FACULTÉ DES SCIENCES ET TECHNOLOGIES

Université de Lille

Master in Physical and Analytical Chemistry: Atmosphere, Clouds & Climate Sciences

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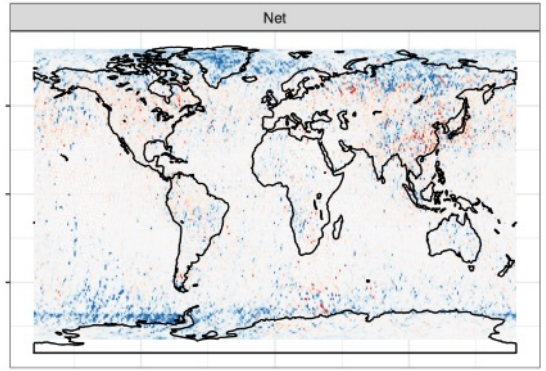
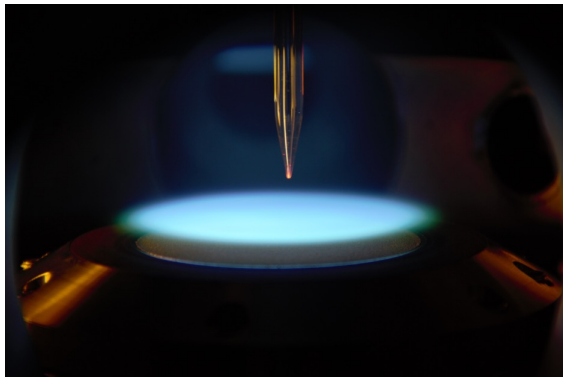
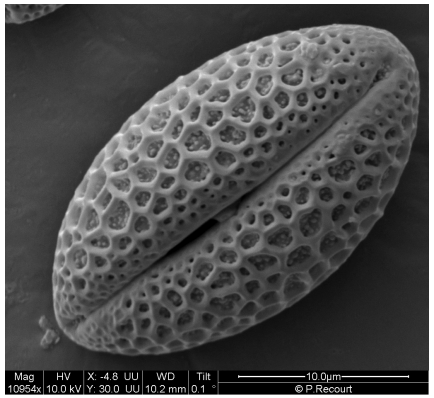
A 2-year program training (120 ECTS)

in chemistry and physics of the atmosphere, at the highest level







VOCs

Mass spectrometry

spectroscopy

$PM_{2.5}$

remote sensing

soot

clouds

air quality

reactivity

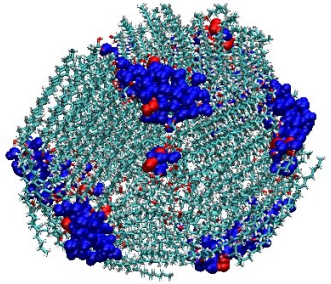
GC/MS

aerosol

greenhouse gases

Air quality

Climate change



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Students will be :

- immersed in an international environment,
  all courses are delivered in english

- involved in events organised by the cross disciplinary project
« ***Aerosol at the heaRt of the Earth Atmosphere system*** **(AREA)**»
bringing together 6 laboratories

Area
Cross Disciplinary
Project Lille

A strong link with research

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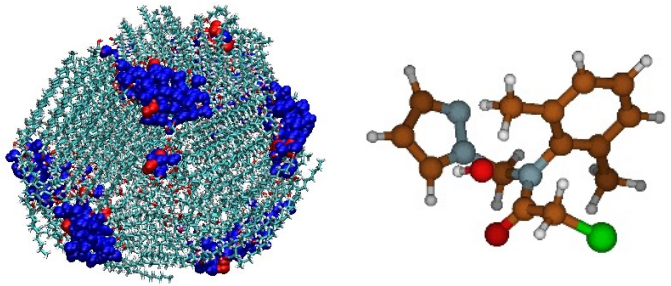
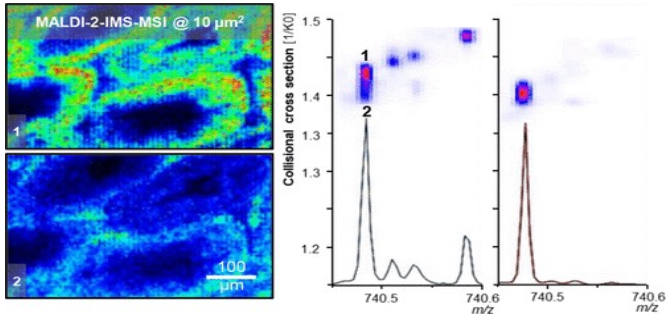
Atmospheric Observatory in Lille (ATOLL)

Molecular level modeling

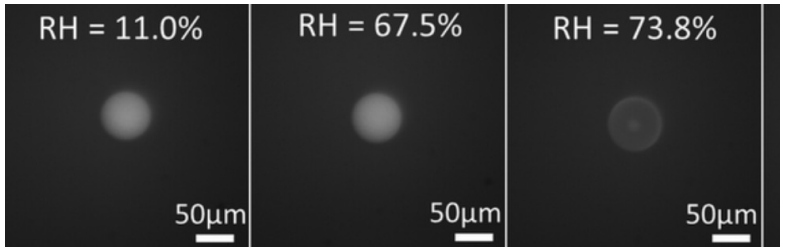


High-resolution mass spectrometer

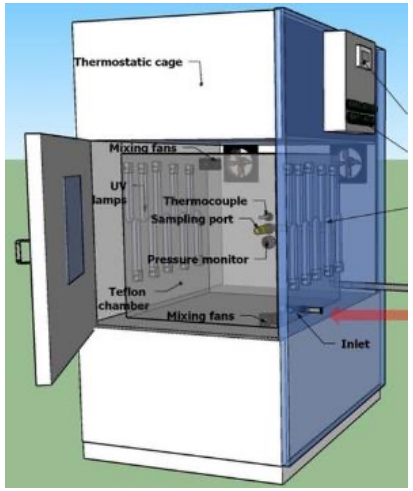


Fourier Transform Microwave Spectrometers 2-20 GHz & sub-millimeterwave spectrometers 50-1500 GHz

Optical imaging of levitated aerosol particles



Atmospheric simulation chamber



Area
Cross Disciplinary Project Lille

ites | PC2A | IMT Nord Europe | LASIRE | Laboratoire d'Optique Atmosphérique | PhLAM | icare

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Pedagogical content

Compulsory teaching units

Master 2

S4 Feb-June

Research training in Laboratory -
Full-time research position in lab of university of Lille
or international lab

S3 Sept-Jan

- **Chemometrics and Artificial Intelligence in Chemistry** — 6 ECTS
- **Hot topics in chemistry** — 6 ECTS
- **Analytical technics : Surface Analysis** — 3 ECTS
- **Computational Chemistry** — 3 ECTS
- **Photosciences and applications** — 3 ECTS
- **Research Project II** Graduate programme Course — 9 ECTS

Master 1

S2 Feb-June

- **Chemometrics and Machine Learning for Advanced Spectroscopy** — 6 ECTS
- **Environmental Sciences** — 5 ECTS
- **Structural Inorganic Chemistry** — 5 ECTS
- **Large Scale Facilities in Physics** — 3 ECTS
- **Research Project II Tutored Trainings** — 11 ECTS

S1 Sept-Jan

- **Physics and Chemistry of the Atmosphere**
  Aerosols and their precursors
  Meteo and clouds
  Atmospheric radiations and remote sensing
  15 ECTS
- **Optical spectroscopy & Advanced Spectroscopic Techniques** — 9 ECTS
- **Language** French / English — 3 ECTS
- **Scientific writing and communication and Project management.** — 3 ECTS

Disciplinary teaching units

Transversal skills

Job opportunities

- **PhD thesis:**

  wide range of offers will be available in laboratories involved in the cross disciplinary project «AREA »

PhysicoChimie des Processus de Combustion et de l'Atmosphère

Laboratoire d'Optique Atmosphérique

Centre de recherche Énergie Environnement

Laboratoire de Spectroscopie pour les Interactions, la Réactivité et l'Environnement

Physique des Lasers, Atomes et Molécules

Laboratoire de PhysicoChimie de l'Atmosphère

- **Engineer:**

  - **Air quality**
  - **Gas and aerosol instrumentation**
  - **Remote sensing**
  - **Atmospheric & Weather modeling**

Data and Services Centers

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How and when to apply for the fellowships?

Various scholarships are available, we suggest applying to all possible categories:

- From the CDP AREA: €8,000 per year

  One application period: 01/12/25 – 15/03/26

Area Cross Disciplinary Project Lille

www.cdp-area.fr

- From the Graduate Programme: €4,500 – €8,500 per year

  1st call: application period: 01/02/26 – 15/03/26

  2nd call: application period: 01/04/26 – 15/05/26

Graduate Programmes Lille

Innovative research-driven training
Graduate Programmes

How and when to apply for the ACCESS Master's programme ?

Admission requirements to apply to :

- **Master 1**: Bachelor (180 ECTS) in Chemistry, Physical Chemistry, or Physics
- **Master 2**: Master 1 (60 ECTS) in Chemistry, Physical Chemistry, or Physics

Etudes en France.

- For candidates in countries eligible for the "**Etudes en France**" (EeF) procedure.
- **Use "Master ACCESS + Université de Lille"** in the Etudes en France online platform.
- **Choose and select**: Master/Taught in English/chimie physique et analytique/Atmosphere, Clouds and Climate Sciences (ACCESS).

Opening – Closing :
01/10/2025 - 15 december 2025 (depends on the country)

Mon Master or e-candidat

- **European nationals or candidates that are not eligible for Campus France and/or the ''Etudes en France''** procedure need to apply directly via monmaster for the Master 1 or the e-candidat platform of University of Lille

Opening – Closing :
02/02/2026 - 17/02/2026

Contact: denis.petitprez@univ-lille.fr