









DOCTORAL PROGRAMME

IN

EFIS

INDUSTRIAL ENGINEERING

Director Prof. Lapo Governi

XLI cycle – academic year 2025/2026

TECHNOLOGICAL AREA				
ADMINISTRATIVE OFFICE	Department of Industrial Engineering Florence (DIEF)			
WEB	www.phdingind.unifi.it			
CURRICULA	 Energy and Innovative Industrial and Environmental Technologies Design and Development of Products, Processes and Materials Industrial Engineering and Reliability 			
POSITIONS AVAILABLE: 25 Positions with scholarship: 23 Positions without Scholarship: 2* * standard ranking only				
Gross Annual amount of the scholarship € 21,000.00 (gross value) The increase of the scholarship is funded by Department of Industrial Engineering				
RANKING LIST FOR STANDARD POSITIONS SCHOLARSHIPS AVAILABLE: 1	University of Florence			
	5 - University of Florence			
	13 - Department of Industrial Engineering			
	Thematics:			
RANKING LISTS FOR POSITIONS WITH SPECIFIC RESEARCH TOPICS SCHOLARSHIPS AVAILABLE: 22	 Multi-scale simulation of wind turbines. Development of Tools and Methods for Active Noise Control Development of nonlinear models and structural optimization strategies for innovative materials Development of robotic manipulation systems Energy scenarios and sector coupling with the integration of Hydrogen and Ammonia Use of innovative CO2 based working fluids in Closed Loop geothermal Systems for heat and power production: optimal integration with underground conditions and surface applications Multiphase and Multispecies Numerical Simulations 			

8.	Development of patient-specific surgical simulatorS Cofunded by Cassa di Risparmio di Firenze – "Progetto T3Ddy - 2025.0771" CONTRIBUTO_FCRF_T3DDY_0771_2025 – CUP B13C25001160007
9.	Aeroelastic design of innovative floating offshore wind turbines for the Mediterranean Sea Cofunded by HORIZON EUROPE - Cluster 5 - Climate, Energy and Mobility project "FLOATFARM" – CUP B13C23004640006
10.	Data-Driven Decision-Support Tools for Managing Uncertainty in Manufacturing and Supply Chain Systems
	Cofunded by project PRIN 2022 "SHOES" (DR 1401 del 18/09/2024) cod. No. 2022YRSHB2 – CUP B53C24007020006
11.	Experimental and Numerical Thermal Analysis of the Piston and Piston Rings in Hydrogen-Fueled Internal Combustion Engines Cofunded by project "TISMEN" Accordi per l'Innovazione - CUP B19J24001440005
12.	AI-Driven Solutions for Next-Generation Underwater Autonomous Systems Cofunded by MUR Call FIS - project "PRSTNT" cod. No. FIS -2023-03704 CUP B53C24009590001
13.	Developing solutions to enhance the Endurance of Next-Generation Underwater Robots Cofunded by MUR Bando Call FIS - project "PRSTNT" cod. No. FIS -2023-03704 CUP B53C24009590001
14.	Analysis, simulation and optimization of manufacturing processes Cofunded by project PRIN 2022 "DoTPOWER" (DR 1401 del 18/09/2024) cod. No. 2022SCH9W8 – CUP B53C24006980006
15.	Development of Molecular Films for Spintronic Devices Based on Chirality-Induced Spin Selectivity Cofunded by MUR Call FIS project "SPIRO-χ" - cod. No. FIS-2023-01975 CUP B53C24009570001
16.	Development and validation of turbulent combustion models for hydrogen combustion in gas turbines Cofunded by HORIZON EUROPE project "InsigH2T" - JTI-CLEANH2-2024 CUP B13C25000050006
17.	Experimental characterization of Gas Turbine cooled components by means of inverse heat conduction methods Cofunded by HORIZON EUROPE project "NEUMANN" - EDF-2021-ENERENV- D-2 – CUP B13C22003610006
18.	Social robotics in neurodevelopmental diseases and rehabilitation Cofunded by MUR - Call EU Partnership on Transforming Health and Care Systems - THCS 2023 "Healthcare of the future" project "ROOMMATE" - CUP B13C24001730002
4 – Sch	olarships funded by Companies
The	ematics:
1.	Nuovo Pignone tecnologie s.r.l. CFD Analysis of the combustion process in gas turbines fueled with NH3, H2 and natural gas mixture

	 Nuovo Pignone tecnologie s.r.l. Innovative Hydrogen Transport System Ergon Research s.r.l. Development of CFD methodologies and reduced order models to investigate the interactions between stator-rotor cavity egress and main annulus flow in gas turbine engines. Ingenio s.r.l. Strategic Human Resource Management in project-based organizations: enhancing agility and resilience through People-Centric practices. 	
STUDY/RESEARCH PERIODS ABROAD	At least 3 months	
DOCUMENTS REQUIRED FOR THE ADMISSION (under penalty of exclusion)	 Copy of the Identification Document Self-certification for qualifications obtained in Italy (laurea triennale, specialistica o magistrale o ciclo unico) with list of exams taken, credits and related grade, title of the thesis and graduation mark (using this template or similar forms containing the required information) Qualifications obtained abroad (Bachelor's and Master Degrees or combined cycle Degree) with a list of all exams taken, credits and related grade, rating scale, title of the thesis and graduation mark The same documentation except for the final mark must be submitted by those who will graduate within the 31/10/2025 	
DOCUMENTS REQUIRED FOR THE EVALUATION	 MANDATORY Curriculum Vitae Research project OPTIONAL Abstract of the MSc degree Thesis Scientific publications Any other additional qualification document 	
RESEARCH PROJECT	The research project must be written in Italian or English in NO MORE than 12,000 characters including spacing, abstract, introduction and references. The candidate can apply for several rankings by submitting a specific research project for each ranking (clearly state the reference to the chosen thematic). Candidates who apply for standard ranking need to submit a project related to one of the thematics listed at www.phdingind.unifi.it/p54.html	
INTERVIEW MODE	Remotely (Videocall) The interview can be conducted in English language	

EVALUATION MARKS	parameter	minimum score	maximum score	
	Curriculum vitae; publications, other qualification documents	10/120	15/120	
	Evaluation of the research project	50/120	65/120	
	Applicants who obtain a mark of at least 60/120 according to the minimum score for each parameter will be admitted to the interview.			
	Interview: discussion of the research project and publications (if any)	20/120	40/120	
	Eligibility is achieved with a minimum score of 80/120			

EXAMINATION SCHEDULE				
	DATE	TIME		
INTERVIEW	July 16 th 2025	09:00 a.m.		
The list of the candidates admitted to the interview and the final ranking will be published at the page				

PhD courses