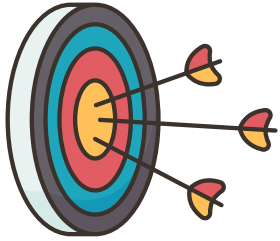


Aim of the models developed by SSSA



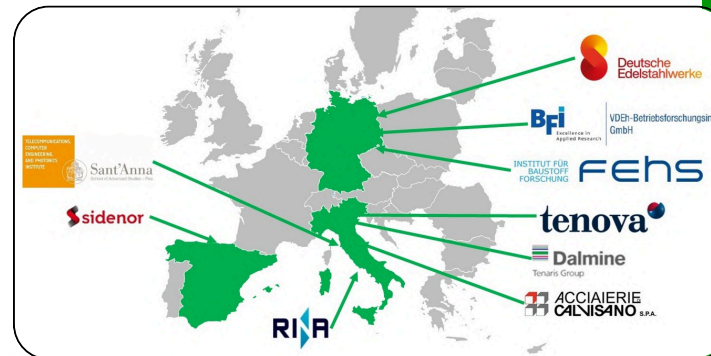
- Estimate the amount and main chemical components of the slag produced by the Electric Arc Furnace (EAF) and by the Ladle Furnace (LF) based on raw materials inputs and main process parameters.
- Support scenario analyses to identify the main factors affecting slag properties and preliminary validating novel operating practices and solutions to jointly optimize metallurgical yield and slag composition in view of their management.



Decrease the costs for slag management and the amount of landfilled slag

The iSlag Project

The project aimed at developing novel digital solutions to improve valorization of the slag coming from the electric steelmaking process route, support good practices in the steelmaking process and explore new recycling paths by facilitating the implementation of a real “industrial symbiosis”.



iSlag

Optimising slag reuse and recycling in electric steelmaking at optimum metallurgical performance through on-line characterization devices and intelligent decision support system

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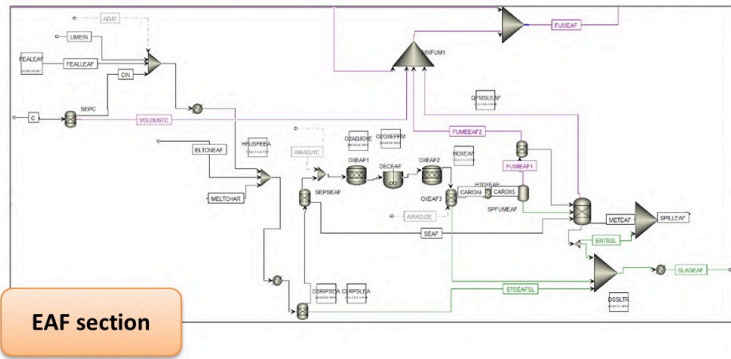
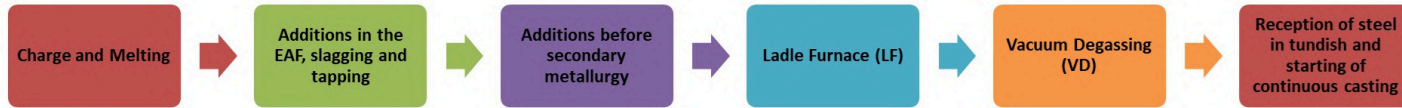


[/company/islag/](https://www.linkedin.com/company/islag/)

Flowsheet model

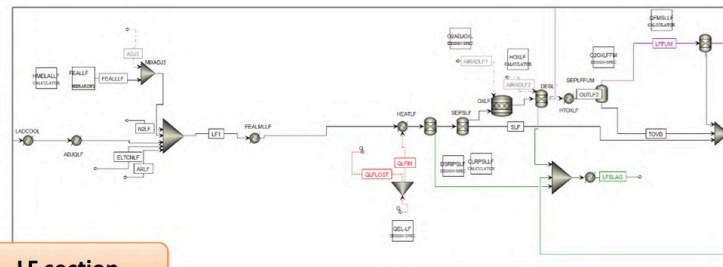
A model of a complete electric steelmaking route, from scrap charge to the beginning of the casting process, estimating for each stage:

- Steel and slag chemistry
- Energy consumption
- Main components of the off-gases

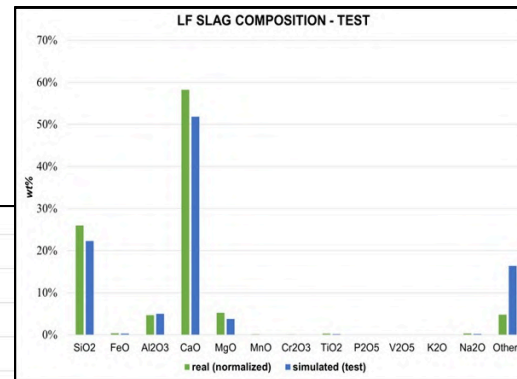
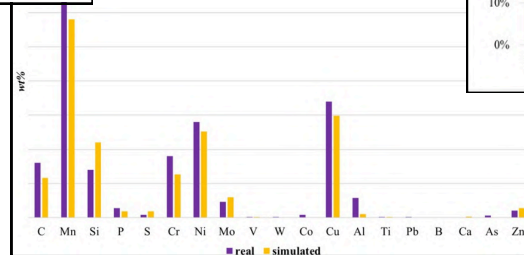
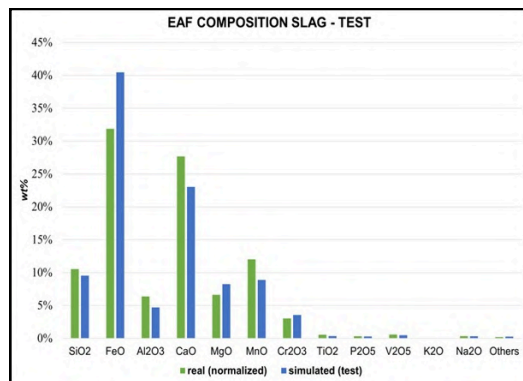


EAF section

Each process unit is represented by the combination of different sub-blocks to reproduce the various involved phenomena.



LF section



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Machine learning-based model

A model based on Physics-Informed Neural Networks and implemented in Python to estimate the contents of the main oxides in slag.

