# PhD Course: MOLECULAR SCIENCES – Curriculum CHEMICAL SCIENCES

in agreement with CONSIGLIO NAZIONALE DELLE RICERCHE (CNR)

<table>
<thead>
<tr>
<th>Department</th>
<th>SCIENZE CHIMICHE - DiSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>3 years</td>
</tr>
<tr>
<td>Scholarships</td>
<td>n. 7</td>
</tr>
<tr>
<td>funded by the</td>
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<tr>
<td>University</td>
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<tr>
<td>Scholarship funded</td>
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<td>by the University</td>
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<td>reserved to</td>
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<td>applicants with</td>
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<tr>
<td>foreign qualification</td>
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<tr>
<td>Selection criteria:</td>
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<tr>
<td>Pre-evaluation of qualifications and oral exam. The assignment of this scholarship will take place with a specific ranking. Candidates who compete for this scholarship cannot compete for the other positions offered by the PhD course in Molecular Sciences</td>
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<tr>
<td>Scholarships</td>
<td>n. 2</td>
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<tr>
<td>funded by the</td>
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<tr>
<td>Partner Institution</td>
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<tr>
<td>1 scholarship funded by Consiglio Nazionale delle Ricerche - CNR; Dipartimento di Scienze Chimiche e Tecnologie dei Materiali - DSCTM; Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia - ICMATE; Referente: Dr. Gregorio Bottaro; Sede: Padova - <strong>Topic:</strong> Functional molecular systems and materials for energy applications and sensing (<strong>curriculum:</strong> CHEMICAL SCIENCES);</td>
<td></td>
</tr>
<tr>
<td>1 scholarship funded by Consiglio Nazionale delle Ricerche - CNR; Dipartimento di Scienze Chimiche e Tecnologie dei Materiali - DSCTM; Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia - ICMATE; Referente: Maria Lo Surdo; Sede: Padova - <strong>Topic:</strong> Innovative plasma processing of surfaces and materials for biomedical applications (<strong>curriculum:</strong> CHEMICAL SCIENCES);</td>
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<tr>
<td>Scholarships</td>
<td>n. 10</td>
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<tr>
<td>funded by external</td>
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<tr>
<td>public or private</td>
<td></td>
</tr>
<tr>
<td>bodies/Departments</td>
<td></td>
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<tr>
<td>1 scholarship funded by 3SLAB S.r.l. - <strong>Topic:</strong> Application of CI-IMS-MS to food science and technology (<strong>curriculum:</strong> CHEMICAL SCIENCES);</td>
<td></td>
</tr>
<tr>
<td>1 scholarship funded by DiSC fondi Progetto finanziato dall’Unione Europea--NextGenerationEU e da STARS@UNIPD 2023 ENGCAT“Engineering of organic-inorganic interfaces for enhancement of photocatalysis” CUP C95F21009900001 PI:F.Arcudi e dal progetto UE ERC-2022-STG PHOTODARK“Photocatalytic Reactions Under Light and Dark with Transient Supramolecular Assemblies” CT 101077698 – CUP C93C23004180006;PI L.Dorđević - <strong>Topic:</strong> Engineering organic-inorganic interfaces for photocatalysis (<strong>curriculum:</strong> CHEMICAL SCIENCES);</td>
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</tr>
<tr>
<td>1 scholarship funded by Dipartimento di Scienze Chimiche - DiSC su fondi Budget MUR Dipartimenti di Eccellenza 2023-2027 - Progetto &quot;Chemical Complexity“ (C2) - CUP: C93C22009260001 - <strong>Topic:</strong> Chemical Complexity (eligible projects are listed at the link <a href="https://phd.chimica.unipd.it/cdsm/phd-projects-complex-chemistry-c2">https://phd.chimica.unipd.it/cdsm/phd-projects-complex-chemistry-c2</a>) (<strong>curriculum:</strong> CHEMICAL SCIENCES);</td>
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<tr>
<td>Scholarship Funded By</td>
<td>Topic</td>
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<td>---------------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
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<tr>
<td>Dipartimento di Scienze Chimiche - DISC su fondi Budget MUR Dipartimenti di Eccellenza 2023-2027 - Progetto &quot;Chemical Complexity&quot; (C2) - CUP: C93C22009260001</td>
<td>Chemical Complexity (eligible projects are listed at the link <a href="https://phd.chimica.unipd.it/cdsm/phd-projects-complex-chemistry-c2">https://phd.chimica.unipd.it/cdsm/phd-projects-complex-chemistry-c2</a>)</td>
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<tr>
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<td>Chemical Complexity (eligible projects are listed at the link <a href="https://phd.chimica.unipd.it/cdsm/phd-projects-complex-chemistry-c2">https://phd.chimica.unipd.it/cdsm/phd-projects-complex-chemistry-c2</a>)</td>
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<tr>
<td>Dipartimento di Scienze Chimiche - DISC su fondi PROGETTO UE Horizon-ERC-STG-2023 &quot;HYPMET&quot; - Hyperpolarized Magnetic Resonance at the point-of-care CT. 101117082 – CUP: C93C23004150006</td>
<td>Signal amplification in magnetic resonance experiments via parahydrogen experiments</td>
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<tr>
<td>ENI S.p.A.</td>
<td>Tailoring new Functional Composite Materials through Chemical Modification of Graphene and Carbon Nanotubes</td>
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<td>SUBER LAB S.r.l.</td>
<td>Rapid quantification of off-flavors in cork stoppers and wine</td>
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<tr>
<td>Syensqo</td>
<td>Sustainable synthesis and electrochemical characterization of proton-exchange membranes</td>
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**Total number of positions**: n. 20

**Selection criteria**: EVALUATION OF QUALIFICATIONS, COMPUTERIZED WRITTEN AND ORAL EXAMINATION

**Written examination**

11 JUNE 2024 13:30 - labP140 del Complesso Paolotti - Via Giambattista Belzoni, 7 - 35121 Padova
## Evaluation of qualifications: First meeting of the Evaluating Commission

12 JUNE 2024 09:00

### Publication of the evaluation of the qualifications

Within **12 JUNE 2024** the evaluating Commission will publish the results of the evaluation of the qualifications in the following website: [https://phd.chimica.unipd.it/cdsm/admission/results-ranking](https://phd.chimica.unipd.it/cdsm/admission/results-ranking)

### Remote oral examination

Applicants who have requested it in the application form will take the oral exam via remote interview using the ZOOM videoconference tool.

### Publication of the timetable of remote interviews and instructions on how to use the ZOOM video conferencing tool

Within **12 JUNE 2024** the evaluating Commission will publish the results on the course website: [https://phd.chimica.unipd.it/cdsm/admission/results-ranking](https://phd.chimica.unipd.it/cdsm/admission/results-ranking) the timetable of remote oral examinations and instructions for the use of the ZOOM videoconferencing tool with respect to candidates who have requested it in their application to participate in the selection process.

### Oral examination

17 JUNE 2024 14:30 - The exam may continue: 18/06/2024 at 8.30, 19/06/2024 at 8.30 and 20/06/2024 at 8.30 - Dipartimento di Scienze del Farmaco, via Marzolo 5, 35131 Padova

### Evaluation criteria for examinations and qualifications, and their weighting

<table>
<thead>
<tr>
<th>Qualifications</th>
<th>points max 20</th>
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<tbody>
<tr>
<td>Written examination</td>
<td>points max 60</td>
</tr>
<tr>
<td>Oral examination</td>
<td>points max 20</td>
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### Documents to be submitted

#### Thesis:
- Points: max 2
- Applicants already holding the entrance qualification: submit the master thesis. Applicants waiting to be awarded the entrance qualification: those waiting to be awarded the entrance qualification by 30th September 2024 will submit a summary of the master thesis project (max. 4 pages) signed by the applicant and the supervisor.

#### Curriculum:
- Points: max 15
- The CV should include 1) List of all exams (including marks) passed during the academic study (both BSc and MSc). For candidates with a foreign degree also the scoring scale has to be provided. 2) Starting date of the academic study (specify any leave period demonstrated by certificates) 3) Final examination mark (for candidates that have already graduated) 4) Documents that certify relevant study or work experiences abroad (with indication of the duration in months).

#### Scientific publications:
- Points: max 1
- Only scientific publications that are indexed on WoS/Scopus or accepted for publication (with DOI) will be taken into consideration. Abstracts of conferences will not be considered.

#### Other documents:
- Points: max 2
- 1) Up to 2 reference letters by Italian or foreign faculties/experts in molecular sciences 2) Awards/prizes received as a result of academic accomplishments.
**Language/s**

**Foreign language/s assessment at the oral examination:**
At the oral examination the commission will assess the knowledge of the following language/s: English

**Admission exam:**
The admission exam will be taken in: English

<table>
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<tr>
<th>Examination topics</th>
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<tr>
<td>Organic Chemistry, Physical Chemistry, Inorganic Chemistry, Analytical Chemistry, Pharmaceutical Science, Biotechnology. For detailed information on the exam and the contents (including examples): phd.chimica.unipd.it/cdsm/admission During the written admission exam (multiple choice questions), to be taken in person, the use of a calculator is permitted.</td>
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<tr>
<th>PhD Course Website:</th>
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<tr>
<td><a href="https://phd.chimica.unipd.it/cdsm/">https://phd.chimica.unipd.it/cdsm/</a></td>
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</tbody>
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<thead>
<tr>
<th>Further information</th>
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<tbody>
<tr>
<td><strong>Department:</strong> SCIENZE CHIMICHE - DISC</td>
</tr>
<tr>
<td><strong>Address:</strong> Via Marzolo - N. 1, 35131 Padova (PD)</td>
</tr>
<tr>
<td><strong>Contact person:</strong> Menna Anna</td>
</tr>
<tr>
<td><strong>telephone:</strong> +39 0498275657</td>
</tr>
<tr>
<td><strong>e-mail:</strong> <a href="mailto:dottorati.chimica@unipd.it">dottorati.chimica@unipd.it</a></td>
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<thead>
<tr>
<th>How to apply</th>
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<tr>
<td>The application must be submitted only via the online procedure available at: <a href="https://pica.cineca.it/unipd/dottorati40">https://pica.cineca.it/unipd/dottorati40</a></td>
</tr>
<tr>
<td>The documents must be attached in pdf format. The application and the attached documents are submitted automatically by closing the online procedure. So no hard copy of the application and of the documents must be sent to the office.</td>
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<table>
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<tr>
<th>Deadlines</th>
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<tbody>
<tr>
<td>Publication of the ranking lists and enrollment from <strong>2 July 2024</strong></td>
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<tr>
<td>Beginning of PhD courses <strong>1 November 2024</strong></td>
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SCHOLARSHIPS FUNDED BY THE UNIVERSITY RESERVED TO APPLICANTS WITH FOREIGN QUALIFICATION

MOLECULAR SCIENCES – Curriculum CHEMICAL SCIENCES

<table>
<thead>
<tr>
<th>Selection criteria for a position with the scholarship funded by the university reserved to candidates with foreign qualification</th>
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<tbody>
<tr>
<td>PRE-SELECTION FOR EVALUATION OF QUALIFICATIONS AND ORAL EXAMINATION</td>
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<tr>
<th>Remote oral examination for a position with the scholarship funded by the university reserved to candidates with foreign qualification</th>
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</thead>
<tbody>
<tr>
<td>Applicants who have requested it in the application form will take the oral exam via remote interview using the ZOOM videoconference tool.</td>
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</tbody>
</table>
| Evaluation criteria for examinations and qualifications, and their weighting, for a position with scholarship funded by the University reserved to candidates with foreign qualification | Qualifications: points max 90  
Oral examination: points max 10 |
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<tbody>
<tr>
<td>Documents to be submitted for a position with the scholarship funded by the university reserved to candidates with foreign qualification</td>
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</tbody>
</table>

Curriculum vitae and studiorum that include:
1) Certificate (released by the University or from the relevant bodies of the country of origin) attesting the achievement of the qualification that gives access to the PhD Course. If the candidate has not obtained the title yet, please attach a statement attesting that the title will be obtained within 30 September 2024. If the certificates are in a language other than Italian or English, a translation in Italian or English must be attached.
2) A document (issued by the University or by the competent authorities) containing the list of examinations and the relative votes
3) Graduates: Summary of the thesis (max 4 pages). For candidates who have not yet graduated, who will obtain the degree by 30 September 2024, summary of the thesis project (maximum 4 pages)
4) Scientific publications: Only scientific publications indexed on ISI/Scopus or definitively accepted (with DOI) will be considered. Conference abstracts will not be taken into account
5) Certificates useful for assessing the preparation of the candidate (e.g. TOEFL, GRE, etc)

Other documents: 
1) Two reference letters by Italian or foreign professors/experts in molecular sciences
2) An original research project compatible with the research conducted at the Department of Chemical Sciences or Pharmaceutical Sciences (for further information: [https://phd.chimica.unipd.it/cdsm/admission/potential-phd-projects](https://phd.chimica.unipd.it/cdsm/admission/potential-phd-projects)). Applicants are encouraged to contact PIs before the admission procedure for more information
### Pre-selection by qualifications:
First meeting of the Evaluating Commission for a position with the scholarship funded by the university reserved to candidates with foreign qualification

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>10 JUNE 2024</td>
<td>9.00</td>
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</table>

### Publication of the evaluation of the qualifications for a position with the scholarship funded by the university reserved to candidates with foreign qualification

- Within **12 JUNE 2024** the evaluating Commission will publish the results of the evaluation of the qualifications in the following website: [https://phd.chimica.unipd.it/cdsm/admission/results-ranking](https://phd.chimica.unipd.it/cdsm/admission/results-ranking)
- In order to be admitted to the examination, the candidate must get a score of at least 7/10 in the preselection.

### Publication of the timetable of remote interviews and instructions on how to use the ZOOM video conferencing tool

- Within **12 JUNE 2024** the evaluating Commission will publish on the course website: [https://phd.chimica.unipd.it/cdsm/admission/results-ranking](https://phd.chimica.unipd.it/cdsm/admission/results-ranking) the timetable of remote oral examinations and instructions for the use of the ZOOM videoconferencing tool with respect to candidates who have requested it in their application to participate in the selection process.
- In order to be admitted to the examination, the candidate must get a score of at least 7/10 in the preselection.

### Oral examination

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>17/06/2024</td>
<td>08.30</td>
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<tr>
<td></td>
<td>- 18/06/2024 08.30 – 19/06/2024 08.30 – 20/06/2024 08.30</td>
</tr>
<tr>
<td></td>
<td>Dipartimento di Scienze del Farmaco, Via Marzolo 5, 35131 Padova</td>
</tr>
</tbody>
</table>

### Language/s for a position with the scholarship funded by the university reserved to candidates with foreign qualification

- **Foreign language/s assessment at the oral examination:**
  - At the oral examination the commission will assess the knowledge of the following language/s: English
  - **Admission exam:**
    - The admission exam will be taken in: English

### Examination topics


### PhD Course Website:
[https://phd.chimica.unipd.it/cdsm/](https://phd.chimica.unipd.it/cdsm/)

### Further information

- **Department:** SCIENZE CHIMICHE - DiSC
- **Address:** Via Marzolo - N. 1, 35131 Padova (PD)
- **Contact person:** Menna Anna
- **telephone:** +39 0498275657 **e-mail:** dottorati.chimica@unipd.it
| How to apply | The application must be submitted only via the online procedure available at: [https://pica.cineca.it/unipd/dottorati40](https://pica.cineca.it/unipd/dottorati40)  
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|---|---|
| Deadlines | Publication of the ranking lists and enrollment from **2 July 2024**  
Beginning of PhD courses **1 November 2024** |