



**Prof. Seth Lloyd**  
Massachusetts Institute of  
Technology (MIT), USA.



**Date & Time:**

19<sup>th</sup> June, 2025 @ 3:00 PM IST



**Venue:**

Classroom-4, TCG CREST

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## **Title – Natural Intelligence: The information processing power of life**

### **Abstract**

Quantum computers work by processing the information stored on microscopic degrees of freedom – electron spins, photons, atoms. This talk applies the physics of computation to analyze the amount of information processing that takes place in living cells. Whenever a photon is absorbed by a leaf, DNA is copied, RNA is expressed, a protein folds, and elementary logical operation takes place. I calculate the number of bio-ops performed by living systems: the cells in your body are performing on the order of  $10^{21}$  logical operations per second: one zeta flop – equal to the number of logical operations performed by all the electronic computers in the world.

**Organized by:**

*CQuERE (Centre for Quantum Engineering, Research and Education), TCG CREST, Kolkata, INDIA*

For more details, please visit the website: <http://www.tcgcrest.org/iyq2025>

For any queries, feel free to contact us through the email: [iyq.2025@tcgcrest.org](mailto:iyq.2025@tcgcrest.org)