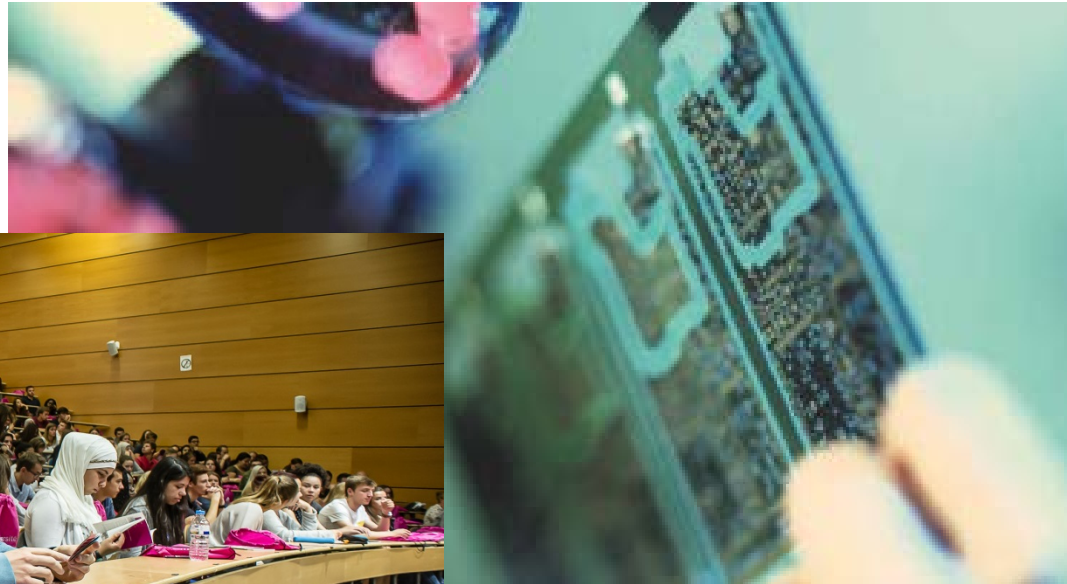




# Université de Lille

***A COMMITMENT TO EXCELLENCE  
IN EDUCATION AND RESEARCH***



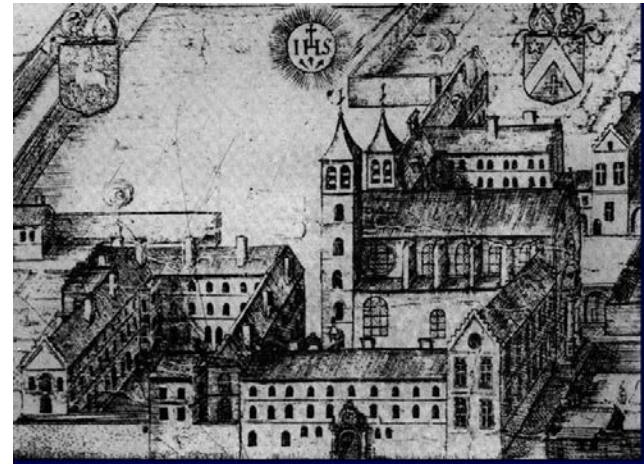
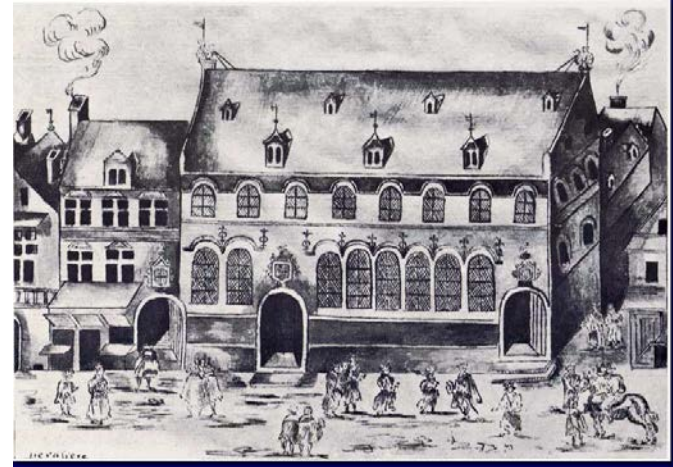
# LILLE

## A pleasant and international city



# 1559 -1562

- ▶ Lille University was founded by *Philippe II, King of Spain*



January 1<sup>st</sup>, 2018



# Lille University : Key figures

- **67 000** students, 12% are international from 145 countries
- **Registered Students**
  - Bachelor: **45 000**
  - Master: **20 000**
  - Doctorate: **2 000**
- **3 500** lecturers and researchers
- **3 000** technicians and administrative staff
- 6 locations** in Lille, Villeneuve d'ascq, Roubaix, Tourcoing and Wimereux (center of oceanography)



# Life on Lille University campus

## Learning Innovation Center LILLIAD

- 220 m<sup>2</sup> for promotion of innovation, 300m<sup>2</sup> for experimentation, 50 rooms for student coworking, 2 lecture halls and 1 internet café.

## Guesthouse

- 368 rooms intended for exchange students and guest researchers. Friendly atmosphere with various services.

## Green campus with active student life:

- sport facilities, student house, cultural center... ranked as 5<sup>th</sup> best campus in EU



# Research & education domains, a multidisciplinary university

- Social and human sciences
  - Arts, literature, languages
- Law, economy, management
- Health and life sciences
- Science and technology
  - Environment, biology, biotech, physics, chemistry and materials, Engineering sciences

# An international university at the heart of Europe : Degree programs taught in English (1/2)

## Bachelor's Degree Programmes (3 degrees)

### Economics and Management

- Business Administration (BBA)
- Economics & Management (International Major)

### Science, Technology, Health

- Life Sciences



# An international university at the heart of Europe : Degree programs taught in English (2/2)

## Master Degree Programmes taught in English (20)

### Science, Technology, Health

- Physical and Analytical Chemistry
- Advanced Spectroscopy in Chemistry
- Atmospheric Environment
- Chemistry, Biorefinery
- Robotics and Transport
- Electrical Engineering for Sustainable Development
- High Performance Computing and Simulation,
- Advanced Scientific Computing
- Translational Neurosciences
- Plant Sciences
- Urban Engineering and Habitat
- Paleontology-Paleoclimatology

### Economics and Management

- International Executive (MBA)
- Global Sourcing, Purchase & Supply Chain
- Economics of Globalisation and European Integration
- Global E-Business
- European Affairs (EuA)
- Globalization and the World Economy (GLOWE)

### Human and Social Sciences

- Urban Planning, Eurostudies
- Machine Learning and Data Science
- Contemporary Philosophy

**Top1 french university  
for english courses**

# From fundamental research to Society-concerns driven research

Health, demographic change and wellbeing

Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy

Secure, clean and efficient energy

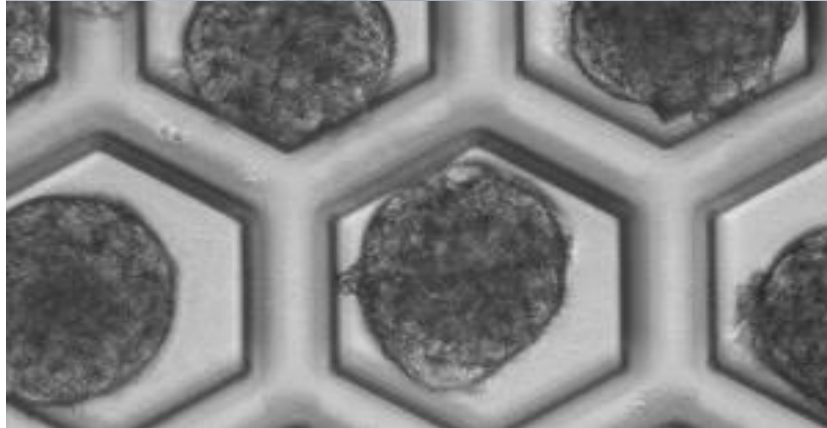
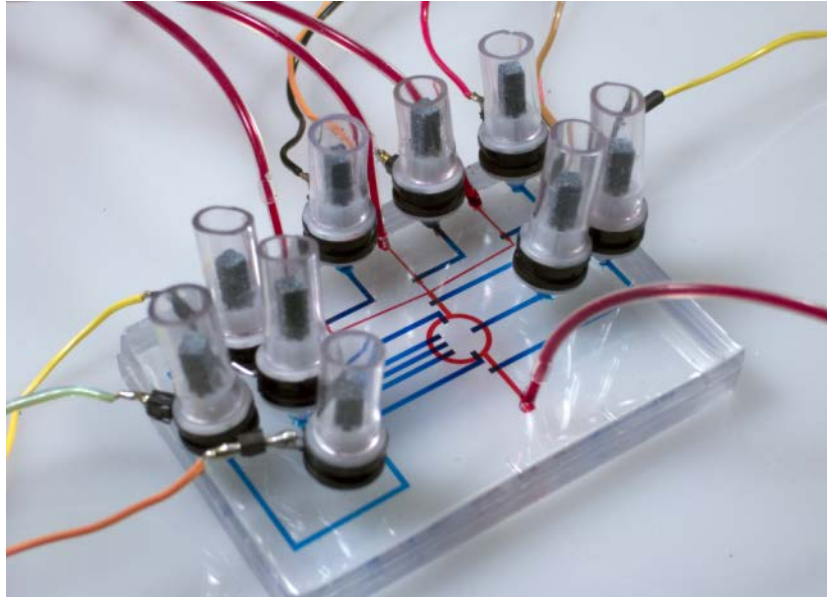
Secure societies - protecting freedom and security of Europe and its citizens

Smart, green and integrated transport

Europe in a changing world - inclusive, innovative and reflective societies

Climate action, environment, resource efficiency and raw materials

## Lille CANCER Center Project 40M€



- ✓ Molecular and cellular bases of resistance to locoregional treatment and tumor dormancy
- ✓ Biological and clinical markers of resistance and dormancy  
New probes and new molecules of therapeutic interest
- ✓ BioMEMS in the study of mechanisms and diagnosis in oncology
- ✓ Interventional therapies assisted by image and simulation
- ✓ Individual and collective processes involved in the development of personalized medicine and biotechnologies in oncology (SHS)

# Environmental sciences : climibio project

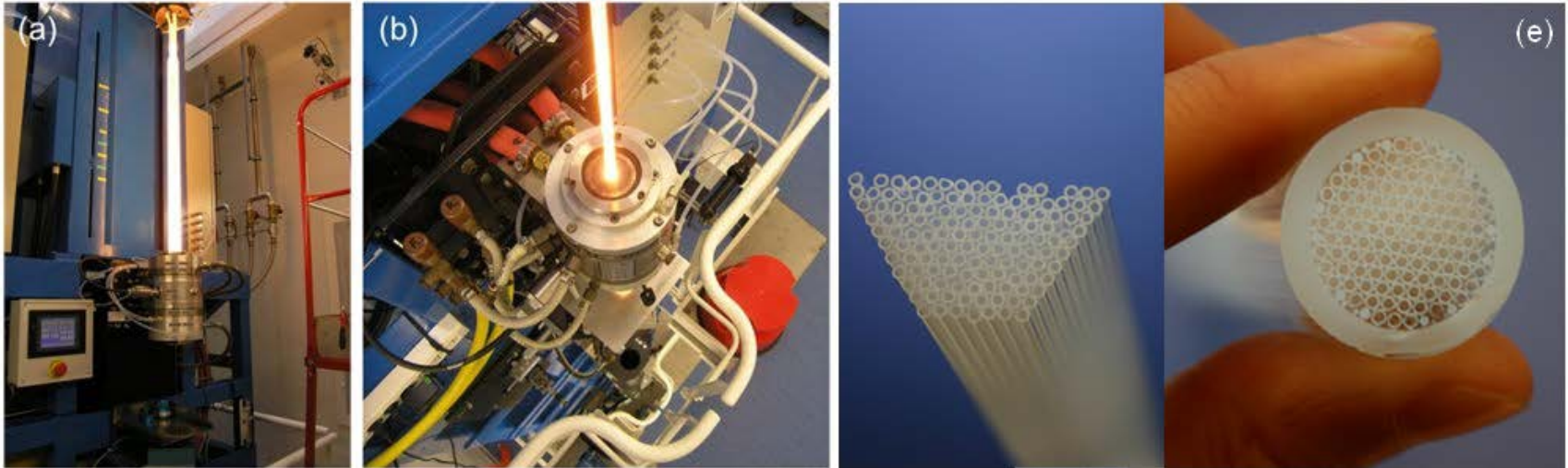
## 12.5M€



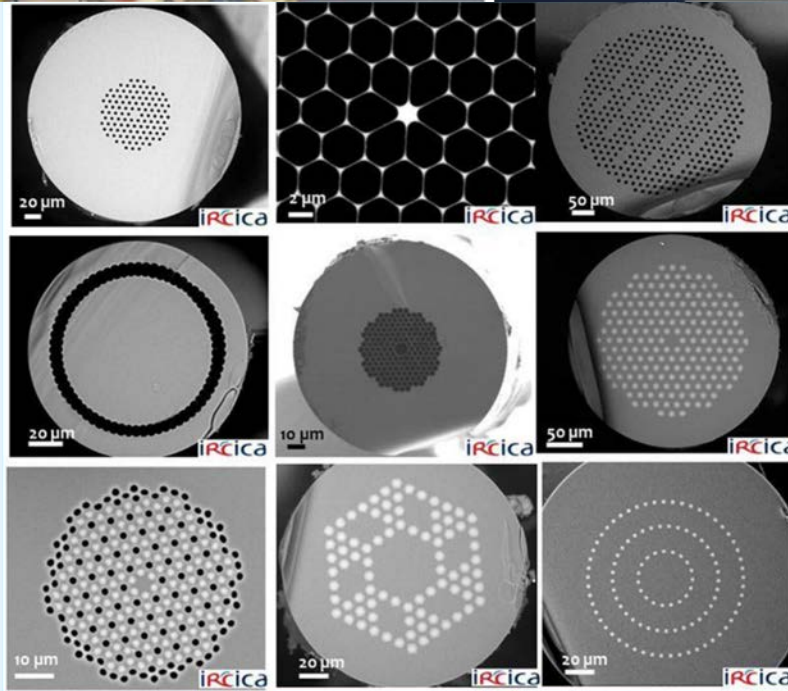
- Study the evolution of environments and climate,
- Analyze the impacts of these changes on biodiversity, air quality, health, society
- Consider the prospects and strategies for adapting to these changes.



# Advanced THz communications : towards 6G Photonics4society project (7,5M€)



FIBERTECH  lille



# PhD programs

> 2000 running PhDs

## 6 Doctoral schools

- Doctoral School of Materials, spectroscopies and Environmental Sciences (ED SMRE)
- Doctoral School of Engineering Sciences (ED SPI)
- Doctoral School of Human and Social Sciences (ED SHS)
- Doctoral School of Biology and Health (ED BSL)
- Doctoral School of Economics, Social, Urban Planning and Management (ED SESAM)
- Doctoral School of Law, Politics and Management (ED SJPG)

**Lille University funds 100 PhD each year**

- **62** research laboratories
- **3500** researchers from university and research organizations
  
- Association with national research organizations:
  - **CNRS**- *National center for Scientific Research*
  - **INRIA**-*IT and Automation Research Institute*
  - **INSERM** - *Medical research and Health National Institute*
  - **INRA** - *Agronomic research Institute*
  - **IRSN** - *Institute for Radiological Protection and Nuclear Safety*
  - **Pasteur Institute**
  
- CHRU de Lille – **Lille Regional University Hospital**
  
- **Engineering schools**

# Strategic focus : Science for a changing world => the 3 science & education HUBs





## ➤ Hub 1: Healthy Aging

- Challenge 1: Accelerate the advent of precision medicine
  - targeted therapy, individual health status
- Challenge 2: digital revolution in biomedical research
  - multi-level analysis of OMICS, combined electronics, material sciences, optics, computational mathematics, engineering
- Challenge 3: Maximize the impact for patient and society
  - “Integrated care” models, organization and delivery of social and health care services

## ➤ Hub 2: Changing planet

- Challenge 1 : multifactorial phenomena involved in the changing process of the planet
  - provide relevant monitoring and remediation protocols
- Challenge 2 : transition to a bio-based economy
  - bio-sourced raw materials, catalysts for biomass transformation
- Challenge 3: Impact of air pollution on health
  - dynamics of air contaminants, impact of climate change

## ➤ Hub 3 Fostering Interactive Knowledge

- Challenge 1: Taming complexity for creating and structuring knowledge
  - new concepts and tools in Mathematics, Physics and Computer Science
- Challenge 2: Fostering the advent of smart industry
  - bio-inspired architecture, new paradigms for energy efficiency, foldable electronics
- Challenge 3 : Empowering users with a safe and trusted digital world
  - privacy preserving on large networks of users and devices based on data mining and machine learning techniques, human computer interaction in interactive visual environments

# Research projects with a National Label of Excellence

## 7 Equipex : Excellence Research Facilities

- **ImaginEx BioMed**. high-speed screening microscopy and very-high-resolution analysis in the biomedical field
- **LIGAN PM** New –generation genome sequencing platform
- **ExCELSiOR** Experimental centre for research into the properties of nanodevices in a wide spectrum from microwave to medium infrared
- **IrDIVE** Platform of research and innovation in digital and interactive visual environments
- **LEAF** Laser processing platform for multifunctional flexible electronics
- **REALCAT** Integrated platform applied to high-speed screening of catalysts for biorefineries
- **FLUX** Fibre optics for high bit-rates

## 5 Labex –Excellence Laboratories

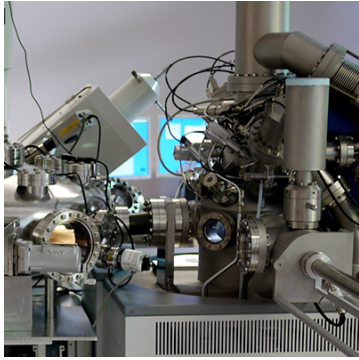
- **EGID** European Genomic Institute for Diabetes
- **DISTALZ** Development of Innovative Stratégies for Transdisciplinary approach to Alzheimer's
- **ParaFrap** French Alliance against Parasitic
- **CaPPA** Atmospheric physics and chemistry
- **CEMPI** Mathematics, physics and their interactions

# Scientific platforms in health & biology



- Biocomputing (bilille)
- Génomic
- Cell and tissue imaging (BICeL)
- functional imaging
- Protéomic & Mass Spectrometry
- High-field Nuclear Magnetic resonance (NMR)
- Expérimental resources

# Platforms for Sciences & Technologies



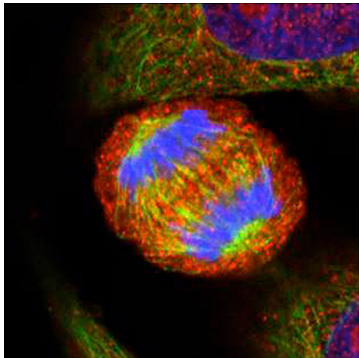
**Syntheses and advanced material characterisations**



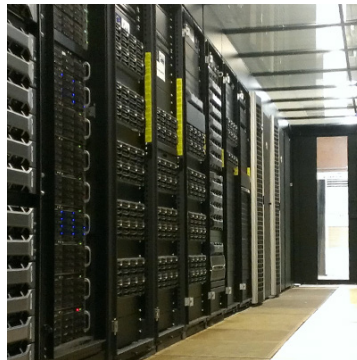
**Communication and computing**



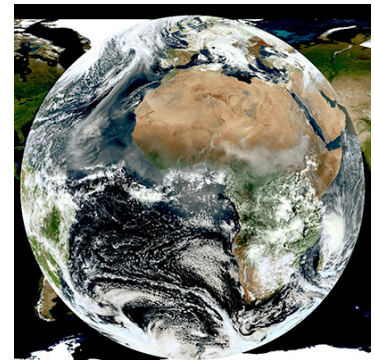
**Mechanics and civil engineering**



**Biotech**

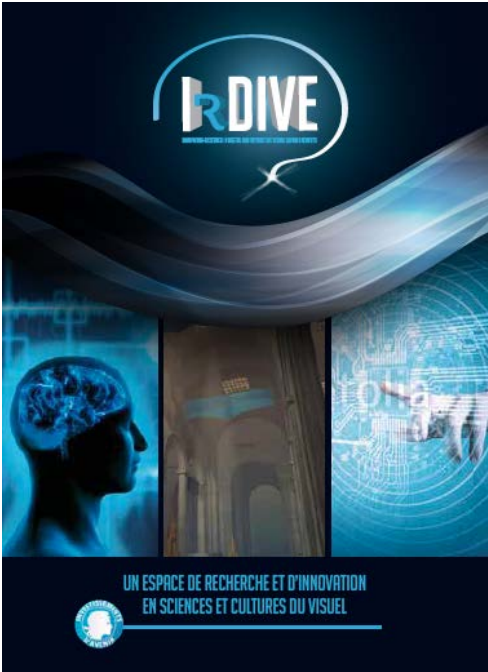


**Fast computing**



**Environmental sciences**

# Platform for Social & Human Sciences



Visual & behavior studies

# 3 national research infrastructures are hosted at ULille



**High-field NMR**  
**1.2 GHz project**  
**(15M€)**

**High-field pulsed-  
EPR**  
**263 GHz project**  
**(1.5M€)**



**High-field FT-  
ICR**  
**15T project**  
**(6M€)**



## GOTOUCHVR

Give the sensation - real - of the touch to the VR helmets  
VR TOUCH simple and powerful solution to interact and  
manipulate virtual objects: an interaction as natural and close as  
in reality.



Markets: e-commerce, health and industry, computer-aided design

4 doctors

Created 2017 - 15 employees in March 2018

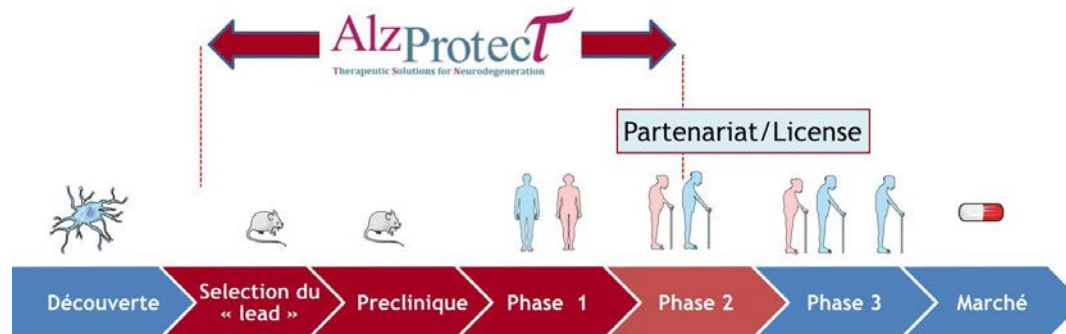
Fundraising of € 540,000 (\$ 640,000) in July 2017



# AlzProtect

Therapeutic Solutions for Neurodegeneration

A biopharmaceutical company developing drug candidates from discovery to clinical trials for the treatment of neurodegenerative diseases including Alzheimer's disease (AD) and orphan tauopathies such as Progressive Supranuclear Palsy (PSP)



Established in 2007 - ULille shareholder

January 2018: AlzProtect raises 14 million euros with the entry of Xerys to launch phase II (clinical studies) of its drug "AZP2006" for its application in Progressive Supranuclear Palsy (PSP)

# International programs

## Student mobility

- Quality Charter for Exchange Programmes
- Formal Agreement with partners (500 University partners)
- Hosting (accommodation, French Language for foreign speakers, integration week)

## Development of Joint activities

- Double or Joint degrees
- Summer and intensive programmes
- Internships (1400 training periods each year realized abroad)

## Researchers Mobility

- Doctoral Mobility through joint PhD or co-advisory of Thesis
- Post Doc Positions
- Visiting Professors (more than 200/y)

## European and International Programs

- Erasmus Mundus Master Programs and Scholarships
- Annual call for international programs (visiting researchers, basic science collaborations)
- International Joint programs –LIA (Japan, India, USA, Italy, Canada, ...)
- International Joint Laboratories – Singapore, Tokyo
- European Research Programs (10<sup>th</sup> best French organization for H2020 success)

# UMI : International Mixed Units



Cintra - Singapore








E2P2L - Shanghai



LIMMS - Tokyo



# The Design of $\text{MnO}_x$ Based Catalyst in Post-Plasma Catalysis Configuration for Toluene Abatement

Zhiping Ye <sup>1,2</sup> , Jean-Marc Giraudon <sup>1,\*</sup>  , Nathalie De Geyter <sup>2</sup> , Rino Morent <sup>2</sup>  and Jean-François Lamonier <sup>1</sup>  

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# University of Lille : open perspectives

S'OUVRIR DES  
PERSPECTIVES