



Open Innovation Test Bed
for nano-enabled Membranes



Role of the industrial partners and service providers involved in the project

For a project like INNOMEM, whose goal is the creation of a sustainable Open Innovation Test Bed (OITB) on nano-enabled membranes, the research activity is a really central topic.

For this reason, the fifth issue of the INNOMEM newsletter is focused on the industrial partners and service providers involved in the project and their main activities performed and to be performed in order to achieve the initiative's scope.

Remember to [subscribe](#) to the INNOMEM newsletter and to follow the project progresses on [LinkedIn](#) and [Twitter](#) accounts!



DBI GUT is a German SME that offers a variety of services along the whole value chain of fuel gases. Within this INNOMEM project DBI GUT is responsible for showcase#2 and offers its expertise in mixing, quantifying and analysing complex gas mixtures for membrane tests.



FURTHR research is a spin-off from RWTH Aachen University and offers a software solution for research data management. Within INNOMEM, FURTHRResearch develops for the partners personalized software solutions for automated data handling. This way, all data within INNOMEM are well structured and long searching for data is a thing of the past.

Introducing FURTHRmind

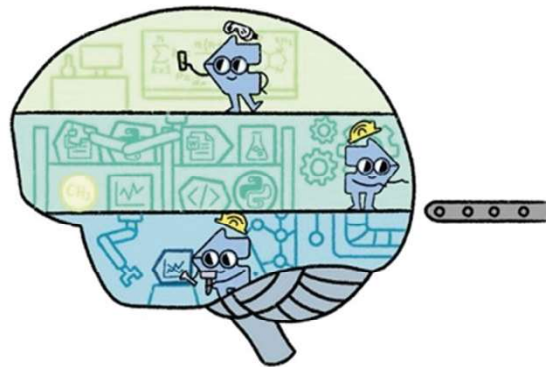
State of the art software system to manage your research data



Customized applications to automatize your lab workflow



Consultancy on efficient and effective research data management





In collaboration with **Engie**, which has provided technical support and analytical tools, H2SITE has carried out 100h of continuous hydrogen production using biogas as feedstock at H2SITE facilities near Bilbao, Spain, during last week of March 2023. The main objective of the testing campaign was to evaluate the behavior of the membrane reactor using palladium-based membranes immersed in a fluidized bed reactor under relevant conditions. Palladium membranes have the ability to separate hydrogen with high selectivity and consequently provide an interesting, decentralized solution for small and medium H₂ consumers.



In this campaign a hydrogen purity of 99.9% was set as objective. However, the measured purity during the campaign was slightly lower. In a new testing phase programmed for May, H2SITE will carry out further measurements integrating improved membranes.



Within INNOMEM, **H2Site** is building and assembling a 2Nm³/h of hydrogen production system for biogas conversion, integrating palladium membranes and participating in the test campaign.





In INNOMEM, **Me-Sep** is responsible for development of pilot line for centrifugal potting of HF membranes. Potential clients of OITB would use Me-Sep expertise and facility to design, develop and produce of HF modules from lab to industrial scale. The capability of Me-Sep in manufacturing of the water filtration and gas separation modules were demonstrated in the show cases of the project.



Rauschert Kloster Veilsdorf (RKV) is part of the Rauschert Group, an independent, owner-managed company with a history of more than 120 years. That, among other things, manufactures ceramic membranes under the Inopor brand. As part of the INNOMEM project, specially developed membranes are delivered as semi-finished products to our project partners for further processing. RKV's main task is to supply these semi-finished products and to optimize the manufacturing process in order to minimize waste and increase quality.

Tecna:ia Ventures' main contributions to INNOMEM include the establishment of the operation of the SEP, planning its sustainability and managing customer relationship. This includes the way it is going to create and provide value; and the organisation structure, appropriate legal entity, and governance rules it will have.



UNE - Asociación Española de Normalización is the National Standardization Body in Spain (<https://www.une.org>), having the purpose to develop technical standards aiming at promoting competitiveness in companies and building a safer and sustainable society.



Within INNOMEM, UNE is in charge of standardization activities, which, in the context of R&D projects, facilitate acceptance and utilisation by the market of project results. Through the development of standardization deliverables, research results are valorised, providing confidence to users, codifying technological requirements and allowing interoperable solutions. UNE is also promoting due coordination with other OITB projects.



Since the foundation of **FilaTech Filament Technology** u. Spinnanlagen GmbH in 1990, technologies and systems for manufacturing hollow fiber membranes have been developed to meet the requirements of customers from various industrial sectors worldwide. Today, FilaTech is a world-leading manufacturer of spinning lines for membranes for haemodialysis. The product range also includes applications for water filtration and gas separation. Spinning lines are offered in any size ranging from single membrane laboratory system to full-scale production system with over 1500 membranes produced simultaneous. A company-owned pilot line and the laboratory within the research department, offer an ongoing development of membranes, processes and equipment for existing technologies and future projects.



FilaTech embodies the Showcase leader for “Polymeric hollow fiber membranes with novel geometry” within the Innomem Project. The given showcase is in cooperation with RWTH Aachen, who produced 3D-printed metal and polymer nozzles with common and novel designs. In general, 3D printing offers a wider range of design options than standard milling, lathing and drilling technologies. Additionally, often it is faster, cheaper and offers an effective opportunity to verify novel designs.

One main objective of the showcase is the transfer of production technologies from polymer to 3D-printed metal spinnerets and the comparison to conventional versions. Using the in-house pilotline of FilaTech, different membranes spun with 3D-printed extrusion spinnerets were manufactured and compared in means of membrane performance morphology. The results shall be used to improve the quality of the nozzles, as well as the production costs.



Conventional spinneret



Conventional nozzles



3D printed metal and polymer nozzle

The INNOMEM second wave of Open Calls has been launched on May 1st. Do you want to learn about the technical feasibility of membrane for your application? Are you innovating in technologies for liquid/gas separation, water treatment, H₂ purification, or CO₂ capture? **Then this call is for you! Apply now to the wide range of services that INNOMEM has to offer!** The call will be open until December 31st, with intermediate evaluation points. Funding is limited, so we encourage all applicants to apply as early as possible.



- Do you want to learn about the technical feasibility of membrane technology for your application?
- Are you developing and/or deploying solutions using membranes in the environmental, health, petro-chemical or energy sectors?
- Are you innovating in technologies for liquid/gas separation, water treatment, H₂ purification, or CO₂ capture?
- Do you need support in process design or modeling involving membrane technologies?



SUBMIT
your application
from
May 1st



WHO

The call is open
to **industry**
both large and SMEs.



See how
to apply here



WHAT

All successful applicants to the INNOMEM Open Call will get **free access to a network of 14 Pilot Lines facilities** and services of a covering the full value chain of products based on nano-enabled membranes.

Discover
all the available
services in our
Catalogue



Check out <https://www.innomem.eu/open-calls/>
or reach out to us via opencall-helpdesk@innomem.eu
for more information.

INNOMEM FIRST WORKSHOP

November, 16-18 Sorrento (Italy)



On November 17-18, 2022 the **First INNOMEM Workshop** was held at Hilton Sorrento Palace hotel & Conference Center, Sorrento (NA), Italy, organized by CNR-ITM.

Joined by over 60 participants on-site and on-line representing about 40 public research institutions and private companies that tirelessly work towards a more sustainable development of membrane technologies and processes across Europe and beyond.

During the Workshop, we were joined by four outstanding experts that provided first-hand insights and took participants through some important aspects related to hydrogen economy and management, potential applications of membranes in petrochemical industry, new sustainable and resilient solutions in the wastewater treatment.

In the meantime, project partners presented the recent advances achieved in the project on the most promising and breakthrough manufacturing pilots and advanced characterization techniques and modelling together with non-technical services through this Test Bed.

Specific emphasis has been given to the launch and presentation of the **Open Calls** which will allow to take into account the needs of industries and SMEs and simplify their search, with a one-stop to access and choose within an EU boutique of experts and assemble the best service portfolio for every need.



INNOMEM Consortium



Project details

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