

### **Results of the first year of implementation**

The THREADING-CO<sub>2</sub> Project is entering its second year of implementation, and the first 12 months have witnessed a multitude of achievements! Explore this newsletter to discover the progress made by the consortium and gain insights into the upcoming milestones.

Stay updated with the latest news by following THREADING-CO<sub>2</sub> on <u>LinkedIn</u> and <u>Twitter</u>.

## Scale-up of MEG production process and set-up of pre-industrial pilot line (TRL6)

Scale-up of MEG production process and set-up of pre-industrial pilot line (TRL6) In the last six months, ELCAT improved the design of an up-scaled CO<sub>2</sub> electrolysis process toward carbon monoxide, introducing the control system and organizing the preliminary technical documentation of pipe and instrument selection for further implementation. Meanwhile, in collaboration with Fairbrics, ELCAT finalized the mass balance to ensure the downstream process design towards the next step in the chain. In parallel, silver-based gas diffusion electrode development and optimization of the reaction condition were conducted by ELCAT to ensure a long-lifetime reaction performance. Finally, ELCAT will work with an external engineering company to ensure that all designs adhere to safety standards and regulatory requirements throughout the project lifecycle. The tender is currently in its last phase for approval and afterwards the fabrication for the electrolyzer pilot will start in 2024. During the same period, Fairbrics process has been further modelized and optimized to answer the challenges related to the scale-up of the chemical reactions of interest from lab to pilot scale including productivity improvement, operating parameters optimization or chemical process safety. These results allowed Naldeo to define the specifications of the main equipment of the process. In parallel, catalyst development was performed in collaboration with Aimplas to identify a synthesis method to manufacture Fairbrics catalysts on a larger scale, optimizations are ongoing and will continue in 2024 Scale-up of MEG production process and set-up of industrial demo plant (TRL7).

#### Life Cycle Sustainability Assessment

In the framework of THREADING-CO<sub>2</sub>, Tecnalia is applying its expertise in life cycle oriented methodologies to assess the sustainability of the new textiles that will be developed using secondary CO<sub>2</sub> feedstock. In the first year of the project, Tecnalia's team has been focused on trying to harmonise the assessments that will be done in THREADING-CO<sub>2</sub>, specifically Life Cycle Assessment, Life Cycle Costing and Social Life Cycle Assessment, to previous works in literature by making an extensive review on sustainability assessment in the textile field. The final goal is to align the goal and scope of the Life Cycle Sustainability assessment that will be done by defining a similar functional unit, system boundaries, allocation rules, impact categories, etc., so the products developed in THREADING-CO<sub>2</sub> can be benchmarked with other reference products to check how sustainable they are. Besides, a questionnaire to gather information from the relevant partners has been developed and will be circulated to all the consortium at the beginning of the next year.

#### **Development of Modular Learning Resources**

- M.Sc. Theses finished on differences between digital and traditional learning
  - find, through a literature review, teaching methods suit-able for the digital learning platformt.
  - find ways in which students' competence can be measured as reliably as possible.
  - assess the sustainability of the digital teaching platform.
  - how the modifiability of the platform can be assessed.
- Lappeenranta company Fiber-X ready to co-operate with digital learning environment.
- Drafted first outline of the first set of lectures for the first trial version with Digiotouch.

# DISSEMINATION, COMMUNICATION AND EXPLOITATION

WP6 – Dissemination, Communication and Exploitation kicked off at the beginning of THREADING-CO<sub>2</sub> and runs throughout the whole project, feeding from the results of previous work packages, and providing support to exploitation of project results through highly focused communication and dissemination activities. Every channel, material, and tool vital to the D&C strategy has been successfully implemented, actively spreading news and increasing awareness of the project. Intrigued to learn more? Explore the THREADING-CO<sub>2</sub> website!



Stay tuned for more updates and follow us on LinkedIn and Twitter! . وی

#### CONSORTIUM



#### CONTACT US

PROJECT COORDINATOR: BENOIT ILLY Co-founder and CEO of Fairbrics https://fairbrics.co benoit.illy@fairbrics.co



 $\label{eq:threshold} THREADING-CO_2 has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement N^{\circ}$  101092257.