



dyCoSMelt®

Problem:

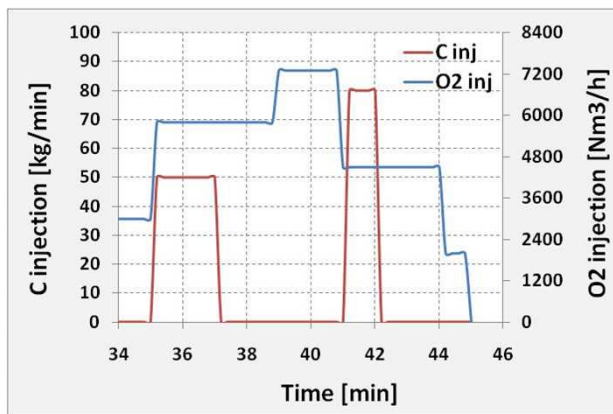
EAF process management during the flat bath condition for both batch or continuous charged plants, can be improved continuously knowing the molten steel and slag composition and temperature.

Solution:

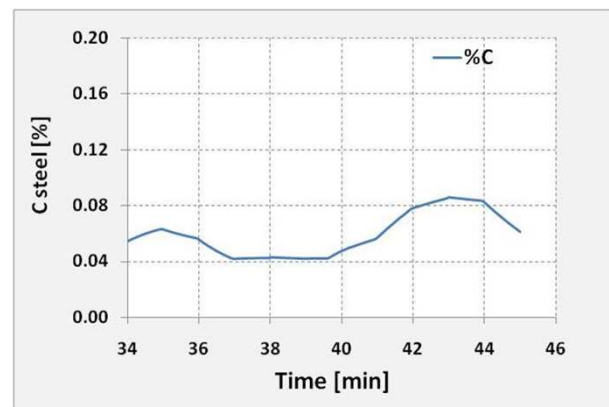
dyCoSMelt® is a tool working as a software sensor allowing to know in real time the evolution of the steel/slag bath in terms of mass, composition and temperature.

It takes into account scrap charged, oxygen and carbon injections, off gas conditions, and the kinetic of reactions in the steel/slag bath.

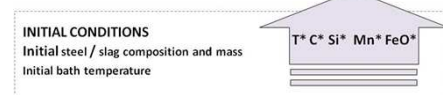
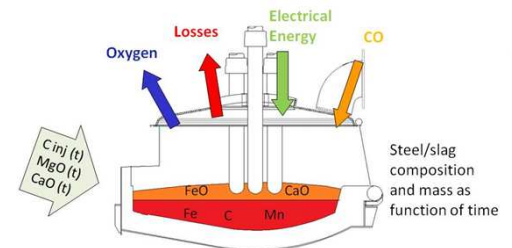
Coal flow rate and O₂ inj. input



A dyCoSMelt® output: carbon evolution



Example of batch EAF, flat bath conditions



Benefits:

- Reduction of number of samplings
- Tap to Tap time reduction
 - Cost reduction for power, oxygen and coal
 - Yield increase
 - Reliability on steel quality targets

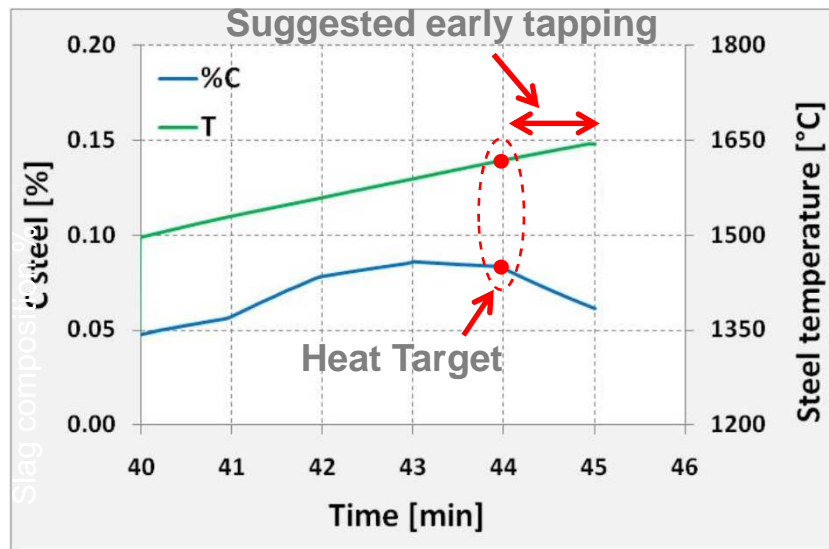
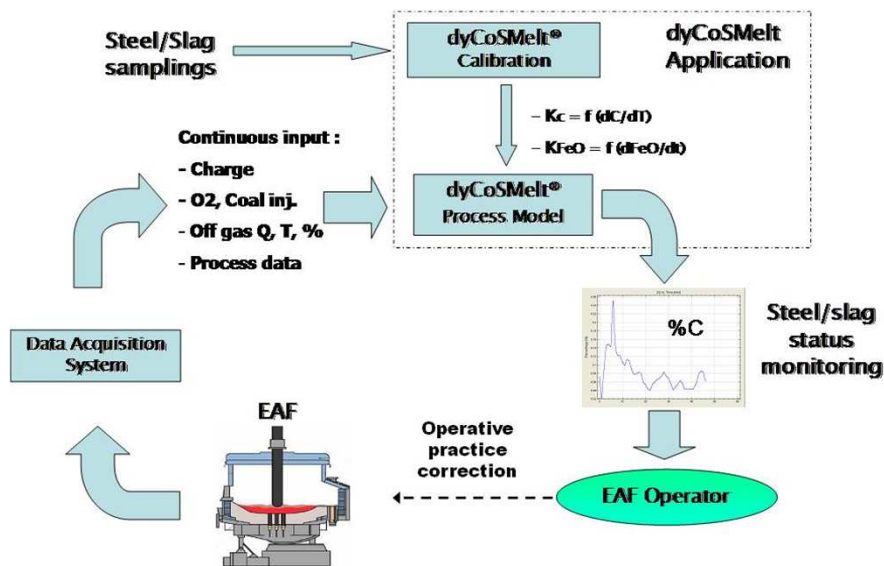
Industrial Arrangement:

dyCoSMelt® can be installed as:

- a stand alone tool for diagnostic during refining phase process
- coupled with existing EAF L2 for on-line monitoring and controls

In both cases are requested:

- preliminary steel and slag samplings for tuning up
- continuous acquisition of process parameters (from L1/L2)
- off-gas composition, temperature and flow rate data.



If off-gas detections are not available, dyCoSMelt® provides an estimation of slag mass and composition evolution.