An innovative air conditioning system enabling 27 percent savings

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Tecnalia is leading the development of an innovative air conditioning system enabling savings of 27% to be made. The system that goes by the name Hybrid Liquid Desiccant System-HLDS combines the technology of liquid desiccants to dehumidify the air with conventional technology on which air-conditioning is based (compression cycles for cooling) and allows humidity and temperature to be independently controlled.

A prototype of this system, already validated on a laboratory level, has been successfully installed at the sports centre of the National Taiwan University of Science and Technology in Taipei and is air conditioning the building.

The HLDS that has been designed and validated at the above-mentioned facility is of particular interest in atmospheres in which humidity is high and/or in ones where independent humidity and temperature control is needed for air conditioning

The monitoring of the equipment combined with its control and supervision system (SCADA- Supervisory Control And Data Acquisition) allows the operating conditions and response of the prototype to be gathered and analysed in order to achieve the desired levels of air conditioning. The analysis of the results on how the system is functioning reflects savings in the order of 27% of electrical power consumption compared with traditional air conditioning solutions. That is why the global COP (Coefficient of Performance) of the installation, an index of the efficiency of the system, has seen an increase of 31%.

HLDS is being developed within the framework of the European Nanocool project, which is part of the 7th framework programme and is being coordinated by Tecnalia. Its title and aim is to develop an "energy-efficient air conditioning system with independent temperature and humidity controls based on the combination of a liquid desiccants cycle with an adapted conventional air cooling system."

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