

March 2022 – Newsletter No. 7

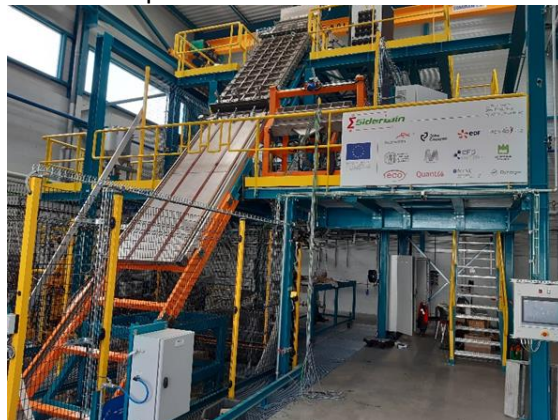
Welcome to this new edition of ΣIDERWIN e-Newsletter. People registered to the Special Interest Group will receive periodically this email to be informed about the main highlights of the project.

### ΣIDERWIN Pilot Plant

During last months, the activities on the site were focused on the commissioning of the pilot, where every equipment of the machine has been tested. Two attempts for the iron plate production had to be stopped after few hours. This activity is still ongoing due to different factors:

- o This is a completely new machine, one of a kind for this application.
- o Some minor mechanical/automation modifications, identified in Hazard and Operability Analysis (HAZOP) during the first part of the commissioning, have been implemented in order to improve the safety of the pilot.
- o Long delivery time for some equipment due to covid-19 crisis.

First trials are expected for middle of April 2022.



Pilot plant

### ΣIDERWIN Webinar

The webinar ΣIDERWIN: *A breakthrough technology to decarbonize primary steel production through direct electrification* was held virtually on the 24<sup>th</sup> of November 2021. There were 124 registrations and finally there were 74 attendees from 44 companies.

The webinar generated a lot of interest due to the large number of questions submitted. Only a few of them could be answered during the event. Afterwards a document was produced to provide answers to all the questions arisen.

The [video recording](#), [slides](#) and [Q&A document](#) are available through the website.



Webinar

### New open access paper

Our partners from Aveiro University have published a new paper in *Materials* 2022, 15, 1440: *Prospects of Using Pseudobrookite as an Iron-Bearing Mineral for the Alkaline Electrolytic Production of Iron*.  
<https://doi.org/10.3390/ma15041440>

### TMS 2022

Professor Geir-Martin Haarberg, from NTNU, participated in the TMS 2022 Annual Meeting held in March 14<sup>th</sup>. He presented in two sessions:

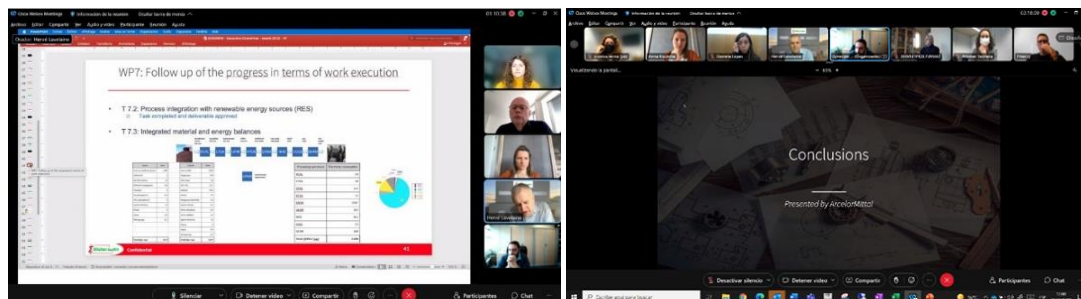
- Light Metals Symposium Rare Metal Extraction and Processing: *Electrochemical Reduction of Iron Oxides in Aqueous NaOH Electrolyte Including Iron Residue from Nickel and Zinc Electrowinning Processes*
- Aluminum Reduction Technology: *Direct Production of Aluminum Titanium Alloys in Aluminum Reduction Cells, A Laboratory Test*.



TMS 2022 Annual Meeting

### Executive and Steering Committee (M54)

The ΣIDERWIN Executive and Steering Committees were held online on the **10<sup>th</sup> and 23<sup>rd</sup> of March 2022**. In the first one, the milestones, deliverables, progress and planning for the following 12 months were reviewed. The second one was devoted to make a quick summary of the main achievements of WP2, WP3 and WP4, already finished. And the work developed during last semester for ongoing WPs was shown to the whole consortium. Interesting results of the experimental work developed in WP6 were discussed during this meeting.



ΣIDERWIN Executive and Steering Committees

### Students at the Aveiro University



Clara Boehme is a BS student of Biomimetics from the City University of Applied Sciences (Bremen, Germany), who joined Aveiro University (CICECO-Aveiro Institute of Materials, Portugal) for an internship within the *Erasmus+* program from October 2021 to February 2022. Her work consisted in the electrowinning of Fe from Fe<sub>2</sub>O<sub>3</sub>-Fe<sub>3</sub>O<sub>4</sub> mixtures in strong alkaline aqueous solutions, actively contributing for the work that has been developed by the Aveiro University team members under the scope of ΣIDERWIN.

Francisco Duarte is a MSc student who recently joined the Aveiro University team (CICECO-Aveiro Institute of Materials, Portugal) for developing his Thesis under the scope of the iron electrodeposition for steel production in alkaline media. Francisco's work will explore the possibility of using an industrial iron-rich residue from a nickel producing industry as a feedstock for the iron electrodeposition as a CO<sub>2</sub>-free steelmaking route. The MSc Thesis is well aligned with the ΣIDERWIN goals and is supervised by the Aveiro University members.



### STEEL TECH 2021

In November, our partners from Tecnia attended the first edition of the International Congress and Expo Steel Tech 2021 held in Bilbao Exhibition Center, BEC (Spain).



Tecnia's stand at SteelTech 2021

### International Women's Day

The 8<sup>th</sup> of March, ΣIDERWIN recognized in the social media the women participating in the project.



International Women's Day

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768788

