M.Tech.

QUANTUM MATERIALS AND TECHNOLOGY

A new Inter-Departmental and Inter-Institutional course by

Physics Department, Punjab Engineering College (Deemed to be University), Chandigarh

Faculty Members from following Premier Institutes will be involved

INST Mohali, IIT Roorkee, IACS Kolkata, IISc Bangalore, IISER Mohali, IIT Delhi, IIT Kanpur, IIT Ropar, NPL Delhi

UNIQUE FEATURES

- Aligned curriculum with current and future needs of the nation, preparing graduates for successful careers in both academia and the private sector.
- Hands-on training on high-end instruments, and technologies operational at PEC, IIT Roorkee, and several National facilities in the Northern region.
- Joint interaction & dissertation with leading academic experts in various National Institutes of international standing.
- Internships/Projects with relevance to upcoming quantum industry.

WHAT STUDENTS WILL LEARN ?

About PEC Chandigarh

Punjab Engineering College (abbreviated PEC or PEC Chandigarh) is a public research & technical institution in Chandigarh. It was founded in 1921 in Lahore, established in Chandigarh in 1953. The academic and administrative processes are similar to IITs in the country. With a history more than 100 Years, the institute has produced a number of alumni who have earned name and fame both for themselves and the institute.

About Physics Department

The Department offers core and specialized courses in Physics to students. The faculty members of the Department work in emerging areas relevant to Ferroelectric materials, Thermoelectric materials, Functional nanomaterials for a better environment, healthcare devices, solar cells, composites, supercapacitors, and biosensing, to name a few. Numerous funding agencies have funded outcomes-based research activities. The outcomes have a significant societal and technological impact.

More information about the Department can be found at
https://pec.ac.in/physics

MOTIVATION

Quantum Materials is a cutting-edge field with ongoing research in both theoretical and experimental aspects. Consequently, the demand for skilled professionals in Quantum Technology is rapidly increasing as more organizations invest in quantum research and development. An M.Tech program is designed to provide students with the opportunity to engage in research projects, work with industry partners, or participate in collaborations with academic researchers. This hands-on experience can be valuable in advancing the state-of-the-art in quantum technologies.

OBJECTIVES

- *To equip students with specialized knowledge and skills related to Quantum Materials and their Applications.*
- *To train students with practical skills through hands-on laboratory work, experiments, and simulations related to Quantum Materials.*
- *The graduating students would have opportunities to enroll preferentially in Ph.D. Program with Principal Investigators from different Institutions participating in this Program.*

ELIGIBILITY

1.Candidates with the following educational qualifications are eligible to apply:

a.) M.Sc. in Physics/Chemistry/Applied Physics/Electronics/Nano-technology/Nano-electronics/Material Science

OR

b.) B. Tech/B.E.in Computer Science & Engg./ Computer Engg./ Computer Science/ Electronics and Communications Engg./Electrical Engg./Materials Engg. or any other relevant branch

2.Candidates must have a valid GATE score. The GATE exam subjects whose score is accepted are PH, CH, MS, ES, EE, EC, CS and other relevant areas.

The candidates will be selected based on GATE score and personal interview.

For any queries related to admission, please contact at headphysics@pec.edu.in

FOUNDING PILLARS FROM PREMIER INSTITUTES ASSOCIATED WITH THIS PROGRAMME

Theory for Quantum Materials

Prof. Tulika Maitra (IIT Roorkee)

Prof. Amit K. Agarwal (IIT Kanpur)

Prof. Chandan Bera (INST Mohali)

Prof. Sanjeev Kumar (IISER Mohali)

Prof. Ehsaan Ali (INST Mohali)

Single Crystals for Quantum Technology

Prof. Yogesh Singh (IISER Mohali)

Prof. Chandan Kumar (IISc Bangalore)

Thin Film Heterostructures for Emergent Quantum Devices

Prof. Suvankar Chakraverty (INST Mohali)

Prof. Ramesh Chandra (IIT Roorkee)

Prof. Kaushik Sen (IIT Delhi)

Prof. Devajyoti Mukherjee (IACS Kolkatta)

Prof. Anjana Dogra (NPL Delhi)

Prof. Vivek K. Malik (IIT Roorkee)

Devices for Quantum Computers, Communication and Sensing

Prof. Aveek Bid (IISc Bangalore)

Prof. Sujit Das (IISc Bangalore)

Prof. Debangsu Roy (IIT Ropar)

Prof. Chandan Kumar (IISc Bangalore)

Multi Institutional Consortium For Quantum MAT erials
MIC-QMAT
Dedicated To The Indian National Quantum Mission
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