PROCESS INDUSTRY NEWSLETTER

Issue #7

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LAST MONTHS' OVERVIEW

EUSEW 2023

RETROFEED was present at EUSEW Energy fair in Brussels for the week event dedicated to energy solutions and transition. Read about it here!

RETROFEED VIII General Assembly

Last May, the project's consortium got together in Castellón, Spain, to discuss RETROFEED's progress and final steps before the project ending. A visit to the facilities was organized by Torrecid. Check the key conclusions.

Researchers visit Fertiberia plant

Within the framework of RETROFEED, in April, Fertiberia – one of the demo sites in the agrochemical sector involved in the project, hosted a group of researchers from the University of Seville at their plant in Palos de la Frontera. Know more!



EXPERT INTERVIEW

Read the full interview by clicking on the image!

HIGHLIGHT PROJECT PROGRESS

RETROFEED is approaching its end, and the results the project has achieved are only one of the steps towards the end goal – 100% decarbonisation. Nonetheless, one crucial step. Watch the final video of the project here!

SOCIAL MEDIA TOP POST

Check the full post by clicking on the image!

PROJECT PROGRESS AS SEEN BY IEN

In the RETROFEED project, we have successfully developed a digital twin for the aluminium industry. Initial findings from industrial tests validate the effectiveness of a new burner (selected through CFD simulations) in reducing NOx and CO2 emissions, which was attributed to improved mixing and reduced natural gas consumption. This digital twin has now been integrated into our Decision Support System (DSS). Moreover, our ongoing work involves a numerical investigation into the feasibility of transforming the cement kiln's multifuel rotary burner into a 100% H2 fired burner. This upgrade has the potential to curtail CO2 emissions from the cement kiln by up to 42%. Tackling challenges related to sustaining heat transfer and managing increased NOx emissions stemming from hydrogen combustion is pivotal. Addressing the characteristics of hydrogen flames—shorter and less radiant—entails design and operation adjustments like incorporating diffusion flames and introducing inert particles to facilitate heat transfer. To mitigate NOx, strategies encompassing optimized air distribution, recirculation zones, and water injection have been proposed. Our efforts include a thorough analysis of the combustion model and the proposal of a new burner design, substantiated through validated CFD simulations.

INSTYTUT ENERGETYKI

QUIZZ CORNER

The last General Assembly for RETROFEED will be held in one of our partner's facilities, the photo is on the right.

Can you guess where?

Find the answer here

UPCOMING EVENTS

Towards more efficient aluminum and steel industries

The first session of a small series of technical workshops focuses on Digital Twins for both the steel and aluminum industries. Join researchers and experts from different partners from RETROFEED. Register now!

September 13th, 2023
Online

Towards more efficient cement industries

Now dedicated to the cement industries, this session will be on the Digital Twins and the main achievements on the project's demo-site partners. Don't miss out

September 18th, 2023
Online

Transforming the metal-making industry: Showcases for retrofitting and circularity

Three innovation projects funded by the EU – INITIATE, RETROFEED, and REVamp – will showcase their solutions for reducing environmental impact and promoting circularity in the metal-making industry. Find the details and register!

September 26th 2023
Online

Retrofeed

RETROFEED main objective is to enable the use of an increasingly variable, bio-based and circular feedstock in process industries through the retrofitting of core equipment and the implementation of an advanced monitoring and control system, and providing support to the plant operators by means of a DSS – Decision Support System – covering the production chain.