

KU Leuven, Faculty of Engineering Technology. University – Industry cooperation

Dr ing. Peter Arras

Content:

- Introduction to KU Leuven
 - Facts and figures
 - University structure
- Cooperation with industry

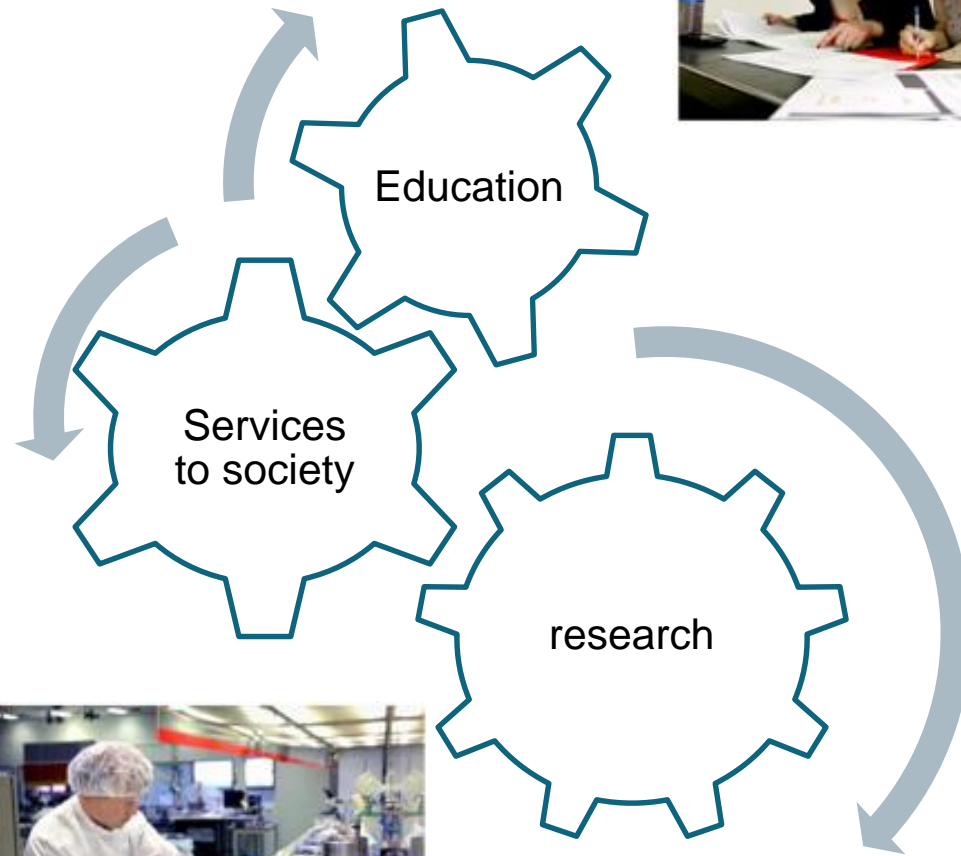


KUL, nearly 600 years of university tradition.

- Founded in 1425.
- Biggest university in Belgium.
- Reuters Most Innovative Universities Top 100: 16
- Times Higher Education ranking: 35
- QS World University Rankings 2015/16: 82
- US News: 8 in Europe, 44 worldwide
- Students 2015-2016: 55392
- Personnel: 12000 in university + 8000 in university hospitals
- Expenses on research (2014): 426.000.000 euro.



University mission:



University structure

15 faculties organised into 3 'groups'

Including an undergraduated campus in Kortrijk

BOARD OF TRUSTEES

BOARD OF GOVERNORS

ACADEMIC COUNCIL

EXECUTIVE BOARD

Humanities &
Social Sciences Group

20,472 students
3,015 international

Biomedical
Sciences Group

9,871 students
1,236 international

Science, Engineering &
Technology Group

8,451 students
1,940 international

Faculties:

- Sciences
- Engineering technology
- Engineering sciences
- Architecture
- Bio-engineering

Science, Engineering & Technology Group

Faculties	Research departments
 Science	<ul style="list-style-type: none">» Architecture, Urbanism and Planning» Biology» Biosystems» Chemical Engineering» Chemistry» Civil Engineering» Computer Science» Earth and Environmental Sciences» Electrical Engineering (ESAT)» Mathematics» Mechanical Engineering» Metallurgy and Materials Engineering» Microbial and Molecular Systems» Physics and Astronomy
 Engineering	
 Bioscience Engineering	
 Engineering Technology	
 Architecture	
Arenberg Doctoral School	



Engineering faculties.



Faculty of Engineering Technology:
-Technology translation / Applied engineering
-Engineering design.

Faculty of Engineering sciences:
- Fundamental
- Conceptual design.



Cooperation with industry:

- Organisational level
- Campus level
- LRD (Leuven Research and Development)



Cooperation with industry: Organisational level

- Captains of industry are part of :
 - University Board of management
 - Faculty senates
 - Members / auditors in the internal Quality system of KU Leuven



Cooperation with industry: faculty/campus level.

- Job fair: in 2015, 170 companies were welcomed at the job fair at our technology campus De Nayer.
- Thesis Works: 80% of master thesis works is done in industry
- Internships
- Study visits: compulsory for students, consisting in seminar and visits.



Cooperation with industry: faculty/campus level.

- Quality system: every 2 years curricula are audited by companies to check compatibility with the state of technology.
- Board of management: consists of academics and captains of industry
- Projects: regional/national/international research and educational projects
- Consulting/contract research: technology translation and transfer of know-how to companies.



Cooperation with industry:

- LRD (Leuven Research & Development)
 - KU Leuven Research & Development (LRD) is the knowledge and Technology Transfer Office (TTO) of the KU Leuven Association.
 - LRD has developed a tradition of collaborating with industry, securing and licensing intellectual property rights, creating spin-off companies and stimulating knowledge-driven regional development.



Mission

- Help researchers and research groups to carry out services or research contracts at the request of companies or other clients.
- The **Legal Service** of KU Leuven Research & Development (LRD) supports researchers in drafting, negotiating and monitoring agreements.
- Specifically for European consortium projects, the **EU advisors** of LRD guide researchers in administrative, financial and legal matters.



LRD: Technology Transfer Office.

KU Leuven Research & Development



Established in 1972

One of the first university technology transfer offices in Europe

Profitable management of the economic potential of research results by means of:

Contract research

Managing intellectual property rights

Founding spin-off companies

Promoting entrepreneurship and innovation

Supporting regional development



- <http://lrd.kuleuven.be/en>



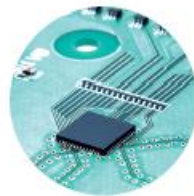
Promoting entrepreneurship and innovation.

- Research centers:
 - <http://lrd.kuleuven.be/en/tc>
- Incubators:
 - <http://lrd.kuleuven.be/en/hitech/incubators>



Spin-offs:

- The creation of spin-off companies is one of the technology transfer mechanisms through which knowledge and/or intellectual property are transferred, by which research results are commercially exploited. The spin-off company translates these research results in commercial products and/or services.
- List:
 - <http://lrd.kuleuven.be/en/spinoff/spin-off-companies>

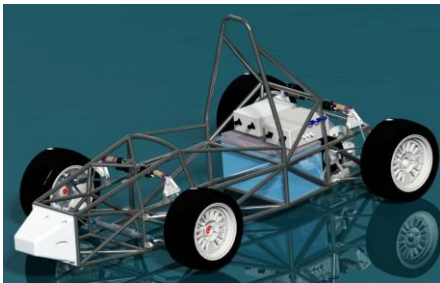
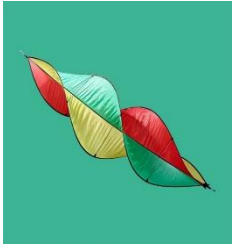


Technology Campus De Nayer.



- » Student at the centre
- » Practice-oriented, industry related
- » Scientific foundation
- » International focus





KU Leuven – Faculty of Engineering technology.



Education: Master programmes

- Integration of education and research and a master thesis
 - Electro-mechanics:
 - Automotive engineering, Manufacturing engineering.
 - Energy
 - Chemistry
 - Bio-chemical engineering
 - Civil construction
 - Electronics-ICT: Electronics, ICT



Research at technology campus De Nayer.

Technology translation

- Sponsored by government and industry
- Implementations in SME of new technologies
- Embedded systems
- Design and production technique
- Waste water treatment
- Low grade energy harvesting (including Renewable energy systems)
- Solar cracking

Knowledge centers:

- Sustainable energy
- Biochemistry
- Micro welding/welding center
- Rapid prototyping/rapid manufacturing techniques



Spin-offs at technology campus De Nayer.

Labo De Nayer:

Accredited test labs for materials and EMC:

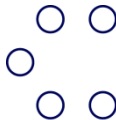
<http://www.labodenayer.be/English/index.html>

InOpSys:

Micro-biological Waste water treatment for industrial poluted waters.



Spin-off company

Initiator  **FISCH**
Chemistry for Sustainability

Founders



Investment



LRD → Spin-off companies → Gemma Frisius Fund

Gemma Frisius Fund

Involved KU Leuven Researchers:
Raf Dewil, Lise Appels, Kwinten Van Eyck



InOpSys

Mobile Units for on-site Removal
of Problem Components
from Waste Water

 **FISCH**
Fisch-concept
"Plant-on-a-Truck"

 **AVORE**
AAT
technology

 **KU LEUVEN**
AOP
technology

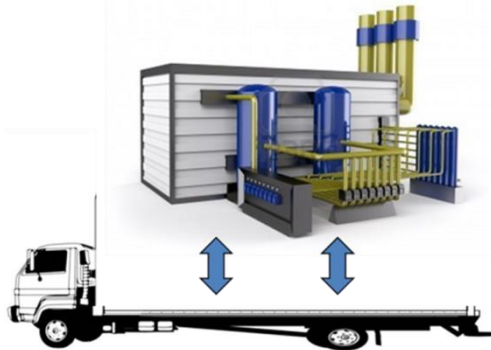
www.inopsys.be

InOpSys | Oude Baan 10 | 2820 Bonheiden
info@inopsys.be | Tel. +32 (0)468 124 094



... InOpSys introduces a “Plant-on-a-Truck” (POAT)

- With flexible. modular & mobile units (FMMUs)



- For “on site” waste/side-stream treatment/valorisation



FMMU is a unique solution

Flexible

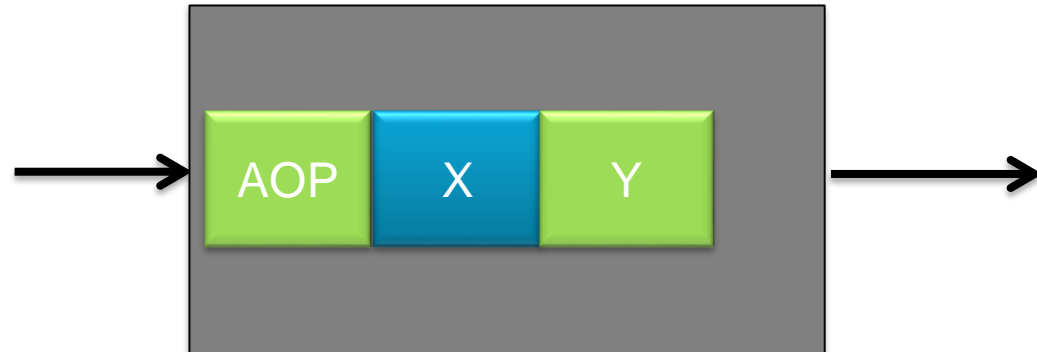
- On Site
- On Demand
- Adaptable
- Capex/Opex

Mobile

- “Plant-on-a-truck”
- Fixed unit is also possible

Modular

- Integrate technologies
- AOP + other existing or novel technologies (R&D)



Cheaper

- Less transport Cost
- Reduced treatment Cost



Services for society at technology campus De Nayer

- Science days for general public, for secondary schools, for primary schools
- Consulting to SMEs, knowledge centers
- Job trainings for employees
- Job trainings for unemployed



International cooperation (1):

- Student exchange:
 - Erasmus: European universities
 - Focus on study exchange (courses)
 - Cooperation with developing countries (Ghana, Peru, Uganda, Ecuador, Suriname)
 - Bilateral agreements
 - Students are welcome in:
 - Regular programs (in Dutch, 2nd master in English)
 - Projects (bachelor/master thesis) in research groups
- Teaching staff exchange



International cooperation (2):

- International projects (education):
 - Tempus projects:
 - NCR, CRIST, PROMENG, MMATENG, DeSIRE
 - Erasmus Mundus:
 - MANECA
- Teaching staff exchange
- Faculty tempus projects: ECBAC, INBI, Creation of university-enterprise cooperation networks for education on sustainable technologies



Contacts.

Dr. Ing. Peter Arras

International relations officer

Curriculum responsible Master Electro-Mechanics

KU Leuven| Faculty of engineering technology

Campus De Nayer

J. P. De Nayerlaan 5

BE2860 Sint Katelijne Waver | Belgium

Tel. + 32 (0)15 31 69 44

mob. + 32 (0)486 528 196

Email: peter.arras@kuleuven.be

