



MASTER DEGREE

PHYSICS PHOTONICS NANOTECHNOLOGY PPN

PPN Master Degree Presentation

The PPN master at EIPHI graduate School addresses modern concepts and state-of-the-art techniques in photonics, optical communications, nanotechnology, laser technology, quantum technologies and spectroscopy. Special emphasis is given to femtosecond laser science, nonlinear fiber optics, nano-optics, quantum control and quantum information, molecular spectroscopy, nanoscale biophysics, nanosensors & nano-characterization.

Designed for R&D engineer positions in big international companies or smaller High-Tech industries, this degree can also be the springboard for a career as Researcher or Professor.

The PPN master is strongly supported by the ICB laboratory and the FEMTO-ST institute, two major BFC research institutions with high international recognition in the physical sciences and engineering.

PROGRAM (Dijon Campus)

Y E A R 1	Core Courses with Research Project 24 ECTS		Crossdisciplinary Courses 6 ECTS
	Core Courses with Research Project 18 ECTS	Soft Skills Courses 6 ECTS	Crossdisciplinary Courses 6 ECTS
Y E A R 2	Specialized Courses with Research Project 24 ECTS		Soft Skills Courses 6 ECTS
	Research Internship 30 ECTS		

Core Course List: 42 ECTS		Cross-disciplinary Course List: 12 ECTS	
NON-LINEAR OPTICS SOLID-STATE PHYSICS & SOFT MATTER LASER RESEARCH PROJECTS		NUMERICAL METHODS SIGNAL PROCESSING MICRO NANO FABRICATION AND CLEAN ROOM...	
MICROSCOPIES FIBER COMMUNICATIONS QUANTUM PHYSICS GUIDED OPTICS & OPTO- ELECTRONICS			
Specialized Course List: 24 ECTS		Soft Skills Course List: 12 ECTS	
NANO-OPTICS ULTRAFAST OPTICS QUANTUM TECHNOLOGIES ADVANCED RESEARCH PROJECTS		FOREIGN LANGUAGE DIGITAL SKILLS TRANSVERSAL SKILLS ENTREPRENEURIAL SKILLS...	
ADVANCED PHOTONICS ATOMIC & MOLECULAR DYNAMICS MICRO, NANO-TECHNOLOGIES & NANOFABRICATION			

RESEARCH

Photonics, Nanotechnology, Quantum Technologies

2 RESEARCH LABORATORIES



6 SCIENTIFIC DEPARTMENTS

Photonics : Submicron optics and nanosensors



Near-field optics & Nano-photonics
Femtosecond processes & intense lasers
Solitons, Lasers and Optical Communication

Quantum Interaction & Control



Molecular Spectroscopy
Molecular Spectroscopy
Collisional Processes
Quantum & Nonlinear Dynamics
Quantum Technologies
Quantum Control & Nonlinear Dynamics

Nano Sciences : Opto-electronics sensors, Nanodesign, and Characterization



Physics applied to Proteins
Nanoparticles & Nanostructures

Optics & Photonics



Nano-Optics
Nonlinear Optics
Quantum Information & Systems
Ultrafast nonlinear dynamics and materials
Photonic artificial intelligence and applications

Micro Nano Sciences & Systems



BioMicro Devices
Phononics
Micro Nano Materials and Surfaces
Micro-Opto-Electro Mechanical Systems

Time Frequency



Wave, Clocks & Metrological Systems
Micro-Acoustics Devices
Acoustics, Electronics & Piezoelectric

