



GRADUATE PROGRAM
'SCIENCE FOR A
CHANGING PLANET'

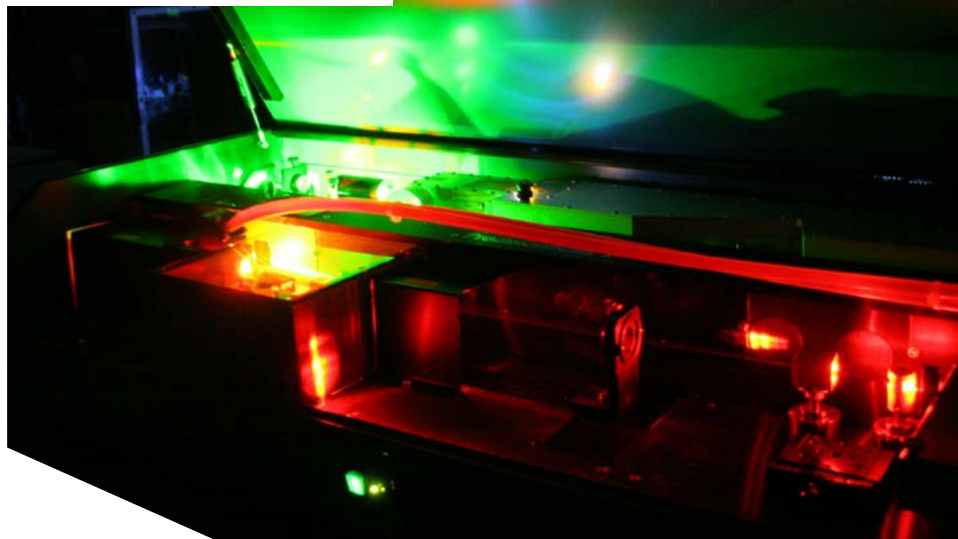
Master

Master 1 - Master 2

Mention

Chemistry

INTEGRATED RESEARCH FOR ADVANCED CHEMISTRY AND MATERIALS (IRACM)



OBJECTIVES

This Master's degree IRACM (Integrated Research for Advanced Chemistry and Materials) provides an advanced 2-year program dealing with chemistry fields which are representative of present research interests in 7 laboratories of Lille University. Indeed, **the main objective of IRACM is to obtain a better orientation of undergraduate students into funded 3 year PhD programs (about 1700 €/month, in general) within research laboratories of our University.**

The novelty of IRACM relies on the pedagogical approach to the research training : apart from classical classes during S1 (see green cells in program structure) devoted to the main fields of chemistry (organic, inorganic, spectroscopy...etc), the student will be gradually immersed in our laboratories. From S1 to S4, students will have « integrated research classes » (See yellow cells in programme structure) with a special focus on : Smart Functionnal Materials, Colloidal Dispersions in Nanomedicine Advanced Catalytic Processes ,Visualization of Chemical Reactivity (chemical modeling and transient spectroscopies). Furthermore, the student's autonomy and initiative will be encouraged through MOOC classes, pluridisciplinary or industrial projects (S2) and Laboratory Projects I and II (S3 and S4). Finally, high-level classes and seminars will be given by worldwide experts, introducing subjects like Artificial Intelligence for Chemistry and other 21st-century hot topics.

Besides theoretical and technical skills related to Chemistry, competences essential for research will be given through specific Graduate Program Courses like Project Management or Dissemination of science (See blue cells in the program structure).

PROGRAM STRUCTURE

1 ECTS (European Credits Transfer System) represents about 12 hours in class (lectures, tutorials, laboratory practical, case study inside laboratories). All the classes are taught in English.

M1- Semester 1

Fundamental Skills					Integrated Research I: Fundamental Tools and concepts			
Language 3 ECTS	Inorganic Chemistry 3 ECTS	Organic Chemistry 3 ECTS	Kinetics of Chemical Networks 3 ECTS	Initiation to scientific programming 3 ECTS	Molecular Spectroscopy & Computational Chemistry 6 ECTS	Analytical Chemistry 3 ECTS	Inorganic-organic materials 3 ECTS	Fundamentals of Catalysis 3 ECTS

M1 - Semester 2

Fundamental Skills					Integrated Research II: specialization (2 among 4)			
Project Management 3 ECTS	MOOC 3 ECTS	Chemometrics 3 ECTS	Characterization of solids 3 ECTS	Pluridisciplinary or Industrial project 6 ECTS	Visualizing Chemical Reactivity 6 ECTS	Colloidal dispersion in Nanomedicine 6 ECTS	Smart Functional Materials 6 ECTS	Advanced Catalytic processes 6 ECTS

M2- Semester 3

Advanced topics				Integrated Research III: advanced technics & project	
Dissemination of science 3 ECTS	Language 3 ECTS	Hot TOPICS in Chemistry 3 ECTS	Artificial Intelligence in Chemistry 3 ECTS	Advanced Characterization Methods (Advanced Scientific Platforms) 9 ECTS	RESEARCH PROJECT I 9 ECTS

M2-Semester 4

Integrated Research IV: Master Thesis	
RESEARCH PROJECT II 30 ECTS	



THIS MASTER'S DEGREE PROGRAMME IS PART OF THE GRADUATE PROGRAMME 'SCIENCE FOR A CHANGING PLANET'

- 7 Msc, 2 Graduate Schools, 22 Laboratories united towards a competitive scientific and training environment.
- Interdisciplinary trainings from the master to the doctorate including an international environment, professional networking, mobility and thematic summer schools.
- This programme guides students to prepare their career and to tackle the scientific and technological challenges of our time.

<http://www.isite-ulne.fr/index.php/en/graduate-programme-science-for-a-changing-planet-student/>



TRAINING'S ASSETS

- High-level educational and research environment, proposed by 7 laboratories of the chemistry department.
- An interdisciplinary chemistry program at the frontiers of physics, organic, inorganic and materials science
- 12 months experimental teaching and laboratory internships during the master's degree, including international mobility facilitates integration within both academic and industrial domains.
- Master students acquire project management skills at an international level
- Possibility of scholarships during the two years (M1&2) : 3 500€ to 7 000€ per year

ADMINISTRATIVE

STAFF

Sylvie DUQUESNOY

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APPLICATIONS

All students that:

- have a Bachelor in the field of chemistry or related subjects
- have a solid background in English
- have a strong interest to acquire and develop skills in Research related to Chemistry

IRACM will be highly selective at entry (up to 15 master students). Some admitted students would be given financial support in the form of scholarships. Depending on your country of origin, you have different modes of application.

International students must complete the Campus France procedure as soon as possible (campusfrance.org/en) for application to the Master and Student Visa.

Students with no Campus France agency and Europeans have to go through the university's application program e-candidat <https://ecandidat-2020.univ-lille.fr/>

RECRUITMENT CALENDAR

- Campus France: before 06/03/2021
- e-candidat: 01/03 to 27/04/2021

DIRECTORS

Directors of studies

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INTERNATIONAL RELATIONSHIP

- The University of Lille has a policy of supporting international access to its courses. That's why it has introduced special procedures to make international students feel welcome and form collaborations.

<https://www.univ-lille.fr/home/international-student/>

- Practical information for your stay at the University of Lille

<https://www.univ-lille.fr/home/international-student-tool-box/>

SCHOLARSHIPS

Scholarships awarded by the Graduate Programme « Science for a Changing Planet » are available to M1 and M2 students to support their studies, to facilitate their settling in Lille and to do an internship in a foreign country. Eligibility, criteria and application can be found here :

deadline : 15th March 2021 (first call) ; please check the date online for the second call <http://www.isite-ulne.fr/index.php/en/graduate-programme-science-for-a-changing-planet-student/>

For more information on the national diplomas offered by the Faculty of science and technology of the University of Lille, consult the training catalog:
www.univ-lille.fr/formations.html