# CHEMICAL SCIENCES

<table>
<thead>
<tr>
<th>Cycle</th>
<th>XXXIV</th>
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| Coordinator | Prof. Roberto CORRADINI  
Department of Chemistry, Life Sciences and Environmental Sustainability  
email: roberto.corradini@unipt.it |
| Duration | 3 years |
| Starting date of the PdD programme | 01/11/2018 |

## Research Topics

- **a)** Development of innovative materials and analytical methods for environmental applications;
- **b)** Multi-catalytic approaches towards molecular complexity;
- **c)** Porous functional materials for the activation of small molecules;
- **d)** Development of analytical methodologies for the characterization of environmental, food and biological matrices;
- **e)** Development of new catalytic methods to access high value added products starting from biomass sources;
- **f)** Bio-inspired materials and metal complexes for agrochemical and zootechnical applications;
- **g)** Interaction of metal ions with biomolecules in neurodegenerative disorders (within the project PRIN2015 “Metal ions, dopamine, and oxidative stress in Parkinson's disease” PRIN2015T778JW, CUP D96J16001220001).
- **h)** Biosensing with PNA and aptamers

## Training Objectives

The aim of the training program is to enable the PhD in Chemistry to acquire the necessary skills to propose and manage research projects in advanced fields of Analytical Chemistry, General and Inorganic Chemistry, Physical Chemistry, Industrial Chemistry and Organic Chemistry. The Doctorate in Chemistry requires that each PhD student work within one of the active research groups at the of Chemistry Units of the of the Department of Chemistry, Life Sciences and Environmental Sustainability (SCVSA), and follow a specific training course in the frame of the chosen sector, through the participation in research activities at qualified centers both in Italy and abroad, at schools and national and international conferences, and by publishing the scientific results achieved in journals with international relevance. Interdisciplinary training activities are also planned to develop the PhD students’ ability to expose, discuss and disseminate the subjects covered by their work both in academic and industrial contexts and in general in the entire society.

## Admission requirements

Applicants who have one of the following degrees may participate in the selection:

- Laurea specialistica or Laurea magistrale (second cycle degree)
- Laurea Vecchio Ordinamento (degree obtained under the Italian previous regulations);
- an academic Master’s degree obtained abroad, comparable to the above mentioned Italian degrees and recognized as suitable for the admission to doctoral programmes.

Undergraduate applicants may also submit applications with the obligation of getting their degree by October 31st 2018.
With Scholarship 7
Reserved to holders of scholarship funded by foreign States 1

TOTAL 8

Positions with University Scholarship

<table>
<thead>
<tr>
<th>N°</th>
<th>Funding entity</th>
<th>Research Topic</th>
</tr>
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<tbody>
<tr>
<td>3</td>
<td>Scholarship Ministerial funds</td>
<td>• see topics at points a) – f) above</td>
</tr>
<tr>
<td>1</td>
<td>Scholarship co-funded by Fondazione Cariparma</td>
<td>• see topics at points a) – f) above</td>
</tr>
<tr>
<td>2</td>
<td>Funded by Department of Chemistry, Life Sciences and Environmental Sustainability</td>
<td>• see topics at points a) – f) above</td>
</tr>
</tbody>
</table>
| 1  | Funded by Department of Chemistry, Life Sciences and Environmental Sustainability (co-financing the project PRIN2015T778JW, CUP D96J16001220001) | • topic g): "Interaction of metal ions with biomolecules in neurodegenerative disorders"

Position reserved to holders of scholarship funded by foreign States

<table>
<thead>
<tr>
<th>University or Foreign State</th>
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<tbody>
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<td>1</td>
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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

ADMISSION PROCEDURES for positions reserved to holders of scholarship funded by foreign States

Assessment of QUALIFICATIONS: up to 120 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 be evaluated at the level of discussion of research topics and / or understanding of scientific texts.

Possibility of videoconference for candidates residing or temporarily abroad
(the relevant request shall be submitted using the form attached to the competitive examination announcement)

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 Call for Applications)
– Scanned Copy of a valid identification document with photo
– Curriculum Vitae et studiorum (art. 4 of the Call for Applications): including the academic career as well as postgraduate experiences, with relative certifications and accompanied by candidates who still have to obtain the Master’s degree, by the substitutive declaration of the certification of the exams taken and the relative marks
– Abstract of the second cycle master’s degree thesis. Undergraduate applicants may submit the draft of the thesis approved by their supervisor (10,000 characters including spaces)
Certificates and academic transcript of records for both the Bachelor’ and the Master’ degrees containing the following details for each degree held: (art. 4 of the Call for Applications):

- University that granted the degree
- Type of degree (first cycle/second cycle/single cycle)
- Name of the degree programme
- 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)

Statement of Research Interest: Short text – maximum 2 pages – in Italian or in English, aimed at:
1) explaining the candidate’s reasons to enrol in the PhD; 2) research interests, with particular reference to the topics of interest for the specific themes proposed; 3) skills possessed that can contribute to a research project in the field of Chemical Sciences.

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)

Scientific Publications: Articles on scientific journals with referees, communications presented at conferences or symposia, book chapters etc.

### EVALUATION CRITERIA

<table>
<thead>
<tr>
<th>QUALIFICATION</th>
<th>EVALUATION CRITERIA</th>
<th>POINTS</th>
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</thead>
<tbody>
<tr>
<td>Curriculum Vitae et studiorum</td>
<td>Relevance of the academic career as well as postgraduate experiences and other research activities in the chemical field</td>
<td>Up to 15 points</td>
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<tr>
<td>Graduation thesis</td>
<td>Consistency of the Master’s Degree thesis with the doctoral programme research topics</td>
<td>Up to 15 points</td>
</tr>
<tr>
<td>Statement of Research Interest</td>
<td>Motivation and competence proved in the text presented</td>
<td>Up to 5 points</td>
</tr>
<tr>
<td>Scientific Publications</td>
<td>Impact and relevance of the publications presented relevant to the Chemical Sciences</td>
<td>Up to 5 points</td>
</tr>
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### LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT

Position reserved to holders of fellowship of Austrian Institute of Technology

<table>
<thead>
<tr>
<th>QUALIFICATION</th>
<th>EVALUATION CRITERIA</th>
<th>POINTS</th>
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<tbody>
<tr>
<td>Curriculum Vitae et studiorum</td>
<td>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 candidate must attach the certificate confirming the award of the scholarship or equivalent contract by the Austrian Institute of Technology and the eventual judgment expressed at the time of attribution.</td>
<td>Up to 50 points</td>
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<tr>
<td>Graduation thesis</td>
<td>Abstract of the dissertation work (even if not yet discussed and in this case countersigned by the thesis supervisor). Consistency of the Master’s Degree thesis with the doctoral programme research topics.</td>
<td>Up to 30 points</td>
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<tr>
<td>Statement of Research Interest</td>
<td>Motivation and competence proved in the text presented</td>
<td>Up to 30 points</td>
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<tr>
<td>Scientific Publications</td>
<td>Impact and relevance of the publications presented relevant to the Chemical Sciences</td>
<td>Up to 10 points</td>
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<tr>
<td><strong>ORAL EXAMINATION</strong></td>
<td><strong>EVALUATION CRITERIA</strong></td>
<td><strong>POINTS</strong></td>
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| 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 his scientific preparation and of his design skills. | o knowledge of the subject and preparation of the candidate for the proposed research activities.  
 o knowledge of English is assessed at the level of discussion of topics of research and understanding of scientific texts. | Up to 80 points |
| **SCHEDULE OF THE ADMISSION EXAMS** | | |
| **ORAL EXAM** | **ORAL EXAM DATE:** 13 September 2018  
**TIME:** 02:30pm  
**PLACE:** ROOM A - Chemistry Building  
Department of Chemistry, Life Sciences and Environmental Sustainability  
Parco Area delle Scienze, 17/A – 43124 PARMA - ITALY | |
| **OTHER INFORMATIONS** | For foreign candidates, the admission examinations may be held in English at the candidate’s choice. | |