

## > Mines Douai and Mines Alès create the Civil Engineering Institute

**On April 11, the two schools inaugurated this new organization that will coordinate initial and life-long learning programs, research and corporate relations in the civil engineering sector.**

Historically, the IMT schools have made a priority of developing training programs and research on natural and artificial mineral materials, particularly those that can be applied to the areas of construction and civil engineering. This is especially true for the Mines Alès and Mines Douai schools. Both benefit from the presence of some twenty research professors in this field, graduate 130 engineers each year, and host around twenty PhD students in the two laboratories.



### **Encourage and enhance the synergy between the schools**

The objective of this Civil Engineering Institute is to establish a single supervisory organization to encourage and enhance the synergy between these two schools.

The institute aims to increase IMT's national and international visibility in the field of civil engineering for its initial learning programs (engineering degree and PhD), vocational life-long learning programs, research and corporate relations in the sector.

Arnaud Gauthier, Head of the Mines Douai Civil Engineering and Environmental Department, explains that "in the area of education, we wish to enhance the attractiveness of our training programs by expanding our offering, and pooling both our educational resources and our international academic partners (in China in particular)."

In the area of research, 4 themes have been identified for building stronger collaborations:

Theme 1: recycling waste and mineral and plant by-products, such as sand and gravel in the concrete used in construction for the structure and shell.

Theme 2: organic and mineral interactions in the suspensions used in construction.

Theme 3: new binding agents for construction: low pH cement, phosphate cement, geopolymers, Portland cement with a high substitution rate for mineral additives.

Theme 4: the bonding of paste and aggregates in eco-friendly concretes: microstructural and mechanic aspects.

"The goal is to jointly promote our expertise among stakeholders in the construction industry, encourage joint research projects and cooperate in investments for research equipment, which can sometimes be costly", explains Eric Garcia-Diaz, Head of the Civil Engineering Materials and Structures Department of the Mines Alès Materials Center.

### **An agile system of governance**

The institute will be governed by a steering committee and an executive committee common to both schools. The schools will both contribute to its resources.

### **IN THE SPOTLIGHT: civil engineering research activities at Mines Alès and Mines Douai**

The research professors from both schools develop research that has the same purpose: develop innovative and sustainable eco-materials for construction.

The Douai team is a member of the Laboratory of Civil and geoEnvironmental Engineering (LGCgE) in the North of France. The Alès team is a member of the Systems Chemistry Laboratory of Excellence (CheMISyst) through the Mines Alès Materials Centre, a research center of the laboratory. Both schools jointly confer, along with the Universities of Lille and Montpellier, a PhD in civil engineering.

The Douai research project has existed since the 1990s, whereas the more recent Alès project was developed in 2009 based on existing research work.

Partnership research is a strength that is common to both departments. Mines Douai has an annual average of 8 direct industrial contracts with groups including Saint-Gobain, Colas and Eiffage, in the area of sustainability and material recycling. It is also connected with consultancy firms and industrial players specialized in processing and treating waste prior to being recycled. An industrial research chair was created in April 2014 with 13 members committed to 10 years of work on recycling of dredged sediments.

Mines Alès actively works with the Marcoule Atomic Energy Centre (CEA), and industrial partners including The French Center for Studies and Research in the Concrete Industry (CERIB), CHRYSO (a WENDEL Group company), and the aggregates industry (French Union of Aggregate Producers).

## **A few examples of the materials research being carried out at the Institut Mines-Télécom**

> [A new research chair at Mines Douai in the area of road materials](#)

> [Additive manufacturing, a process for the industry of the future](#)

### **À propos de l'Institut Mines-Télécom [www.mines-telecom.fr](http://www.mines-telecom.fr)**

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