

## Press release

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# AIT AT THE LONG NIGHT OF RESEARCH 2024

The AIT Austrian Institute for Technology presents the latest technological developments and their benefits for the economy and society in Vienna, Tulln and Ranshofen. The application of artificial intelligence methods plays an important role in many innovations.

Research & development is the central driver of innovation for the economy and society, secures jobs and prosperity and thus strengthens Austria as a business location. Research provides solutions for the major challenges of our time. "Creating public awareness of this is of crucial importance," emphasises Brigitte Bach, CEO of the AIT Austrian Institute of Technology. The Long Night of Research is Austria's largest science communication event - on Friday, 24 May 2024, there will be more than 2,800 programme items at 270 locations throughout Austria, where interested parties can come into direct contact with the world of science from 5 pm to 11 pm.

"The AIT Austrian Institute of Technology is very happy to take part in the Long Night of Research to show the public the top achievements of applied research in Austria," says Bach. Specifically, AIT researchers will be presenting exciting new research results and developments at three locations: at the Vienna

"Cape 10" (Vienna, Alfred-Adler-Straße 1), at the Tulln University and Research Centre (Lower Austria, Konrad-Lorenz-Straße 24) and at the LKR Leichtmetallkompetenzzentrum Ranshofen (Upper Austria, Lamprechtshausener Str. 61).

### Artificial intelligence has many applications

Artificial intelligence (AI) plays a decisive role in many innovations. One example is the AIT Mobility Observation Box, which uses a camera to closely monitor traffic and analyses the movements of different groups of road users with the help of AI. From this, conclusions can be drawn for road safety - for example, how to minimise any accident clusters at a particular location.

section of road. This is particularly useful for weaker road users (cyclists, pedestrians).

AI is also an important tool for exposing fraud on the internet. A major problem at the moment is fake shops that lure customers with deceptively genuine-looking offers at bargain prices on the internet - but those who order there wait in vain for the goods they have paid for. Together with partners, experts from the AIT have developed a "Fake Shop Detector" was developed as a free browser plug-in that checks unknown online shops in real time for more than 21,000 features. If a shop is suspicious, the Detector issues a warning.

Other examples of the use of AI - all of which will be on show at the AIT's presentation in Vienna's "Cape 10" - include the "AI4Trees" project, which aims to keep our forests healthy, and an innovative training system for emergency responders.

### Sustainable batteries of the future

Another important topic of the present day is being addressed by battery researchers.

-Researchers: The AIT Battery Lab is developing innovative manufacturing processes that do away with hazardous solvents during production and replace critical raw materials, such as cobalt, with alternative materials. New methods are also being developed for the recycling of lithium-ion batteries to strengthen the European supply chain, reduce dependence on imported raw materials and promote circular economy approaches in battery production.

### Healthy environment, healthy people

At the Tulln site, the AIT focuses in particular on new methods and technologies in the fields of biology and medicine. The Long Night of Research will show, for example, how indoor air quality can be measured, how crops of the future can be made fit for climate change, how microplastics in arable soil affect life in the soil and on plants or how to prevent even more olive and almond trees in southern Europe from falling victim to a bacterial plant disease.

A particular speciality of AIT researchers is research into the so-called "Microbiome". These are microorganisms that naturally live together with plants and are responsible for many important functions - for example, they help to fertilise the soil, promote plant growth and defence, reduce the greenhouse effect and break down pollutants. In some large-scale projects that

led by the AIT, is currently investigating how the microbiome can be positively influenced in order to replace fertilisers or pesticides, for example.

### Lightweight metals for lower emissions

The AIT's LKR Light Metals Competence Centre in Ranshofen has been working on light metals (aluminium, magnesium, titanium) for many years. The lighter cars or aeroplanes are, for example, the less energy is required to power them and the lower the CO2 emissions. During the Long Night of Research, the entire path of a lightweight component from the material to the end product is shown - for example, the material development, which is accompanied by simulations, the casting of metals or extrusion moulding. One particularly interesting new method is wire arc additive manufacturing (WAM), which is a form of 3D printing with metals. This means that even very complex shaped objects can be produced quickly and economically, even in very small quantities.

### About the AIT Austrian Institute of Technology

Research & development is the central driver of innovation for the economy and society, secures jobs and prosperity and thus strengthens Austria as a business location. Applied research also provides solutions for the major challenges of our time. The AIT Austrian Institute of Technology is Austria's largest research and technology organisation with currently 1,527 employees working on the key infrastructure issues of the future. The AIT focuses on the two interlinked research areas of "sustainable and resilient infrastructures", particularly in the fields of energy, transport and health, as well as the digital transformation of industry and society, working closely with industry and clients from public institutions.

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