campus. This workshop was supported by NASI-Delhi chapter. Prof. Ajoy Ghatak gave a course of lectures on Modern Physics to teachers associated with Delhi Public Schools.

October 30, 2012 - Special Lecture on “Nobel Laureate S. Chandrasekhar: His Perception of Evolution of Stars from White Dwarfs to Black Holes” by Prof. Bimla Buti at IIT Delhi

NASI Delhi Chapter & IIT Delhi (in association with IITD Astronomy Club) organized a Special Lecture on “*Nobel Laureate S. Chandrasekhar: His Perception of Evolution of Stars from White Dwarfs to Black Holes*” by Prof. Bimla Buti (Formerly Prof. at Physical Research Laboratory, Ahmedabad and currently Director, Centre for Science & Society) on October 30, 2012 at IIT Delhi. The lecture beautifully covered the fascinating stellar journey that brought ‘Nobel Prize’ to Prof. S. Chandrasekhar popularly known as “Chandra”. According to Great Britain’s Astronomer Royal, Martin Rees, “*Chandra probably thought longer and deeper about our universe than anyone since Einstein*”. Crucial role played by Relativity in deciding the fate of a massive star, was also illustrated in this lecture. The Seminar Hall was packed and the lecture was extremely well received. Many students from nearby colleges and universities attended the lecture. Dr. V.P. Sharma, President, NASI Delhi Chapter presided over the lecture and Prof. R.K. Shevgaonkar, Director IIT Delhi gave a memento as a token of appreciation to Prof. Bimla Buti.



Prof. Bimla Buti (Formerly Prof. at Physical Research Laboratory, Ahmedabad and currently Director, Centre for Science & Society) delivering a talk on *Nobel Laureate S. Chandrasekhar: His Perception of Evolution of Stars from White Dwarfs to Black Holes* to a packed Seminar Hall at IIT Delhi.



Dr. V.P. Sharma, Chairman-NASI Delhi Chapter presided over the lecture and Prof. R.K. Shevgaonkar, Director IIT Delhi gave a memento as a token of appreciation to Prof. Bimla Buti.



The packed Seminar Hall at IIT Delhi during Prof. Bimla Buti's lecture on October 30, 2012.

January 19, 2013 - Workshop on “Teacher Training” held at Ahlcon International School, New Delhi

On January 19, 2013 Delhi Association for Science Education (DASE) organized a one day workshop on Teacher Training at Ahlcon International School, New Delhi for Physics Teachers. The workshop was jointly sponsored by National Academy of Sciences, India – Delhi Chapter and Ahlcon International School, New Delhi. Dr. Punita Verma of Delhi Association for Science Education coordinated the workshop which was attended by 25 teachers. Dr. N. Madhavan [Scientist at Inter University accelerator center (IUAC)] spoke on “*Application of Accelerators in Basic and Applied Research*” this is one of the topics in the Class XII syllabus; Prof. Ajoy Ghatak spoke on *Einstein and Special Theory of Relativity* and Dr. Punita Verma had a detailed interaction-cum-discussion session with all teachers.

January 21-23, 2013 - Workshop on “Emerging Trends in Development of Drug & Devices” at Department of Chemistry, University of Delhi

The Department of Chemistry, University of Delhi and Three National Science Academies of India jointly organized a joint Lecture workshop at University of Delhi, Delhi during January 21-23, 2013. This workshop was initiated by NASI, Allahabad under Education panel program. The main office bearers of the Lecture workshop were Dr. S.K. Awasthi, Dr. Vibha Tandon & Dr. Akhilesh K. Verma from Department of Chemistry; Prof. Krishna Misra was convener of conference. In this, workshop about 325 delegates participated. Out of 325 delegates, 280 were undergraduate, graduate students and teachers of postgraduate colleges. The registration fee of 65 students was waived off. 74 students presented posters in the workshop and 11 young faculties & students gave oral presentations in the workshop. Six students got best poster awards. The unique feature of this workshop was that out of 270 students, 98 students were Masters students of various science departments and specially from Department of Chemistry. They were extremely happy and got benefitted by scientific deliberations. Many students come to know about NASI, Allahabad and its students-oriented programs. The conference was funded by NASI, Delhi Chapter also and Prof. Ajoy Ghatak helped us a lot in advertising the conference among academy fellows and members. There were 20 invited lectures were given by eminent scholars from all over of India. The keynote lectures were delivered by Prof. P. Balaram and Dr. Rajesh S. Gokhale. The conference was inaugurated by Prof. Dinesh Singh, Vice Chancellor of Delhi University and Dr. Manju Sharma, Former Secretary of Department of Biotechnology was Guest of Honour. Prof. P. Balaram, Director, IISc. Bangalore delivered a key note lecture on *Mass Spectrometry of Conus Venom*. He focused his talk specially to the students and told them that how Mass spectrometry can be used for Proteomics study. Dr. Manju Sharma told us about *how Chemists, Biologists and Pharmaceutical companies can come together and give an impetus to Drug discovery in India*. In the 2nd Technical Session on Advances in Drug Development, Prof. Ganesh P. Pandey spoke about *the development of new methodologies for synthesis of organic molecules* and Mr. Nilanjan Saxena, Vice President, Clinical Research, Ranbaxy Laboratories spoke on “*Synriam : a Drug against Malaria*”. In the 3rd Technical Session on Advances in Drug Development, Prof. Javed Iqbal, Director, Reddy’s Institute of Life Sciences, Hyderabad spoke about *the development of Antidiabetic Drug*. Prof. P.V. Bharatam, from NIPER, Chandigarh also spoke about *the development of PPAR γ inhibitors*. The session was chaired by Prof. S.K. Dogra and Dr. V.P. Sharma. Second day started with a session on Nucleic Acids, Peptides & Protein Chemistry. Prof. K.N. Ganesh, Director, IISER, Pune delivered a lecture on *Secondary and Tertiary structure of Collagens and development of Peptide Nucleic Acids as an Antisense agent*. Prof. B. Jayaram (from IIT Delhi) told us about a number of free ware program available on the site of SCF BIO. Those programs can be used for researchers working on DNA and Proteins. They can just dock the small molecules to the DNA and Protein and Predicta and Bhagirathi will give the scores of their molecules in few hours to few days only. This session was concluded by Dr. Souvik Maiti, Scientist F, IGIB, Delhi, who spoke about

RNA. The session was chaired by Prof. H.M. Chawla and Prof. Krishna Misra. The lecture workshop had a special session on Advances on Organic Devices. The first speaker of this session was Prof. Ajaya Ghosh who is a recipient of the Bhatnagar award and also the first Infosys award of Chemistry. Dr. Srivari Chandrasekhar, IICT-Hyderabad spoke about *stereospecific synthesis of heterocyclic molecules*. Dr. Atul Goel, CDRI, Lucknow spoke about *the development of Organic devices*.

In the 4th Technical Session on Advances in Organic Chemistry, one of the distinguished speaker was Prof. Manas K. Ghorai, Department of Chemistry, IIT Kanpur. Prof. Bhishma K. Patel, Department of Chemistry, IIT Guwahati spoke about the cascade reactions and stereo chemical synthesis of new organic compounds using catalytic chemistry. Prof. D.S. Rawat, University of Delhi spoke about the development of antimalarial compounds. Prof. Chimni from GNDU, Amritsar, Dr. Akhilesh K. Verma were few more speakers of this workshop. The Valedictory function was chaired by Pro Vice Chancellor, Prof. Vivek Suneja of Delhi University and Prof. T.P. Singh was guest of honour. Dr. Rajesh S. Gokhale, Director, IGIB, Delhi delivered valedictory lecture on *synthesis of poyketide synthases and to use them against infection of Mycobacterium Tuberculosis*. The workshop was supported by DST, DBT, CSIR & DRDO also.

February 18, 2013 - One-Day Workshop on “Photonics and other Areas in Physics” at Dyal Singh College, University of Delhi

A one-day workshop on “Photonics and other areas in Physics” was organized by the Physics Society of Dyal Singh College (University of Delhi) in collaboration with National Academy of Sciences, India – Delhi Chapter on 18th February, 2013 at the Auditorium of Dyal Singh College. The total number of students who participated in the workshop was about 150.



Prof. Ghatak delivering a lecture on *Fiber Optics* at the One-day workshop on *Photonics and other areas in Physics* organized at Dyal Singh College (University of Delhi) on 18th Feb. 2013.

The number of students from colleges other than Dyal Singh College was about 40. Other colleges included Miranda House, St. Stephen's College, Kalindi College, Dronacharya College of Engineering, Zakir Hussain College, Deshbandhu College, Khalsa College, Deen Dayal Upadhyaya College

etc. The workshop comprised of lectures by Prof. Ajoy Ghatak (on *The Story of Fiber Optics*) and by Prof. K. Thyagarajan, IIT, Delhi (on *Non-Linear Optics and its Applications*). The lectures were followed by competitions in which students of different colleges participated.



Participants of the workshop.



Prof. V.P. Sharma giving away prizes at the end of the one-day workshop on *Photonics and other areas in Physics* organized at Dyal Singh College (University of Delhi) on 18th February, 2013.
Dr. Navina Mehan, Convener of the Workshop is at the center.

The competition included Power Point Presentations by students on any topic in Physics of their choice. There was also a Quiz Competition which encompassed all areas in Physics including Photonics. Three students were members of a team representing a college. In addition, there was a Poster Competition wherein a student was required to come with an already prepared poster on any topic in Physics. The concerned students explained the contents to the viewers during the Poster Session. The convener of the workshop was Dr. Navina Mehan and she was helped by her colleagues and students at Dyal Singh College.

April 01, 2013 - March 31, 2014

April 18-19, 2013 - Two-Day Workshop on “Quantum Mechanics and its Applications” at IIIT Campus

NASI Delhi Chapter & IIIT (Jaypee Institute of Information Technology, Noida) organized a two-day workshop on “*Quantum Mechanics and its Applications*” at the IIIT Campus during April 18-19, 2013. The workshop was also supported by CSIR. The workshop was coordinated by Dr. Papia Chowdhury & her colleagues at IIIT.

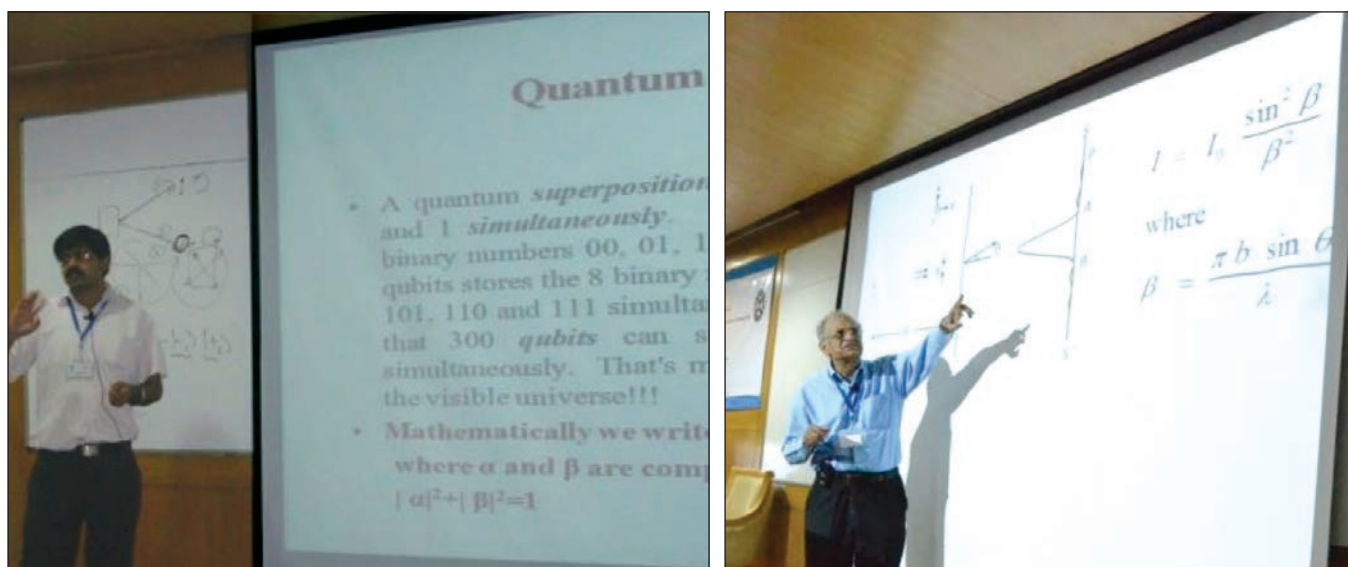


Dr. Papia Chowdhury (Convenor of the workshop), Prof. Ajoy Ghatak, Prof. S.C. Saxena, Vice Chancellor, IIIT, Prof. V.P. Sharma (President, NASI Delhi chapter) and Prof. D.K. Rai, Head of Physics and Materials Science Engineering, IIIT at the Inaugural function of the workshop on Quantum Mechanics and its Applications.



Prof. V.P. Sharma receiving a memento from Prof. S.C. Saxena, Vice Chancellor, IIIT, at the Inaugural function.

There were over 180 registered participants including undergraduate students, post graduate students and faculty members. Participants were from different colleges and schools from U.P., Delhi, Haryana, Orissa, Karnataka, Tamilnadu, Rajasthan and Madhya Pradesh. They were also from different disciplines (which includes Physics, Electronics, Computer Science, Biotechnology, Material Sciences etc.). Prof. V.P. Sharma (President NASI, Delhi chapter) inaugurated the workshop on April 18, 2013 and many other dignitaries were present in the inaugural function. In the morning session of April 18, 2013, there were three lectures; the first two were delivered by Prof. Ajoy Ghatak on *Basic Quantum Mechanics*. He started with the history of quantum mechanics and explained its fundamentals. Next was Prof. Patrick Das Gupta who spoke on “*Quantum mechanics and the problem of measurement*”. In the afternoon session Prof. Arvind spoke on “*Quantum algorithms*”. He had tried to show that superposition of states is very important to implement quantum algorithm that are more efficient compared to their classical counter parts. This lecture was followed by Prof. Ajoy Ghatak’s lecture on *Applications of Quantum Mechanics*. During the lunch and tea breaks there was good interaction about physics everywhere; lots of enthusiastic students assembled in groups and were discussing about the lectures. At the end, there was another lecture by Prof. Ajoy Ghatak and he talked on *Dirac delta function and its applications*. In the evening, a movie “Infinity” based on the life of Feynman was screened for the participants.



Prof. Anirban Pathak (left) and Prof. Ajoy Ghatak (right) lecturing at the workshop on Quantum Mechanics.

In the morning session of April 19, 2013, there were three lectures; the first two were delivered by Prof. Ajoy Ghatak where he discussed Dirac’s Bra-ket algebra and also interesting solutions of the Schrodinger equation. The next lecture was by Prof. K. Thyagarajan who talked about “*Nonlinear optics and generation of entangled photon pairs*”. It was soon followed by short panel discussion and quiz. The afternoon session started as Dr. Anu Venugopalan spoke on “*The Quantum Zeno effect*”. She tried to explain the history of Zeno paradoxes and discussed its solution with the help of quantum mechanics. At the end, there was a lecture by Prof. Anirban Pathak and he spoke on “*Quantum magic show*”. He started his lecture with the discussion about entanglement, quantum cryptography and discussed in much detail about quantum teleportation. Just before the tea break, feedback forms about the workshop were given to each participant. In the tea break there was good discussion about Quantum teleportation everywhere. After the tea break, Prof. Pathak continued his talk. After the end of this lecture, the filled feedback forms were collected from the participants and the names of seven successful participants who won the quiz

were announced and were given the prizes. After having distributed the prizes among the participants, the coordinators of the workshop proposed a vote of thanks to the participants and the workshop closed with a happy note.

May 19-21, 2013 - Robotics Workshop at Student Activity Center, IIT Delhi

The Robotics Club of IIT Delhi conducted a workshop on Robotics for the school children of IIT Delhi campus studying in Classes IV to XII. It was held during May 19-21, 2013. The workshop was sponsored by NASI, Delhi Chapter and was coordinated by Prof. Subir Saha of Mechanical Engineering Department of IIT Delhi. Prof. Joby Joseph and Dr. Shashank Deep (along with Prof. Saha) supervised the activities.



Students being helped to build a robot May 20, 2013.

On the first day of workshop, students up to class VIII were taught about basic robotic components and then they were taught about the assembly and disassembly of different robotic parts. After that, they were given an assembled robotic chassis and were asked to disassemble it, draw and write about different components of it. All students were very much involved and showed very good response in learning and applying their knowledge. Students above class VIII were showed how to do soldering using soldering iron and soldering wire. They were also told about precautions to be taken during soldering. After that, they were given PCBs to perform soldering on their own under the guidance of a mentor. On the second day, there was a presentation about DPDT switches by Ms. Tanya. Then, the participants were divided into four groups with a mentor from the volunteers. The eldest one of each participating team was made coordinator of that team to maintain the discipline. The mentor watched over the activities of the team. Then each team was assigned a task to make the robot with all the circuits and chassis which they were given on the first day of disassembly. Then, there was a small video presentation by the volunteers about latest robotic developments. On the third day, they continued with the assembly of the robot among the groups.



A working robot.

Older students soldered the circuit and the younger students assembled the chassis. All students were very enthusiastic about the robot and they came out with a very good and beautiful robot with clean astonishing good soldering for the first time. At the end, we organized a small field in which they all practiced their robots. They all were very happy on what they made for the first time in their life and it was a great step for them in the path of new learning. The workshop was a great success and we hope that this would give them the required initial push and interest in the area of science and technology, and provide them the necessary skill in knowing how things work in real-life rather than studying from the book only. Such activities made their learning fun too, as obvious from their enthusiasms during the workshop and the demand for similar workshop in future.

January 15, 2014 - A Special Public Lecture on “Diabetes in India” by Prof. Nikhil Tandon at IIT Delhi

NASI Delhi Chapter & IIT Delhi organized a Public Lecture on “*Burden and Risk Factors of Diabetes in India*” by Prof. Nikhil Tandon of All India Institute of Medical Sciences, New Delhi on Wednesday January 15, 2014. This was a NASI award Lecture. India has the highest population of people with diabetes, with a consistent increase in prevalence over the past few decades. As per the latest estimates from the International Diabetes Federation, the current burden of disease is approximately 63 million, and likely to reach the 100 million mark by 2030. The Diabetes Atlas reports an adult prevalence of diabetes to be between 7-9% currently and anticipates an increase to 9-12% over the next two decades. Urban prevalence is even higher, with a recent study revealing that the adult prevalence of diabetes in Chennai and Delhi is nearing 20%. The other area of concern is the rising prevalence in the socio-economically disadvantaged sections of society. From a situation, a century ago, where diabetes was only reported in the affluent, recent data have shown that within industrial populations, there is a higher prevalence of all coronary heart disease risk factors including diabetes in the those with the lowest educational and economic status.



Prof. Nikhil Tandon delivering the NASI award lecture at IIT-Delhi on Jan 15, 2014

The risk factors associated with diabetes in India are age, BMI, measures of central adiposity, lack of physical activity and family history of disease. The prevailing belief is that the contributory factors for the higher prevalence of diabetes in India include the following: early life influences (including fetal programming), higher body fat and preferential deposition of upper body fat, increased insulin resistance, probable genetic factors. In the presence of these underlying factors urbanization, industrialization, and change in lifestyle have further driven the increasing prevalence. Migration from villages to towns also brings with it a heightened risk of developing diabetes and other factors associated with heart disease. Prof. Tandon very nicely covered all issues related to the rising burden of diabetes in India and its probable risk factors.



The packed seminar hall at IIT Delhi during the lecture of Prof. Nikhil Tandon.

The Seminar Hall was packed and the lecture was extremely well received. Many students from nearby colleges and universities attended the lecture. Prof. Kasturirangan, President, NASI presided over the lecture and gave the award medal to Prof. Tandon. Prof. V.P. Sharma presented the citation and

Prof. Manju Sharma presented a shawl to the speaker. The lecture was also attended by Prof. R.K. Shevgaonkar, Director IIT Delhi and many other dignitaries.



Prof. Nikhil Tandon being felicitated Dr. Neeraj Kumar (Executive Secretary, NASI; Dr. U.C. Srivastava, (General Secretary, NASI) is at the center



Prof. Nikhil Tandon being felicitated Dr. Kasturirangan (President, NASI); Dr. Ajoy Ghatak is at the left.



Prof. Nikhil Tandon being felicitated by Prof. V.P. Sharma by presenting the award.



Prof. Nikhil Tandon being felicitated by Prof. Manju Sharma by presenting a shawl.



Prof. Kasturirangan, Prof. R.K. Shevgaonkar, Prof. Asis Dutta and Prof. P.N. Tandon just before the lecture on Diabetes in India.

March 08-10, 2014 - National Workshop on “Basic Optics, Fiber Optics and Optical Communication” at Maharaja Agrasen College, University of Delhi

NASI- Delhi Chapter & Maharaja Agrasen College (University of Delhi) organized a “*National Workshop on Basic Optics, Fiber Optics and Optical Communication*” during March 08-10, 2014. Dr. Geetika Saxena, Associate Prof. at Department of electronics, Maharaja Agrasen College was the Convenor; she (along with her colleagues) very nicely coordinated the workshop. They also were able to receive additional financial support from The Optical Society of India, IEEE EDS Delhi Chapter & Fiber Optic Services, Mumbai. Because of the phenomenal growth of the fiber optic industry, fiber optics is now included in most curricula both in physics and electrical engineering. The workshop covered few lectures on basic optics and a large number of specialized lectures on Fiber Optics and Optical Communications. Teachers from various academic institutions, undergraduate and post graduate students and research scholars from all over India had come to participate in the workshop. The response was overwhelming – they had 236 registered participants. The registrations were from various colleges of University of Delhi and other institutions from UP, Himachal Pradesh, Rajasthan and as far as Odissa.



Prof. Amitava Sengupta giving the inaugural talk at the workshop on Optics & Fiber Optics

Prof. Amitava Sengupta, Head, Time and Frequency Division, National Physical Laboratory gave the inaugural talk on “*Atomic Clocks – How do they Work & Why do we need them?*”. Prof. Ajoy Ghatak gave lectures on *Basic Optics and also on Basic Fiber Optics*. Prof. Anurag Sharma gave lectures on *Guided Modes in Optical Waveguides*, Prof. Enakshi Sharma spoke on *Integrated Optics & Pulse Dispersion*, Prof. Arun Kumar gave lectures on *Polarization and Polarization Effects in Fibers* and Prof. Bishnu Pal gave lectures on *Fiber Optic Sensors*. Prof. Thyagarajan gave lectures on *Basic Quantum Optics*. Prof. Shenoy gave lectures on *Sources & Detectors* and Dr. Varshney gave lectures on *Fiber Optic devices*. A quiz was also conducted during the workshop and prizes were given to top ten winners. The prizes were supposed to be distributed by Prof. V.P. Sharma (President NASI – Delhi Chapter) but on that day he was unfortunately not well; as such, the prizes were distributed by Prof. Ajoy Ghatak.



From Left to right: Prof. Ajoy Ghatak and Dr. Sunil Sondhi, Principal Maharaja Agrasen College



The participants of the workshop; the Convenor Dr. Geetika Saxena is in the extreme right in the front row.



Group photograph at the concluding session of the workshop.

March 19, 2014 - Lecture on “Development of Science in India: A Brief History & Einstein & His Famous Equation $E = mc^2$ ” by Prof. Ajoy Ghatak at MIRAMBIKA School in Sri Aurobindo Ashram, New Delhi

On March 19, 2014 Prof. Ajoy Ghatak gave a lecture on “Development of Science in India: A Brief History & Einstein & His Famous Equation $E = mc^2$ ” at the MIRAMBIKA school in Sri Aurobindo Ashram, New Delhi. Later he interacted with the students and teachers.



April 01, 2014 - March 31, 2015

During the period April 01, 2014 to March 31, 2015, NASI-Delhi chapter had organized the Prof. Sri Ranjan Memorial Award Lecture, Prof. B K Bachhawat Memorial Award Lecture and the Prof. Meghnad Saha Memorial Award Lecture; the first two at Miranda House, University of Delhi and the third one at the Deen Dayal Upadhyaya College, University of Delhi. The Delhi Chapter also organized a one-day workshop (for undergraduate students) at Kalindi College, University of Delhi. The year 2015 being the International Year of Light, the Delhi Chapter also published a book on *Experiments with Light* to enthuse school and college students. In addition to quite a few lectures and workshops, the Delhi Chapter fully supported two undergraduate student projects one at Dyal Singh College, University of Delhi and the other at Kalindi College, University of Delhi. The Chapter Executive Committee members were extremely pleased to see the enthusiasm of the students and it was felt that this was possible only because of the fact that the annual grant was enhanced w.e.f. April 01, 2015.

September 14, 2014 - Prof. Sri Ranjan Memorial Award Lecture (2012) by Prof. Akhilesh Tyagi and Prof. B.K. Bachhawat Memorial Award Lecture (2011) by Prof. Debi Sarkar at Miranda House, University of Delhi

Prof. Akhilesh Tyagi, Director, National Institute of Plant Genome Research (and President, NASI) delivered the 2012 Prof. Sri Ranjan Memorial Award Lecture on “*Plant Genomes for Forward and Reverse Genetics*” at Miranda House, University of Delhi on September 16, 2014.



Invited guests at the NASI Memorial Lectures at Miranda House on September 14, 2014.

The session was chaired by Dr. V.P. Sharma, Founding Director, National Institute of Malaria Research and President of the NASI Delhi Chapter. He also presided over the entire event. Prof. Debi P. Sarkar, J.C. Bose National Fellow in the Department of Biochemistry at University of Delhi South Campus delivered the 2011 Prof. B.K. Bachhawat Memorial Lecture on “*Gene Therapy of Jaundice Using Animal Virus*” at Miranda House, University of Delhi on September 16, 2014. This session was chaired by Dr. Manju Sharma, Former Secretary, Department of Biotechnology, Government of India.

The coordinator of both the events, Dr. Pratibha Jolly (Principal, Miranda House) wrote

“..On this momentous occasion, the college felicitated Prof. Vinod Sharma on having been conferred the prestigious Padma Bhushan Award in 2014. Dr. Manju Sharma who was the Chairperson of the Governing Body of the College for a period of five years from 2006 to 2011 was also felicitated. The college had also felicitated her earlier soon after she was conferred the Padma Bhushan award in 2007. The formal proceedings included welcome address by Dr. Pratibha Jolly, Principal Miranda House and briefing on NASI activities by Dr. U.C. Srivastava, General Secretary, NASI; Dr. Niraj Kumar, Executive Secretary NASI; and Prof. Ajoy Ghatak, NASI Delhi Chapter. The talks were preceded by a lunch for the distinguished guests and NASI members in the Miranda House Dining Hall located in the beautiful ambience of its residential building, designed by the famous architect Walter George. Organization of the award lectures in an undergraduate college provided a unique opportunity for education outreach. The program was widely advertised and brought together nearly 500 students and 50 faculty members from as many as 12 undergraduate colleges of the University of Delhi. In addition, scientists from postgraduate departments of North and South Campus of University of Delhi, IIT Delhi, Jawaharlal University, B.R. Ambedkar Centre for Biomedical Research, Jamia Millia Islamia participated. A large number of NASI members also attended the program. The auditorium was filled to capacity and the audience listened in rapt attention as the two speakers made captivating presentations on their scientific research on the frontiers. The success of the program and the motivational effect on the large student population was evidenced by the vibrant informal interaction after the talks when the students surrounded the distinguished speakers and bombarded them with incessant questions. The college students also set up graphic display boards highlighting the bio profile and research work of the speakers and other distinguished guests. Infographics on various science education extension activities at the college were also presented. Hence the program provided a unique bilateral exchange between scientists and students in an educational setting”.

The lectures were followed by high tea where many students had considerable interactions with speakers and other dignitaries.



National Academy of Sciences, India (NASI)
and
Miranda House
present
NASI AWARD LECTURES

Title: Plant Genomes for Forward and Reverse Genetics
Professor Akhilesh K Tyagi
Director, National Institute of Plant Genome Research
Laureate, National Bioscience Award and J.C. Bose National Fellow

Title: Gene Therapy of Jaundice Using Animal Virus
Professor Debi P Sarkar
Department of Biochemistry, University of Delhi South Campus
Laureate, Shanti Swarup Bhatnagar Award 1998

Chaired by
Professor Vinod P Sharma
Padma Bhushan
Founding Director, National Institute of Malaria Research
Meghnad Saha Distinguished Fellow NASI, IIT Delhi

Dr. Manju Sharma
Padma Bhushan
Former Secretary, Department of Biotechnology
Government of India

The announcement of the two lectures at Miranda House.



Prof. Akhilesh Tyagi (Top) and Prof. Debi Sarkar (bottom) delivering the Memorial Lectures to a packed Auditorium of Miranda House.



Dr. Pratibha Jolly, Principal, Miranda House delivering her welcome address. On the dias (from the left) Dr. Niraj Kumar, Prof. Debi Sarkar, Prof. V.P. Sharma, Prof. Manju Sharma, Prof. Akhilesh Tyagi, Prof. U.C. Srivastava and Prof. Ajoy Ghatak.



Left: Prof. Ajoy Ghatak felicitating Prof. V.P. Sharma on having been conferred the prestigious Padma Bhushan Award in 2014. Prof. U.C. Srivastava (extreme left) and Prof. Manju Sharma (extreme right) are also on the dias. Right: Dr. Pratibha Jolly felicitating Prof. Manju Sharma for her outstanding contributions.



Left: Prof. Manju Sharma felicitating Prof. Akhilesh Tyagi for delivering the 2012 Prof. Sri Ranjan Memorial Award Lecture. Left to right - Dr. Pratibha Jolly, Prof. Manju Sharma, Prof. Akhilesh Tyagi, Mrs Tyagi and Prof. U.C. Srivastava, Prof. V.P. Sharma. Right: Prof. Akhilesh Tyagi felicitating Prof. Debi Sarkar for delivering the 2011 Prof. B.K. Bachhawat Memorial Lecture. Left to right - Prof. Manju Sharma, Prof. Debi Sarkar, Prof. Akhilesh Tyagi and Prof. U.C. Srivastava.

September 24, 2014 - One-Day Workshop on “Einstein & his year of Miracles” at Kalindi College, University of Delhi

A One-day workshop on “Einstein & his year of miracles” (sponsored by the NASI-Delhi Chapter) was organized by Physcom Society of Kalindi College, University of Delhi on September 24, 2014. Over 300 students attended the workshop. It was extremely well coordinated by Dr. Punita Verma and her colleagues at Kalindi College. Dr. Rachna Kumar and Dr. Pushpa Bindal made the necessary arrangements for the event. All other teachers and staff members (of Kalindi College) actively participated in the organization. The workshop included inaugural welcome address by Dr. Rachna Kumar, followed by welcome speeches of Dr. Pushpa Bindal and Dr. Punita Verma. This was followed by the three talks by Prof. Ajoy Ghatak on the following topics:

- $E = mc^2$.
- *What is light & Basics of Quantum Theory.*
- *Special Theory of Relativity: Time dilation and length contraction.*

The lectures were greatly appreciated by the students. At the end of the workshop, a Quiz was organized and about 25 students were given books as prizes.



Left: Dr. Punita Verma with her students; the whole auditorium was full of such posters which showed the great enthusiasm of the students and faculty. Right: Prof. Ajoy Ghatak with faculty members of the Physics Department of Kalindi College, University of Delhi. (From Left to Right) – Dr. Rashmi Menon, Dr. Triranjita Srivastava, Dr. Sudha Gulati, Dr. Seema Gupta, Dr. Punita Verma, Dr. Ajoy Ghatak, Dr. Pushpa Bindal, Dr. Rachana Kumar, Mr. Sanjesh Kumar and Dr. Mazhar Ali.



Left: Prof. Ajoy Ghatak with some of the students in the packed auditorium of Kalindi College after the seminar was over. Right: Prof. Ajoy Ghatak gave prizes to about 25 students who did well in the QUIZ. Dr. Punita Verma is on the extreme left, Dr. Pushpa Bindal and Dr. Rachana Kumar are on the right.

January 21, 2015 - Prof. Meghnad Saha Memorial Award Lecture (2013) by Prof. Bimla Buti at Deen Dayal Upadhyaya College, University of Delhi

The NASI-Prof. Meghnad Saha Memorial Award Lecture was organized at the Deen Dayal Upadhyaya College, University of Delhi on January 21, 2015. Prof. Bimla Buti, Director, Centre for Science and Society, New Delhi was the recipient of the 2013 Prof. Meghnad Saha Memorial Award Lecture and she delivered a beautiful talk on “*Stellar Evolution to Black Holes and Beyond*”. This talk was a befitting tribute to Prof. Meghnad Saha (Founder of NASI), who had made fundamental contributions to the theory of thermal ionization for the interpretation of Stellar Spectra and in whose memory this lecture was organized. The lecture dealt with the fascinating stellar journey that brought ‘Nobel Prize’ to Prof. S. Chandrasekhar in 1983. Crucial role played by Theory of Relativity, in the evolution of a massive star to black holes was also discussed.



Prof. V.P. Sharma, President NASI-Delhi Chapter delivering the Presidential address.



Left: Prof. Bimla Buti delivering the Prof. Meghnad Saha Memorial Lecture to a packed auditorium at Deen Dayal Upadhyaya College. Right: Prof. V.P. Sharma, Prof. Ajoy Ghatak and Dr. Neeraj Kumar felicitating Prof. Bimla Buti for delivering the Prof. Meghnad Saha Memorial Award Lecture.

The lecture was presided by Prof. V.P. Sharma and also attended by Prof. U.C. Srivastava, General Secretary NASI and Dr. Neeraj Kumar, Executive Secretary, NASI. The lecture was very nicely coordinated by Dr. Manoj Saxena, Associate Prof. in the Department of Electronics at Deen Dayal Upadhyaya College. The seminar hall was packed and many were standing. It was attended by over 200 persons from different colleges and institutions in the NCR region. After the lecture there was tea where there was great interaction of the students with Prof. Buti and others.



Prof. V.P. Sharma and Prof. Bimla Buti with faculty members and NASI officials after the lecture.



Left: Dr. Niraj Kumar, Prof. Ajoy Ghatak, Prof. V.P. Sharma (slightly at the back), Prof. U.C. Srivastava, Prof. Bimla Buti, Dr. S.K. Garg (behind Prof Buti), Dr. Poonam Kasturi, Dr. Manoj Saxena with some of the students who attended the lecture by Prof. Buti.
Right: Prof. Bimla Buti interacting with many students after the lecture.

May 17, 2014 - Technical Lecture by Prof. V.P. Sharma at Graphic University, Dehradun

Prof. V.P. Sharma delivered a lecture on 17th May 2014 on “*Writing a Scientific Paper*” at Graphic University, Dehradun for the NASI-Dehradun Chapter, Uttarakhand.

December 16, 2014 - Technical Lecture by Prof. V.P. Sharma at Pune University

Prof. V.P. Sharma delivered two lectures at Pune University, Pune: one on “*Writing a Scientific Paper*” on 16 December 2014, and the other on “*Poster Presentation*” delivered on 17 December, 2014. All his lectures were greatly appreciated.

February 20-22, 2015 - Virtual laboratory project on “*Innovative Approach to Practicals in Physics Laboratory*” at Kalindi College, University of Delhi

Dr. Punita Verma, Associate Prof. of Physics, Kalindi College, University of Delhi had discussed with Prof. V.P. Sharma and Prof. Ajoy Ghatak about a project which would help to remove basic problems faced by the students while performing experiments in the physics laboratory by giving them a complete package of help and guidance. After discussions, it was decided to support the project. *In fact the project was totally funded by NASI-Delhi Chapter.* After completing the project, Dr. Verma wrote

“...Manuals, power point presentations, audio files with explanation, movies of experiments being performed, C++ programs for the facility of students and teachers alike have been developed under this project which should be of great help to the students. 37 students have been working in the project under my guidance. The project was presented at Antardhwani, Inter Delhi University Fest held during 20–22 February 2015. Presentations given by the students were greatly appreciated by students and teachers. A very positive response was received by all visitors towards such an innovative approach using technology and a project based learning. Presentation and the short movie prepared by the students regarding the basic idea of the project was the center of attraction. This approach enabled understanding of differently abled people and would be an important step for long distance education. This project was also presented at the National Conference on “Striving & Thriving Towards Diffusion of Student-Driven Research in Science and Technology for Inspired Learning”.”



Display of various materials (developed under the NASI Delhi Chapter sponsored student project) at the Delhi University Fest during February 20-22, 2015. On the right are the students with their adviser Dr. Punita Verma.

The stall displaying the Innovative Approach to practicals in Physics Laboratory at Delhi University Fest during February 20-22, 2015. In the photograph on the extreme right, Dr. Verma with some of her students at the stall. In each poster, the support from NASI was acknowledged.

Student Project on Solar Energy at Dyal Singh College, University of Delhi

Dr. Navina Mehan, Associate Prof. of Physics at Dyal Singh College, University of Delhi discussed with us about a project that she wanted to carry out with four students from her college. After discussions, it was decided to support the project. According to Dr. Mehan

“..The motivation of the PROJECT ARK came from the fact that recently, solar energy is being used in developed countries for various purposes. It is a non-polluting and easily available source of energy. A solar furnace is in operation at Odeillo in the Pyrenees-Orientales in France and can reach temperatures of about $3,500^{\circ}\text{C}$. It is used to produce hydrogen by cracking methane molecules, to test materials for extreme environment and to produce carbon nanotubes or zinc nanoparticles by solar induced sublimation controlled cooling. With the help of 3 undergraduate students (Sandeep Roy, Prathu Bajpai and Deepak Bahmani), we have performed experiments using a self-made set-up to explore the possibility and effectiveness of designing such an apparatus in India for various possible applications viz., to purify water, possibly to separate waste from drainage water from factories, and to produce electricity.

A setup using a custom made 5.5 mm thick concave mirror of diameter 48 inches with focus at 23 inches, along with 11 plane mirrors of thickness 5 mm made of extra clear glass, was designed. The concave mirror was mounted on a specially made wooden stand with adjustable angle with respect to ground, and wheels that can be locked. Plane mirrors were fixed in specially made iron stands whose angle can be adjusted with respect to the ground. The temperature at the focus of the concave mirror could be measured with a thermometer with maximum measurable temperature 600°C . The tip of the thermometer was adjusted at the focus of the concave mirror, and the temperature readings could be taken by a telescope kept at a distance of 2 feet (for safety) from it. The temperature vs. time graphs were plotted during different times of the day on sunny and cloudy days. Experiments were done with concave mirror alone, and also using plane mirrors to reflect the sunlight on to the concave mirror (See photograph below). When sun rays (reflected from the plane surfaces) fall directly on the concave mirror, these are incident obliquely on it, and the angle of the concave mirror was adjusted to move the focus to a desirable height above the ground.

The focus of the concave mirror was found to extend over a circular region of about one inch. On a reasonably sunny day, the temperature at the focus of the concave mirror rose to a value of 460°C in 40 seconds. On a cloudy day, it reached a maximum value of 280°C in about 80 seconds. Readings were also taken with the thermometer dipped in water in an aluminum vessel, kept at the focus of the concave mirror. The temperature rose to about 180°C in 14 minutes. Thereafter, a special copper vessel of volume 60 ml with a lid having a small hole was filled with water and placed at the focal point of the concave mirror. The water started boiling and continued to boil after a period of about 12 minutes. The working of the system was demonstrated to Prof. Ajoy Ghatak.

The project was totally funded by NASI- Delhi Chapter.

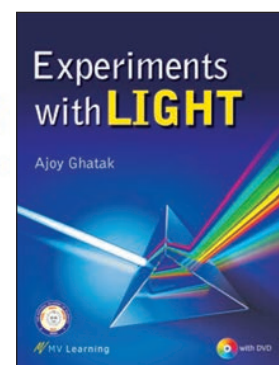
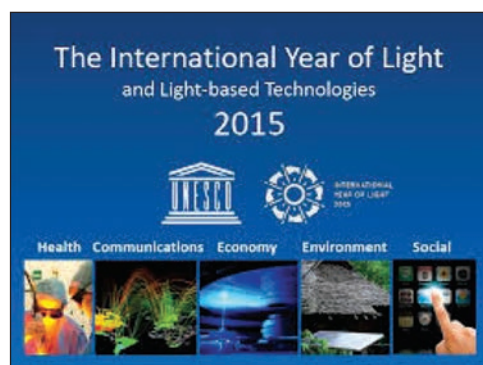


The arrangement of flat reflecting surfaces reflecting sunlight on a large concave mirror.



Dr. Navina Mehan with her 3 students who carried out the project at Dyal Singh College.

Book Writing Project on Experiments with Light



On 20 December 2013, The United Nations General Assembly proclaimed 2015 as the International Year of Light and Light-based Technologies (IYL 2015). In proclaiming an International Year focusing on the topic of light science and its applications, the United Nations has recognized that

light plays a vital role in our daily lives.... It has revolutionized medicine, opened up international communication via the Internet, and continues to be central to linking economic and political aspects of the global society. It has revolutionized medicine, opened up international communication via the Internet, and continues to be central to linking economic and political aspects of the global society.

John Dudley, Chairman of the IYL 2015 steering committee (which will plan out the yearlong festivals associated with the International Year of Light) said

Whether they (the Governments) invest in chemistry or physics or optics or mathematics, at the end of 2015 it doesn't matter... But we have to raise the profile of science. Light is a great vehicle to do that.

As a part of the celebration of the International Year of Light, Prof. V.P. Sharma (Chairman of the Delhi Chapter) suggested that it will be nice to have a book which would describe a few very interesting experiments related to light which will motivate school and college students to study more on light. Prof. Ajoy Ghatak took up this responsibility and wrote a book discussing many very interesting experiments with light and also explaining the basic concepts behind them. It is planned (during 2015-16) to deliver lectures in schools and colleges and make the book available judiciously.

April 01, 2015 - March 31, 2016



We start with the very sad news that our Chairperson Prof. Vinod Prakash Sharma, known internationally for his outstanding work on the bioenvironmental malaria control and for the development of many innovations now used world-wide, left for his heavenly abode on October 9, 2015 at AIIMS, New Delhi. He was a man par-excellence and very much popular in the scientific fraternity in India. NASI Delhi Chapter had organized a condolence meeting on Tuesday October 12, 2016 at IIT Delhi which was attended by many academicians.

September 29, 2015 - Special Lecture on “Sunlight and Human Health” by Prof. V.P. Sharma at IIT Delhi

On September 29, 2015, the NASI Delhi Chapter and IIT Delhi jointly organized a special lecture by Prof. V.P. Sharma on “*Sunlight and Human Health*”. The lecture was very well organized by Prof. Anurag Sharma.



From L-R: Prof. Anup Ghosh, Prof. Ajoy Ghatak, Dr. Brahm Prakash, Prof. Shashi Bala Singh, Prof. N.R. Jagannathan, Prof. V.P. Sharma and Prof. Manju Sharma in the Board Room of IIT Delhi, just before the special lecture.



Left: Prof. V.P. Sharma delivering the special lecture. Right: Prof. Anurag Sharma and Prof. Kshitij Gupta, Director, IIT Delhi felicitating Prof. V.P. Sharma with a memento.

February 17, 2016 - Prof. B.P. Pal Memorial Lecture (2015) by Prof. Jitendra P. Khurana at Deen Dayal Upadhyaya College, University of Delhi

Science Foundation, Deen Dayal Upadhyaya (DDU) College, University of Delhi and NASI-Delhi Chapter jointly organized the 2015 Prof. B.P. Pal Memorial Lecture on February 17, 2016 which was delivered by Prof. Jitendra P. Khurana who is currently J.C. Bose National Fellow & Dean, Faculty of Interdisciplinary & Applied Sciences at University of Delhi South Campus. Dr. S.K. Garg, Principal, DDU College gave the welcome address which was followed by a very nice special lecture by Prof. Manju Sharma, (Padma Bhushan & Distinguished Women Scientist Chair, NASI, Allahabad) on “*Women in Science*”. The whole event was very nicely coordinated by Dr. Manoj Saxena.



From L-R – Dr. J.P. Khurana, Prof. Akhilesh Tyagi, Dr. S.K. Garg and Dr. Manju Sharma.



Prof. J.P. Khurana receiving medal from Dr. Manju Sharma.



From L-R – Dr. Manju Sharma, Prof. J.P. Khurana, Prof. Akhilesh Tyagi and Dr. S.K. Garg, College Principal.



Group Photograph at DDU College on February 17, 2016 after the two lectures.

February 29, 2016 - Prof. R.C. Gupta Endowment History of Science Lecture (2014) by Prof. P.N. Tandon, President, National Brain Research Centre Society at NIPGR, New Delhi

The 2014 Prof. R.C. Gupta Endowment History of Science Lecture was delivered by Prof. P.N. Tandon, President, National Brain Research Centre Society & Former President, NASI on 29th February 2016 at National Institute of Plant Genome Research, New Delhi (NIPGR). He spoke on “*Founders of Neurosciences in India*”. Prof. Manju Sharma presided over the function and spoke about the science day celebration. In the same function, Prof. Archana Sharma Memorial Award was given to Dr. Chandrima Shaha, Director, National Institute of Immunology, New Delhi.



Prof. Akhilesh Tyagi, Prof. Manju Sharma and Prof. P.N. Tandon lighting the lamp.



Prof. Chandrima Shaha receiving Prof. Archana Sharma Memorial Award from Prof. Manju Sharma.



From L-R: Prof. Ajoy Ghatak, Prof. Manju Sharma, Prof. Akhilesh Tyagi, Prof. P.N. Tandon, Prof. Chandrima Shaha and Prof. U.C. Srivastava on the dais at NIPGR on February 29, 2016.

March 16, 2016 - Prof. A.C. Banerjee Memorial Award Lecture (2015) by Prof. Ajoy Ghatak and Prof. B.K. Bachhawat Memorial Lecture Award (2015) by Prof. Rajesh S. Gokhale at IIIT, Noida



Creation of the students at IIIT Noida

Prof. Ajoy Ghatak delivered the 2015 Prof. A.C. Banerjee Memorial Award Lecture and Prof. Rajesh S. Gokhale delivered the 2015 Prof. B.K. Bachhawat Memorial Lecture Award on 16th March 2016 at the auditorium of Jaypee Institute of Information Technology, Noida (IIIT, Noida). Prof. Ghatak spoke on “*The International Year of Light and Fiber Optics*” and Prof. Gokhale spoke on “*Genome Science: Shaping the Life of Tomorrow*”. Both lectures went off very well and were attended by over 500 students/faculty and distinguished scientists from the NCR region. Prof. Manju Sharma presided over the function. The lectures were followed by High Tea in the lobby of the auditorium which allowed interaction between students and faculty. The entire program was very nicely coordinated by Prof. Anirban Pathak.



Left: Prof. Manju Sharma felicitating Prof. Ajoy Ghatak with the Prof. A.C. Banerji Memorial Lecture Award medal; Prof. U.C. Srivastava is on the left.



Right: Prof. Rajesh Gokhale receiving the citation for Prof. B.K. Bachhawat Memorial Lecture Award from Prof. U.C. Srivastava. Prof. Hari Om Gupta is in the center and Dr. Niraj Kumar is on the extreme right.



From L to R (front row): Prof. Bimla Buti, Dr. Papia Chowdhury, Prof. Asish Datta, Prof. D.K. Rai, Prof. Ajoy Ghatak, Prof. Manju Sharma, Prof. Kasturi Datta, Prof. R.K. Dwivedi, Dr. Niraj Kumar. L to R: (back row): Dr. Manish Kumar, Prof. S.P. Purohit, Prof. Padam Kumar, Prof. R.C. Jain, Prof. Anirban Pathak, Prof. Hari Om Gupta, Prof. R.S. Gokhale, Prof. U.C. Srivastava, Prof. Sanjay Gupta.

March 21, 2016 - Prof. Meghnad Saha Memorial Award Lecture (2015) by Dr. Anil Kakodkar at NIPGR, New Delhi

Dr. Anil Kakodkar, INAE Satish Dhawan Chair of Engineering Eminence, BARC & Former Chairman, Atomic Energy Commission of India delivered the *2015 Prof. Meghnad Saha Memorial Award Lecture* at NIPGR on March 21, 2016. Prof. (Mrs.) Manju Sharma, presided over the function. Dr. Kakodkar spoke on “*Technology Vision 2035*”.



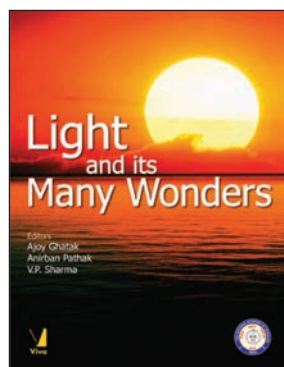
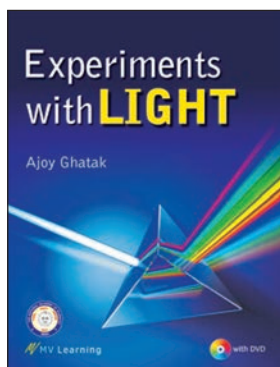
Left: Dr. Anil Kakodkar receiving the citation for the Prof. Meghnad Saha Memorial Award Lecture from Prof. Manju Sharma.

Right: The audience in the Seminar Hall of NIPGR listening to the Prof. Meghnad Saha Memorial Award Lecture by Dr. Anil Kakodkar. In the front row we have Prof. S.K. Sopory, Prof. Anurag Sharma, Prof. P.N. Tandon, Prof. Sneha Bhargava, Prof. Girjesh Mehta, Prof. Abanimohan Mandal, Prof. Chandrima Shaha and Dr. Niraj Kumar.

Books Published Celebrating the International Year of Light

On 20 December 2013, The United Nations General Assembly proclaimed 2015 as the International Year of Light and Light-based Technologies (IYL 2015). NASI wanted to celebrate IYL 2015 by publishing books related to light which would be of interest to students and also to a general audience. The following two books were published:

- **EXPERIMENTS WITH LIGHT**, Ajoy Ghatak, VIVA Book, New Delhi (see <http://www.vivagroupindia.com/frmBookDetail.aspx?BookId=11758&Status=N>) was published in 2015. This book was released by Dr. R. Chidambaram (Principal Scientific Adviser to the Government of India) at a NASI event organized at Hyatt Regency Hotel, New Delhi on September 22, 2015.



- **LIGHT & ITS MANY WONDERS**, Edited by Ajoy Ghatak, Anirban Pathak and V.P. Sharma, (VIVA Books, New Delhi) – see <http://www.vivagroupindia.com/frmBookDetail.aspx?BookId=12049&Status=N>

This book was published in collaboration with UNESCO and was released by Prof. Akhilesh Tyagi during the Annual Symposium of NASI at Bhubaneswar on December 6, 2015.

One-Day Workshops Organized to Celebrate International Year of Light 2015

Three one day workshops were organized to celebrate the International Year of Light (IYL- 2015) and to create a general awareness about light and its wonderful applications among the undergraduate and postgraduate students and faculty members teaching courses related to optics. The first workshop was organized by Department of Physics, Kalindi College (Delhi University) on September 1, 2015. The second workshop was organized by Department of Electronics, Deen Dayal Upadhyaya College (Delhi University) on October 28, 2015. The third workshop was organized by Department of Physics & Materials Science & Engineering at Jaypee Institute of Information Technology (JIIT), Noida on November 18, 2015.



Dr. S.K. Garg, Principal, Deen Dayal Upadhyaya College addressing the Delegates.



Mr. Mohammad Yasir Abbas, Senior Application Engineer-Nikon India Private Limited demonstrate digitally integrated high accuracy Optical Data Acquisition system.



Dr. Poonam Kasturi, Co-Convener-Symposium presenting a memento to Prof. K. Thyagarajan, IIT Delhi



Audience at the auditorium at the one day symposium celebrating the Year of Light at DDU College on October 28, 2016.



Dr. Rajeev Jindal at IIIT, Noida on November 18, 2015.



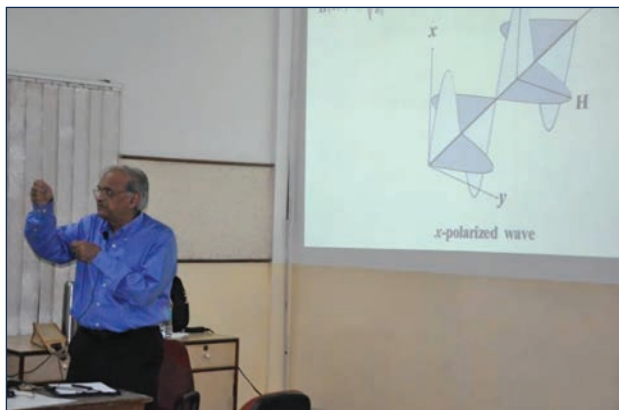
Prof. Patrick Dasgupta at IIIT, Noida on November 18, 2015.



Prof. Amit Sharma delivering his talk at IIIT, Noida on November 18, 2015.

March 13-14, 2016 - Workshop on “Quantum Mechanics: Theory & Applications” at Deen Dayal Upadhyaya College, University of Delhi

Silizium-Electronics Society, Deen Dayal Upadhyaya College and NASI-Delhi Chapter jointly organized The Third Workshop On “*Quantum Mechanics: Theory and Applications*” during March 13-14, 2016 in the College. The workshop was supported by IEEE Electron Device Society (Delhi Chapter). 140 students and faculty members from many colleges attended the workshop.



Prof. Ajoy Ghatak delivering his lecture.



Prof. Anirban Pathak delivering his lecture.



L-R – Prof. Ajoy Ghatak with Prize Winners of Quiz Competition and Dr. Manoj Saxena, Convener-Workshop and Dr. Poonam Kasturi, Co-Convener-Workshop.



Group Photograph of Organizing Team.



Group Photograph at DDU College on March 13, 2016.

Student Projects Fully Supported by NASI Delhi Chapter

This year we have sponsored two student projects: one on Fiber Optic Sensors & Integrated Optic Waveguides (under the supervision of Dr. Pushpa Bindal and Dr. Triranjita Srivastava at Kalindi College) and the other on Solar energy (under the supervision of Dr. Navina Mehan) at Dyal Singh College.



Dr. Pushpa Bindal (Left) and Dr. Triranjita Srivastava (Right) supervising projects with students at Kalindi college.

April 01, 2016 - March 31, 2017

September 29, 2016 - Meeting of the Executive Committee

A meeting of the Executive committee of the Delhi Chapter of NASI was organized on September 29, 2016, at IIT Delhi to discuss its various activities. The meeting was attended by Prof. Ajoy Ghatak, Prof. Anurag Sharma, Prof. Anup Ghosh, Prof. Amit Sharma, Prof. Paramjit Khurana, Prof. Anirban Pathak and Dr. Manoj Saxena. The members of Executive committee made best efforts to realize those plans throughout the year.

October 01, 2016 - One-Day Workshop on “Optics and its Applications in Information Technology” at Benett University, Greater Noida

The Delhi Chapter of NASI and Bennett University, Greater Noida jointly organized a One-Day Workshop on “*Optics and its Applications in Information Technology*” on October 01, 2016. The workshop was coordinated by Dr. Ayan Khan, Bennett University and was attended by more than 150 undergraduate students and a good number of faculty members from Delhi NCR. Prof. Ajoy Ghatak delivered two lectures: One on “*What is light?*” and another on “*Year of light and Fiber Optics*”, Prof. Rupa Ghosh gave a talk on “*Introduction to quantum optics and quantum information*”, Prof. Anurag Sharma spoke on “*Holography*”, Prof. Anirban Pathak delivered a talk on “*Understanding quantum communication using ideas of undergraduate optics*” and Prof. K. Thyagarajan delivered a talk on “*Fiber optics and light wave communications*”. All talks were greatly enjoyed by the students. A quiz contest was organized and best performers were awarded with books at the end of the program.



Prof. Anurag Sharma and Prof. Rupa Ghosh delivering their lectures at the workshop on “Optics and its Applications in Information Technology” at Bennett University.

October 20, 2016 - Dr. Mridula Kamboj Memorial Award Lecture (2016) by Dr. M.V. Padma Srivastava and 2016 Award Lecture in the field of Toxicology by Dr. Pramod Garg at National Institute of Immunology, New Delhi

The Delhi Chapter of NASI and National Institute of Immunology jointly organized the 2016 *Dr. Mridula Kamboj Memorial Award Lecture* and the 2016 *Award Lecture in the field of Toxicology* on October 20, 2016. Prof. Chandrima Shaha coordinated the event. *Dr. Mridula Kamboj Memorial Award Lecture* was delivered by Dr. M.V. Padma Srivastava, Prof. of Neurology at AIIMS, New Delhi on “*Restorative therapies in stroke: drugs, devices and robotics*”, while the Award Lecture in the field of Toxicology was delivered by Dr. Pramod Garg, Prof. of Gastroenterology at AIIMS, New Delhi on “*Toxins and human diseases: Empiricism and evidence*”. Prof. Akhilesh K. Tyagi, President, NASI, presided over the function and Prof. Manju Sharma gave away the awards.

October 26-27, 2016 - Two-Day Workshop on “Quantum Physics and Quantum Optics” at Dyal Singh College

The Delhi Chapter of NASI and COSMOS (The Physics Society of Dyal Singh College, Delhi University) jointly organized a two-day workshop on “*Quantum Physics and Quantum Optics*” on October 26-27, 2016. Dr. Navina Mehan, Dyal Singh College coordinated the workshop. Prof. Ajoy Ghatak delivered talks on “*Quantum Nature of light and interesting experiments*” and “*Entanglement and Bell’s inequality*”, Dr. Anindita Banerjee spoke on “*Basic ideas of quantum optics*” and “*Some experiments in quantum optics*”, on the first day of the workshop. A quiz competition was organized on the topic “*Nature of light and nature of matter*”, at the end of the day. Prof. Patrick Dasgupta delivered two lectures on quantum measurements and Prof. Anirban Pathak delivered a talk on “*Basic ideas of optical quantum information*”, on the second day of the workshop. A poster competition was also organized on the topic “*Concepts, paradoxes and applications of quantum mechanics*”. The event was attended by about 200 students and faculty members. The participants were extremely enthusiastic and interactive.



(From Left to Right): Prof. Anirban Pathak receiving a plant as a souvenir from a student after his talk; Dr. Navina Mehan, who coordinated the workshop, is on the left; Dr. Anindita Banerjee delivering her talk on Experiments in Quantum Optics and Prof. Patrick Dasgupta receiving a memento after his talk.

November 04, 2016 - Dr. P. Sheel Memorial Award Lecture (2016) by Dr. Shelly Praveen at Miranda House, New Delhi

The Chapter organized “2016 *Dr. P. Sheel Memorial Award Lecture*” at Miranda House, Delhi University, Delhi, on November 4, 2016. The award was conferred on Dr. Shelly Praveen, Head, Division of Biochemistry, Indian Agricultural Research Institute, New Delhi. Dr. Praveen delivered her award lecture

on “*Virus propagation: Host fitness trade-off and resistance development*”. Dr. Pratibha Jolly welcomed everyone and Prof. Manju Sharma presided over the function and presented the award to Dr. Shelly Praveen. The event was coordinated by Dr. Pratibha Jolly, Dr. Saloni Bahri and Dr. Janaki Subramanyan. In the end, Dr. Niraj Kumar proposed the vote-of-thanks.



Dr. Pratibha Jolly welcoming the guests.



Dr. Manju Sharma presenting the award to Dr. Shelly Praveen.



Dr. Niraj Kumar proposing the vote-of-thanks.



From L-R: Dr. Santosh Shukla, Dr. Niraj Kumar, Dr. Pratibha Jolly, Dr. Shelly Praveen, Dr. Manju Sharma, Dr. M.R. Jagannathan and Dr. Ajoy Ghatak at the ‘2016 Dr. P. Sheel Memorial Award Lecture’ at Miranda House.

November 25, 2016 - Prof. R.N. Tandon Memorial Lecture Award and Prof. B.K. Bachhawat Memorial Young Scientist Lecture Award at University of Delhi South Campus

Prof. R.N. Tandon Memorial Lecture Award was conferred on Prof. S.K. Sopory, Former VC, JNU; and *Prof. B.K. Bachhawat Memorial Young Scientist Lecture Award* was conferred on Dr. Mukesh Jain, JNU, on November 25, 2016, at Delhi University (South Campus). Prof. Paramjit Khurana coordinated the entire event. Prof. Sopory delivered his award lecture on “*Methylglyoxal: a novel stress signal in plants?*” and Dr. Jain delivered his award lecture on “*Genome Science: a gateway to decipher molecular mechanisms and identify targets for crop improvement*”. The program was presided over by Prof. Akhilesh Tyagi, President NASI. Prof. Manju Sharma, Past President NASI was the Chief Guest and gave away the awards.



Prof. Akhilesh Tyagi and Prof. Manju Sharma conferring the awards to (a) Prof. S.K. Sopory and (b) to Dr. Mukesh Jain.
(c) Prof. Jitendra Khurana, Prof. Akhilesh Tyagi, Prof. Paramjit Khurana, Prof. Manju Sharma, Prof. Ashish Dutta, Prof. Ajoy Ghatak and Prof. Sopory at the award function.

January 10, 2017 - Prof. N.R. Dhar Memorial Award Lecture by Dr. R.A. Mashelkar at IIT Delhi

The Delhi Chapter of NASI and IIT Delhi jointly organized “*Prof. N.R. Dhar Memorial Award Lecture*” which was delivered by Dr. R.A. Mashelkar, Former Director General, CSIR on “*From incremental to disruptive innovation*”. Prof. Anurag Sharma coordinated the event. The lecture was attended by a large number of Fellows, members and faculty members and students of IIT and other institutes. Every one present in the talk felt encouraged as the speaker lucidly described the need for building an Indian innovation ecosystem that would foster the movement from incremental to disruptive innovation. The program was presided over by Dr. Manju Sharma, Past President of NASI. Prof. Akhilesh Tyagi, President NASI and Prof. V. Ramgopal Rao, Director IIT Delhi participated in the award ceremony.



Left: Dr. R.A. Mashelkar, delivering Prof. N.R. Dhar Memorial Award Lecture at IIT Delhi.
Right: Dr. R.A. Mashelkar, interacting with students after the lecture.



Dr. Ajoy Ghatak, Dr. Manju Sharma, Dr. R.A. Mashelkar, Dr. V. Ramgopal Rao and Dr. Akhilesh Tyagi during Prof. N.R. Dhar Memorial Award Lecture at IIT Delhi.

January 21, 2017 - Workshop on 'Optics' for school teachers at Mother's International School

The Mother's International School organized a workshop on 'Optics' for school teachers on January 21, 2017. Prof. Ghatak gave a lecture on "*Year of Light and Fiber Optics*". The workshop was coordinated by Dr. Sharmila Banerjee and was partially supported by the Delhi Chapter of NASI.

February 18, 2017 - Workshop on "Observing Nuclear Processes from Zeptosecond to Picosecond Time-Scale" at Inter-University Accelerator Centre, New Delhi

The Delhi Chapter of NASI and the Inter-University Accelerator Centre jointly organized a workshop on "*Observing nuclear processes from zeptosecond to picosecond time-scale*" on February 18, 2017, to introduce the participants to the charged particle accelerators, nuclear experimental facilities and the experimental research carried out at IUAC, New Delhi. The workshop was coordinated by Dr. D. Kanjilal, Dr. N. Madhavan and Dr. P.N. Prakash from IUAC. The response was overwhelming; however, only about ninety B.Sc./M.Sc. students from various academic institutions (along with faculty members) could be accommodated. Invited talks were delivered by Prof. Ajoy Ghatak on "*Milestones in nuclear research*", Dr. Amit Roy on "*Accelerators in Science and Technology: The major challenges*", Dr. D. Kanjilal on "*Time sequencing the past – Accelerator Mass Spectrometry*" and Dr. N. Madhavan on "*Femtoscience using IUAC nuclear physics facilities*", in the first half of the workshop.



A group photo of the participants of the IUAC workshop on Nuclear Physics and Applications.

Participants were taken to various laboratories in the post-lunch sessions to provide them an idea of experimental activities on nuclear physics that are happening in India. Dr. Manju Sharma, Past President NASI, addressed the participants and informed them about various opportunities that are open for them. The program was also graced by the presence of distinguished scientists like Prof. Bimla Buti and Prof. G.K. Mehta. A quiz was organized at the end. The participants gave a very positive feedback on the day's activities with a request to conduct more such workshops and of longer duration.



Participants shown around various facilities at IUAC, New Delhi.

March 23, 2017 - Workshop on “Physics for Society” at Gargi College, University of Delhi

The Delhi Chapter of NASI and Gargi College (Delhi University) jointly organized a workshop on “*Physics for Society*” on March 23, 2017.

**PHYSICS FOR SOCIETY LECTURE SERIES CUM WORKSHOP IN ASSOCIATION WITH NASI, DELHI CHAPTER
CELEBRATING ETHOS OF GOLDEN JUBILEE YEAR OF GARGI COLLEGE**



Participants at the Workshop on “Physics for Society” at Gargi College on March 23, 2017.

Dr. Vandna Luthra coordinated the workshop. The students from Gargi College and other colleges participated in the day-long event. Prof. Ajoy Ghatak delivered a popular talk on “*Evolution of Quantum Mechanics*”, Dr. Hema V. Raghavan, Former Principal, Gargi College delivered an inspiring talk on “*Physics and Society*”. Prof. Pratik Kumar, AIIMS talked on “*Medical Applications of Radiations*”. Dr. N. Madhavan, IUAC, New Delhi delivered a lecture on “*Advanced Experimental Research Facilities in India and Beyond*” and also talked about various opportunities available for science students at IUAC. Dr. R.N. Sharma talked about the “*Various opportunities for science graduates in the industry*”. The various career options for the physics students were also discussed in the sessions and a quiz was organized on the topic “*Noble prizes and discoveries in Physics*”.

March 25, 2017 - One-Day Workshop on “Nuclear Physics and its Applications” at IIIT University

The Delhi Chapter of NASI and IIIT Noida jointly organized a One-day workshop on “*Nuclear Physics and its Applications*” on March 25, 2017. The workshop was coordinated by Prof. Anirban Pathak and Dr. Papia Chowdhury. About 140 participants (mostly undergraduate students) from UP, Delhi, Jammu Kashmir, Himachal Pradesh, Uttarakhand and Haryana attended the workshop. Extremely interesting lectures were delivered by Prof. Ajoy Ghatak on “*Evolution of Nuclear Physics*”, Prof. Dinakar Kanjilal on “*Accelerators for nuclear research and nuclear techniques*”, Prof. Madhavan Narayanasamy on “*Nuclear Physics is not so unclear-Experiments to observe processes in femtometer scale*”, Prof. Bal Raj Sehgal on “*Lessons learned and not learned from the reactor accidents: TMI-2, Chernobyl and*



From left to right: Prof. Patrick Dasgupta, Prof. Madhavan Narayanasamy and Prof. Balraj Sehgal delivering lectures at the workshop held at IIIT, Noida. Far right: Prof. Ghatak felicitating Prof. D. Kanjilal after his inaugural talk at the workshop.

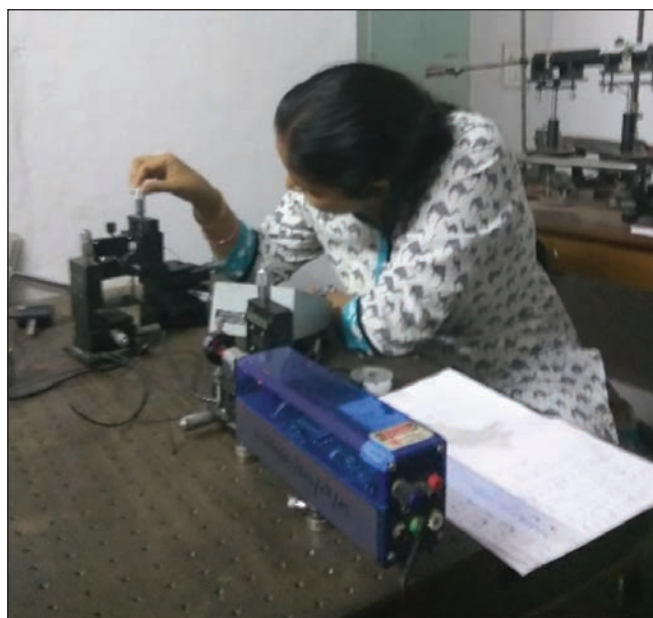
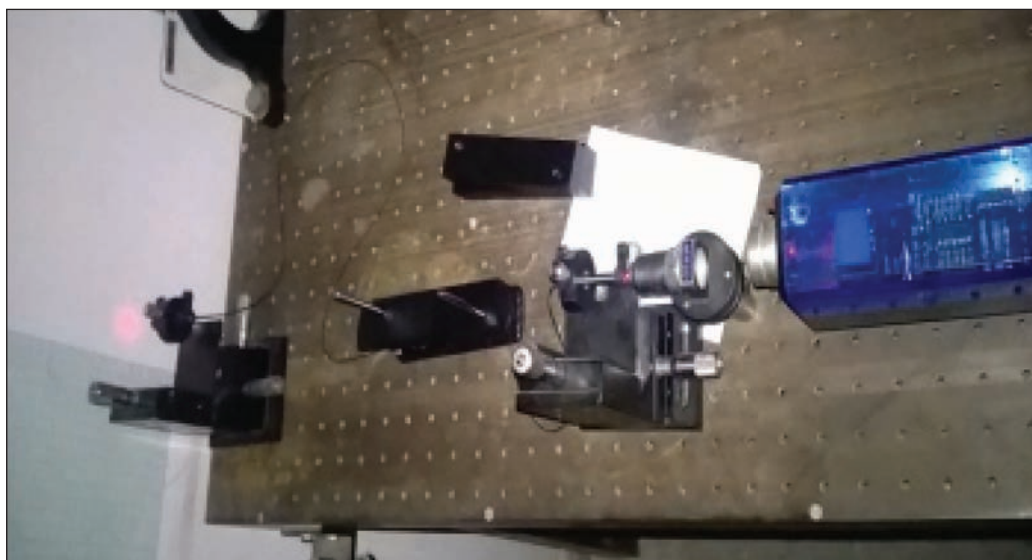
Fukushima” and Prof. Patrick Dasgupta on “*Role of Nuclear Physics in exploring the secrets of celestial objects*”. A quiz was organized at the end of the program and the winners were awarded with books published by NASI.



A group photo of the speakers with the participants of the workshop at IIIT, Noida held on March 25, 2017.

Undergraduate Student Projects

The Delhi Chapter of NASI funded the projects of six students of B.Sc. (Physics Honours) (Shiwangi, Kanchan, Shatakshi, Vaivaswati, Divita, Shikha) of Kalindi College, carried out on “*Experimental investigations on splice losses in Optical fibers*”, “*Modeling of Plasmonic Waveguides*”, and “*Surface Plasmon Resonance based bio-chemical sensor*” under the supervision of Dr. Pushpa Bindal (Associate Prof. of Physics) and Dr. Triranjita Srivastava, Assistant Prof. of Physics, Kalindi College, University of Delhi.



Experimental setup for measuring splice loss in optical fiber.

UNESCO had declared 2015 as the Year of Light. Dr. Punita Verma, Associate Prof., Kalindi College discussed with Prof. V.P. Sharma, Prof. Ajoy Ghatak and Prof. Anirban Pathak about the possibility of getting a telescope made by the students in the Year of Light, for promoting astronomy amongst the young minds. The Delhi Chapter of NASI agreed to financially support the project. The project was named *Celestia* and aimed at making an 8 inch Dobsonian telescope which is one of those telescopes that beautifully enhances the naked vision of the night sky and outer space. Dr. Punita Verma and her four students (Ms. Mohineet Kaur, Ms. Deepshika Bharadwaj, Ms. Drishti Kalhans and Ms. Neeta) built a telescope on their own from scrap under the guidance of AAAD (Amateur Astronomers Association, Delhi). Measurement of focal length of the primary mirror by Foucault's method and other parameters for the construction of telescope were done by the students at Nehru Planetarium. The built telescope (now at the roof of Kalindi College) was used in several night sky watching events like to view the moon whose craters were clearly visible through it. The project (totally funded by NASI-Delhi Chapter) was a remarkable contribution made by the students and their advisor.



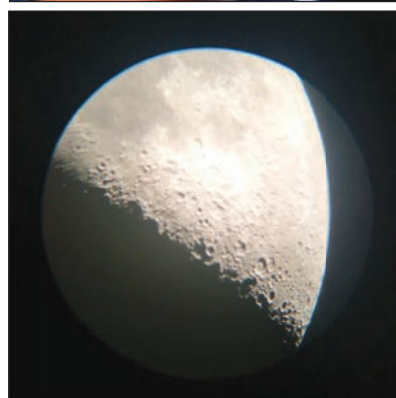
Students involved with the Telescope project (under the supervision of Dr. Punita Verma) and involved with the Fiber Optics project (under the supervision of Dr. Pushpa Bindal and Dr. Triranjita Srivastava) with Prof. Ajoy Ghatak and Prof. Anirban Pathak; the photograph was taken in April 2016; Making of the tube for the telescope.



Making of diagonal holders for the telescope by the students at Nehru Planetarium.



(Left to right: Mohineet Kaur, Deepshika Bharadwaj, Drishti Kalhans, Dr. Punita Verma and Neeta with the 8" telescope that they built.



The NASI emblem on the telescope and Photograph of the craters on the moon taken by the telescope built by the students.

April 01, 2017 - March 31, 2018

April 07, 2017 - Prof. N.R. Dhar Memorial Lecture (2015) by Prof. P. Balaram at NII, New Delhi

On April 07, 2017, NASI Delhi Chapter and National Institute of Immunology (NII) organized *Prof. N.R. Dhar Memorial Lecture (2015)* which was delivered by Prof. P. Balaram (Molecular Biophysics Unit, Indian Institute of Science, Bangalore and Formerly Director, Indian Institute of Science, Bangalore) on “*Peptide Diversity in Cone Snail Venom: Integrating Mass Spectrometry and Next Generation Sequencing in the Analysis of Natural Peptide Libraries*”. The program was presided by Prof. Manju Sharma (past President NASI) who delivered presidential address and introduced Prof. Balaram. In this program welcome address was delivered by Dr. Anil Suri, Director, NII. Prof. Ajoy Ghatak spoke about the award and Dr. Niraj Kumar (Executive secretary, NASI) delivered vote of thanks.

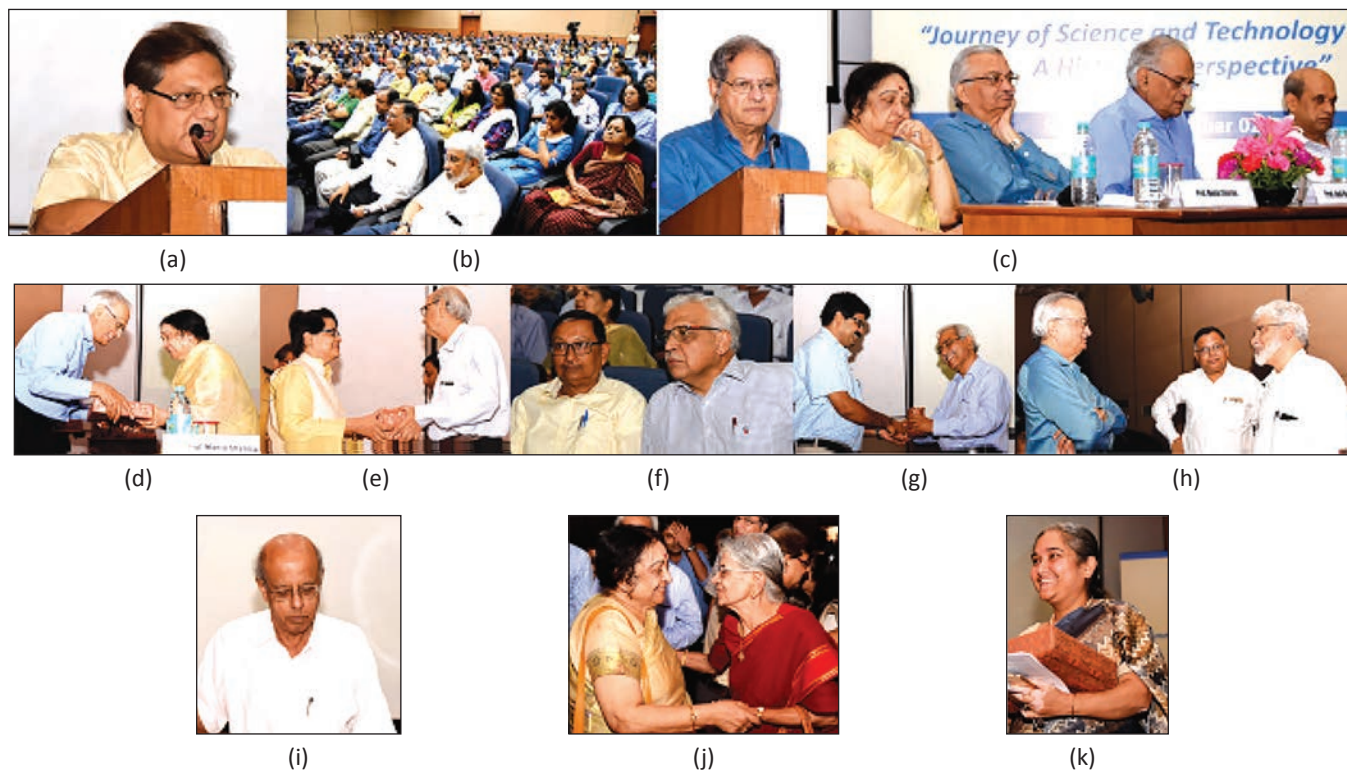
April 21, 2017 - Prof. M.G.K. Menon Award Lecture by Prof. P.N. Tandon at NII, New Delhi

On April 21, 2017, NASI Delhi Chapter and National Institute of Immunology (NII) organized *Prof. M.G.K. Menon Award Lecture* which was delivered by Prof. P.N. Tandon (National Prof. & Founder President, NBRC Society, Manesar) on “*Biomedical Research; Past, Present & Future*”. The program was presided by Dr. Anil Kakodkar, President, NASI. Dr. Soumya Swaminathan, DG ICMR was present as Guest of Honour. After introductory remarks of Dr. Chandrima Shaha, Prof. of Eminence & Former Director, NII a welcome address was delivered by Dr. Anil Suri, Director, NII. Prof. Ajoy Ghatak spoke about the awardee and Dr. Niraj Kumar (Executive secretary, NASI) delivered vote of thanks.

September 02, 2017 - Seminar on “Journey of Science and Technology in India: A Historical Perspective” at NIPGR, New Delhi

Presidency College, Kolkata is the oldest college in India and NASI (The National Academy of Sciences, India) is the oldest science academy in India. Both have played important roles in the development of Science and Technology in India. In fact, one of the eminent alumni of the Presidency College, Prof. Meghnad Saha was the Founder President of NASI. Keeping this in mind, in the bicentenary year of the Presidency College, NASI Delhi Chapter and Calcutta Presidency College Alumni Association (CPCAA), Delhi organized a seminar on “*Journey of Science and Technology in India: A Historical Perspective*”. The seminar was held on September 2, 2017 at NIPGR Auditorium and was coordinated by Dr. Subhra Chakraborty. The program started with opening remarks by Mr. Hiranmay Karlekar. This was followed by the following talks: Prof. Manju Sharma spoke on “*NASI-It's past, present and way forward*”, keeping in view the National Missions. Prof. Ajoy Ghatak spoke on “*Evolution of Science in India*”. This was followed by the Keynote Address by Prof. Anil Kakodkar on “*Leveraging science for National Development: Experience in Atomic Energy Program*”. Prof. P.N. Tandon gave a talk on “*Dawn of Higher Education in India*” which was followed by a talk by Prof. Kankan Bhattacharyya on “*Presidency College & Birth of Modern Science*”. After this, Prof. Sabyasachi Bhattacharya spoke on “*Early Science at Presidency College, Calcutta: an accident or a great beginning?*” This was followed by a talk by Prof. Akhilesh Tyagi on

“Milestones from Plant Science to Agricultural Biotechnology in India.” The concluding remarks were given by Prof. Kamal Datta, The seminar was a great success and was attended by over 300 people including many students and teachers from nearby colleges. We are planning to bring out a volume containing all the lectures.



Photographs taken at the Seminar on Journey of Science and Technology in India held at NIPGR, New Delhi on September 2, 2017.

(a) Dr. Neeraj Kumar compering the program to a (b) packed auditorium; (c) Mr. Hiranmay Karlekar, Dr. Manju Sharma, Dr. Anil Kakodkar, Dr. Ajoy Ghatak and Dr. Niranjana Chakraborty at the inaugural function. (d) Dr. Ajoy Ghatak felicitating Dr. Manju Sharma after her lecture; (e) Dr. Chandrima Shaha felicitating Dr. P.N. Tandon after his lecture; (f) Dr. Kankan Bhattacharyya with Dr. Anurag Sharma (g) Dr. Anirban Pathak felicitating Dr. Akhilesh Tyagi after his lecture; (h) Dr. Anil Kakodkar, Dr. D. Kanjilal and Dr. Sabyasachi Bhattacharya (i) Dr. Manju Sharma with Dr. Bimla Buti (j) Dr. Kamal Datta giving his concluding remarks and (k) Dr. Subhra Chakraborty coordinating the program.

October 25-26, 2017 - Two-Day Workshop on “Quantum Physics: An Insight” at Kalindi College, University of Delhi

A two-day workshop “Quantum Physics: An Insight” was held on October 25-26, 2017. It was organized by the Department of Physics, Kalindi College, University of Delhi & NASI - Delhi Chapter under the convenorship of Dr. Pushpa Bindal. The workshop had about 130 participants from various sectors of educational institutes such as Amity University (Gurgaon), IIIT (Noida), Sharda University (Noida) and Delhi University Colleges like Hansraj College, Gargi College, Daulat Ram College, Maitreyi College, Ramjas College, Shivaji College and SV College. In total 24 faculty members and 106 students participated. Welcome address for the workshop was delivered by Dr. Anula Maurya, Principal, Kalindi College. It was followed by opening remarks of Prof. Ajoy Ghatak on NASI and its various activities. Subsequently, Prof. Ghatak delivered two technical talks: the first one was on *“Evolution of Quantum Theory”* and the second was on *“Schrodinger Equation & Basic Concepts in Entanglement”*. These lectures were followed by a talk

of Prof. Patrick Das Gupta (Delhi University) on “*Three Faces of Quantum Phase*”. The last lecture of the first day was delivered by Prof. Anurag Sharma (IIT Delhi) on “*Eigenvalues and Eigenstates: Beyond Exact Analytical Solutions*”.



(a)



(d)



(b)



(e)



(c)



(f)

Photographs taken at the workshop on Quantum Physics: An Insight held on October 25-26, 2017 at Kalindi College, University of Delhi. (a) Dr. Pushpa Bindal with Prof. Ajoy Ghatak in the presence of Dr. Anula Maurya, Principal, Kalindi College. (b) Prof. Patrick Dasgupta (c) Prof. Anurag Sharma (d) Prof. K. Thyagarajan (e) Prof. Kamal Dutta delivering their talks and (f) Prof. Anirban Pathak during hands on experiments.

On the second day, the first lecture was delivered by Prof. K. Thyagarajan (Bennett University, Greater Noida) on “*Quantum Nature of Light and the Photon*”. It was followed by a talk of Prof. Kamal Dutta (formerly Prof. of Physics at DU) on “*The Development of Quantum Formalism: the Early Years*”. The last two lectures of the day were delivered by Prof. Anirban Pathak (JIIT, Noida). The first lecture was on “*How to build a small Optical Quantum Computer?*” and the second one was on “*Let’s do Quantum Computing over Cloud*”. The second lecture was held on a lab and participants were given hands on training on how to use a quantum computer which is placed in cloud. Finally, the workshop was concluded by Dr. Pushpa Bindal who delivered the vote of thanks. The response from the participants was very good.

December 07, 2017 - Meeting of the Executive Committee

On December 7, 2017, a meeting of the Executive committee of NASI, Delhi Chapter was organized at IIT Delhi. In the meeting plans for various activities were discussed with a special focus on the activities to be organized on the 10th year of the NASI Delhi Chapter, which was inaugurated on April 18, 2008.

January 23, 2018 - One-Day Workshop on Quantum Mechanics and Applications held at Amity University Haryana

A One-day workshop on “*Quantum mechanics and applications*” was held on 23rd January, 2018 at Amity University Haryana (AUH). It was organized by AUH and “NASI - Delhi Chapter” under the convenorship of Prof. A.K. Yadav, Director ASAS, AUH. In the inaugural session of the workshop, Prof. Yadav welcomed the participants and Prof. Padamkali Banerjee (Pro-VC, AUH) briefly addressed them. Prof. Ajoy Ghatak briefly spoke about the NASI and its activities.



Photographs taken at the workshop on Quantum Mechanics and Applications held on January 23, 2018 at Amity University Haryana (a) Prof. Ajoy K Ghatak being felicitated by Prof. Padmakali Banerjee PVC AUH and Prof. A.K. Yadav Director Amity School of Applied Sciences AUH. (b) Prof. K. Thyagarajan and (c) Prof. Anirban Pathak delivering their talks.

This session was followed by 3 technical sessions. The first two technical talks were delivered by Prof. Ghatak. The first one was on “*Evolution of Quantum Theory*” and the second was on “*Schrodinger Equation & Basic Concepts in Entanglement*”. These lectures were followed by two talks of Prof. K. Thyagarajan (Bennett University, Greater Noida) on “*Quantum Nature of Light and the Photon*”. The last two lectures of the workshop were delivered by Prof. Anirban Pathak (JIIT, Noida). His first lecture was on “*How to build a small Optical Quantum Computer?*” and the second one was on “*Let’s do Quantum Computing over Cloud*”.



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