

Guest Lecture Title:

Physics Today

Guest Lecture

Dr. R. Shankar

Assistant Professor,
Department of Physics
Bharathiar University, Coimbatore

DEC

28

2020

Time: 02.00 PM - 3.00 PM

Convener

Dr. E. Sivasenthil

Associate Professor & Head,
Karpagam Academy of Higher Education

Organizing Secretary,

Dr. B. Janarthanan

Associate Professor,
Department of Physics,
Karpagam Academy of Higher Education



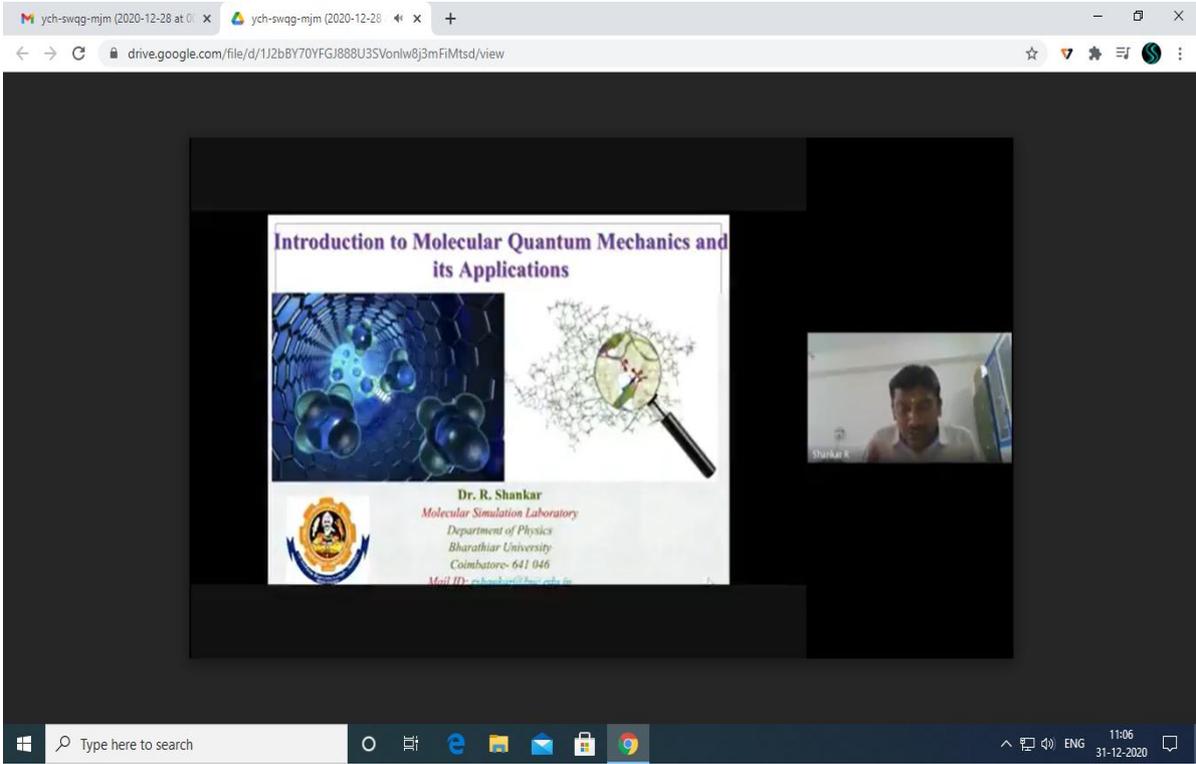
Google meet Link: <https://meet.google.com/ort-hrmk-otm>

KARPAGAM ACADEMY OF HIGHER EDUCATION, COIMBATORE

DEPARTMENT OF PHYSICS

Report on Guest Lecture

Department of Physics organized **Guest Lecture** on **28th December 2020 at 2.00 PM - 03.00 PM** by conducting guest lecture on **“Physics Today”**. Dr.R.Shankar, Assistant Professor from Department of Physics, Bharathiar University, Coimbatore is the Chief Guest of the session. More than **50 students and 10 Faculty members** attend the session through Google meet. **Dr.E.Sivasenthil**, Head of the Department, Department of Physics, KAHE introduce the chief guest and address the gathering. The Chief Guest explained about the importance of physics (science) used in daily life. Finally, the session came to an end with vote of thanks given by the organizing secretary **Dr. B.Janarthanan**.



The screenshot shows a Google Meet window. The main content is a presentation slide titled "Introduction to Molecular Quantum Mechanics and its Applications". The slide features two images: a blue molecular structure on the left and a magnifying glass over a molecular structure on the right. Below the images, the text reads: "Dr. R. Shankar", "Molecular Simulation Laboratory", "Department of Physics", "Bharathiar University", "Coimbatore- 641 046", and "Mail ID: rshankar@bharathiar.ac.in". To the right of the slide is a small video feed of Dr. R. Shankar. The browser address bar shows "drive.google.com/file/d/112bBY70YFGJ888U3SVonlw8j3mFIMtsd/view". The Windows taskbar at the bottom shows the search bar, task view, and system tray with the time 11:06 and date 31-12-2020.

Hamiltonian for a Molecule

$$\hat{H} = \sum_i^{\text{electrons}} \frac{-\hbar^2}{2m_e} \nabla_i^2 + \sum_A^{\text{nuclei}} \frac{-\hbar^2}{2m_A} \nabla_A^2 + \sum_i^{\text{electrons}} \sum_A^{\text{nuclei}} \frac{-e^2 Z_A}{r_{iA}} + \sum_{i>j}^{\text{electrons}} \frac{e^2}{r_{ij}} + \sum_{A>B}^{\text{nuclei}} \frac{e^2 Z_A Z_B}{R_{AB}}$$

- i. Kinetic energy of the electrons*
- ii. Kinetic energy of the nuclei*
- iii. Electrostatic interaction between the electrons and the nuclei*
- iv. Electrostatic interaction between the electrons*
- v. Electrostatic interaction between the nuclei*

