

FELICITATION
of
INTERNATIONAL OLYMPIAD MEDALLISTS, 2016
in the sciences and mathematics

Thursday, December 22, 2016

SCIENTIFIC PROGRAMME: 09.30 to 11.30 hrs

Expository lectures by eminent scientists

AWARD CEREMONY: 12.00 to 13.30 hrs

An event organized by HBCSE (TIFR) in association with
the Infosys Foundation & the TIFR Endowment Fund.

Homi Bhabha Centre for Science Education
Tata Institute of Fundamental Research

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OLYMPIADS IN MATHEMATICS, SCIENCES AND INFORMATICS

The International Olympiads in mathematics, physics, chemistry, biology, astronomy, astrophysics, junior science, earth science and informatics are annual academic competitions to stimulate and challenge bright young pre-university students. The aims of the International Olympiads are to promote academic excellence and also to foster friendship among students and teachers of different countries. India started participating in International Olympiads in mathematics from 1989, in physics, chemistry, biology, astronomy and informatics about a decade later, followed by participation in Earth Science Olympiad and Junior Science Olympiads. India hosted the International Mathematical Olympiad (1996), the International Chemistry Olympiad (2001), International Astronomy Olympiad (2006), International Biology Olympiad (2008), International Earth Science and Junior Science Olympiads (2013), International Physics Olympiad (2015) and the International Olympiad on Astronomy and Astrophysics (2016).

The Indian Olympiad programme typically involves three stages of selection. The first stage selects a few hundred students from among thousands who appear for the preliminary examinations all over the country. The second stage is the Indian National Olympiads – the most challenging contests in mathematics and sciences at the pre-college level held in the country. About 35 national Olympiad winners in each subject undergo training and testing every summer at the Homi Bhabha Centre for Science Education (HBCSE), Tata Institute of Fundamental Research (TIFR), after which the Indian teams are selected to represent the country at the International Olympiads. The Informatics Olympiad training camp is held at The International School, Bengaluru. The Earth Science Olympiad camp is held at Bengaluru or Chennai, while the Junior Astronomy Camp is held at the Nehru Science Centre, Mumbai.

HBCSE (TIFR) is the nodal agency for implementing the Olympiad programme in mathematics, physics, chemistry, biology, astronomy and astrophysics, and junior science. The first stage of the science Olympiads is carried out by the Indian Association of Physics Teachers (IAPT) with support from teacher associations of chemistry and biology. The second and higher stages are carried out by HBCSE with support from teachers and scientists nationwide. In the mathematics Olympiads, carried out by HBCSE under the aegis of National Board of Higher Mathematics (NBHM), the first stage is de-centralised. The Informatics Olympiad Programme is carried out by the Indian Association for Research in Computing Science (IARCS). The Earth Science Olympiad Programme is carried out by the Geological Society of India (GSI).

The Science Olympiad Programme in India is funded by the Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy (DAE), Department of Science and Technology (DST) and Ministry of Human Resource Development (MHRD). The Mathematics Olympiad Programme is funded by NBHM (DAE) and MHRD. The Astronomy Olympiad Programme is funded by DAE, Department of Space (DOS), and by the National Council of Science Museums (NCSM). The Informatics Olympiad is funded by Indian Association for Research in Computing Science (IARCS), Sasken Communication Technologies Ltd and TCS iON (a division of Tata Consultancy Services). The Earth Science Olympiad Program is funded by the Ministry of Earth Sciences (MoES). The Junior Science Olympiad program is funded by MHRD and by HBCSE (TIFR) through its Plan funds.

Felicitations of International Olympiad Medallists, 2016

Indian students have been doing consistently well at the International Olympiads. The performance of the teams in 2016 was: Physics (3 Gold, 2 Silver); Chemistry (2 Gold, 2 Silver); Biology (1 Gold, 3 Silver); Mathematics (1 Silver, 5 Bronze); Astronomy (Jr.) (2 Silver, 1 Bronze); Astronomy and Astrophysics (2 Gold, 4 Silver, 2 Bronze, 1 H.M); Junior Science (5 Gold, 1 Silver); Informatics (2 Silver, 2 Bronze); Earth Science (3 Bronze). Out of the 45 students who were sent to various Olympiads, 43 won either a gold, silver or bronze medals. The best of our Olympiad students are comparable with the best in the world and we are justifiably proud of them.

ACKNOWLEDGEMENTS

In 2002, Infosys Foundation instituted awards to Indian medalists in the International Olympiads. The awards consist of a cash prize of Rs. 15,000/-, the grant for which has been given to the TIFR Endowment Fund. HBCSE (TIFR) expresses its deep gratitude to Smt. Sudha Murty, Chair, Infosys Foundation for her spontaneous and generous response to the Institute's request for this support. We also thank the TIFR Endowment Fund for their pro-active interest in the Olympiad programme.

The Government of India has been generously supportive of the Olympiad programme through its various agencies as listed above. We are thankful for this support and for the support for the Informatics Olympiad by the agencies listed. Finally, it is a pleasure to thank the Indian Association of Physics Teachers (IAPT), the Association of Teachers in Biological Sciences (ATBS), the Association of Chemistry Teachers (ACT), Indian Physics Association (IPA), National Council of Educational Research and Training (NCERT), CBSE, IARCS, GSI, NCSM and the large number of scientists and teachers from different institutions across the country for their enthusiastic collaboration in this exciting activity.

K. Subramaniam

Chair, National Steering Committee
Science and Astronomy Olympiads.

Morning Session

Expository Lectures by Eminent Scientists

Lecture 1 (9:30 to 10:30 hrs)



Prof. Sanjay Sane

Associate Professor, National Center for Biological Sciences

Insects as Architects: how insects engineer our ecosystems

Engineering is not a uniquely human trait. Even a cursory look at our backyard can reveal a staggering variety of structures engineered by insects and other animals. These structures emerge from the coordinated activity of many individuals, or sometimes even a solitary individual. Like human-built structures, they require tremendous coordination, constant maintenance, rapid responses to environmental changes etc. My seminar will use termite mounds as an example of animal engineering. Specifically, I will describe our recent attempts at understanding how these fascinating insects are able to build enormous structures through coordinated activity. How do they recognise and repair damage to these structures? What sensory cues guide them in these tasks? And finally, what lessons can we learn from these marvellous structures about energy-efficient, waste-free civil engineering? These are some of the questions I will address in my talk.

About the Speaker

Prof. Sanjay Sane obtained a B.Sc. in Physics, Chemistry and Mathematics from St. Stephens College, University of Delhi and a Master's in Physics from University of Poona, with a specialization in Astrophysics and Nonlinear Dynamics. His childhood fascination for insects drew him to study the aerodynamics of insect flight as a Ph.D. student at the University of California, Berkeley. He served as a Post-Doctoral Research Fellow at University of Washington, Seattle, before joining the National Center for Biological Sciences (NCBS), Bangalore where he is currently an Associate Professor.

Lecture 2 (10:30 to 11:30 hrs)

Prof Mahan Mj.

Tata Institute of Fundamental Research



What is hyperbolic geometry?

We shall indicate a solution to a problem posed by Euclid: Prove or disprove the parallel postulate assuming only the first 4 axioms of Euclidean geometry. The solution leads to a new geometry called hyperbolic geometry. We shall only assume some familiarity with calculus.

About the Speaker

Prof. Mahan Mitra joined the PhD program in mathematics at University of California, Berkeley with Andrew Casson as his advisor. He received the Earle C. Anthony Fellowship, U.C. Berkeley in 1992–1993 and the prestigious Sloan Fellowship for 1996–1997. After earning a doctorate from the University of California at Berkeley in 1997, he worked briefly at the Institute of Mathematical Sciences in 1998. Spiritually inclined, he joined the Ramakrishna Math as a renunciate upon being impressed by the life and work of the Vedantic philosopher Ramakrishna Paramahansa. His initial name was Brahmachari BrahmaChaitanya. He was renamed as Swami Vidyanathananda after receiving his saffron robe in 2008. Swami Vidyanathananda is a monk at the order's headquarters at Belur Math. He was Professor of Mathematics and Dean of Research at the Ramakrishna Mission Vivekananda University till 2015. He is currently Professor of Mathematics at Tata Institute of Fundamental Research Mumbai.

He has widely published and presented his research in the area of hyperbolic manifolds and ending lamination spaces. His most notable work is the proof of existence of Cannon-Thurston maps. This led to the resolution of the conjecture that connected limit sets of finitely generated Kleinian groups are locally connected. He is also the author of a book titled *Maps on boundaries of hyperbolic metric spaces*.

Afternoon Session (12 : 00 – 13 : 30 hrs.)

Address & Award distribution by Mr. K. N. Vyas, Director, B.A.R.C

Mr. K. N. VYAS








Mr. K.N. Vyas is a Mechanical Engineering graduate from MS University, Vadodara. After completion of the training in the 22nd Batch of the BARC Training School in 1979, he joined Fuel Design & Development Section of Reactor Engineering Division of BARC. Mr. Vyas has worked for design & analysis of nuclear reactor fuels. He was also responsible for design & development of a novel fuel for strategic applications. He has worked extensively in thermal hydraulics and stress analysis of critical reactor core components. Mr. Vyas, as an engineer, has played a key role for completion of strategic projects. Mr. Vyas has also participated in design & analysis of the Test Blanket Module planned to be installed in ITER, France.

Mr. Vyas has been conferred several awards, which include Indian Nuclear Society Outstanding Service Award 2011, Homi Bhabha Science and Technology Award 2006, DAE Awards in the years 2007, 2008, 2012 and 2013. He is also a Fellow of the Indian National Academy of Engineers.

Mr. Vyas, as Director, BARC is committed to focus on work related to societal applications. Mr. Vyas will also continue to further the research activities being carried out in the basic and applied areas.

INDIAN DELEGATION TO THE 57th INTERNATIONAL MATHEMATICAL OLYMPIAD 2016

The following team represented India at the 57th International Mathematical Olympiad held at HongKong during July 6 – 16, 2016.

Students	Medals	
1. Kapil Pause Flat No : S-3, Ish Krupa Co-op. HSG. Society, Kakoda, Curchorem - Goa – 403706	Silver	
2. Sutanay Bhattacharya Jhapor More, (Daruka Complex), bishnupur, Bankura, West Bengal	Bronze	
3. Madhusudhan Reddy P. Koritepadu 4th Lane end of the street Pincode: 522007	Bronze	
4. Supravat Sarkar 99A, Indra Palli, Ward No-3, Arambaugh, Hooghly, Pin-712601	Bronze	
5. Anant Mudgal H. No : 2237, Sector – 28, Faridabad, Haryana-121008	Bronze	
6. Deepesh Singhal flat no 801, block no 9, Hill Ridge Springs, Gachibowli, Hyderabad-500032.	Bronze	
Leaders and Scientific Observers		
1. Dr. Prithwijit De Mathematical Olympiad Cell, HBCSE, TIFR, Mumbai	Leader	
2. Prof Udayan M. Prajapati Department of Mathematics St. Xavier's College, Navrangpura Ahmedabad - 380 009.	Deputy. Leader	

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3. Prof. B. Sury
Stat Math Unit,
Indian Statistical Institute
8th Mile Mysore Road
RV College Post
Bangalore 560059

Scientific Observer



4. Shri. Alok Kumar
C/o Dr Vindu Amitabh
B 5/3/1 Multi Storey Apartments
Sector 13, R K Puram
New Delhi - 110 066

Scientific Observer



INDIAN DELEGATION TO THE 47th INTERNATIONAL PHYSICS OLYMPIAD 2016

The following team represented India at the 47th International Physics Olympiad held at Zurich, Switzerland during July 11 - 17, 2016.

Students	Medals	
1. Debaditya Pramanik 2A1 Brook Tower, Hiland Park, 1925 Chak Garia, Kolkata, West Bengal – 700094	Gold	
2. Gowtham Amirthy Neppoleon 88, Erode Main Road, Perundurai, Erode District, Tamil Naidu – 638052	Gold	
3. Preey Shah C-405, New Sarvottam Society, Irla Bridge, S.V. Road, Andheri Mumbai – 400058	Gold	
4. Divyansh Garg 143, Krishna Vihar, Gopalpura bypass, Jaipur Rajasthan – 302018	Silver	

5. Manan Bhatia
1/8 Shivsthal, 1, Faizabad road,
Opposite I. T. College,
Lucknow – 226007

Silver



Leaders, Scientific Observer & Visitors

- 1 Prof. Anwesh Mazumdar
HBCSE (TIFR), Mumbai

Leader



2. Mr. Shirish Pathare
HBCSE (TIFR), Mumbai

Leader



3. Prof. Rekha Ghorpade
Ramniranjan Jhunjhunwala College
of Arts, Science & Commerce,
Ghatkopar

Scientific Observer



4. Prof. P. K. Jena
Bhubaneswar

Scientific Observer



INDIAN DELEGATION TO THE 48th INTERNATIONAL CHEMISTRY OLYMPIAD 2016

The following team represented India at the 48th International Chemistry Olympiad held at Tbilisi, Georgia during July 23 - August 01, 2016.

Students

1. Valay Agarawal
B-35, Gole market flats,
Jawahar Nagar, Jaipur – 302004
2. Utkarsh Gupta
NBH – 4, PH – 1 Gail Complex,
Vijaipur, Guna,
Madhya Pradesh – 473112

Medals

Gold



Gold



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3 Kartik Patekar
23, Ganga devi nagar,
Near Vijaynagar, Indore,
Madhya Pradesh – 452001

Silver



4 Sharvik Mital
B-85, Sagar Royal Homes,
Hoshangabad road, Near Ashima Mall,
Bhopal, Madhya Pradesh – 462026

Silver



Leaders and Scientific Observers

1 Prof. A. A. Natu
IISER, Pune

Leader



2. Prof. Avinash Kumbhar
University Of Pune

Leader



3. Prof. Anindya Dutta
IIT Bombay

Scientific Observer



4. Dr. Ankush Gupta
HBCSE (TIFR), Mumbai

Scientific Observer



INDIAN DELEGATION TO THE 27th INTERNATIONAL BIOLOGY OLYMPIAD 2016

The following team represented India at the 27th International Biology Olympiad held at Hanoi, Vietnam during July 17 - 24, 2016.

Students




1. Lajjaben Patel
Paaranu Hospital, Sardar Complex,
Kadodara Char Rasta,
Kadodara, Surat,
Gujarat – 394327

Medals

Gold



Felicitatation of International Olympiad Medallists, 2016






- | | | |
|---|--------|---|
| 2. Spandan Roy
Balaka Apartment,
2 nd floor 'B', 2 No Natun Gram Road,
Sahem Bagan, Shyamnagar,
North 24 Parganas,
West Bengal – 743127 | Silver |  |
| 3. Tanish Modi
H. No. 621 (first floor),
Sector – 16D,
Chandigarh – 160015 | Silver |  |
| 4. Vidushi Varshney
34/507 Pratap Nagar Ganganer,
Jaipur, Rajasthan – 302033 | Silver |  |

Leaders and Scientific Observers

- | | | |
|--|---------------------|---|
| 1. Prof. Dharmendra Shah
M. S. University, Baroda | Leader |  |
| 2. Prof. Rekha Vartak
HBCSE (TIFR), Mumbai | Leader |  |
| 3. Ms. Anupama Ronad
HBCSE (TIFR), Mumbai | Scientific Observer |  |
| 4. Mr. Vikrant Ghanekar
HBCSE (TIFR), Mumbai | Scientific Observer |  |

INDIAN DELEGATION TO THE 21st INTERNATIONAL ASTRONOMY OLYMPIAD 2016





The following team represented India at the 21st International Astronomy Olympiad held at Plovdiv-Pamporovo (Bulgaria) during October 5 – 13, 2016.

Students	Medals	
1. Mulinti S Wajid H.No: 28-768-14-3-L, Lalitha Nagar, Nandyal, Kurnool, Andhra Pradesh-518502	Silver	
2. Prashant A Gokhale A/203, Jai Ghanshyam Society, Tejpal Schm Lane 3, Vile Parle (East), Mumbai, Pin: 400057	Silver	
3. Harshit Khandelwal 1409, Scheme number - 114 Part-1, Indore, Madhya Pradesh-452010,	Bronze	
Leaders, Scientific Observer & Visitors		
1. Dr. Kanchan Chowdhury National Council of Science Museums 33, Block-GN, Sector V, Bidhan Nagar, Kolkata, West Bengal – 700091	Leader	
2. Madan Gopal Krishnappa No 22, 2nd cross, AnubhavaNagar, Nagarbhavi Main Road Bangalore-560072	Leader	



INDIAN DELEGATION TO THE 10th INTERNATIONAL OLYMPIAD ON ASTRONOMY AND ASTROPHYSICS 2016

The following team represented India at the 10th International Olympiad on Astronomy and Astrophysics held at Bhubaneswar, India during December 9 – 19, 2016.




Guest Team:

Students	Medals	
1. Yash M Mehta 503, Navkar Apartment, Near Corner Point, Maitry Row House Road, Citylight Surat, Gujarat – 395007	Silver	
2. Lakshay Sharma Roongta Villa 297, Old Rajeev Gandhi Nagar Kota, Rajasthan – 324005	Bronze	
3. Devansh Shringi 38, Rajeev Gandhi Nagar Second Floor, Kota, Rajasthan – 324005	Bronze	 <small>DEVANSH SHRINGI</small>
4. P. Pavan Chaitanya 9-5-32, SBI Colony, Champapet Hyderabad – 500079	Hon'ble Mention	
5. Jaidev Ashok B-402 CAPRI, Hiranandani Estate, Patlipada, Ghodbander Road, Thane(W) - 400607	-----	






Official Team:

Students	Medals	
1. Ameya Patwardhan B 106, Greenfield CHSL, Plot 8 Sector 16A, Vashi, Navi Mumbai – 400703	Gold	
2. Anand Iyer E7/313, 201 Rachnakunj Apts., SBI Housing Society, Arera Colony Bhopal – 462016	Gold	

Felicitation of International Olympiad Medallists, 2016

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|--|--------|---|
| 3. Neel Karia
A-1008,
Ashok Tower Dr. Babasaheb Ambedkar Road,
Parel (E), Mumbai – 400012 | Silver |  |
| 4. Aditya Sharma
T-21K, T Block, Ground floor,
Park Elite Floors Sector 75,
Greater Faridabad, Haryana – 121004 | Silver |  |
| 5. R. Nikhil Reddy
1-9-129/17/J,
St. No.19 Ramnagar,
Hyderabad – 500020 | Silver |  |

Leaders and Scientific Observers

- | | | |
|---|---------------------|---|
| 1. Najam Hasan
Apt. No 101, Desires Panorama,
M.L.A. Colony, Road No 12,
Banjara Hills, Hyderabad – 500032 | Leader |  |
| 2. Vinayak Katdare
404, Yashraj, Sir Bhalchandra Marg,
against 4 th road, Hindu Colony,
Dadar (E), Mumbai 400014 | Leader |  |
| 3. Manojendu Choudhury
3D Kedarnath,
Anushaktinagar, Mumbai – 400094 | Leader |  |
| 4. Swapnil Jawkar
B/14 Ravikiran,
Near Taran Talav,
Kalwa(W), Thane – 400605 | Leader |  |
| 5. Prasad Adekar
13, Matruchhaya Niwas,
Nehru nagar, Kanjurmarg (east),
Mumbai – 400042 | Scientific Observer |  |
| 6. Tejas Shah
JN4/12/8, sector 9, vashi,
Navi Mumbai – 400703 | Scientific Observer |  |




**INDIAN DELEGATION TO THE 28th INTERNATIONAL OLYMPIAD IN INFORMATICS
2016**

The following team represented India at the 28th International Olympiad in Informatics held at Kazan, Russia during August 12 - 19, 2016.



Students	Medals	
1. Rajat De Room Number G17, Students' Hostel Chennai Mathematical Institute H1, SIPCOT IT Park Siruseri, Kelambakkam – 603103	Silver	
2. Srijon Mukherjee Villa-1, ATS-Greens 1 A86 Sector-50 Noida, UP 201301	Silver	
3. Malvika Raj Joshi B 106 Iris, Dosti Acres, Uphill Link Road, Wadala East Wadala East, Mumbai 400037	Bronze	
4. Sampriti Panda Plot No – 3C/241, Sector 9, C.D.A., Cuttack, Odisha 743014	Bronze	
Leaders, Scientific Observer & Visitors		
1. Prof. Madhavan Mukund Chennai Mathematical Institute H1 SIPCOT IT Park Siruseri, Kelambakkam 603103	Leader	
2. Prof. Arjun Arul Chennai Mathematical Institute H1 SIPCOT IT Park Siruseri, Kelambakkam 603103	Deputy Leader	

INDIAN DELEGATION TO THE 10th INTERNATIONAL EARTH SCIENCE OLYMPIAD 2016

The following team represented India at the 10th International Olympiad on Earth Science held at Mie, Japan, during August 20 – 27, 2016.








Students	Medals	
1. Aditya Pal 40 Kalitala link Road, Haltu Purbachal, P.O:Haltu,P.S:Garfa Kolkata-700078	Silver	
2. Amarjeet Pandde 2, someshwar Apartments, near gurukul Society, opposite uday nagar, panchpakhadi, Thane - West. Pin code 400602	Silver	
3. Guhan Narayanan s/o R. Narayanan B - 204, Bairavi Dhrupad New Thippasandra Main Road Bangalore 560075	Silver	

Leaders, Scientific Observer & Visitors

1. Dr. K.S. Godhavari Secretary Geological Society of India No.63, 12th Cross, Basappa Layout Gavipuram, Bangalore - 560 019	IESO Observer	
2. Dr. Hema Achyuthan Prof. and national coordinator, Mentor (IESO) Department of Geology Anna University, Chennai 600 025	National Coordinator, IESO	

INDIAN DELEGATION TO THE 13th INTERNATIONAL JUNIOR SCIENCE OLYMPIAD 2016

The following team represented India at the 13th International Junior Science Olympiad held at Bali, Indonesia during December 2 – 11, 2016.

Students	Medals	
1. Nishant Abhangi D 101, Selenium Heritage, B/H Crystal Mall, Kalanad road, Rajkot 360005	Gold	
2. Archit Boobna D 68, Saket, First floor, New Delhi, 110017	Gold	
3. Gaurang Dev BB-17, IFFCO, Township, Phulpur, Allahabad, UP 212404	Gold	
4. Goli Aananda Vardhan 29, 1320 A, Kothepeta, Vinukonda, Guntur, AP 522647	Silver	
5. Ayushman Tripathy C-335, First floor, Sector C, Talwandi, Infront of ALLEN samanvaya Building, Kota, RJ 324005	Gold	
6. Rajdeep Singh Dhingra A-54, Priyadarshani Vihar, Delhi, 110092	Gold	
Leaders, Scientific Observer & Visitors		
1. Dr. Paresh Joshi HBCSE (TIFR)	Scientific Observer	

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2. Prof. Pradeep Kumar Burma
University of Delhi, Delhi

Leader



3. Dr. A. K. Rajarajan
B.A.R.C, Mumbai

Leader



4. Retd. Prof. Prabhu Damodar Vittal
Wilson College, Mumbai

Leader



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Infosys Foundation
Infosys Towers, No. 27, Bannerghatta Road,
3rd Phase, JP Nagar,
Bangalore – 560 076

Telephone: 91-80-2658 8668
Fax: 91-80-2658 8676
Email: snm@infy.com