

Press Release

Vienna, 16 May 2022

AIT AT THE LONG NIGHT OF RESEARCH

Decarbonization and digitalization are the central topics that AIT researchers will present to the general public on May 20 at the Long Night of Research. This begins with the development of batteries and innovative methods for planning sustainable cities and extends to the sustainable use of plant resources.

Vienna (AIT): The technologies being developed at the AIT Austrian Institute of Technology are of the highest relevance for the future of the country. In particular, these are topics from the areas of decarbonization and digitalization. In order to give the population a low-threshold insight into the wealth of important research topics and to make the results tangible, the AIT is once again participating in the "Long Night of Research", which will take place throughout Austria for the tenth time this year on May 20, 2022.

Solutions for decarbonization

As Austria's largest research and technology organization, AIT is involved in a whole host of activities at the Long Night of Research. For example, AIT researchers will be very prominently represented at the exhibition site organized by the Ministry of Climate Protection at CAPE 10 (near Vienna Central Station; Alfred-Adler-Strasse 1, 1100 Vienna). Three important future technologies in the service of decarbonization will be presented there:

Urban planning of the future: cities must manage their growth intelligently while finding answers to the challenge of climate change. This requires new planning and implementation concepts. In AIT's City Intelligence Lab, scenarios such as the climate situation in city districts or the optimization of people flows can be vividly simulated and acted out. This is an essential building block for planning resilient cities.

Heat pumps - energy sources of the future: With the help of heat pumps, it is possible to use heat from the environment or unused waste heat from industrial processes. This can greatly reduce both the need for fossil energy and CO₂ emissions. The potential of this technology is demonstrated using a heat pump that can be used simultaneously as a beverage cooler and sausage warmer.

Battery of the future: The ideal battery has a high energy or power density, is environmentally friendly, safe and cost-effective. Current lithium-ion batteries are still somewhat away from achieving this goal. Therefore, other materials and environmentally friendly production processes are being researched. The way batteries work will be demonstrated at the Long Night of Research using a potato battery.

Sustainable use of resources

The sustainable use of natural resources is the focus of presentations at the Lower Austrian AIT site in Tulln (UFT, Konrad Lorenz Straße 24). This starts with the importance of the microbiome -

which is the totality of all microorganisms in a habitat - for the growth of plants. for the growth of plants. The diversity of these organisms is central to the stability and resilience of ecosystems and also to plant production in agriculture. An often overlooked but very important part of ecosystems are fungi. These organisms also play a major role for us humans - be it as food, be it as a supplier of important medicines or of paints or be it because they can trigger allergies. Another important topic for the future is soil: AIT researchers show the public first-hand what is happening in the soil beneath our feet.

Safety and production

Groß The topic of digital security is also a major focus of research at the AIT: researchers will provide an insight into this topic at the presentation of the Austrian Security Research Program KIRAS (in the Palm House), where a project demonstration will be shown. In cooperation with the International Atomic Energy Agency (IAEA), AIT experts will also be demonstrating in the UNO City how artificial intelligence methods can be used to detect cyberattacks and thus ensure the security of power plants. The AIT experts will also offer a workshop at HappyLab Vienna: In the project "fem*MAD" (Female Engagements in Making * a difference), visitors to the Long Night of Research will be asked to design what they consider to be an ideal makerspace under the title "Make your Makerspace!".

AIT expert as "Living Book"

An AIT researcher, Tanja Tötzer, a specialist in the field of urban planning (Digital Resilient Cities), will also be available as a "Living Book". This is a dialogue platform where visitors can "borrow" a person for a personal discussion on a specialist topic - analogous to a public library.

All information:

- www.LNF22.at
- <https://langenachtderforschung.at/programm#/?mode=station&text=AIT>

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