

CHEMICAL SCIENCES			
CYCLE	XLI		
COORDINATOR	Prof Giovanni MAESTRI email: <u>giovanni.maestri@unipr.it</u> Department of Chemistry, Life Sciences and Environmental Sustainability		
DURATION	3 years		
STARTING DATE OF THE PHD PROGRAM	01/11/2025		
POSITIONS PUT OUT TO COMPETITION	15		
ADMISSION PROCEDURES	Assessment of QUALIFICATIONS and Research Project Oral Exam in PRESENCE or REMOTELY		
ADMISSION REQUIREMENTS	 Regardless of age and citizenship, applicants holding at least one of the following academic qualifications can apply for admission: Laurea specialistica or Laurea magistrale (second cycle master's degree) Laurea Vecchio Ordinamento (degree obtained under the previous Italian regulations); Second cycle Master's degree obtained abroad, equivalent to the above mentioned Italian degrees and recognized as suitable for the admission to doctoral program Undergraduates can also apply for admission to the selection, with the obligation to obtain the degree by 31.10.2025 		

TRAINING OBJECTIVES

The training program aims to provide students with the necessary skills to propose and manage research projects in the advanced sectors of Analytical Chemistry, General and Inorganic Chemistry, Physical Chemistry, Industrial Chemistry, and Organic Chemistry. The PhD in Chemical Sciences requires that each PhD student works within one of the research groups active at the Chemistry Units of the Department of Chemical, Life and Environmental Sustainability Sciences (SCVSA), and that he/she follows a specific training path within the chosen sector, also through participation in research activities at qualified centers both in Italy and abroad, in schools, national and international conferences, and through the publication of the scientific results achieved in internationally distributed journals. Interdisciplinary training activities are also planned, aimed at developing in PhD students the ability to present, discuss, and disseminate the subjects of their work both in an academic and in an industrial context, and, more generally, to society at large.

RESEARCH AREAS

- Analytical Chemistry
- General and Inorganic Chemistry
- Physical Chemistry
- Industrial Chemistry
- Organic Chemistry

	Position with Sc	holarship
N°	Funding entity	Research Topic or Areas
1	Scholarship partly financed with MINISTERIAL funds and UNIVERSITY funds and co-financed by the Department of Chemistry, Life Sciences and Environmental Sustainability (funds Project PNRR-M4C2- I1.1 – MUR Call for proposals n. 1409 del 14-09-2022 - Bando PRIN 2022 PNRR - ERC sector PE11- Project title: Bioactive compounds to Extend food Shelf-life through Innovative Technologies (BEST) - Project Code P2022M3H2K- CUP Code D53D23018680001-	Analytical evaluation of potential contaminants in food contact materials



	Funded by the European Union – NextGenerationEU.) and by the Company Food Contact Center S.r.l.	
	Financiado dell'Università è Italiadomani III UNIVERSITÀ della Ricerca	
1	Scholarship partly financed with MINISTERIAL funds and UNIVERSITY funds	Design of crystalline functional materials with environmetal applications
1	Scholarship partly financed with MINISTERIAL funds and UNIVERSITY funds	Multifunctional systems as ligands for iomacromolecules and enzyme mimics
1	Scholarship partly financed with MINISTERIAL funds and UNIVERSITY funds and co-financed by the Department of Chemistry, Life Sciences and Environmental Sustainability (funds Project FIL_INC_C_2024_CAPALDOCOFIN, CUP: D53C25000160005)	Mechanochemical synthesis of industrially relevant compounds
1	Scholarship partly financed with MINISTERIAL funds and UNIVERSITY funds and co-financed by the Department of Chemistry, Life Sciences and Environmental Sustainability (funds PNRR-M4C2- I1.1 – MUR Call for proposals n.104 of 02-02-2022-PRIN2022-ERC sector PE5 Project title:Nickel- catalyzed carboxylations enabled by the calixarene scaffold (Ni_CO2_CALIX)-Project Code 20227Z3BL8-CUP CodeD53D23010240001-Funded by the European Union- NextGenerationEU)	Metal-catalyzed C-H functionalizations for the synthesis of pharmaceuticals
1	Scholarship partly financed with MINISTERIAL funds and UNIVERSITY funds and co-financed by the Department of Chemistry, Life Sciences and Environmental Sustainability (funds Project MANI_A_24_HORIZONEU_BACTERADIX_01, CUP D93C24002080006)	Synthesis of Artificial DNases for next-generation antibacterials to fight AMR
1	Scholarship partly financed with MINISTERIAL funds and UNIVERSITY funds and co-financed by the Department of Chemistry, Life Sciences and Environmental Sustainability (funds Investimento: PNRR – M2C2 Investimento 3.5 PNRR ART-2-HYDROGEN "ARTIFICIAL ENZIMES FOR THE PHOTOCATALYTIC PRODUCTION OF HYDROGEN IN PHOTOSYNTHETIC BACTERIA" ID: RSH2A_000009, CUP F97G22000270006)	Artificial proteins for biocatalytic and diagnostic applications
1	Scholarship funded by Department of Chemistry, Life Sciences and Environmental Sustainability (funds Project MSCA20240000010, CUP D93C25000480007)	Visible-light mediated enantioselective synthetic strategies



1	Scholarship funded by Department of Chemistry, Life Sciences and Environmental Sustainability (funds Project FIS-2023-01733 "NHC-Ligated Boryl Radicals: New Frontiers in Halogen-Atom Transfer", CAPA_L_23_MUR_XAT2.0_01, CUP D53C25000690001)	Novel asymmetric approaches in radical chemistry
1	Scholarship funded by Department of Chemistry, Life Sciences and Environmental Sustainability (funds Project FIS-2023-01733 "NHC-Ligated Boryl Radicals: New Frontiers in Halogen-Atom Transfer", CAPA_L_23_MUR_XAT2.0_01, CUP D53C25000690001)	Development of innovative Group 13 complexes for synthesis and catalysis
1	Scholarship funded by Department of Chemistry, Life Sciences and Environmental Sustainability (funds Project FIS-2023-01733 "NHC-Ligated Boryl Radicals: New Frontiers in Halogen-Atom Transfer", CAPA_L_23_MUR_XAT2.0_01, CUP D53C25000690001)	Light-mediated post-polymerization functionalization of polymeric materials
1	Scholarship funded by Department of Chemistry, Life Sciences and Environmental Sustainability (funds of "Departments of Excellence" program)	Synthesis and characterization of functional organic materials for potential optoelectronic applications
1	Scholarship funded by the Company RSE – Ricerca sul Sistema energetico S.p.A.	DEVELOPMENT OF MATERIALS AND PROCESSES FOR THE SELECTIVE RECOVERY OF STRATEGIC RAW MATERIALS FROM UNCONVENTIONAL SOURCES
1	Scholarship funded by EMILIA ROMAGNA REGION (PR.FSE + 2021/2027 – DGR n. 344 del 10/03/2025) CUP D92J25000110002	Molecular approaches to metabolomics, big data and Machine Learning techniques for sustainable production
1	Scholarship funded by EMILIA ROMAGNA REGION (PR.FSE + 2021/2027 – DGR n. 344 del 10/03/2025) CUP D92J25000110002	Metal-Chelating Approaches in the Fight Against Antimicrobial Resistance: New Thiosemicarbazone Complexes

ADMISSION PROCEDURES

Assessment of QUALIFICATIONS: up to 40 points (a minimum score of 20 points shall be required to be admitted to the Oral Exam) ORAL EXAM: up to 80 points Minimum score for ELIGIBILITY: 70/120

ORAL EXAM PROGRAM

UNIVERSITÀ DI PARMA Via Università, 12 - 43121 Parma www.unipr.it



Applicants admitted to the ORAL EXAM can take it either in PRESENCE or REMOTELY in Audio and Video Teleconference (Applicants who intend to take the Oral Exam remotely must submit a formal request, using the form attached to the competition notice)

The ORAL EXAM includes the presentation of the research project and is intended to assess the suitability of the applicant to pursue scientific research as well as the general knowledge of issues connected to the PhD course.

Foreign Language the fluency of which shall be assessed during the Oral Exam	ENGLISH	The evaluation of the knowledge of this language will be oral and will consist in the discussion of part of the research topics in English.
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SCHEDULE OF THE ADMISSION EXAMS				
ASSESSMENT OF QUALIFICATIONS		It is the candidate's responsibility to verify the outcome of the evaluation of qualifications, which can be consulted in their reserved area by connecting to the page http://unipr.esse3.cineca.it/Home.do in the days preceding the date of the Oral Exam		
	DATE	2 nd September 2025 (with possible extension in the following days)		
ORAL EXAM	TIME	10:00 am (Italian Time)		
	PLACE	Departiment of Chemistry, Life Sciences and Environmental Sustainability CHEMISTRY BUILDING Parco Area delle Scienze, 17/A – Campus 43124 PARMA - ITALY		
FURTHER INFORMATION		The choice of the Research Topic to be expressed in Annex A is not binding on the assignment of the research project, and it is intended to assess candidate's skills during the admission exam. The PhD research topic will be assigned by the Academic Board.		
		THE INTERVIEW MAY BE HELD ALSO IN ENGLISH	For foreign candidates it is possible to carry out the admission examination exclusively in English. For Italian candidates it will be possible to take the admission examination in Italian or in English at the candidate's choice	

LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT			
MANDATORY DOCUMENTS TO BE ATTACHED TO THE ON-LINE APPLICATION			
ANNEX A	(art. 3.2 of the Competition notice)		
Identification Document	Scanned Copy of a valid identity document with photo (i.e. identity card, passport)		
Curriculum Vitae et studiorum	No specific CV format is required (see art. 3.2 of the Competition notice)		
Abstract of degree thesis	Abstract of the second cycle master's degree thesis. Undergraduate applicants must submit the draft of the thesis approved by their supervisor (abstract/draft of the thesis: 10.000 characters including spaces)		
Academic Qualifications	Certificates and academic transcript of records for both Bachelor' and Master' degrees containing the following details for each degree held: (art. 3.2 of the Competition notice): University that granted the degree - Type of degree (first cycle/second cycle/single cycle)		

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	Name of the degree program - Date of graduation - Final mark - List of exams and corresponding scores (academic transcript of records) - Translation into Italian or English (only for degrees issued in languages other than Italian or English).			
Research Project	Written in Italian or in English, according to the format attached to the competition of It will have to focus on an original research topic (unpublished, developed person the candidate, PENALTY NOT EVALUATION. It should be noted that the Exami Board can use of IT tools useful for verifying the originality of the submitted Project It does not represent a constraint with respect to the following choice of the de thesis, which will be assigned by the Academic Board			
(only qual	LIS ifications a	T OF EVALUABLE QUALIFICATIONS ttested by a document drawn up in Italian or in English)		
Curriculum Vitae et studiorum	Including academic career and postgraduate experience, accompanied by a statutory declaration in lieu of the certification of the exams passed with the relevant marks, as well as the final graduation mark. The marks of the exams and the graduation mark will be the most relevant element of the evaluation. Relevance of the academic career as well as postgraduate experiences and other research activities related to Chemical Sciences.			
Graduation thesis	Consister topics (bi	Consistency of the Master's Degree thesis with the doctoral program research topics (briefly describe the topics in the curriculum vitae)		
Research Project	 Points relating to the research project shall be allocated on the basis of the following criteria: Scientific value and originality of the proposal description and structure of the proposal proposal feasibility consistency with the research themes of the PhD course 			
Statement of Research Interest	Short text – maximum 1 page – in Italian or in English, aimed at explaining the candidate's reasons to attend the PhD program; the description of specific research interests, with particular reference to the topics relating to the specific topics proposed; the skills possessed that can contribute to a research project in the field of Chemical Sciences.			
Scientific Publications	Articles on national and international journals, papers presented at conferences or symposia, book chapters etc Impact and relevance of the qualifications presented related to Chemical Sciences		Up to 4 points	
EVALUATION ORAL EXAM				
Interview Program		Evaluation CRITERIA	POINTS	
The ORAL EXAM includes the presentation of the research project and is intended to assess the suitability of the applicant to pursue scientific research as well as the general knowledge of issues connected to the PhD course		 knowledge of the subject and skills of the candidate for the proposed research activities are assessed by a discussion on the qualifications submitted for evaluation knowledge of English is assessed by discussion of topics of research and by understanding of scientific texts. 	Up to 80 points	