CHEMISTRY LABORATORY – LCH

FROM MOLECULE TO DEVICE: A WIDE SPECTRUM OF CHEMISTRY SKILLS

http://www.ens-lyon.fr/CHIMIE

LABORATOIRE
DE CHIMIE
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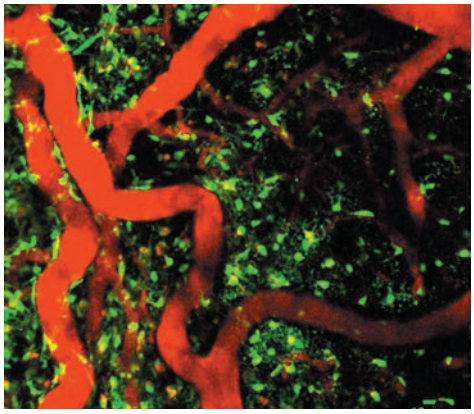

RESEARCH TOPICS

- THEORETICAL CHEMISTRY AND MOLECULAR THERMODYNAMIC
- SUPRAMOLECULAR CHEMISTRY AND BIOLOGICAL CHEMISTRY
- FUNCTIONAL MATERIALS AND PHOTONICS

CROSS-CUTTING THEMES

- CHEMISTRY FOR LIFE
- SUSTAINABLE CHEMISTRY & ENERGY
- LIGHT-MATTER INTERACTIONS
- CATALYSIS
- IONIC LIQUIDS & THERMODYNAMICS
- SURFACE, INTERFACES & NANOMATERIALS
- SELF-ASSEMBLIES
- CHIRALITY

RESEARCH EQUIPMENT AND TOOLS

- Laboratories and equipment for synthesis
- NMR spectrometers
- EPR coupled with light irradiation
- Computational cluster
- Calorimeters
- Spectroscopy and advanced micro-spectroscopy (LSM 510 META Zeiss)
- Non-linear spectroscopy
- Characterization of materials (DRX, MEB, SAXS...)
- ISO 8 Clean Room
- 3D/4D printing and micro-fabrication platform

KEY FIGURES

120 staff including **95** researchers, **35** permanent staff, **60** PhD students and post-doctoral fellows, **14** research support staff

Over the last 5 years:

516 publications

6 prizes and distinctions including **1** IUF and **1** member of the French Academy of Sciences

62 public funding including **1** ERC, **5** Horizon 2020, **33** ANR

48 private research contracts

Intellectual property:

17 active patent families, **7** licenses

3 start-ups

TRL scale between 1 and 9

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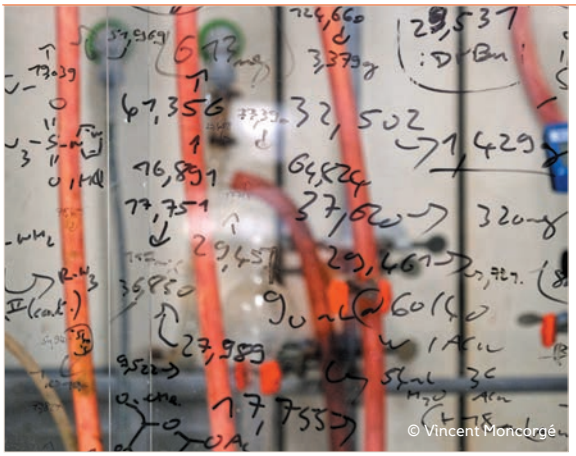

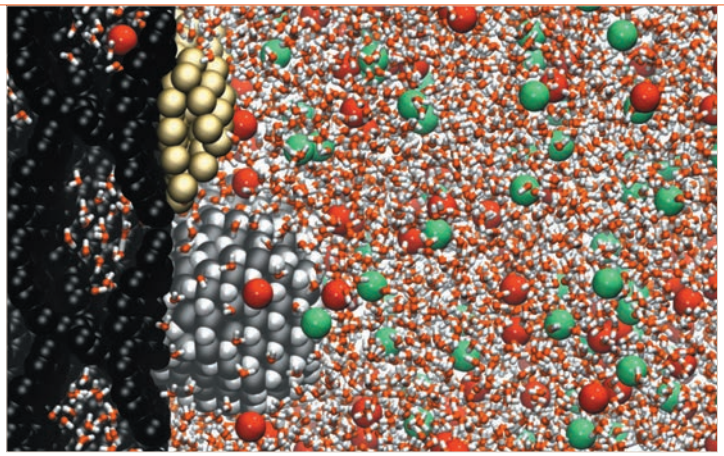

FROM THE LABORATORY TO THE SOCIO-ECONOMIC WORLD

- Member of several competitiveness clusters:
  - Axelera - Chemistry and Environment competitiveness cluster
  - Techtera - competitiveness cluster of the textile sector
  - Lyonbiopole - competitiveness cluster focused on pharmaceutical activities
- Extensive collaboration and services with international private groups: chemistry, defense, oil, cosmetics, pharmacy.

FOCUS ON

Institutional partnership research

IDEXLYON-IFPEN-ENS Chair of Lyon «ROAD4CAT»

IFPEN has been a key partner of the Laboratory since its creation in 2004

- **Objective:** To propose an innovative research approach in computational chemistry and apply it to the rational design of heterogeneous catalysts at the atomic scale, from the genesis of the active phases to their operation in catalysis or photocatalysis.

Private partnership research

Collaboration in the DGA-Rapid project - CIFRE Thesis Scholarship

Active research collaboration since 2007 with Thales, the DGA and Mathym/Baïkowski.

- **Objective:** To develop solid material with optimized optical limiting properties in the SWIR (Short-Wave Infrared "eye-safe" band) priority for certain civil or military applications, including telemetry, active laser imaging and 3D laser imaging.

Services provided

- The LCH offers a range of services in the fields of molecular synthesis, material synthesis and shaping, analytical methods, technical and scientific expertise.

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