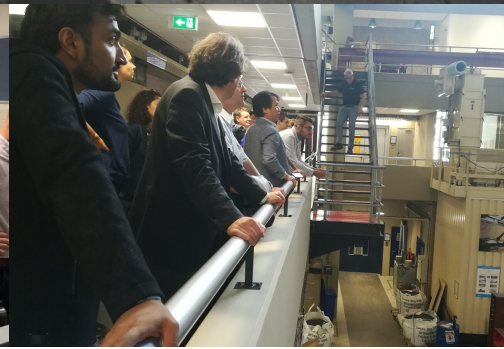


DuRSAAM

The PhD Training Network on Durable, Reliable and Sustainable Structures with Alkali-Activated Materials

Inside this Issue



AMBITIONS

The expected breakthrough is the strengthening of the European research area on eco-efficient construction materials. A new generation of researchers will be trained in the optimal use of AAM concrete for a sustainable built environment.

THE TEAM

The consortium brings together 7 academic and 15 non-academic partners, to excel in the scientific development and exploitation of AAM concrete, advancing design, modelling and practice beyond the state-of-the-art.

EVENTS

Learn about our recent and next events including the upcoming course in alkaline activated materials to be held in the week of 27-31 January 2020 and hosted by KIT.

ABOUT DURSAAM

DuRSAAM is a collaborative PhD framework creating a critical mass of experts skilled in innovative alkali-activated material (AAM) for concrete, as a key enabling technology for a sustainable and resilient built environment.

AAM technology presents a new generation of materials, ideally conceived to respond to the need for more efficient, durable, eco-friendly and reliable construction, and utilizing by-product resources as raw materials.





THE MISSION OF DURSAAM

The aim of DuRSAAM is to strengthen the European research within eco-efficient construction materials and increase competitiveness of Europe's construction sector, by applying concrete technology based on alkali-activated materials (AAM) for a more sustainable built environment.

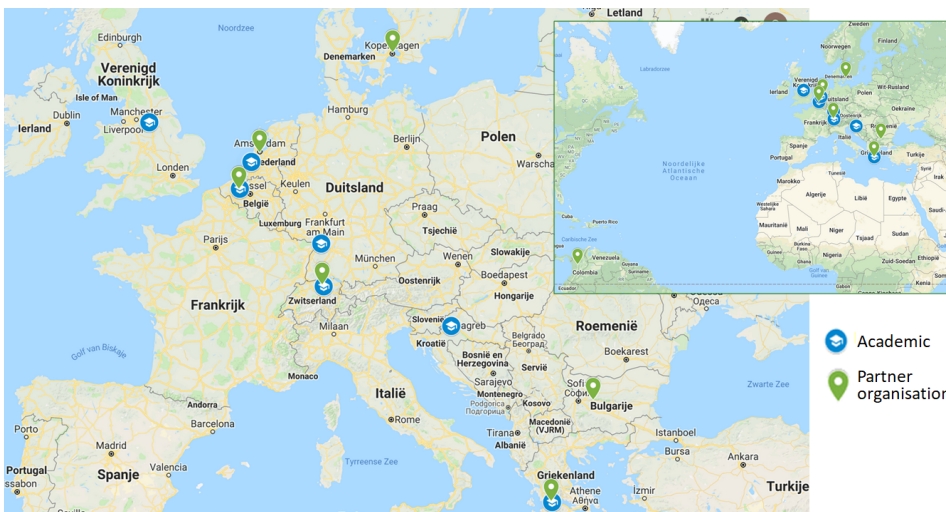
WHY DURSAAM

The design, durability and performance of structures play a crucial role in fostering societal and economic growth. In Europe, around 4 tons of concrete per capita are consumed annually. The downside of using concrete is associated with its durability issues and huge environmental costs, as the cement industry accounts for 8% of global anthropogenic carbon dioxide emissions. Moreover, around 60% of all non-renewable resources are used in construction, making it one of the least sustainable industries.

There is a clear demand for a new, sustainable generation of construction materials, since Ordinary Portland Cement (OPC)-based concrete on its own cannot meet all the challenges of modern society concerning durability and sustainability. The DuRSAAM action addresses this by establishing a training and research network contributing to a sustainable built environment using AAM concrete.

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Worldwide, 4.1 billion tons of cement are manufactured per year, translating into 8% of all human-derived CO2 emissions.
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THE DURSAAM TEAM



The network delivers world-leading training to Early Stage Researchers (ESRs) through 13 PhDs within interrelated aspects of AAM concrete, fibre reinforced high-performance concrete, and textile-reinforced mortar, as well as sustainability assessment. The outcomes will be instrumental in delivering a sustainable future in Europe's construction industry, which is increasingly driven by the growing demand for durable yet cost-effective solutions, allocating a greater focus on reliable and comprehensive eco-efficient material technologies such as AAM.

NOTE FROM THE COORDINATOR:

Prof. dr. ir Stijn Matthys, Ghent University

"Dear reader, in this first DuRSAAM newsletter we give you an insight in this European PhD training action focussed on alkali activated materials (AAM) for concrete. Be inspired by the enthusiasm of the PhD fellows and the DuRSAAM partners to bring eco-friendly concrete technologies to a next level. As such, we strongly believe in technological advancements going hand in hand with economic and environmental aspects. Are you also triggered by these new concrete technologies? Contact us for your future building projects."

PROJECT MEETING 2

On the 12th and 13th September, Delft University of Technology hosted DuRSAAM consortium for *Project Meeting 2*.



During Project Meeting 2, the DuRSAAM consortium welcomed new Early Stage Researchers (ESRs) on board.

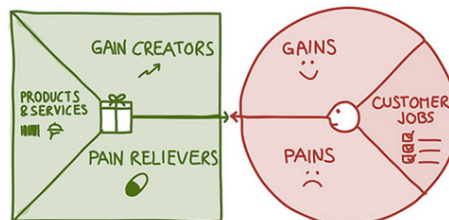
- PhD students were introduced to the consortium, the scope of the program and the current status of the project.
- ESRs presented the scope of their individual PhD research projects and exchanged the ideas on further cooperation across the topics.
- Fellows had a chance to learn, network and experience the collaboration in action.
- ESRs established a council of PhD fellows with the aim of supporting each other's work for the next four years.

All DuRSAAM partners participated in a guided tour through the laboratories and testing facilities at TU Delft and could visualize the benefits from industry-academia partnerships.

At PM2, ESRs had a chance to meet their mentors from the industry. Moreover, within the DuRSAAM project training will be partially delivered at industrial partners' premises.

DuRSAAM aims at the development of critical and innovative thinking of PhD fellows!

In the first **Entrepreneurial Workshop**, organised by DuRSAAM, Dr. Victor Scholten (responsible for Entrepreneurial Matters at TU Delft) presented his model for turning technology into business, stimulating students to think about research and development not only within the academic environment but also on a more global level, in order to develop outcomes that influence society on a daily-life basis and generate profit and resources for solving future challenges.



"These actions make young professionals prepared for both academic and industrial challenges."

In this expert talk, **Wouter Crijns** (co-founder of start-up ResourceFull) presented a successful *UHPIPC Staircase* case-study and showed step-by-step evolution of the project from the mix design under lab-scale to further expansion within real-life scale. The expected and unexpected issues appearing during this project were discussed. Students were exposed to real-scale challenges that are rarely predicted or measured during research work.



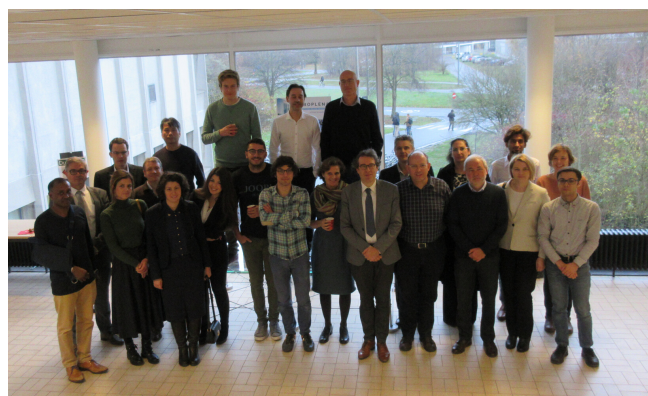
OUR PARTNERS

The team holds a unique focus on: (1) today's concerns of users and engineers that durability and sustainability of AAM concrete is yet insufficiently quantified; and (2) provision of an AAM technology for rehabilitation of structures to meet the growing demand for renovation, to be developed in parallel with AAM mixtures for new concrete structures.

PREVIOUS EVENTS

Project Meeting 1 in December 2018, hosted by Ghent University

This was the first opportunity for all members of DuRSAAM action to come together and start this success story.



NEXT EVENTS

Course on alkaline activated materials

The course will be held from Monday 27 - Wednesday 29 of January 2020 at the Karlsruhe Institute of Technology - Open to all interested! The course will comprehend the basic aspects of alkaline activation and will be a hands-on experience in development of alkaline activated material mix designs in the laboratory, guided by experts in the field.

More information and registration can be found here: <http://www.dursaam.ugent.be/index.php/events/27-pm3>

Project Meeting 3

The Project Meeting 3 will take place at the Karlsruhe Institute of Technology from Wednesday 29 - Friday 31 of January 2020, where progress of the project will be discussed.

STAY TUNED

For more information about DuRSAAM visit our webpage, and follow us on LinkedIn for updates from our framework.



This issue of the newsletter is brought to you by PhD fellows: Anastasiya Komkova, Andres Arce, Ivana Krajnović and Luiz Miranda de Lima Junior, and Prof. dr. ir. Stijn Matthys

