UNIVERSITÉ SAVOIE MONT BLANC

LCME

Laboratory for Molecular Chemistry and Environment

EA 1651 - USMB

Faculty: UFR Sciences and Mountain

PhD school: Science and Engineering of Systems, of Environment and of Organisation (SISEO)

FIELD OF TRANSVERSAL SKILLS

Fundamental sciences, Earth sciences and Environmental

KEY WORDS

Green chemistry ■ Environmental chemistry ■ Persistant organic pollutants ■ Air, water, soil ■ Sonochemistry ■ Ionic liquids ■ Carbon materials ■ Valorization of biomass

SECTORS

Chemical industries (organic and inorganic synthesis) ■ Pollution control companies ■ Environmental engineering services ■ Nature parks and reserves

The LCME was created in 1984. After 1995, it progressed rapidly in the field of sonochemical applications (base of one of the sectors of current green chemistry).
Over the past 15 years, the laboratory's activity has broadened to include environmental chemistry for studying sources and dynamics of organic pollutants in mountain environments. The LCME co-founded the FREE-Alpes federation, grouping EDYTEM, CARRTEL and, more recently, LECA and EM- IRSTEA.

SPECIFIC EQUIPMENT AND EXPERTISE

- Sampling devices for atmospheric particles, semi-volatile pollutants, total atmospheric deposits and lake sediments
- Laboratory analytical platform to characterise water, air and soils
- On-line atmospheric analyser, drone to monitor water quality Ultrasonic reactors and transducers
- BET surface area measurement instrument

PHD STUDENTS SKILLS

- Organic and inorganic green synthesis
- Clean, safe and simple pollution control processes
- Trace analyses
- Dynamics and reactivity of pollutants in the environment

RESEARCH THEMES

LCME's research work is focused on 2 research teams:

▪ Chemistry in sustainable development

- Molecular synthesis and building materials using methodologies based on the twelve principles of sustainable chemistry to develop pollution control processes

▪ Environmental chemistry

- Studying biogeochemical cycles of persistent organic pollutants with the aim of minimising anthropic pressure on ecosystems

NETWORKS / PARTNERSHIPS

Academic cooperations

- IGE, Joseph-Fourier University (Grenoble, France)
- ECOTOX Centre (EAWAG EPFL)
- ICBMS, Claude Bernard University (Lyon, France)
- Jean Lamour Institute, Lorraine University (Metz, France)
- Institute of Separation Chemistry (Marcoule, France)
- Research Centre on Divided Matter: CRMD (Orléans, France)

Institutional cooperations

- National Institute for the Industrial Environment and Hazards: INERIS (Verneuil-en-Halatte, France)
- Inter-association Committee for cleaning the Lake of Bourget (Chambéry, France)
- Atmo Auvergne Rhône Alpes (Lyon, France)
- Nature Parks (Ecrins, Bauges)

Industrial cooperations

Terra Nova ■ Dacard ■ SGL Carbone ■ Azimut Monitoring

KEY DATA*

14 researchers and professors
5 administrative and technical staff
7 PhD students and **1** post-doctoral student

* Academic year 2016-2017

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LCME Laboratoire Chimie Moléculaire et Environnement

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