

NEWSLETTER




Development of new methodologies
for InDustrial CO₂-freE steel
pRoduction by electroWINning

November 2019 – No. 2

Welcome to the second edition of SIDERWIN e-Newsletter. People registered to the Special Interest Group will receive periodically this email to be informed about the main challenges of the project.

Pilot Plant Building Construction

Works for the new building that locates the SIDERWIN pilot  at ArcelorMittal facilities in Maizières-lès-Metz (France) have been progressing during these months. Our partners ArcelorMittal and John Cockerill met there at the end of August to validate the design. Detailed drawings and purchase order start being issued.



New insight on the electrification of iron oxides is given by the Universidade de Aveiro

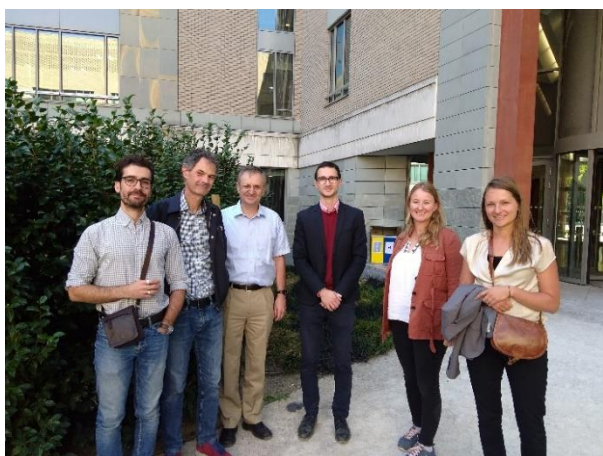
The article “Electrochemical reduction of hematite-based ceramics in alkaline medium: Challenges in electrode design”, published in *Electrochimica Acta* Volume 327 (December 2019), could be considered a milestone in the knowledge building up to run the SIDERWIN pilot.

The study focuses on the direct electrochemical reduction of aluminium-containing hematite in strong alkaline media. Within this scope, the reduction mechanisms of porous and dense cathodes, with 60%, 37% and 3% of open porosity, were investigated using different types of electrodes configurations. The results highlight the importance of electrolyte access to the interface between the metallic current collector and ceramic cathode for attaining reasonable electroreduction currents. And it shows that the necessity to find a compromise between mechanical strength of the electrode and its open porosity is essential for the electrolyte access.

<https://doi.org/10.1016/j.electacta.2019.135060>

WP7 meeting

Our colleagues from WP7 attended on 19th of September to a meeting at ArcelorMittal offices in St Denis (Paris) to update on task developments, discussion on first results, data exchange and planning of next steps.



WP6 meeting

Our colleagues from WP6 attended on 26th of September to a meeting at NTNU (Trondheim) focused on the reduction mechanism of iron oxides, contained in iron ore and Bauxite Residue, in caustic solution and low temperature. Results with pure iron oxide seems very promising in terms of current efficiency. The results of experiments with Bauxite Residue with different cathode materials and the effect of temperature were also studied. The partners agreed the next steps for the experiments.

M24 Steering Committee

The 9-10th of October SIDERWIN partners attended to the M24 Steering Committee in Antikyra (Greece) where the main achievements of the different work packages during the last 6-month period were discussed and the activities for the next months were planned. During the meeting they visited the alumina and aluminium plant of Mytilineos, Metallurgy BU. The bauxite residue produced there, as a by-product of the alumina refinery, has proven to be a promising raw material for iron production through the SIDERWIN process. An exciting and rare chance for industrial symbiosis between two traditional competitive metal sectors!



ELECTRIFICATION EUROPE

Our partner EDF organized in Paris (France) the conference: “[Electrification Europe 2019 International Summit](#)” for companies, policy makers and financial responsables. The SIDERWIN project coordinator Hervé Lavelaine participated on the breakout session 3B “Decarbonizing Industry” of Track B “Decarbonizing Buildings and Industry” that was held on October 17th: “[Decarbonisation of primary steel production by electrification](#)”

SIDERWIN video updated

Subtitles have been included in the [video of SIDERWIN](#), a short animation offering a general overview of the project.

SIDERWIN in ESTAD-METEC 2019

The paper and presentation of Project Coordinator, Hervé Lavelaine de Maubeuge, who attended the METEC - ESTAD 2019 in Dusseldorf with his lecture “SIDERWIN project: electrification of primary steel production for direct CO2 emission avoidance” are now available through the [website](#).

John Cockerill (former CMI)

Our partner CMI has changed its name to [John Cockerill](#).



SIDERWIN webinar postponed

Although announced for the end of 2019, finally SIDERWIN webinar will be postponed till more results could be shared with all interested people. We will keep you informed.

This e-mail was sent to you because of your registration to the Special Interest Group of SIDERWIN project
Did this eNewsletter get forwarded to you? [Sign up](#) to our SIG to receive the SIDERWIN eNewsletter.

To unsubscribe, please send an email to monica.serna@tecnalia.com with the subject “Unsubscribe SIDERWIN eNewsletter”