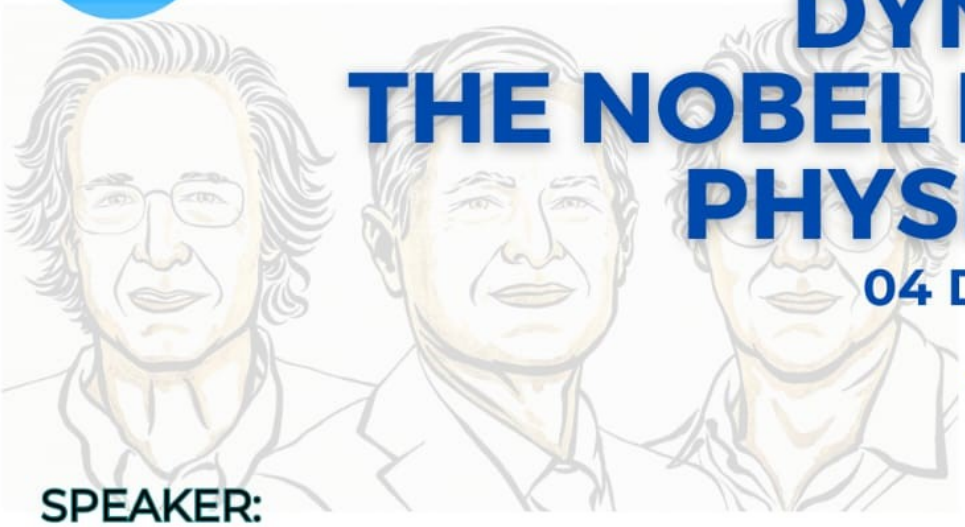
SASTRA FOUNDATIONS

Inauguration of Nobel Lecture Series
and the first lecture on Physics
Nobel prize-2023

STIM

ATTOSECOND DYNAMICS: THE NOBEL PRIZE IN PHYSICS 2023



04 DECEMBER 2023

AT 2:30 PM
VIA GOOGLE MEET
(ONLINE)

SPEAKER:

PROF. P. C. DESHMUKH

PROFESSOR, IIT TIRUPATI

Registration link:
(for institute)

Registration link:
(for individual)

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Attosecond Dynamics : The Nobel Prize in Physics 2023

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Movement of an electron wave-packet in atoms and molecules takes place in a very short time, of the order of an attosecond (10^{-18} sec). This is a very tiny interval; there are as many attoseconds in one second as there are seconds in the life of our universe since the Big Bang. Investigating physical processes on the *natural* atomic time scales requires high precision and innovative experimental techniques and also advanced theoretical methods. We will visit some exciting aspects of attosecond dynamics to celebrate the 2023 Nobel Prize in Physics awarded to Pierre Agostini, Ferenc Krausz and Anne L'Huillier, who "demonstrated a way to create extremely short pulses of light that can be used to measure the rapid processes in which electrons move or change energy". We shall also discuss a few interesting applications of attosecond light pulses

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P. C. Deshmukh is Convener and Mentor of the Center for Atomic, Molecular, and Optical Sciences and Technologies (CAMOST), which is a joint initiative of the IIT Tirupati and the IISER Tirupati. He is concurrently an Adjunct Professor of Physics at the IIT Tirupati. His new book *Quantum Mechanics – Formulation, Methodologies, and Applications* is expected to be very well received, just as his previous book *Foundations of Classical Mechanics* was. Both of these books are published by the Cambridge University Press. About two hundred of his video-lectures, covering four full-fledged courses, are available on the internet. These have been published by the NPTEL and SWAYAMPRABHA. He has taught undergraduate and graduate courses, and guided graduate research, at the IIT-Madras for over three decades, and also at the IIT Mandi, Georgia State University Atlanta, University of Western Ontario at London, Canada, and at the IIT Tirupati and the IISER Tirupati. He has mentored a significant number of undergraduate students, Ph.D. students, Post-Doctoral Research Fellows, and also young colleagues. His research group is one of the leading contributors to relativistic many-body studies of attosecond dynamics in atomic photoionization processes.
