



RawMaterials

Connecting matters

# Pitch template for KAVA Call 9

Brokerage Event & Expert Forum<sup>3</sup> | 13-14 October 2021



Co-funded by the  
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# SHORT DESCRIPTION OF THE IDEA

- Develop a computational software package, that utilizes Machine Learning (ML) and large databases to enable the prediction of steel heat treatment processes
- Models for phase transformations occurring during the heat treatment of high alloy steels, in i.a. continuous or isothermal processes
- Develop a software package based on deep learning technology for image recognition for fast and reliable microstructural analysis
- Improve quality control work after heat treatments but also aid design of novel steels by supporting the heat treatment database

# THEMATIC SCOPE OF THE PROJECT PROPOSAL

Category of activity:

- Education/Upscaling/RIS

Link with the topics addressed in KAVA Call 9:

- **Raw Materials and Circular Societies Lighthouse:**
  - Recycling of end-of-life products containing Strategic Materials and/or CRMs
  - Supply of Strategic Materials and/or CRMs
  - Resource and Energy efficient in metallurgical and Mineralogical processing
- **Sustainable Materials Future Mobility Lighthouse:**
  - Resource efficient design
  - Innovative technical and business solutions in process design, plant engineering and construction
  - Development of an improved Life Cycle Inventory database
- **Sustainable Discovery and Supply Lighthouse:**
  - Targeted exploration of Strategic Materials and/or CRMs
  - Supply of Strategic Materials and/or CRMs
  - Environmental-Social-Governance (ESG)

# CURRENT STATUS OF THE PROPOSAL

- Agencia estatal consejo superior de investigaciones científicas (CSIC)
- Eurecat
- University of Oulu
- Royal Institute of Technology KTH
- Suzuki Garphyttan
- Ferritico
  
- High level work plan and budget prepared

# TYPE OF EXPERTISE REQUESTED

Industrial partners running state-of-the-art steel heat treatment and characterization to:

- Define end-user simulation use cases and workflow
- Define project steel grade scope
- Provide materials samples for experimental measurements, as input for databases and for simulation benchmarking
- Pool data to heat treatment and image recognition databases
- Define technology and business requirements
- Test and validate software solutions in production environment

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