

Press Release

Vienna, 07.10.2022

AIT SHOWS LATEST TECHNOLOGIES AND SOLUTIONS FOR OPTIMIZING INDUSTRIAL APPLICATIONS WITH HEAT PUMPS

At CHILLVENTA in Nuremberg from October 11 to 13, 2022, the AIT Center for Energy will present the latest developments and services in the fields of heat pumps and refrigeration. One of the highlights is the Augmented Reality Industry Simulator for optimizing industrial applications with HoloLens.

The world's leading trade fair and conference for refrigeration, air conditioning, ventilation and heat pump technology gives the AIT Center for Energy the opportunity to present its latest technologies to an expert audience from industry and research. Presented are:

- Augmented reality simulators for optimizing industrial applications and heating/cooling applications with heat pumps and renewable energies based on smartphones and with Microsoft HoloLens.
- The sound optimization of air heat pumps by means of acoustic camera
- Heat pumps with natural refrigerants and the smallest amounts of refrigerant.

AUGMENTED REALITY INDUSTRY SIMULATOR

The AR Simulator of the AIT Center for Energy can be used to plan the industrial sites of the future, as well as energy systems of single and multi-family homes. Using state-of-the-art augmented reality technology, buildings and plants are visualized completely in 3D as freely rotatable and zoomable holograms. Complex production and energy data are clearly displayed, enabling the planning and optimization of future CO₂-neutral industrial sites and sound-optimized residential complexes. <https://www.youtube.com/watch?v=Jxp7dNP-1Co>

TECHNOLOGY DEVELOPMENT WITH ALTERNATIVE REFRIGERANTS

One of the core competences of the AIT Center for Energy is the ongoing development of refrigeration circuits with alternative refrigerants. Refrigerants with low GWP values such as HFOs (hydrofluoroolefin) and natural ones such as propane, butane and others are being investigated. In addition, the AIT Center for Energy focuses its research on the optimization of the refrigeration circuit in order to increase efficiency on the one hand and to reduce the amount of refrigerant on the other. For this purpose, the AIT Center for Energy develops new components and systems in close cooperation with industry.

[Technology development with alternative refrigerants - AIT Austrian Institute Of Technology](#)

ACOUSTICS OF AIR SOURCE HEAT PUMPS

With its unique acoustic equipment, the AIT Center for Energy is a European leader in the investigation and optimization of sound immisions of heat pumps and refrigeration systems. The range of services offered by the AIT Center for Energy includes acoustic directional characterization of heat pumps, support in development and optimization, and accompanying scientific consulting for manufacturers. Specifically, the AIT Center for Energy offers sound

pressure and sound power determination, sound source localization, vibration measurements, the investigation of transient processes as well as measurements and fluidic investigations in the acoustically optimized climate chambers.

[Acoustic Optimization Of Heat Pumps - AIT Austrian Institute Of Technology](#)

THERMAL ENERGY LABORATORIES

As Austria's largest research institute in the energy sector, the AIT Center for Energy conducts studies and evaluations of novel refrigerants for high-temperature applications of heat pumps as well as novel storage materials for use in industrial processes and is a European leader in this field.

Development and evaluation of innovative heat exchanger concepts for heat storage systems and heat pumps, as well as characterization and development of novel thermal energy storage systems complete the portfolio of our heat pump laboratories. Our broad expertise enables us to cover technical, organizational and economic aspects like no other research institute.

[Thermal Energy Laboratories - AIT Austrian Institute Of Technology](#)

AIT Austrian Institute of Technology Center for Energy

At the AIT Center for Energy, more than 250 employees are working on solutions for tomorrow's sustainable energy supply under the leadership of Wolfgang Hribernik. Many years of experience and scientific excellence of the AIT experts as well as high-quality laboratory infrastructure and a global network offer companies innovative and applied research services and thus a clear competitive advantage in this future market.

The portfolio of topics is oriented around three central systems: Public Energy Systems, Industrial Energy Systems, and Cities & the Built Environment.

More information about the center: <https://www.ait.ac.at/energy>

AIT Austrian Institute of Technology GmbH

The AIT Austrian Institute of Technology is Austria's largest research and technology organization (RTO) and plays in the top league worldwide in many infrastructure topics. With its seven centers, the AIT deals with the central infrastructure topics of the future and sees itself as a highly specialized research and development partner for industry. AIT's research and technological developments realize fundamental innovations for the next generation of infrastructure technologies in the fields of Energy, Low-Emission Transport, Health & Bioresources, Digital Safety & Security, Vision, Automation & Control and Technology Experience. These scientific research areas are complemented by expertise in Innovation Systems & Policy.

As a national and international hub at the interface between science and industry, AIT makes innovation possible

thanks to its scientific and technological expertise,

experience in the markets, close customer ties and an outstanding research infrastructure.

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