



PROJECT NUMBER	653605		
PROJECT ACRONYM	XERIC		
PROJECT NAME	Innovative Climate-Control System to Extend Range of Electric Vehicles and Improve Comfort		
START DATE	01/06/2015	END DATE	31/05/2018
TOTAL BUDGET (M€)	4 621 280	EU FINANCIAL CONTRIBUTION (M€)	4 621 279,75
WEBSITE	http://xeric.eu - and follow us @XERICproject		
COORDINATOR	Nino GAETA sng@gvs.com		



PROJECT PARTNERS

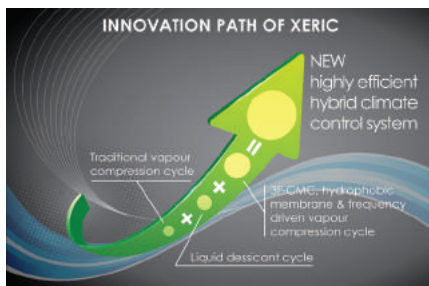


3d Party



AIM OF THE PROJECT

Because of the limited capacity of electric batteries and the substantial amount of energy necessary to run auxiliary equipment, the range capability of electric vehicles is today dramatically affected. For instance, climate control systems absorb in summer conditions 40-60% of the total available energy. **The objective of XERIC is to develop an energy friendly climate control system** capable to reduce drastically the energy used for passenger comfort (heating, cooling and dehumidifying), not only in summer or winter period in Europe but also in countries with more extreme climate conditions.



The core of the system is an **innovative highly compact and energy efficient 3-fluids combined membrane contactor (3F-CMC)** that simultaneously works with air, desiccant solution and refrigerant. The membrane is between the desiccant and the air, and acts as a contacting surface. Air enters the contactor, flows onto the membrane surface and is then de-humidified, at the level required for the specific application. The concept is covered by very original patents belonging to consortium members.

More specifically XERIC's climate control system will reduce more than 50% the energy for comfort, have a lifetime longer than 10 years and get an easy industrialization and customization at cost from 1,200 to 3,000 €.



RESULTS

XERIC prototype is real and functional

GVS with the support of TICASS, UNIGE, ITWM, FRIGOMAR, UDE and VITO, manufactured four working prototypes of 3F-CMC. FRIGOMAR assembled the full XERIC Climate Control System (CCS) to test it in a dedicated climatic chamber, which enable to test different indoor and outdoor conditions. The XERIC innovative CCS includes the following specific components developed in the frame of the project:

- Small-scale prototype of 3-fluids combined membrane contactor - (3F-CMC)
- Hydrophobic membranes (PTFE and PVDF)
- Innovative electronic system including a variable frequency drive compressor
- Tool to predict –through modelling– the performance of the novel CCS
- Tool to predict and prevent – through modelling – the frost formation on the evaporator
- Plasma treatment deposition of hydrophobic coatings on membranes
- U-shaped coated minitubes
- Evaluation of the environmental impact and economic feasibility of the CCS prototype as part of life cycle analysis and life cycle cost analysis assessments

From the lab to the market

Although the main application that has been identified is electric cars, XERIC CCS is valuable for other applications, such as busses, boats or buildings. The working prototype is ready to be modulated according to the market needs (i.e. capacity, size).

The consortium partners are now exploring industrial partnership opportunities and particularly with Original Equipment Manufacturers (OEM) to tailor the XERIC system.

NOTES

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extracted from the EGVI cPPP Project Portfolio Calls 2014-2017

