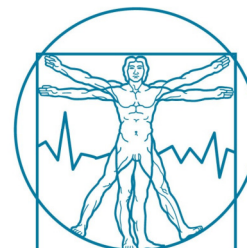


HYDROGEN
ECOSYSTEM
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Hydrocarbon hydrogen carrier
Sustainable storage, transport
and use of H₂

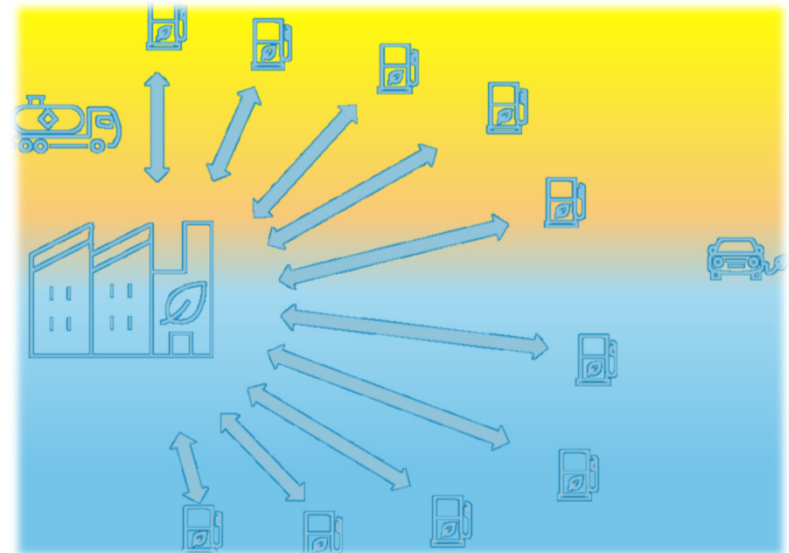
Fausto Ferrazzi
Serichim



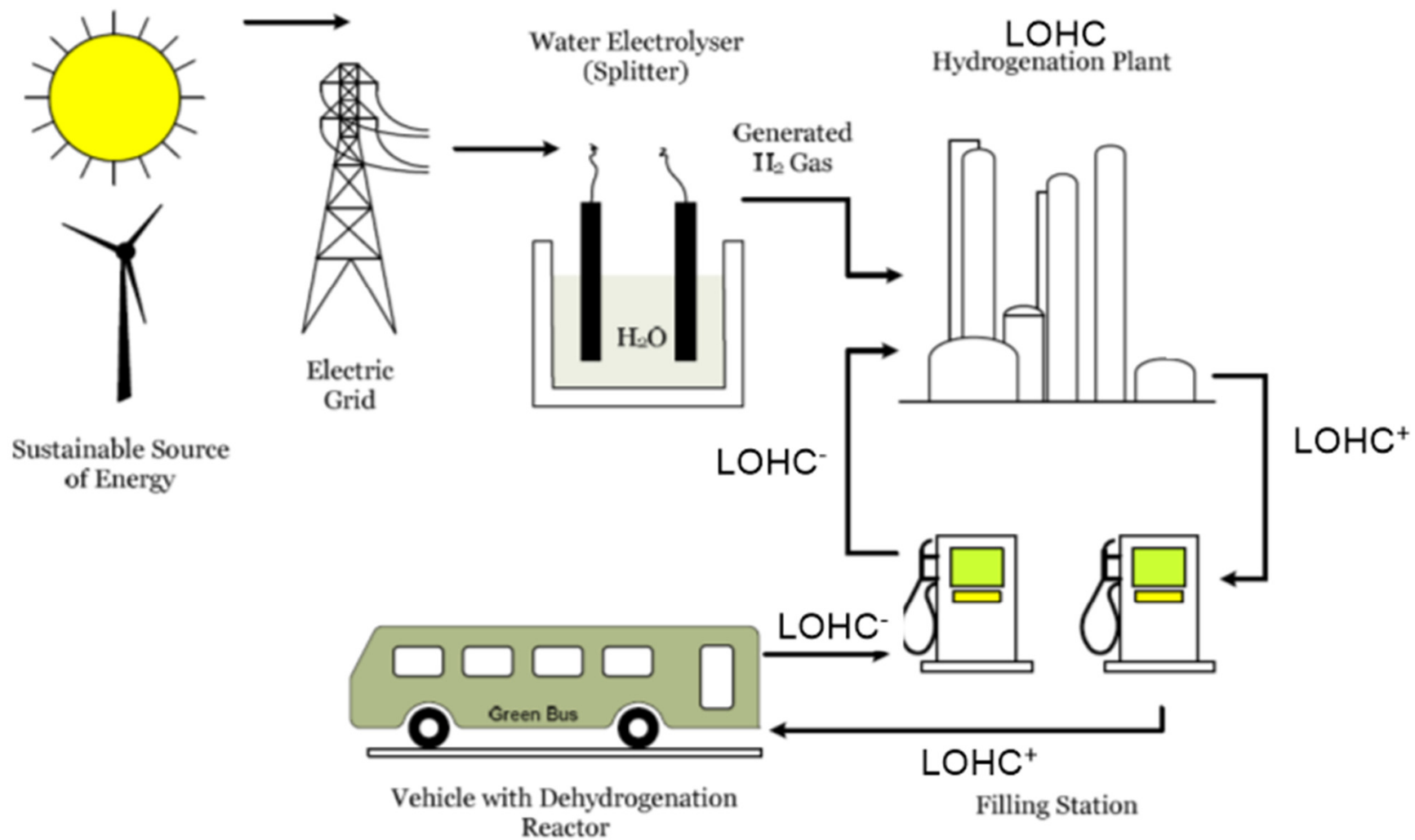
Biovalley
Investments
Partner

Hydrogen is an alternative energy source needed to reduce CO₂ emissions, but its transport presents serious safety problems. We are designing a machine to release hydrogen fixed on a liquid carrier (LOHC), creating a gaseous flux at the moment of use on board of trucks, trains and ships eliminating storage at high pressure.

Our clients will be producers of engines for transportation and for heating buildings.

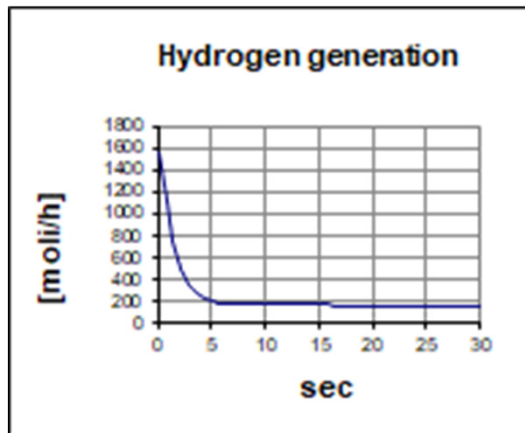


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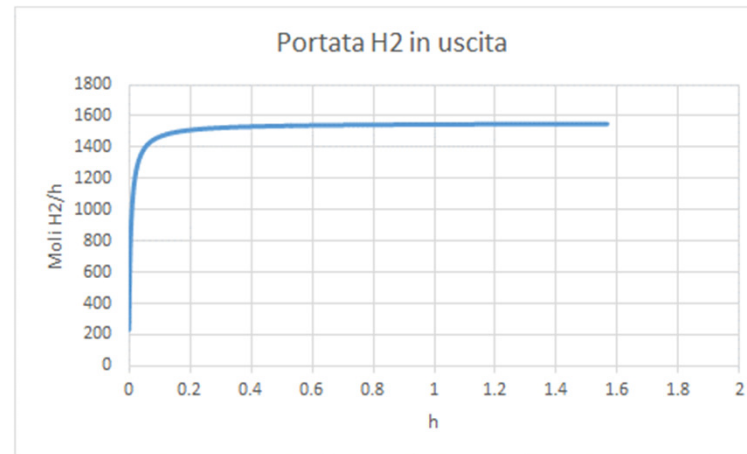


A system able to release hydrogen «On Demand», at variable rates according to the changes of required potency.

Our Dynamic Hydrogen Releaser (DHR) avoids the need of high pressure hydrogen storage both in the distribution chain and within user vehicles. The existing infrastructures for diesel distribution and storage can be used, reducing time and costs of substitution.



Decreasing request



Increasing request

OUR ADVANTAGES

The dynamic behaviour of DHR is the subject of our international patent application.

Our technology features

- A constant fluid dynamic working regimen of the releaser reactor at different hydrogen production rates.
- The reactor optimizes the gas-solid-liquid contact, improving the reaction rate.

The TLR of our project goes from 4 to 8 in the span of 36 months, at which point the licensing of the DHR design will begin.

Serichim is an R&D company: the products of our activity are technical know-how.

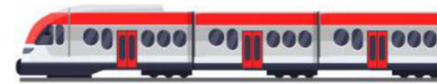
For the DHR project we are creating a network of contacts with industries potentially interested in using hydrogen as an energy source for two reasons:

- to collect technical information that allows us to select the operating characteristics of the DHR for the different possible applications;
- to have contracts for the know-how developed as technology transfer, and royalties.

NACHIP DHR PILOT

1) Optimization of the process and plant components to obtain consistent efficiency parameters and define the dimensional constraints relating to the different possible applications.

2) Demonstration site of the technology to potentially interested industries, such as the motor industries, shipbuilding, public and private transport, and industries producing thermal plants.



Implementation strategy

Cascade financing for bulk production of the catalyst identified in the project and also for the development of the catalyst regeneration technology.

Capacity building:

- The construction of a demonstration site for marketing and publicity.
- Establish a business unit with regulatory expertise as part of the technology transfer to assist clients with the market acceptance of their innovative products.

NACHIP pilot in hand we will work closely with clients in post sales service, license support, and as a technical resource.

Financial partners will be sought for investments into prototypes with the final configurations for different applications for technology transfer including regulatory support.

Team DHR

- Fausto Ferrazzi: Serichim CEO
- Kevin Ainger: Serichim COO & Project Leader
- Pietro Delogu: NACHIP Project Scientific Advisor
- Prof. Andrea Mio: Professor of process simulation and dynamics of chemical processes at the University of Trieste.
- Prof. Alessandro Trovarelli: Director of the Department of Industrial Engineering for environmental sustainability at the University of Udine
- Ing. Andrea Padoan: Chemical Engineering consultant
- Daniele Verardo: Owner of CTSH2



BIOVALLEY
INVESTMENTS
PARTNER



QUESTIONS?

THANK YOU.

SERICHIM S.r.l. – P.le Marinotti, 1 33050 Torviscosa (UD) Italy
Tel: +39 0431381403 Mail: segreteria@serichim.it
www.serichim.it