UCT academics collaborate with global leaders to decarbonise concrete

A team of academics from the University of Cape Town (UCT) joined a network of 450 scientists and industry leaders around the world which recently met in Lausanne, Switzerland to drive forward critical research into making concrete net zero.

Source: Pixabay

These leading academics and industry players took part in the Innovandi Global Cement and Concrete Research Network (GCCRN) annual gathering to drive decarbonisation of the world's most used man-made product.

UCT, through its Concrete Materials & Structural Integrity Research Unit (CoMSIRU), was represented by Emeritus professor Mark Alexander and PhD scholar Areej Gamieldien.

Gamieldien made a presentation on her current research that addressed recycling Construction and Demolition Waste into useful materials.

Her research is supervised by professor Hans Beushausen, with Alexander as co-supervisor. CoMSIRU is the only African entity represented in the GCCRN.

Professor Alexander said: “This gathering brought together top researchers and research students from around the world, to deliberate on how to make cement and concrete – among the most environmentally impactful materials in the world – more suitable for construction moving into the future with the goal of net-zero carbon by 2050.”

Concrete is an essential material, vital for modern infrastructure, including homes, hospitals, bridges, tunnels, roads and so much more.

But because it’s so widely used, it currently accounts for 7% of the world’s carbon emissions.

Universities attending included the renowned EPFL (Swiss Federal Institute of Technology) in Lausanne, which hosted the event, researchers from South East University and Wuhan University in China, University of Toronto, Indian Institute of Technology in Delhi, UCT, Imperial College London and the University of São Paulo.

Research topics discussed during the week included the use of AI in decarbonisation; new materials and processes for manufacturing cement, including sourcing and improving the use of alternatives to clinker (the most carbon intensive element of the manufacturing process), as well as further development on the use of calcined clays; concrete recycling; the use of renewable energy and kiln electrification; and further development of carbon capture, use and storage (CCUS).