Global Initiative for Academic Networks (GIAN) Course

October 1 - 11, 2018 at IISER Mohali, Punjab, India

Structured Light-Matter Interaction & its Applications

Objective

Nowadays, light is at the heart of our modern technologies to observe, understand and manipulate Nature, while our information network strongly relies on optical communication links. Light is much more than a way to enlighten a scene or providing some energy around. Indeed, many technological developments have and continue to be made by exploiting the linear and angular momenta of optical fields. It is known since more than one century that light may carry spin angular momentum associated with its polarization degree of freedom, another source of angular momentum emerged and bloomed during the last two decades. Indeed, light fields can also carry orbital angular momentum associated with the spatial degrees of freedom. More specifically, light beams carrying phase singularity possess a nonzero azimuthal energy flow and are known as optical vortices. Such vortex beams carry nonzero orbital angular momentum and promise many applications, which include micromanipulation, microscopy, quantum information, or astronomical imaging. Optical vortices have already started to revolutionize our way to tame light from atomic to macroscopic scales. Interestingly, the polarization and the spatial structure of a light beam may dependent one from each other, which refers to optical spin-orbit interaction. Though being a subtle effect, spin-orbit interaction of light occurs in scattering, diffraction, focusing and propagation of electromagnetic waves and its study has become an intense research field in optics and photonics in the recent years, and fundamental phenomena have already become commercial applications. The proposed set of lectures and tutorials aim at covering recent developments in the field of structured light-matter interaction with a focus on a particular kind of prime choice optical materials, liquid crystals.

Faculty

Prof. Etienne Brasselet
University of Bordeaux, France

Dr. Kamal P. Singh
IISER Mohali, India

Who should attend

- Students in the final year of their Integrated BS-MS, B. Tech, M.Sc/M. Tech or equivalents.
- PhD students and Post doctoral scholars.
- Young faculties and researchers from academic institutions, technical institutions and companies.

How to apply

Interested candidates are requested to apply by sending a copy of their CV and a SOP (not more than 500 words) for attending the course to the contact address given below.

Registration Fees**

• Foreign Participation	USD 100
• Faculty, Industry/Research Organizations	INR 3000
• Postdocs and PhD	INR 2000
• UG/PG students	INR 1500

Application Deadline

September 1, 2018

(selected candidates will be intimated for registration)

Local/Course Coordinator

Dr. Kamal P. Singh, IISER Mohali.
Contact: fslgianiiser@gmail.com

*** The above fees includes all instructional materials. Participants may be provided with budget accommodation on payment basis in IISER guest house upon advance request.*