

A short academic program

# **Quantum Optics & Quantum Technology**

5-8 June 2017

Jointly organized by the

Department of Materials Science & Raman Centre for Atomic and Molecular Sciences (RCAMOS),

**Indian Association for the Cultivation of Science,**

**Jadavpur, Kolkata**

## **Program schedule**

### **Day -I (5th June 2017)**

9:30-10:00 am : Registration

10:00-10:20 am : Inauguration

#### **Session-I**

**Venue:** C V Raman Hall, IACS

**Chair:** Gour Prasad Das, IACS

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
10:20-11:45	<b>Bimalendu Deb, IACS</b>	EPR Paradox & Bell Theorem
11:45-12:00	<b>Tea Break</b>	

#### **Session-II**

**Chair:** Gour Prasad Das, IACS

12:00-13:25	<b>Bhupendra Nath Dev, IACS</b>	Solid-State Quantum Structures in Quantum Information Processing and Quantum Technology
13:25-15:30	<b>Break</b>	

#### **Session-III**

**Venue:** S N Bose Hall, IACS

**Chair:** Bimalendu Deb, IACS

15:30-16:55	<b>Manas Mukherjee</b> CQT, NUS, Singapore	Quantum Control of a few atom, photons and phonons
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## Day-II(6th June 2017)

Venue: S N Bose Hall, IACS

### Session-I

Chair: Manas Mukherjee, CQT, NUS, Singapore

Time	Speaker	Title
10:20-11:45	<b>Debasish sarkar</b> University of Calcutta	Quantum Correlation-Entanglement and beyond Entanglement

11:45-12:00 **Tea Break**

### Session-II

Chair: Krishnendu Sengupta, IACS

12:00-13:25	<b>Arnab Das, IACS</b>	Quantum Computation and it's analog Version: A basic primer
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13:25-15:30 **Break**

### Session-III

Chair: Dhruva Banerjee, JU

15:30-16:55	<b>Goutam Paul, ISI-Kolkata</b>	Quantum Key Distribution and its cryptanalysis
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## Day-III (7th June 2016)

Venue: S N Bose Hall, IACS

### Session-I

Chair: Krishna Rai Dastidar, IACS

Time	Speaker	Title
10:20-11:45	<b>Manas Mukherjee</b> CQT, NUS, Singapore	Quantum Control of a few atom, photons and phonons

11:45-12:00 **Tea Break**

### Session-II

Chair: Bimalendu Deb, IACS

12:00-13:25	<b>Subhadeep De, NPL</b>	Precise "time keeping" using atoms and lasers
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13:25-15:30 **Break**

### Session-III

Chair: Manas Mukherjee, CQT, NUS, Singapore

15:30-16:55	<b>Saikat Ghosh, IIT-Kanpur</b>	Cavity QED / Cavity optomechanics
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## Day-IV(8th June 2016)

### Discussion Meeting

Venue: S N Bose Hall, IACS

10:00-10:10: Welcome address by Bimalendu Deb, Chairperson, RCAMOS

10:10-10:20: Brief remarks by Debashis Mukherjee.

#### Session-I

##### Solid-state quantum structures and spintronics

Chair: Gour Prasad Das, IACS

Time	Speaker	Title
10:20-10:35	Bhupendra Nath Dev, IACS	Solid-State Quantum Structures
10:35-10:50	Shyamal Kumar Bhadra, IACS	TBA
10:50-11:05	Subhadeep Dutta, IACS	Mesoscopic quantum dot physics and nanomagnetism
11:05-11:20	Somobrata Acharya, IACS	Nanomaterials Based Device Applications
11:20-11:35	Nirmalya Ghosh, IISER-Kolkata	TBA
11:35-11:50	<b>Tea Break</b>	

#### Session-II

##### AMO Theory

Chair: Krishna Rai Dastidar, IACS

11:50-12:05	Prasanta Panigrahi, IISER-Kolkata	Cat and Kitten states : Their use in quantum metrology
12:05-12:20	Krishnendu Sengupta, IACS	Entanglement generation and dynamical transition in a periodically driven integrable closed quantum system.
12:20-12:35	Sonjoy Majumdar, IIT KGP	Interaction of trapped Rydberg atoms with optical vortex
12:35-12:50	Pradip Mandal, ESSB College	Exchange of angular momentum in interaction of optical vortex beams with molecules
12:50-13:55	<b>Lunch Break</b>	

#### Session-III

##### AMO Based Quantum Systems (experiment )

Chair: Krishna Rai Dastidar, IACS

14:00-14:15	Subhadeep De, NPL	Atomic Clock
14:15-14:30	Biswajit Ray, CU	TBA
14:30-14:45	Sankar De, SINP	TBA
14:45-15:00	Dipankar Bhattacharya, Santipur College	Observation of EIT and EIA signal in Rb-D2 transition
15:00-15:20	<b>Tea Break</b>	

#### Session-IV

##### Discussion: Developing Quantum Technology

Chair: TBA

15:20-16:50 Discussion (Chiranjib Mitra, Manas Mukherjee, Bimalendu Deb, Saikat Ghosh, Chanchal Choudhuri, Surajit Sen and many others)