

European Industrial Doctorate (EID) on Ultralight membrane structures towards a sustainable environment (LIGHTEN)

LIGHTEN is a European Industrial Doctorate programme, funded in the frame of the Marie Skłodowska-Curie actions (MSCA) to tackle the sustainability challenges and exploit the opportunities provided by the built environment, as a response to binding international agreements such as the Paris Climate Act for highly efficient and fully decarbonising buildings by 2050.

LIGHTEN will train five early-stage researchers (ESRs) in the experimental, analytical, and computationally data-driven methods necessary to model, design and analyse the next generation of lightweight and sustainable membrane structures. The ESRs will be enrolled on to PhD programmes in Academic institutions and will spend at least 18 months in Industry.

LIGHTEN is coordinated by Professor Federico Bosi from University College London (UCL), UK. In addition to UCL, the LIGHTEN consortium includes two interdisciplinary academic partners, Università degli Studi di Trento (IT) and Technische Universiteit Delft (NL), as well as three worldwide companies undertaking the design and analysis of tensioned membrane constructions: Tensys (UK), CAEmate (IT), and Schlaich Bergermann Partner (DE).

LIGHTEN introduces a paradigm change in the design of a new generation of sustainable and energy-efficient urban built environment, which is based on recent advances in creating novel lightweight building skins. However, the exponential growth in the production and use of such structural membranes has highlighted the lack of scientific and technological knowledge on the skins' behaviour and the urgency of comprehensive characterisation and multiscale modelling.

By integrating multidisciplinary scientific expertise, complementary skills and academic and industrial experience, LIGHTEN will shape a new generation of highly qualified scientists and engineers to become experts in the application of advanced techniques for the design of sustainable buildings.

Detailed information on the LIGHTEN consortium, its research programme and updates on the research results can be found at the website <http://www.lighten-itn.eu>

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