Co-funded by the European Union

ΕΣΠΑ 2021-2027
Βιώσιμη Ανάπτυξη για Όλους
Partnership Agreement 2021-2027

Program "CENTRAL MACEDONIA" 2021-2027
Action: «Innovation Investment Projects»

Project title:

«Development of innovative "digital twin" of cement industry kiln for the study and optimization of products with reduced carbon footprint (DIGIKILN)»
KMP6-0079905

Brief Description:

The project entitled "Development of innovative "digital twin" of cement industry kiln for the study and optimization of products with reduced carbon footprint (DIGIKILN)" (Project code: KMP6-0079905), focuses on the creation of a state-of-the-art digital twin, i.e. an integrated computational platform designed to simulate and optimize the processes occurring within industrial cement kilns.

Key expected outcomes of the project include:

- Reduction of operating costs
- Acceleration of innovative, resource-efficient products
- Enhanced recovery of raw materials and energy
- Contribution to climate change mitigation efforts
- Digital transformation and modernization of Titan Cement S.A.'s production processes
- Strengthening of Titan Cement S.A.'s competitive positioning at local, national, and international levels

The project aims to establish best practices for the use of alternative fuels in clinker production, fully aligned with current regulatory standards, to significantly reduce the carbon footprint of cement products.
Leveraging advanced computational fluid dynamics (CFD) techniques, the digital twin will provide deep insights into the physicochemical phenomena inside the kiln, enabling operational optimization for improved energy efficiency and consistent clinker quality.
Moreover, it will serve as a powerful tool for exploring new production strategies for low-carbon clinker at lower kiln temperatures, supporting the industry's sustainability transition.

Total Project Budget: 675.650,00 €

CERTH Budget: 132.200,00 €