




CHEMICAL SCIENCES	
CYCLE	XXXVIII
COORDINATOR	Prof.ssa Alessia BACCHI email: alessia.bacchi@unipr.it Department of Chemistry, Life Sciences and Environmental Sustainability
DURATION	3 years
STARTING DATE OF THE PHD PROGRAM	01/11/2022
RESEARCH TOPICS (The candidate MUST mandatorily indicate one research topic in the form ANNEX A and submit a RESEARCH PROJECT in the relevant field)	
<p>A) Towards high value complex molecular architectures via atom-economical cascades</p> <p>B) Metal coordination and development of antiviral and anticancer compounds.</p> <p>C) PNA-based systems for link-and-release and their application for the realization of supramolecular mini-proteins</p> <p>D) Design and synthesis of organic mono- and multivalent ligands for medically relevant biomacromolecules and study of their properties</p> <p>E) Preparation, characterization and study of the catalytic and biological properties of mechanochemically obtained substances</p> <p>F) Integration of advanced analytical platforms for the detection and characterization of nano- and small microplastics: metrological traceability of measurement data to address environmental pollution and food safety issues (Project: Project: 21GRD07 PlasticTrace - Metrological traceability of measurement data from nano to small-microplastics for a greener environment and food safety, Bando: European Partnership on Metrology Call 2021 – Green Deal programme of EURAMET)</p> <p>G) Novel small molecule activation modes promoted by visible light</p>	
TRAINING OBJECTIVES	
<p>The training program aims to provide the PhD in Chemical Sciences the necessary skills to propose and manage research projects in the advanced fields of Analytical Chemistry, General and Inorganic Chemistry, Physical Chemistry, Industrial Chemistry, and Organic Chemistry . The PhD course in Chemical Sciences requires each student to work within one of the research groups active at the Chemistry Unit of the Department of Chemistry, Life Sciences and Environmental Sustainability (SCVSA), and to follow a specific training pathway in the chosen sector; this is achieved also through: participation in research activities at qualified centers both in Italy and abroad, participation to national and international schools and conferences, and through the publication of scientific results in international journals. Interdisciplinary training activities, aimed at developing PhD students the ability to exhibit, discuss and disseminate the subjects of their work both in the academic and industrial context and even more generally in society, are also part of the program.</p>	
ADMISSION REQUIREMENTS	<p>Regardless of age and citizenship, applicants holding at least one of the following academic qualifications can apply for admission:</p> <ul style="list-style-type: none">– 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 <p>Undergraduates can also apply for admission to the selection, with the obligation to obtain the degree within the deadline set for enrollment, that is by 24.10.2022.</p>

POSITIONS PUT OUT TO COMPETITION	7	With Scholarship	7
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Position with Scholarship		
N°	Funding entity	Research Topic
3	Scholarship funded by University of Parma (Ministerial funds)	• Research Topic: A-B-C-D-E
1	Scholarship funded by University of Parma (University funds)	• Research Topic: A-B-C-D-E
1	Scholarship co-funded by Fondazione Cariparma	• Research Topic: A-B-C-D-E
1	Scholarship funded by the Department of Chemistry, Life Sciences and Environmental Sustainability (Project: 21GRD07 PlasticTrace - Metrological traceability of measurement data from nano to small-microplastics for a greener environment and food safety, Bando: European Partnership on Metrology Call 2021 – Green Deal programme of EURAMET)	• Research Topic: F
Position with Scholarship LINKED TO SPECIFIC TOPICS (art. 11 of the Competition notice)		
During the Oral Exam, applicants may express and/or confirm their interest of being assigned a scholarship linked to a specific research topic. The Examination Board will evaluate their eligibility based on specific competences, experience and specific aptitudes of the applicants.		
N°	Funding entity	BOUND RESEARCH TOPIC
1	Scholarship financed with funds under the PNRR– Mission 4 component 1 (Ministerial Decree 351/2022 art. 7 “PNRR Research”) 	• Research Topic: G : Novel small molecule activation modes promoted by visible light

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
Foreign Language	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.
CANDIDATES ADMITTED TO THE ORAL TEST CAN TAKE THE EXAM IN PRESENCE OR REMOTELY IN AUDIO AND VIDEO TELECONFERENCE (The Oral Exam takes place <u>in presence</u> . Candidates who intend to take the Oral Exam remotely must submit a motivated REQUEST , to this purpose, as per the model attached to the competition notice)	
THE INTERVIEW MAY BE HELD ALSO IN ENGLISH	
LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT	
MANDATORY DOCUMENTS TO BE ATTACHED TO THE ON-LINE APPLICATION	
ANNEX A	(art. 5 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. 4 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)	
Qualifications	Certificates and academic transcript of records for both Bachelor' and Master' degrees containing the following details for each degree held: (art. 4 of the Competition notice): University that granted the degree - Type of degree (first cycle/second cycle/single cycle) 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 notice. It will have to focus on an original research topic (unpublished, developed personally by the candidate. It should be noted that the Examination Board can use of IT tools useful for verifying the originality of the submitted Project). <u>It does not represent a constraint with respect to the following choice of the doctoral thesis, that shall be assigned by the Academic Board.</u>	
FURTHER QUALIFICATIONS THAT MAY BE ATTACHED TO THE APPLICATION, IF IN POSSESSION OF THE APPLICANT (only qualifications attested by a document drawn up in Italian or in English)		
Statement of Research interest	Short text – maximum 1 page – in Italian or in English, aimed at: 1) explaining the candidate's reasons to attend the PhD programme; 2) research interests, with particular reference to topics of interest in the specific topics proposed; 3) skills that can contribute to a research project in the field of Chemical Sciences.	
Scientific Publications	Articles on scientific journals with referees, communications presented at conferences or symposia, book chapters, other publications related to Chemical Sciences.	
Other experiences	<ul style="list-style-type: none"> – Participation in Schools or training courses related to Chemical Sciences – Any awards received related to Chemical 	
EVALUATION CRITERIA		
QUALIFICATION	EVALUTATION CRITERIA	POINTS
Curriculum Vitae et studiorum	Relevance of the academic career as well as postgraduate experiences and other research activities related to Chemical Sciences	Up to 16 points
Graduation mark or Average of the exam marks (if the candidate will attain the degree no later than 24 October 2022)	Assignment of a score related to the final mark or, for candidates who will attain the degree by 24 October 2022, a score related to the average of the exam marks	Up to 5 points
Graduation thesis	Consistency of the Master's Degree thesis with the doctoral programme research topics	Up to 10 points
Research Project	Score related to the evaluation of the Project based on originality, impact and scientific substantiation.	Up to 2 points
Statement of Research Interest	Motivation and competence proved in the text presented	Up to 3 points
Scientific publications	Impact and relevance of the qualifications presented related to Chemical Sciences	Up to 4 points



ORAL EXAM		EVALUATION CRITERIA	POINTS
<p>The ORAL EXAM takes place in Italian or in English for foreign candidates. It includes a discussion of the qualifications presented by the candidate and an assessment of their scientific profile and design skills.</p>		<ul style="list-style-type: none">○ 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
SCHEDULE OF THE ADMISSION EXAMS			
ORAL EXAM	DATE	19 September 2022 (with possible extension in the following days)	
	TIME	10:30 AM (Italian time)	
	PLACE	Department of Chemistry, Life Sciences and Environmental Sustainability CHEMISTRY BUILDING Parco Area delle Scienze, 17/A – Campus 43124 PARMA - ITALY	
OTHER INFORMATION		<p>For foreign candidates, the admission examinations may be held in English at the candidate's choice.</p> <p>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 candidates skills during the admission exam.</p>	