

European Research and Innovation Project



INNOVATIVE CLIMATE-CONTROL SYSTEM
TO EXTEND RANGE OF ELECTRIC VEHICLES
AND IMPROVE COMFORT



CRAFTING
THE FUTURE OF
**GREEN
VEHICLES**



XERIC in a nutshell

EC Call: H2020-GV-2014
Grant agreement n°: 653605
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Duration: 36 months
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Contact

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Dehumidifying

XERIC comes from ξηρός,
which means *dry* in Greek.

Context

The limited capacity of electric batteries combined with the substantial amount of energy needed to run auxiliary equipment dramatically affects the range capability of electric vehicles: the climate control system can absorb up to 40-60% of the energy available in summer conditions.

Aim

The aim of this trans-disciplinary project is to develop an energy-friendly climate-control system capable of reducing of at least 50% the energy used for passenger comfort throughout the year (i.e., heating, cooling and dehumidifying).

XERIC's climate control system will:

- **reduce by more than 50% the energy used for passenger comfort;**
- **have a lifetime superior to 10 years;**
- **enable easy industrialisation and customisation for electric vehicles currently on the market;**
- **cost between 1200 and 3000 € per vehicle.**

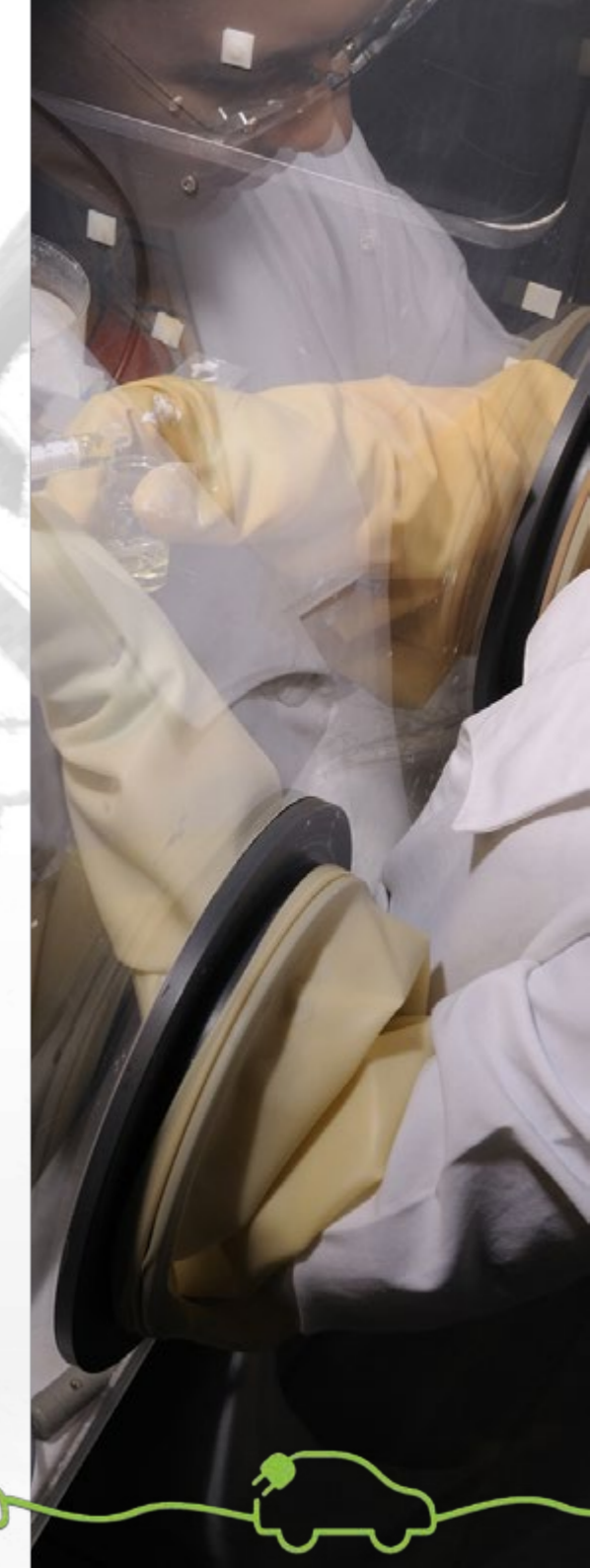
Academia & industry hand in hand to make a reality of innovative climate-control systems for electric vehicles.

Developing a hybrid system

With current technologies, air is dehumidified thanks to climate control systems based on a Vapor Compression Cycle (VCC), which cools air below its dew point. Alternatively, desiccants can be used to dehumidify air without cooling it below its dew point. This is an efficient way which allows controlling temperature and humidity independently.

What's new with XERIC?

XERIC develops **a hybrid system**, combining a liquid desiccant cycle (operating on humidity) with a traditional VCC (dealing with temperature). In such a system, the VCC operates at higher refrigerant evaporation temperature and at lower condensation temperature, the result being energy saving. This hybrid combination is possible thanks to **an innovative and highly compact three-fluids combined membrane contactor** that works simultaneously with air, desiccant solution and refrigerant.





Partners

GVS - GVS S.P.A. - *Italy*
Project Coordinator

TICASS - Tecnologie Innovative per il Controllo Ambientale e lo Sviluppo Sostenibile SCRL - *Italy*

Fraunhofer ITWM - Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung E.V
Germany

EMH – European Membrane House
Belgium

FRIGOMAR SRL
Italy

UDE - Universität Duisburg-Essen
Germany

VITO - Vlaamse instelling voor technologisch onderzoek - N.V.
Belgium

AIN - Asociación de la Industria Navarra - *Spain*



Third party

University of Genova - *Italy*

www.xeric.eu