



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

PHD IN TECHNOLOGIES FOR FUNDAMENTAL RESEARCH IN PHYSICS AND ASTROPHYSICS

Curriculum: DETECTORS, LASERS AND OPTICS

- Photodetection: Scintillators and Silicon Photomultipliers
- High-energy particle physics detectors in Space
- New Technologies for Cherenkov telescopes
- HE-5: Front-end and readout electronic systems for High Energy Astroparticle Physics
- Cosmic radiation and radiation hardness assurance
- Rare event search with Noble Liquids
- Cryogenic sensors for Astroparticle Physics
- Low Energy Radiation Measurements (Lab course)
- High Energy Radiation Measurements (Lab course)
- Cabling and Shielding for low noise applications
- Gaseous Detectors for Experimental Particle Physics
- Advanced scientific programming in Matlab
- Semiconductor light sources for engineers



- Programmable System on Chip (SoC) for data acquisition and processing
- Vacuum Technologies
- Adaptive Optics for Astronomy
- Radio and Optical Interferometry
- Fundamentals of System Engineering and Project Management for large scientific projects
- Simulation of optical photon propagation for generic scintillator-based detectors
- Novel detectors for future experiments at collider
- Radiation Matter Interaction
- Physics with High Energy particle detectors: from photographic plates to the LHC experiments
- Solid State Detectors
- Methodologies and techniques for the analysis of experimental data
- Adaptive Optics for Astronomy II