



UNIVERSITÀ  
DI PAVIA

Ph.D. Program in Electronics, Computer Science and Electrical Engineering

## SEMINAR

### Time-Resolved Magneto-Optical Kerr Spectroscopy for determination of spin wave mode frequencies of magnonic materials

**Prasanta K. Datta**  
*IIT Kharagpur, India*

Monday, 03 July 2023, h. 11 a.m.

Blue Seminar Room (E Floor)

**Abstract** - The time-resolved magneto-optical Kerr effect (TRMOKE) technique is capable of probing both thermos-physical and magnetic properties of a variety of materials, and it offers superb spatial (micrometer) and temporal (sub-picosecond) resolutions. In this talk, the powerfulness of the method will be presented by measuring collective spin wave frequencies in differently patterned permalloy magnetic films. The aim of this research is to obtain a pattern which can sustain spin wave mode in tens of GHz frequencies for possible application in communication.

**Bio** - P. K. Datta joined Indian Institute of Technology Kharagpur in 2000 and is currently Professor and Head of the Department of Physics there. He has developed Ultrafast Science Laboratory with funding from several Govt. agencies. He did his postdoctoral work in the Department of Electronics of the University of Pavia during 1996-98 on cascaded second order optical nonlinearity and used it in a laser cavity for generation of mode-locked picoseconds laser pulses. Currently he is working on transient absorption spectroscopy, THz spectroscopy, time-resolved magneto-optical effect and ultrafast optical nonlinearity. He has supervised 15 PhD students and has published 140 papers in internationally referred journals.

#### Organizer

Prof. Ilaria Cristiani

Prof. Antonio Agnesi

#### Ph.D. Coordinators

Prof. Ilaria Cristiani