INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A & 2B, Raja S.C. Mullick Road, Jadavpur, Kolkata-700032, India

Seminar Notice

Org. by

School of Physical Sciences

Title:	**Trapped ions for multi-valued quantum information**
Speaker:	**Crystal Senko,Institute for Quantum Computing, University of Waterloo, Canada**
Date:	**August 5, 2019 (Monday)**
Time:	**15:30**
Venue:	**C.V.Raman Hall, 2nd Floor, Main Building, IACS**
Abstract:	I give an overview of trapped ion quantum information experiments and discuss prospects for implementing multi-valued quantum logic using trapped ions. Qudits (the multi-state generalization of qubits) are attractive for quantum computing because they enable a much larger Hilbert space for the same number of trapped ions, which may allow us to improve the information capacity of a quantum processor. I describe possible advantages and disadvantages of using qudits in place of qubits, and lay out some of the protocols that my lab will test for implementing measurements, single-qudit operations, and two-qudit operations in a trapped ion system.

All are cordially invited to attend the seminar