



Lecture Workshop on Quantum Information and Computation

Organized by

St. Philomena's College (Autonomous), Mysore-Bangalore Road
Bannimantap, Mysuru 570 015
18-20 August, 2018

Sponsored by

Indian Academy of Sciences, Bengaluru
Indian National Science Academy, New Delhi
The National Academy of Sciences, India, Ahmedabad

A lecture workshop on Quantum Information and Computation will be held at St. Philomena's College (Autonomous), Mysuru 570 015 during 18-20 August 2018. A brief outline of the course is as follows:

There will be four modules:

1. Basic Quantum Mechanics
2. Non-locality and Entanglement
3. Quantum Circuits and Algorithms
4. Quantum Error Correction and Cryptography

Resource persons:

1. Prof. R. Srikanth, Department of Theoretical Sciences, PPISR, Bengaluru
2. Prof. C. M. Chandrashekar, Fellow, Department of Theoretical Physics, IMSc, Chennai
3. Prof. Anil Kumar, NASI- Honorary Scientist, Department of Physics, IISc, Bengaluru
4. Prof. A. R. Usha Devi, Department of Physics, Bangalore University, Bengaluru
5. Prof. K. S. Mallesh, Department of Studies in Physics, University of Mysore, Mysuru

Convener: Prof. M. V. N. Murthy, Emeritus Scientist, IMSc, Chennai

Coordinator: Prof. D. Revannasiddaiah, Department of Physics, St. Philomena's College, Mysuru

Email-id: revannasiddaiah.d@gmail.com, Ph. No. : 9886576762

This workshop is open to M.Sc. students (and highly motivated B.Sc. Students), Research Scholars, University and College teachers. Interested may register with Prof. D. Revannasiddaiah, Co-ordinator of the Workshop.

There will be no Registration Fee.

Necessary instructions have been provided in the enclosed enrolment form. Our College web page <http://www.stphilos.ac.in/> too has a copy of this form.

Last date for receipt of applications: 10-08-2018

Prof. D. Revannasiddaiah
Co-ordinator



**St Philomena's College(Autonomous)
Department of Physics**

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(+91) 821 4240 900
Bannimantap, Mysuru
570015, Karnataka, India

Enrolment form

Lecture workshop on Quantum Information and Computation

18–20 August, 2018

Candidate

Full name: _____

Designation: _____

E-mail address: _____

Mobile number: _____

Affiliation

Institution: _____

Address: _____

Applicant's signature

Name and Signature of the
Head of the Institution/Department

Instructions for participation;

1. Last date for applying is 10-08-2018.
2. Scan, fill and e-mail this form to pgphysics.philos@gmail.com or revannasiddaiah.d@gmail.com .
3. Alternatively, you may mail it to the following address:

The Head, PG Department of Physics, St Philomena's College, Bannimantap, Mysuru -570 015



Lecture workshop on Quantum Information and Computation

Schedule of lectures

Overview

09:30	11:00	11:30	13:00	14:00	15:30	16:00	17:30
L1	Tea break	L2	Lunch	L3	Tea break	T	SL

Lecture workshop inauguration: 9:00 – 9:30 AM, 18-08-2018

Lectures

18 Aug 2018	L1	States, Observables, Dynamics and Measurements	KSM
	L2	Qubit: Pauli Matrices and Bloch Sphere Representation	KSM
	L3	Einstein-Podolsky-Rosen Paradox, Non-Locality	ARU
	T	Tutorials and Additional topics	KSM
19 Aug 2018	L1	Quantum Gates, Circuits and Oracle Algorithms	RS
	L2	Entanglement, Teleportation and Superdense Coding	ARU
	L3	Quantum Algorithms	RS
	T	Tutorials and Additional topics	ARU
	SL	Special Lecture : Experimental Implementation of Quantum Algorithms	AK
20 Aug 2018	L1	Quantum Search Algorithms	CMC
	L2	Quantum Key distribution and Error Correction	RS
	L3	Quantum Simulation	CMC
	Concluding session: 16:00		

Speakers

- KSM** Prof. K. S. Mallesh, Department of Studies in Physics, University of Mysore, Mysuru
- ARU** Prof. A. R. Usha Devi, Department of Physics, Bangalore University, Jnanabharathi, Bengaluru
- RS** Prof. R. Srikanth, Department of Theoretical Sciences, Poornaprajna Institute of Scientific Research, Bengaluru
- AK** Prof. Anil Kumar, NASI- Honorary Scientist, Department of Physics, Indian Institute of Science, Bengaluru
- CMC** Prof. C. M. Chandrashekar, Fellow, Department of Theoretical Physics, The Institute of Mathematical Sciences, Chennai