

# 8<sup>th</sup> International Workshop on Tracking Detectors in High Energy Physics



**December 16-18, 2025**

**Experimental High Energy Physics, CoE Physics  
National Centre for Physics, Islamabad**

## Introduction

The Experimental High Energy Physics (EHEP) department at the National Centre for Physics (NCP), Islamabad, is organizing the International Workshop on Tracking Detector Technologies. The workshop is a dynamic platform aimed at fostering collaboration within the Pakistani scientific community, including students, researchers and professionals.

This workshop will explore the latest advancements in tracking detector systems, emphasizing their pivotal role in modern physics experiments. Participants will gain comprehensive insights into cutting-edge technologies such as silicon detectors, hybrid pixel detectors, tracks identification, next-generation sensors, sensors fabrication, and detector readout systems.

## Topics to be covered

- Innovative tracking architectures used in major experiments, including those at the LHC, CERN
- Advanced applications of silicon detectors in precision particle tracking
- Machine learning-based reconstruction algorithms for detecting invisible particles
- Emerging trends such as AI-enhanced real-time tracking and 4D tracking systems
- Broader applications of tracking technologies in medical imaging, space exploration, and security systems

During this event, there will be a dedicated half-day mini-workshop on machine learning in semiconductor detectors

## Participation

The graduate/undergraduate students, faculty members, scientists, engineers from universities and R&D organizations are encouraged to apply.

## Directors

Qaisar Ahsan (NCP, Pakistan)  
Muhammad Aftab Rafiq (NCP, Pakistan)  
Ashfaq Ahmad (NCP, Pakistan)

## Advisory Committee

Duccio Abbaneo (CERN, Switzerland)  
Andrea Venturi (INFN, Italy)  
Marko Dragicevic (HEPHY, Austria)  
Ulrich Heintz (Brown, USA)

## Tentative Speakers

Andreas Musgiller (DESY, Germany)  
Francesco Moscatelli (INFN, Italy)  
Qi Yan (IHEP, China)  
Viktor Veszpremi (Wigner RCP, Hungary)  
Sally Seidel (University of New Mexico, USA)  
Muhammad Aftab Rafiq (NCP, Pakistan)  
Ashfaq Ahmad (NCP, Pakistan)  
Imran Malik Awan (NCP, Pakistan)  
Stefan Maier (KIT, Germany)  
Saleh Muhammad (NCP, Pakistan)  
Waqar Ahmed (NCP, Pakistan)  
Muhammad Irfan Asghar (NCP, Pakistan)  
Imdad Ali (NCP, Pakistan)  
Bora Akgun (Bogazici Uni. Turkey)

## Local Organizers

Muhammad Kamran Saadat  
Zia-ud-Din Kasi  
Ali Ahmad  
Muhammad Tanzeel Murtaza  
Saleh Muhammad  
Imran Malik Awan  
Wajid Ali Khan  
Muhammad Irfan Asghar

## Registration Fee

Local Students: 1500 PKR  
Outstation Students: 3000 PKR  
Local Employees/Professionals: 3000 PKR  
Outstation Employees/Professionals: 4500 PKR

## APPLICATION DEADLINE

**November 30, 2025**

<https://www.ncp.edu.pk/iwtd-2025.php>

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