



Pozvánka na přednášku / Lecture Announcement

Název / Title

Sustainable cementitious composites: Recent research and development

Přednášející / Lecturer

Ildiko Merta

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Faculty of Civil Engineering, TU Wien, Karlsplatz 13, 1040 Vienna, Austria

Jazyk / Language English

Wednesday 1. 12. 2021, 13:30 h

FCE BUT, Brno, Veveří 331/95,

budova / Building C, místnost / Room 421

zasedací místnost ústavu STM

Abstrakt / Abstract

The construction industry is one of the greatest CO₂ emitters and the production of concrete – as the most widely used construction material on Earth (over 4.7 tons per person per year) – is responsible for 8–9 % of global anthropogenic greenhouse gas emissions. The huge quantities of concrete used are responsible for the vast carbon footprint of concrete as a whole. As a consequence, concrete is the largest raw resource consuming material, demanding the most energy by production and generates the major pollutions.

The growing environmental awareness and need for reducing raw material consumption and carbon emissions related to cementitious materials is apparent. In recent years worldwide intensive research efforts are focusing on the development of different types of ecologically sustainable composites which could serve as sustainable alternatives to traditional concretes.

At the TU Wien under the lead of Ildiko Merta comprehensive research is in progress dealing with the development of various new generation of sustainable cementitious composites, such as natural fibre mortars and concretes or alkali-activated composites reinforced with natural fibres. The focus is on design, optimization and experimental characterization of the composites along with improvement of their long-term properties. The results are promising and so far, demonstrate that the properties of these composites are comparable to that of traditional composites. In this lecture an overview and insight in this research will be provided.

Přednášející / Lecturer

Ildiko Merta (Prof. Dr.techn. Dipl.-Ing., -venia docendi in civil engineering) is a civil engineer and a building material scientist. She obtains the Ph.D. (with honour) in 2006 at TU Wien, Faculty of Civil Engineering, Austria, Thesis: Analytical Shear Capacity Model of Reinforced Concrete Circular Cross-Section Members under Monotonic Load, Supervisors: Prof. A. Kolbitsch (TU Wien), Prof. J. Kollegger (TU Wien). She has three positions at various institutions:

from 09/2021 | Visiting Professor – University of Novi Sad, Faculty of Technical Sciences, Department of Civil Engineering

from 05/2021 | Venia Docendi in Civil Engineering – University of Maribor, Faculty of Civil engineering, Transportation Engineering and Architecture, Slovenia

from 09/2018 | Senior scientist – TU Wien, Institute of Material Technology, Building Physics, and Building Ecology

Her research interest is focusing on the development, characterisation and optimisation of advanced high-performance composite building materials (primarily cement-based) with enhanced environmental sustainability, circular-based design approach and improved durability toward their application in civil engineering structures.

Her goal is to understand the complex relationships between the microstructure of the material, the interaction between the constituents at mesoscale and the influence on the final macroscopic properties of the material by a holistic approach considering the entire lifecycle of the material.

Organizátor / Organizer

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Projekty / Projects

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