



# KAAPI WITH KURIOSITY

## Quantum Mechanics: The Wild World of Atoms

With the discovery of quantum mechanics in the 1920's, scientists obtained a quantitative and precise description of all known microscopic phenomena from nuclear matter to molecules and solids. The formulas of quantum mechanics deal with waves instead of particles, and they make strange and paradoxical predictions. Today, leading scientists agree on the validity of the quantum formalism, but among themselves, they disagree strongly on the meaning of the quantum theory. In this talk, I will review the basic elements of quantum theory, how it works and how it still mystifies and inspires scientists in the 21st century. What seems strange and incomprehensible may also be useful. Scientists and engineers today try to employ the weirdest quantum features and paradoxes of the theory for practical applications in the wiring of quantum computers, quantum communication networks and quantum precision sensors.



### Klaus Mølmer

Klaus Mølmer (born 1963) is a professor at the Niels Bohr Institute in Copenhagen, Denmark. His research in theoretical physics has been published internationally in nearly 400 scientific articles. He has made theoretical methods to describe measurements and decay processes in quantum systems and proposals for quantum computing, which have guided experiments in many laboratories worldwide. Klaus Mølmer is also involved in outreach and cultural projects, including public lectures and courses in schools and movie theatres, and collaborations with composers and choreographers to make concerts and ballet performances that are inspired by quantum physical phenomena.

**4 PM, SATURDAY, JANUARY 25**  
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Contact: [outreach@icts.res.in](mailto:outreach@icts.res.in)

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