

# YEARS OF ENGINEERING EDUCATION IN LUXEMBOURG

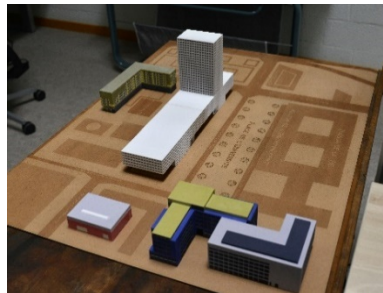
1916 - 2016

# Research Unit in Engineering Sciences

Today: Campus Kirchberg

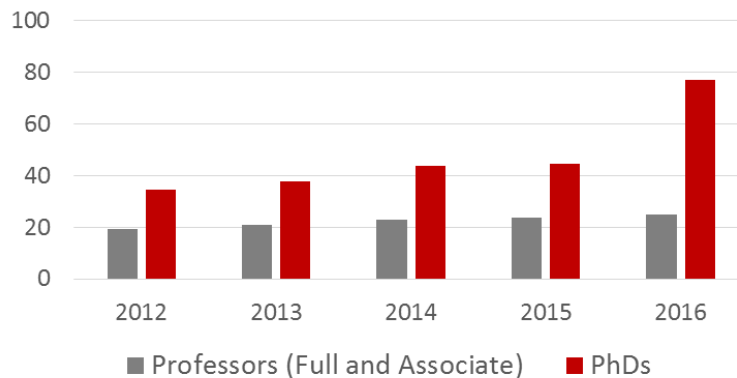


Tomorrow: Campus Belval

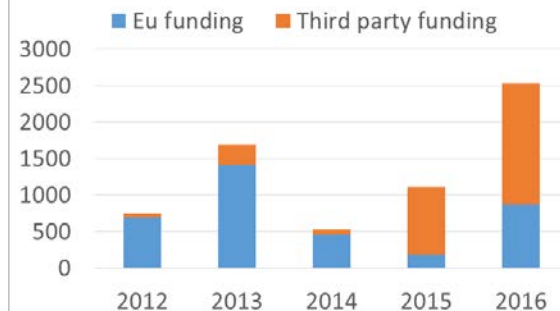


## RUES | RESEARCH UNIT IN ENGINEERING SCIENCES

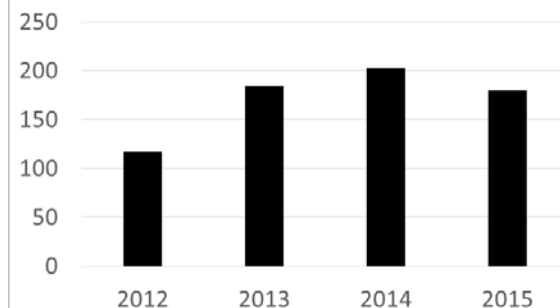
Head Counts

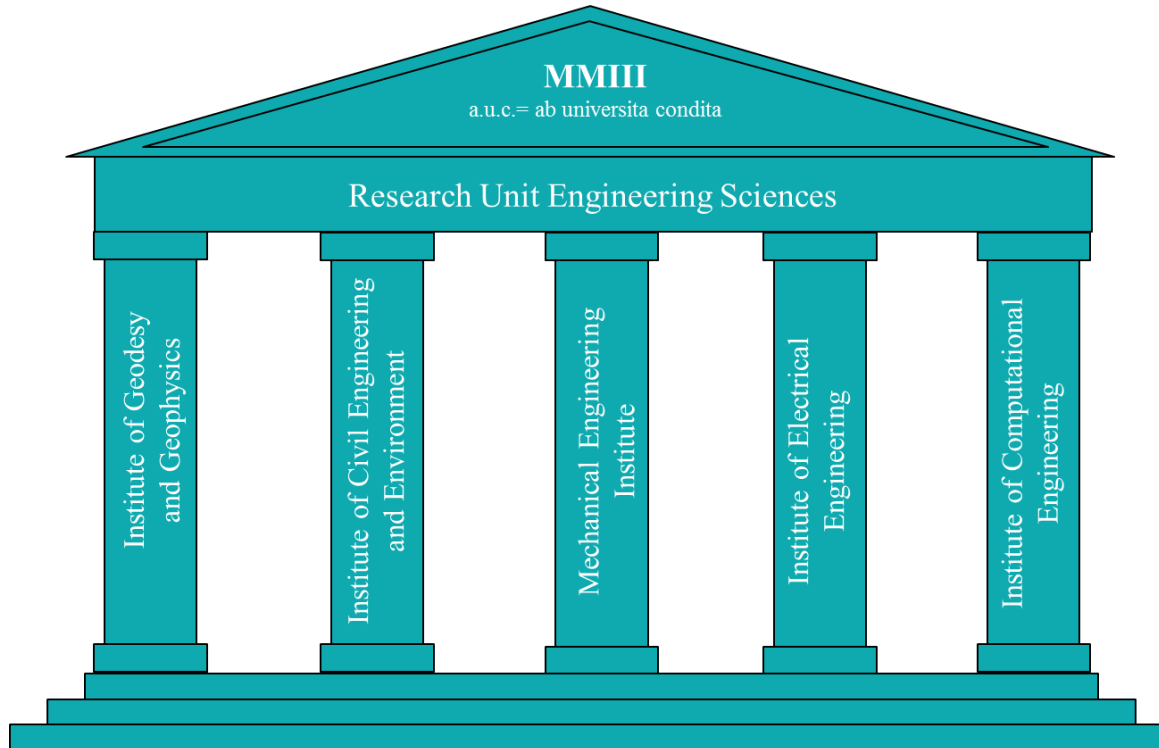


EU / Industry funding



Number of Publication





- **Mission: Multidisciplinary Research and Education under a single Roof!**
- **Meeting Luxembourg's needs in society and industry**

## Research

- Global Environmental Change
- Interpretation of Geophysical Processes
- Geodetic Monitoring

## Expertise

- Gravity Measurements
- Global Navigation Satellite Systems (GNSS)
- Geospatial Techniques and Technology



**Our research is both relevant to  
Luxembourg and the global society !**

## with

- Significant External Funding
- Highly-cited Publications

## Current Staff

- 3 Professors
- 5 Post-doctoral Researchers
- 6 PhD Candidates

# Research Unit in Engineering Sciences Institute of Civil Engineering and Environment



## Research

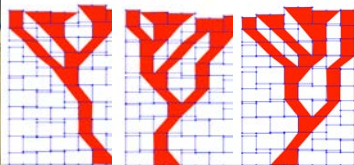
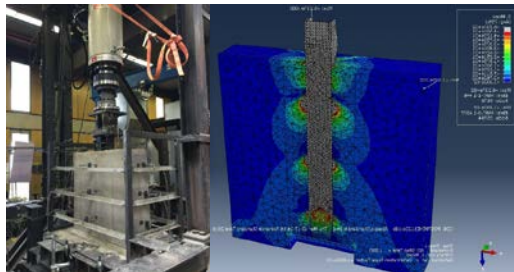
- Structural Civil Engineering
- Sustainable Construction Materials
- Waste Water Treatment
- Smart Urban Mobility

## Expertise

- Structural Element Analysis
- Finite Element Analysis
- Structural Health Monitoring



ArcelorMittal Chair of Steel  
and Façade Engineering



## Research in collaboration with industry



- **MultiCoSteel:** Composite Columns for High Rise Buildings
- **SRCON:** Composite Connections with Slim Floor Beams
- **CrossRoads:** Dry-stacked masonry blocks
- **CO2RedCem:** CO<sub>2</sub> reduced cement
- **EmiPoll:** Micro-pollutant emission profiles on wastewater treatment plants
- **Smart Urban Mobility:** Big Data-based optimizing of multimodal and sharing services



LE GOUVERNEMENT  
DU GRAND-DUCHÉ DE LUXEMBOURG

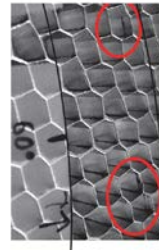
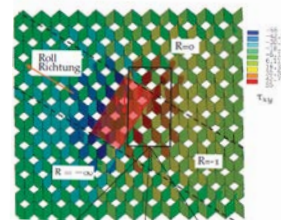
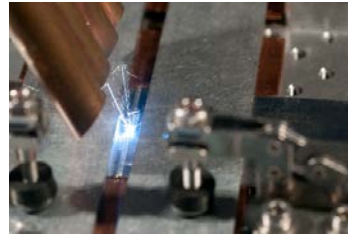


## Current Staff



- 6 Professors, 1 Senior Lecturer
- 2,5 Post-doctoral Researchers
- 23 PhD Candidates

## Research

- Innovative Manufacturing
- Sustainable Product Creation
- Energy: Supply, Distribution, Storage and Savings



## Research Project (Examples)

- Dynamics of an Injection Molding Machine **HUSKY**<sup>®</sup>
  1. PhD Student of the University of Luxembourg 2006
- Laser Joining of Li Ions Batteries for Automotive 
- Fatigue Design of Aluminum Honeycomb Sandwich Panels 

## Expertise

- Energy- System & Energy Storage
- 3D- Printing
- Laser Joining
- Construction & Design

## Current Staff

- 6 Professors, 1 Senior Lecturer
- 4 Post-Docs
- 23 PhD Students

### Research

- Mechatronics, Robotics
- Telecommunication
- Generation & Distribution of Electrical Energy



### Expertise

- Sensing & control for autonomous vehicles and robots
- Integration of renewable energy sources in smart grids
- Antenna design



### Research Activities & Projects

- Close interdisciplinary cooperation with SnT in Automation & Robotics
- Eco-Cities (Hollerich Village)
- Power Quality in Smart Grids
- Ground Antenna Galileo



### Current Staff

- 3 Professors
- 2 Senior Lecturers
- 7 PhD Students (+11 PhDs in SnT)

### Research activities

- Modeling and simulation of multi-physics/multi-scale systems
- Numerical and applied mathematics
- High-performance algorithms and computing
- Large-scale data analysis and visualisation



**Research, training and development  
to solve *future* engineering challenges:  
volatility + uncertainty + complexity**

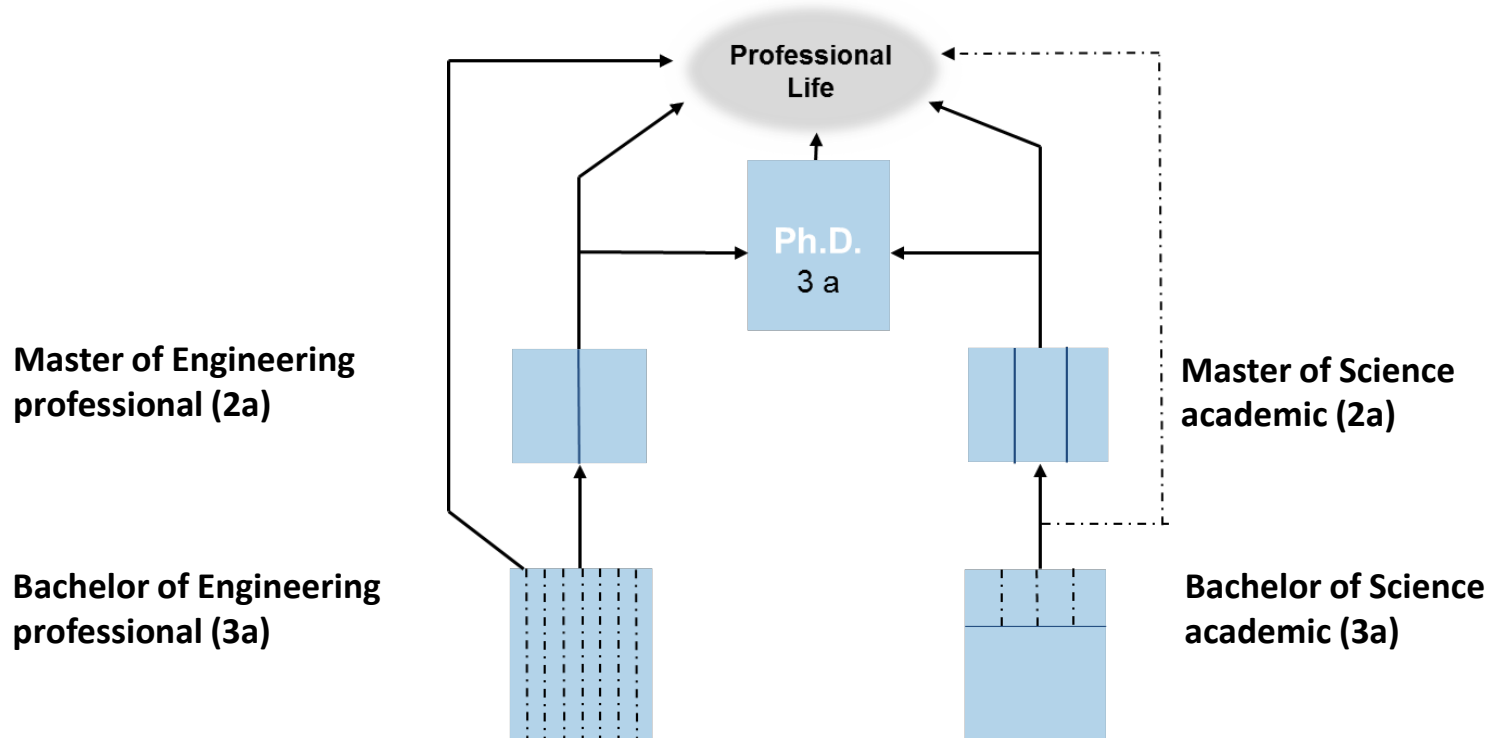
**First ERC starting grant of the  
uni.lu in computational  
engineering  
ERC RealTCut**

### Current Staff

- 3 Professors
- 3 Senior Researchers
- 11 Post-Docs
- 18 PhD Students

# Research Unit in Engineering Sciences

## Applied and Academic Education under a single Roof



# Research Unit in Engineering Sciences

## The Master Programs

### **MSPC**

Master of Science in Mechanical Engineering - Sustainable Product Creation

### **MSCE**

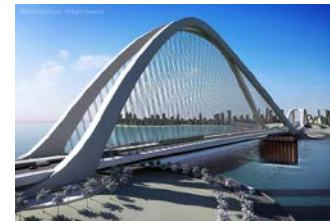
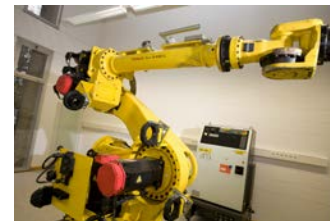
Master of Science in Civil Engineering - Megastructure  
Engineering with Sustainable Resources

### **MDD**

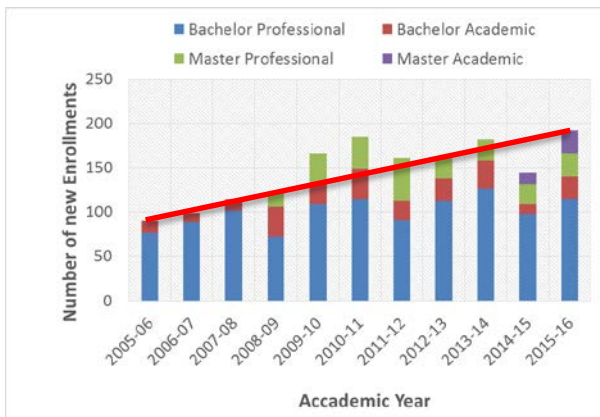
Master of Sustainable Development - Filière Energy and Environment

### **MEEE**

Master of Engineering - Energy Efficiency and Economics



## Increasing number of students

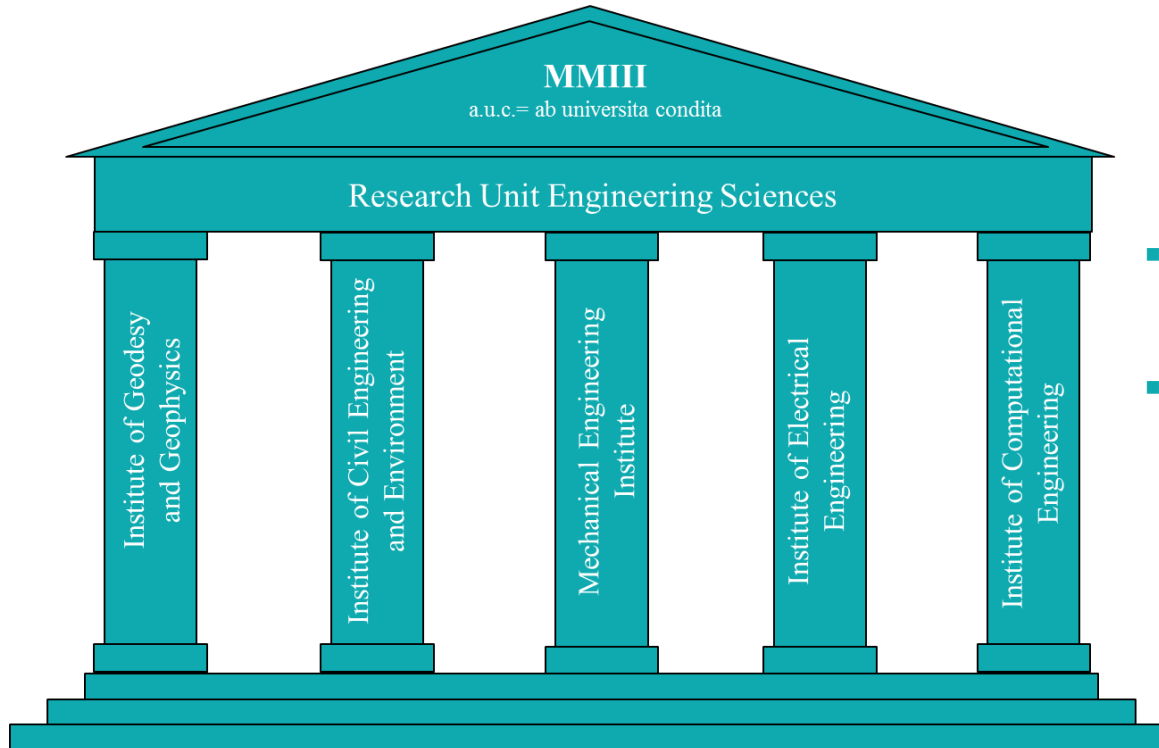


## External Evaluation of the Professional Bachelor “Employability Study” (2012)

- **Solid Technical Education**
- **Excellent Employability**

Deloitte.

iüii  
institut universitaire  
international luxembourg



- **RUES:** multidisciplinary Research and Education under a single Roof
- **RUES:** embedded in a strong national and international Industrial and Research Network.





## Villmools Merci