ACHIEF

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able to meet the extreme and fluctuating conditions currently employed in Energy Intensive Industries (EIIs) through the implementation of a novel Integrated Artificial Intelligence-aided Materials Toolbox (IAIMT).

Concept:
From theoretical parameters and requirements, a novel IAIMT will propose innovative and adapted high performance materials and protective coatings. First, the virtually designed materials will be developed at small scale in laboratories. The project partners will define optimum process parameters for their specific requirements and will make a selection of the most efficient solutions among those proposed by the artificial intelligence toolbox. ACHIEF aims to develop four types of new materials: - Polymer derived ceramic (PDC) coatings with improved high temperature corrosion and erosion resistance. - Advanced Chromium-steels grade with 15% improved creep resistance and higher temperature corrosion resistance. - Innovative high temperature and creep resistance materials based on High. - Entropy Super Alloy (HESA) models. - High performance coatings based on High Entropy Alloy (HEA) nanocomposites. After laboratory testing, the developed materials will be implemented in industrial environments to demonstrate their ‘real world’ performance and efficiency.

Start date:

01/10/2020

End date:
31/03/2024