

# SCIENCE MOVEMENT 2017

(An initiative of Subhadra Charitable Trust)

Dec 21<sup>st</sup> - Dec 25<sup>th</sup>

## Speakers

- ◆ Dr. Rajesh K Vatsa, BARC
- ◆ Dr. Sharmishta Dutta Chowdhury, BARC
- ◆ Prof. Ajit Mohan Srivastava, IOPb
- ◆ Prof. Gagan Mohanty, TIFR
- ◆ Prof. Avinash Deshpande, RRI
- ◆ Dr. Satyanarayana Bheesette, TIFR
- ◆ Dr. Joseph Amal Nathan, BARC
- ◆ Dr. Subhojit Sen, UM DAE CBS
- ◆ Dr. Deepak Modi, NIRRH
- ◆ Dr. Satish Devadas, ILS
- ◆ Dr. Sachin Deshmukh, IISc
- ◆ Dr. Tapan K Gandhi, IITDelhi
- ◆ Mr. Vijay Arolkar, TIFR
- ◆ Dr. Purav Badani, University of Mumbai

## Scientific Advisory Committee:

- ◆ Dr. Rajesh K Vatsa
- ◆ Prof. Ajit M Srivastava
- ◆ Dr. Subhojit Sen
- ◆ Prof. Gagan Mohanty
- ◆ Dr. Seema Bahinipati

## Organising Committee:

- ◆ Mr. Jyoti Ranjan Tripathy (Convenor)
- ◆ Mr. Basant Bhuyan
- ◆ Mr. Janmejy Mandal
- ◆ Mr. Samvit Mahapatra
- ◆ Mr. Bikash Ku. Rath

## Sponsored by:



**VENUE:**  
IIT-Bhubaneswar Auditorium,  
IIT Kharagpur Extension,  
Mouza Samanatapuri  
Bhubaneswar-751013



### Thursday, December 21, 2017

Time	Item/Topic	Speakers
8:00am - 9:30am	Registration, Breakfast and Briefing	
9:30am - 11:00am	"Light-Matter Interactions"	Dr. Rajesh K Vatsa (BARC)
11:00am - 1:00pm	"An Excursion in Number Theory Problem Solving"	Dr. Joseph A Nathan (BARC)
1:00pm - 2:00pm	Lunch Break	
2:00pm - 3:00pm	Panel Interaction	
3:00pm - 4:00pm	Inauguration	
4:00pm - 6:00pm	Demonstration "Experiments with Liquid Nitrogen"	Mr. Vijay Arolkar (TIFR)
6:00pm - 7:30pm	"Weighing Atoms and Molecules"	Dr. Rajesh K Vatsa (BARC)

### Friday, December 22, 2017

Time	Item/Topic	Speakers
9:00am - 11:00am	"Uplifting mankind through Science and Technology"	Dr. Tapan K Gandhi (IIT Delhi)
11:00am - 1:00pm	"Fascinating Life-stories of Pulsars" - The Cosmic Lighthouses	Prof. Avinash Deshpande (RRI Bangalore)
1:00pm - 2:00pm	Lunch Break	
2:00pm - 2:30pm	Sponsors Talk - OHPC	
2:30pm - 4:00pm	"Deciphering the Language of DNA" - The new science of Epigenetics	Dr. Subhojit Sen (UM DAE CEBS)
4:00pm - 5:30pm	"Space in the Brain" - A historical perspective	Dr. Sachin Deshmukh (IISc Bangalore)
5:30pm - 7:30pm	Panel Interaction	

### Saturday, December 23, 2017

Time	Item/Topic	Speakers
9:00am - 10:30am	"Light and Chemistry"	Dr. Sharmistha Dutta Choudhury (BARC)
11:00am - 1:00pm	"You Measure, therefore You Prove" - The exciting profession of building detectors	Dr. Satyanarayana Bheesette (TIFR)
1:00pm - 2:30pm	Lunch Break	
2:30pm - 4:00pm	"New Paradigms in Reproductive Biology"	Dr. Deepak Modi (NIRRH Mumbai)
4:00pm - 6:00pm	Demonstration	Dr. Sachin Deshmukh and Subhojit Sen
6:00pm - 7:30pm	Panel Interaction	
7:30pm - 8:00pm	Interaction	Mr. Ansuman Acharaya (IISER Mohali)

### Sunday, December 24, 2017

Time	Item/Topic	Speakers
9:00am - 11:00am	"What's the Matter ?"	Prof. Gagan Mohanty (TIFR)
11:30am - 1:00pm	"How are You and How You are Today?" - An immunological view.	Dr. Satish Devadas (ILS Bhubaneswar)
1:00pm - 2:00pm	Lunch Break	
2:00pm - 3:30pm	"Peeping inside Solids" - Structure vis-à-vis Property	Dr. Purav Badani (University of Mumbai)
3:30pm - 5:00pm	Panel Interaction	
5:00pm - 8:30pm	Evening Sky Observation	Prof. Ajit M Srivastava (IOP Bhubaneswar)

### Monday, December 25, 2017

Time	Item/Topic	Speakers
9:00am - 11:00am	"Learning Science, Doing Research, 3 Idiots Way"	Prof. Ajit M Srivastava (IOP Bhubaneswar)
11:00am - 1:00pm	"On the Many Uses of Uselessness"	Mr. Samvit Mahapatra (UM DAE CEBS)
1:00pm - 2:00pm	Lunch Break	

# SCIENCE WHY MOVEMENT ?

The Science Movement primarily seeks to re-conceptualize the perspectives behind studying and pursuing the basic sciences among school students, by initiating them into science from the standpoint of research and innovation.

Students today are usually taught the sciences, either as part of compulsory school coursework to satisfy preexisting curricula, or to clear examinations and earn merit whenever possible. In this compulsory setup few students dare to ask themselves questions such as " Why learn the sciences?", and an even fewer number set out to seek satisfactory answers. And most of the time, finding satisfactory answers to such questions without painstaking struggles is unfathomable. Often, to make way for the 'mandatory objectives' students are directly/indirectly discouraged to ask open questions without restraint.

This approach does not quench 2017 India's crunching need for innovators and researchers, adept at pushing the frontiers of knowledge and functioning at the helm of the fundamental & applied sciences, technology & innovation. Furthermore the gaping disparity between the nation's educators and researchers/innovators does not resolve the crisis. To push forward it's civilization, 2016 India doesn't need tons of students constituting a meritorious, 'know-it-all' workforce, instead India needs individuals who can sustain straying into unknown territories of knowledge by asking open questions, spending most of their time in confusion amidst towering obstacles and poor definitions, and enduring lots of struggle and frustration in the process. In essentially 2017 India needs more 'real' world problem solvers.

Research and innovation involve an eternal process of learning new knowledge, and more importantly banishing naive, old ideas. Asking questions is important, open questions place us at the edge of human knowledge, and facilitate breakthroughs. Science is non-intuitively dynamic and ever-changing. The 'familiar' science of today is a light matter, but the revolutions and evolutions that science will experience in a hundred years will far exceed the most daring anticipations ever made. The meandering, turbulent and chaotic course undertaken in charting the sciences is very different from the straightforward picture commonly depicted to students at school.

The Science Movement seeks to invigorate interested students into pursuing the scientific and innovative temperament with a more pragmatic understanding of the sciences, facilitate more effectual science education in the process, and contribute to nurturing tomorrow's world leaders in science and innovation.



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