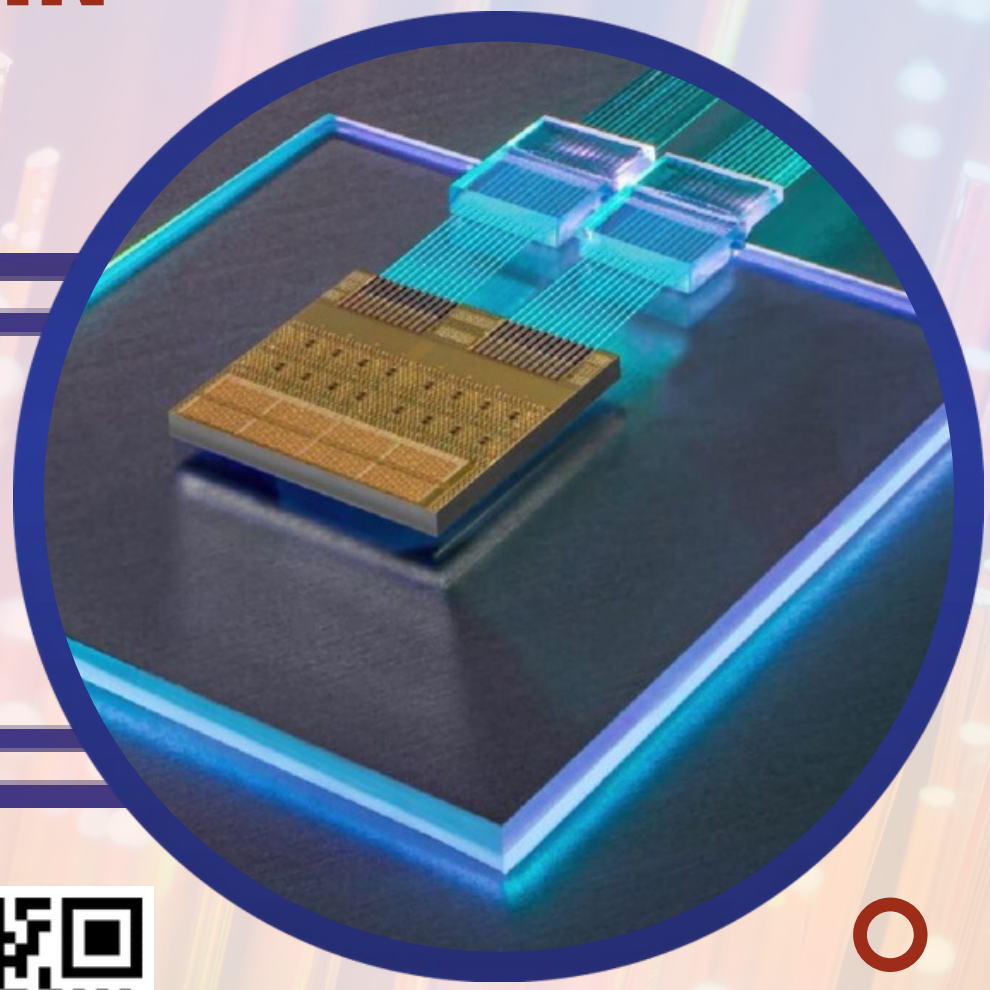
PUNJAB ENGINEERING COLLEGE, CHANDIGARH

&

NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH, CHANDIGARH

organizing a **Short Term Course on**

RECENT ADVANCES IN ON-CHIP OPTICS



27-31 MAY, 2024

PEC, CHANDIGARH

MODE : CONTACT

REGISTRATION & CERTIFICATION FEES **RS.118**

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About PEC

Punjab Engineering College is one of the oldest and most prestigious institutions for research & technical in Chandigarh. It was founded in 1921 in Lahore, established in Chandigarh in 1953, and focuses on the field of applied sciences, particularly engineering & technology. The institute collaborates very closely with research organisations, industries, alumni and other academic institutions both India and abroad.

About NITTTR

In realization of the need for training better quality technicians to meet the large scale industrialization of the country, the ministry of Human Resource Development (the then Ministry of Education), Government of India established four Regional Technical Teachers' Training Institutes (now National Institute of Technical Teachers Training & Research, NITTTR at Bhopal, Chandigarh, Chennai and Kolkata in 1967. The Institute at Chandigarh is one of these four NITTTRs, started in collaboration with Royal Netherlands Government (upto 1974).

Objectives

On-chip optics is a technology which aims at constructing so-called integrated optical devices or photonic integrated circuits or planar lightwave circuits, containing several or many optical components which are combined to perform a wide variety of optical functions. Recent developments in nanostructures, metamaterials, and silicon technologies have expanded the range of possible functionalities of optical devices on highly integrated chips. Photonic integrated circuits have the ability to perform all the operations with light as the quintessential factor. Photonics has high potential of development, but it needs a thorough scientific research to perform light manipulation for all operations. Because of its limitless potential, Photonics find its application in on chip communication, healthcare diagnostics, processing industry, mobility, safety and security, and agro-food etc.

With focus on advancements in on-chip photonics, this short term course (STC) will serve as a guide for academic researchers and faculty on latest aspects of light-matter interactions on-a-chip. Covering the progress from theory to technical descriptions, the course plans to cover the advancements in a wide range of topics, including Silicon Photonic, Nonlinear Optics, optoelectronic materials and devices, Plasmonics, Bio-Nano photonics etc. The course will give an insight into advancements happening in the field of integrated photonic devices in order to meet the needs of relevant industry, space, defense and research organization.

Major topics to be covered are:

- Silicon Photonic On-Chip circuit
- Nonlinear Optics & Optics System Design
- Semiconductor Photonics & Bio Nano photonics
- Numerical Simulations
- Quantum nanophotonics
- Photonic Crystals
- Bio-inspired photonic nanostructures
- Two-dimensional photonic monolayers
- Plasmonics
- Hands-on Experience on State-of-the-Art Photonics Design Softwares by Synopsys & Ansys etc.

List of Resource Persons

- Faculty from IISc, IITs, Institutes and Industry of National repute.
- Scientists/Engineers from DRDO/ ISRO /CSIR, labs etc.

Co-ordinators

Dr. Kanika Sharma(NITTTR)
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Co Co-ordinator

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