IIT DELHI STUDENT CHAPTERS OF OSA & SPIE

Webinar 10.0 with

DR. HANIEH FATTAHI

Head of Femtosecond Fieldoscopy Group
Max Planck Institute for the Science of Light
Erlangen, Germany

On the topic

LASER SPECTROSCOPY AT EXTREME LIMITS

To capture four dimensional movies of electron dynamics in matter, attosecond resolution in time domain and picometer resolution in space are required. This calls for availability of attosecond pulses with kilo-electronvolt pulse energies, which is beyond the state of the art. This talk is devoted to modern methods for generating ultrashort pulses to overcome this barrier. Coherent synthesis of few-cycle pulses at different carrier frequencies allows for engineering the electric field of light with an arbitrary shape and generating sub-cycle pulses (light transients). Such pulses hold promise to generate attosecond pulses at higher photon energies, paving way towards capturing four dimensional movie of electron-dynamic in matter. I discuss this exotic concept and demonstrate the first prototype high-energy field synthesiser based on Yb:YAG, thin-disk laser technology.

26TH NOV'20

6:30 PM IST

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