

Optical Engineering & Applications



19 Dec 2011 - 6 Jan 2012

Organized by



Department of Applied Optics & Photonics
University of Calcutta

Sponsored by

Science & Engineering Research Council (SERC)
Department of Science & Technology (DST)
Government of India

Tentative List of Speakers

Dr. P. T. Ajithkumar, Light Logics, Trivandrum
Dr. S. K. Bhadra, CGCRI, Kolkata
Dr. K. Bhattacharya, University of Calcutta
Dr. Kankan Bhattacharya, IACS, Kolkata
Dr. I. Bhattacharya, Eye Surgeon
Prof. A. K. Chakraborty, University of Calcutta
Dr. R. Chakraborty, University of Calcutta
Prof. Chandrasakher, IIT Delhi
Dr. A. De, NITTR, Kolkata
Prof. A. Ghosh, University of Calcutta
Dr. A. Gupta, NRS Medical College, Kolkata
Dr. A. K. Gupta, IRDE, Dehradun
Dr. P. D. Gupta, RRCAT, Indore
Dr. P. K. Gupta, RRCAT, Indore
Prof. P. N. Ghosh, Jadavpur University
Prof. L. N. Hazra, University of Calcutta
Dr. R. Hazra, Cardiac Surgeon
Dr. J. Joseph, IIT Delhi
Dr. S. V. Joshi, ARCI, Hyderabad
Prof. M. P. Kothiyal, IIT Madras
Dr. A. K. Maini, LASTECH, New Delhi
Dr. I. Manna, CGCRI, Kolkata
Dr. N. K. Mohan, IIT Madras
Dr. A. K. Nath, IIT Kharagpur
Prof. B. P. Pal, IIT Delhi
Dr. A. Pradhan, IIT Kanpur
Dr. Sendhil Raj, RRCAT, Indore
Prof. D. N. Rao, University of Hyderabad
Prof. G. Ravindrakumar, TIFR, Mumbai
Dr. M. Ray, University of Calcutta
Dr. A. Razdan, LASTECH, New Delhi
Dr. P. Roychaudhuri, IIT Kharagpur
Prof. S. K. Sarkar, University of Calcutta
Prof. R. K. Thareja, IIT Kanpur

Course Contents

Laser Basics

Elements of Laser Physics; Operational characteristics of 3 & 4 level lasers; Laser cavity modes; Q- switching; Optical resonators; Mode locking; Characteristics of Laser Beams; Laser systems overview.

Optical Engineering Basics

Sources of light; Radiation detectors; Optical instrumentation; Beam shaping; Ray optics & Aberrations; Elements of Fourier Optics; Optical Micromanipulation; Optical Imaging; Laser optics.

Laser Applications

Holography; Holographic Interferometry; Embossed Holograms; Speckle Interferometry; Optical Image Processing; Lasers in Optical Metrology; Lasers in communication; Laser material processing; Nonlinear Optics; Lasers in environment; Ring laser gyro; Lasers in strategic applications; Ultrafast lasers; Lasers in Biophotonics; Lasers in medicine and surgery.

The course would consist of Lectures, Laboratory Sessions, Tutorials and Educational Trips. Keeping in view the wide application potential of the subject, participation from a broad cross section of young researchers, university and college faculty, and scientists and technologists from R&D institutions is welcome. The course is structured to familiarize the participants to basic considerations for use of lasers in optical engineering for broad range of applications in diverse areas of science & technology.

All participants will be provided support towards travel (AC III Tier return train fare from place of work), and local hospitality, including boarding during 18.12.11 - 6.1.12 for attending the course.

Interested participants should apply through proper channel along with a resume and a brief statement of purpose.

Applications should be addressed to :

Dr. Lakshminarayan Hazra

Director, DST-SERC School, 2011

Department of Applied Optics & Photonics, University of Calcutta
92 Acharya Prafulla Chandra Road, Kolkata - 700009

APPLICATION DEADLINE : 15 October 2011

Please send advance intimation of participation to:

lasersercschool2011@gmail.com

Another SERC School on "Laser Physics & Technology" is likely to be held at

RRCAT, Indore in March 2012