



LC SPIRE 08 2020

Aim:

CEM-WAVE aims at validating an innovative Microwave-assisted Chemical Vapour Infiltration technology to produce Ceramic Matrix Composites. Promising a significant reduction in production costs, CEM-WAVE answers the need for high-performance materials, withstanding the fluctuating and extreme manufacturing conditions created by the growing use of renewable energy sources in heavy industry.

Concept:

The CEM-WAVE project strives for introducing Ceramic Matrix Composites (CMCs) in European industries through an innovative Microwave assisted Chemical Vapour Infiltration (MW-CVI) technology. With a significant reduction in production times and costs, MW-CVI makes the use of CMCs increasingly sustainable for a wide range of energy-intensive sectors, with tangible benefits from both an environmental and a manufacturing standpoint. In view of the needful transition from traditional to sustainable energy sources, CEM-WAVE will produce CMCs-based tubes and validate them inside radiant tube furnaces, currently used by the steel industry. Given CMCs' higher service temperatures and longer lifetime, the project estimates an energy efficiency improvement of about 30%, extending the equipment's lifespan by 20%. Using state-of-the-art Life Cycle Assessment methods, CEM-WAVE will demonstrate how transiting to this ground-breaking process could reduce CO₂ emissions from radiant tube furnaces by at least 20%.

Start date:
01/10/2020

End date:
31/03/2024
