
UCL

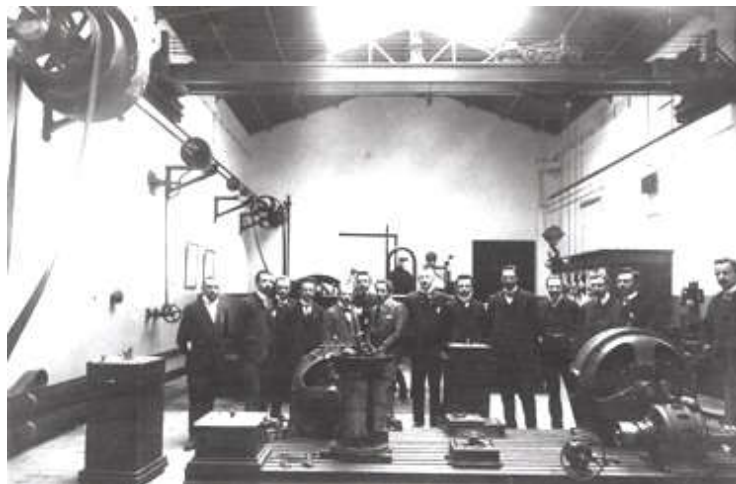
**Université
catholique
de Louvain**

Université catholique de Louvain

An internationally-recognized university
at the heart of Europe



A university rooted in history (1425)



Key statistics

ca 29 000 students

5 sites : Louvain-la-Neuve, Brussels, Mons, Tournai, Charleroi

5 695 staff members

1 721 faculty members

2 056 research scientists

21 research institutes

Research

21	research institutes
2 713	permanent researchers
2 019	PhD students
62	research centres
25	technological platforms
1	Nobel Prize for medicine
15	ERC Grants
21	Francqui Prizes
20 370	Scientific publications (2002-2011)

Teaching

14 schools

Humanities (15 733 students)

Medical science (7 544 students)

Science and technology (5 330 students)

10 Erasmus Mundus programmes

753 Erasmus bilateral agreements

1 227 "out" students

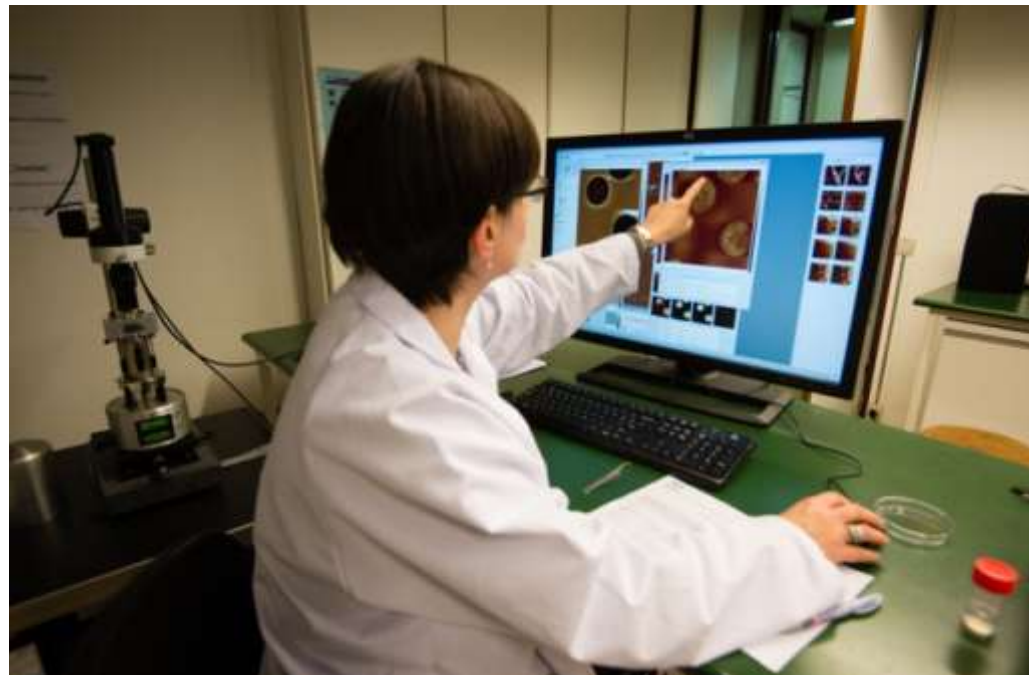
576 Partner Erasmus & Mercator institutions worldwide

555 International professors and researchers

The FAME@UCL master program



Louvain School of Engineering
Dept of Materials Science
and Chemical Engineering



The FAME@UCL master program

Courses – 30 credits	Semester	Credits
COMPULSORY (waived if prior knowledge is demonstrated)		
Polymer Science and Engineering	1	5
Physical Chemistry of Metals and Ceramics	1	5
Physics of Functional Materials	1	5
Deformation and Fracture of Materials	1	5

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Deformation and Fracture of Materials	1	5
ELECTIVE (select two or more – all courses of dept are now in English)		
Physics of Nanostructures	1	5
Design of Micro- and Nano-Systems	1	5
Micro- and Nano-Fabrication Techniques	2	5
Macromolecular Nanotechnology	2	5
Physical Chemistry and Chemistry of Polymers	1	5
Project in Polymer Science	2	5
Polymer Materials	1	5
Materials Selection	2	5
Characterization of Inorganic Materials	1	5
<i>Other elective courses</i>		



Learning-, not teaching !

Courses – 30 credits

COMPULSORY (waived if prior knowledge is demonstrated)

Polymer Science and Engineering
Physical Chemistry of Metals and Ceramics
Physics of Functional Materials
Deformation and Fracture of Materials

Partially flipped classroom

Project-based
Partially project-based

ELECTIVE (select two or more – all courses of dept are now in English)

Physics of Nanostructures
Design of Micro- and Nano-Systems
Micro- and Nano-Fabrication Techniques
Macromolecular Nanotechnology
Physical Chemistry and Chemistry of Polymers
Project in Polymer Science
Polymer Materials
Materials Selection
Characterization of Inorganic Materials

Project-based
Project-based
Project-based
Project-based + flipped classroom
Project-based
Partially project-based
Partially project-based

Other elective courses



Master thesis & research



Institute of Condensed Matter
and Nanosciences



Institute of Information
and Communication Technologies,
Electronics and Applied Mathematics



Institute of Mechanics,
Materials
and Civil Engineering

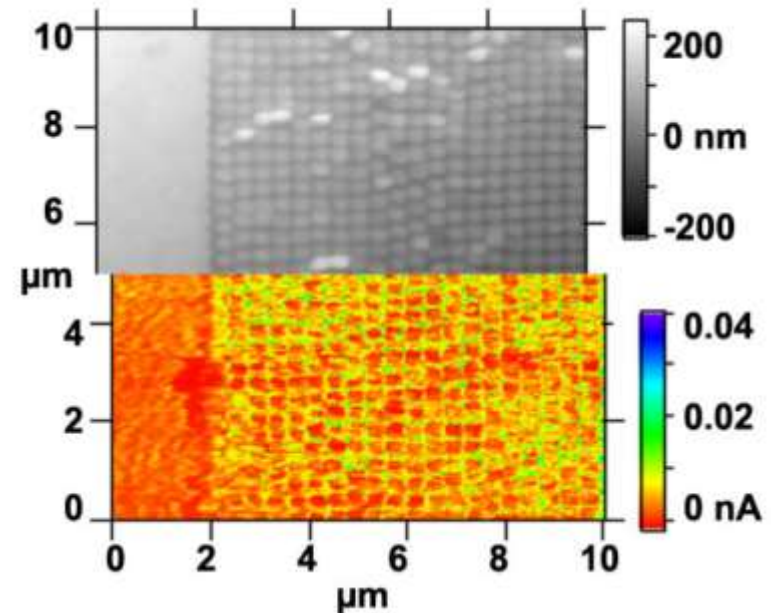
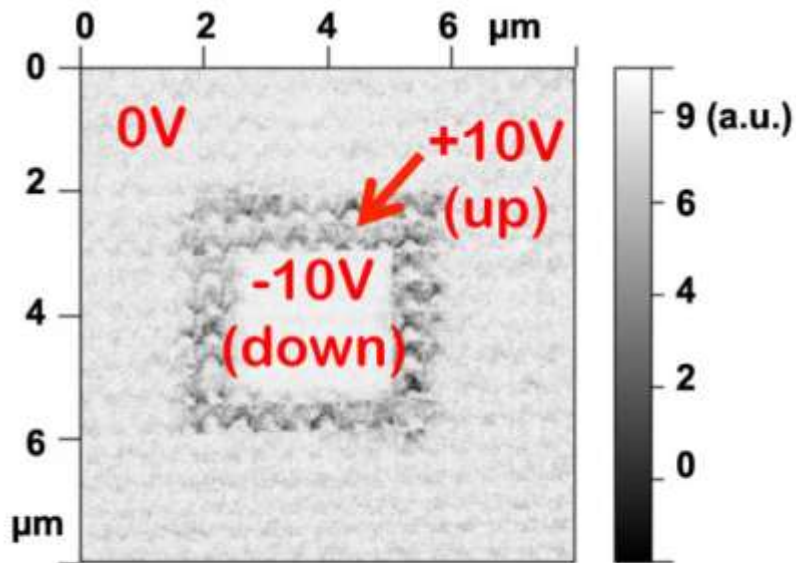


Institute of Life Sciences

Master thesis – examples (org. electron.)

2008 - Plastic ferroelectric memories - FeRAM's
2008 - Thin organic films for plastic electronics
2009 - Plastic RAM's - Holst center, Eindhoven
2009 - Organic solar cells - IMEC, Leuven

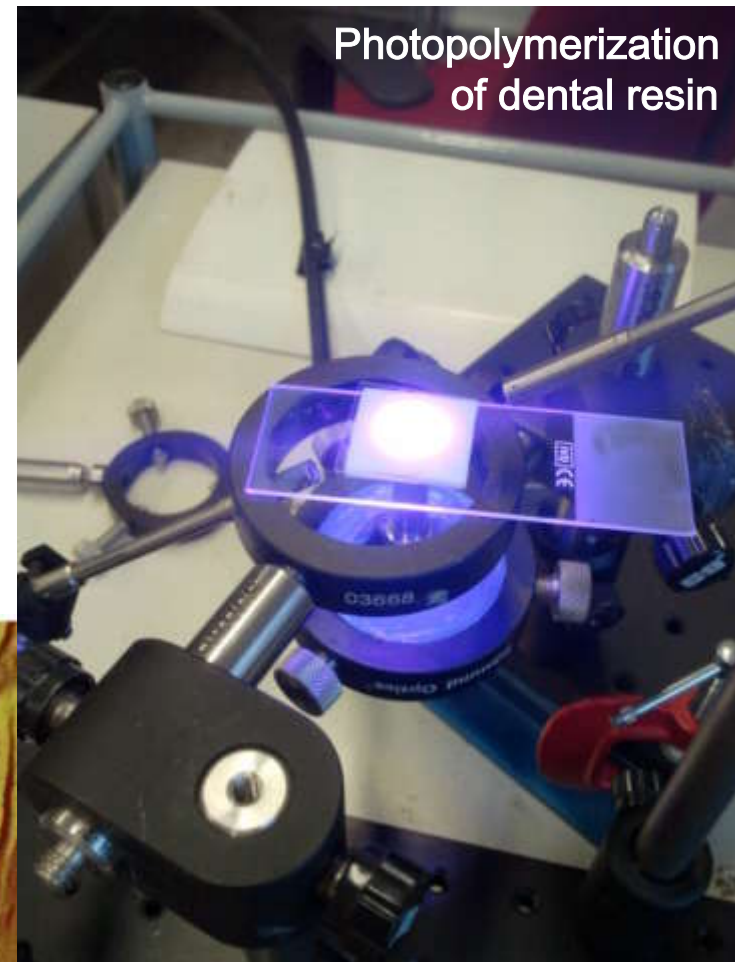
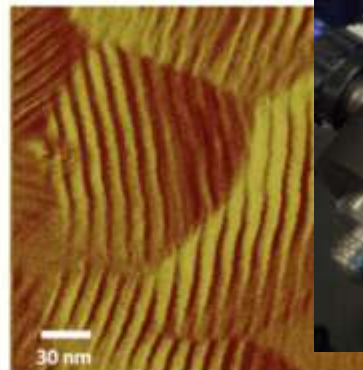
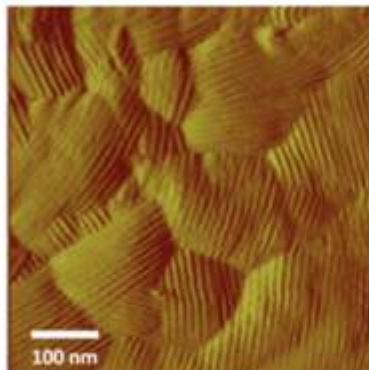
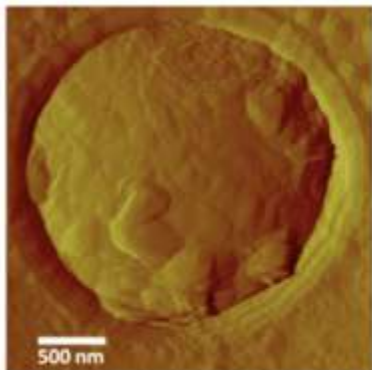
Ferroelectric/semiconductor organic memory device



Master thesis – examples (bio-related)

- 2008 - Nanomicrobiology using atomic force microscopy
- 2009 - Biosensors based on porous alumina films
- 2010 - Biosensors based on organic nanowires
- 2010 - Protein nanowires for cell transfection
- 2011 - Mapping receptors on living cells by AFM
- 2012 - Comparison of dental resins with different photoinitiators
- 2012 - A redox-triggered autocleavable intein for protein purification

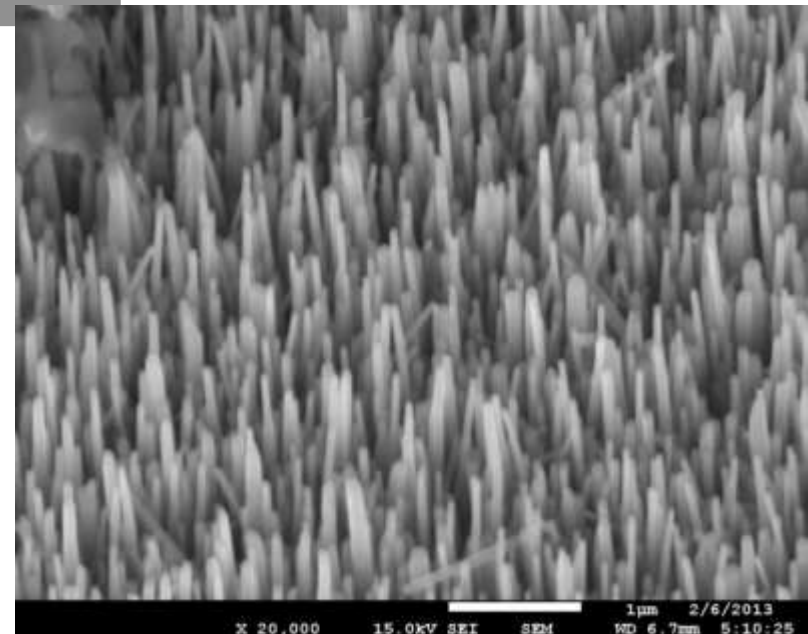
AFM of living *Aspergillus fumigatus* spores



Master thesis – examples (inorg. nanotech)

2008 - integrated solar cells - Fraunhofer - ISE
2009 - On-chip nanomechanical testing laboratory
2010 - magnetic nanowires in ferroelectric polymer
2012 - Arrays of ZnO nanorods for photovoltaic devices
2013 - Magnetic force microscopy on magnetic nanowires
2013 - quantum optics (Institut d'optique - Paris)

ZnO nanorods on
transparent conducting substrates



Master thesis – examples (hybrids, surfaces)

2008 - Microstructural engineering of Ti alloys for aeronautics - coll. Arcelor-Mittal
2008 - New hybrid magnetic luminescent materials (spin crossover compounds)
2010 - CNT and graphene nanocomposites
2012 - Development of new super strong Ti alloys
2012 - Morphological investigation of CZTS(Se) alloys - Asahi Glass Company Europe
2012 - Sprayed coating for super-hydrophobic solar panel glasses





Ecole
polytechnique
de Louvain

Master thesis – rules

30 credits **spread over two semesters** (except external collaboration).

Selected during the **two first weeks** of the first semester.

Not paid.

Possible in collaboration with industry or external lab

if 30 credits passed successfully in S1:

either proposed by a professor in UCLouvain;

or supported by a professor in UCLouvain acting as co-supervisor.



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<http://www.uclouvain.be/en-master-fame.html>

UCL – International Master 'Functionalized Advanced Materials and Engineering' – FAME

UCL Université catholique de Louvain

LOUVAIN SCHOOL OF ENGINEERING

> SCIENCE DES MATÉRIAUX ET DES PROCÉDÉS (MAPR) > CHIMIE ET PHYSIQUE APPLIQUÉES (FYK) > Les programmes d'étude > International | Version française |

Master 'Functionalized Advanced Materials and Engineering' - FAME

International Master 'Functionalized Advanced Materials and Engineering' - FAME

Functionalized Advanced Materials and Engineering

FAME @ UCLouvain

Ecole polytechnique de Louvain

Université catholique de Louvain

Physical and Chemical Engineering

The Erasmus Mundus master "Functionalized Advanced Materials & Engineering"- FAME, is an international program spread over Belgium, Germany, France and Portugal. Within the mobility scheme of FAME, students spend a first year either at the University of Augsburg or at the Institut National Polytechnique de Grenoble. All classes are in English. The second year of the master is then followed in one of the remaining six partner Universities. In this context, the University of Louvain offers a second year centered on the **Engineering of Materials and Nanostructures**. At the end of the master, the students obtain a dual degree from the two Universities into which they studied. The full program is detailed on the [general web site of the FAME master](#). Here, only details specific to the admission, research and registering in UCLouvain are given.

| contact : [Alain Jonas](#) | 27/04/2009 |

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address : 1, Place de l'Université B-1348 Louvain-la-Neuve (Belgium) - Telephone: +32 (0)10/47.21.11 - Fax: +32 (0)10/47.29.99 |