Website address:
https://www.gesundheitsindustrie-bw.de/en/article/press-release/ulm-university-funds-projects-molecular-quantum-bits-and-digital-diabetes-research-research-incubators-focus-ideas-outside-mains

Ulm University funds projects on molecular quantum bits and digital diabetes research - Research incubators focus on ideas outside the mainstream

Creating scope for innovative projects from various disciplines: That is the aim of the research incubators at Ulm University. The aim is to initiate developments and ideas that could become relevant research areas for the University. In the current call for proposals, the jury has selected two interdisciplinary projects on quantum chemistry and digital, sensor-based diabetes research. These will be funded with up to 150,000 euros per year for up to three years.

The so-called research incubators serve to identify new, promising interdisciplinary fields of research that lie outside the scientific mainstream and the existing focal points of Ulm University. The special focus is on the interdisciplinary approach, in which scientists from different subject areas and faculties jointly submit a proposal and develop solutions.

The funding opportunity is based on the observation that although there are often signs of cooperation between different disciplines in everyday scientific work at the University, these often cannot be systematically pursued. This may be due to a lack of time and resources or because only small teams are working on these topics.

"We would like to encourage our researchers to think outside the box and network with other researchers beyond the boundaries of their own discipline. We are convinced that new fields of action can emerge from these initiatives," explains Professor Joachim Ankerhold, Vice President Research.

A committee has selected the following projects based on the criteria of scientific quality, expertise of the scientists involved and the prospect of third-party funds:

ChemAI: AI-supported research into molecular qubit systems - Professor Max von Delius, Professor Birte Glimm, Professor Alexander Kühne, Professor Sabine Richert, Professor Timo Ropinski

The interdisciplinary ChemAI team from Chemistry and Computer Science wants to use artificial intelligence (AI) to discover molecular qubit systems. These are important building blocks for future quantum sensors and quantum computing technologies. By combining advanced 3D deep learning with experimental validation, the researchers hope to predict so-called few-qubit architectures with ideal properties and then produce them in the chemistry lab. The "AlphaFold" software, which can predict three-dimensional protein structures using AI, serves as a model.

DiaPulse: Non-invasive digital biomarkers for food intake and metabolic health - Professor Martin Heni and Professor Walter Karlen

The DiaPulse project combines expertise from Internal Medicine and Engineering and combines metabolic research with modern biosignal processing. The aim is to better understand the regulation of metabolism during food intake and thus open up new approaches for individualised diabetes management. Wearable sensors will be used to tap into previously unused physiological signals that reflect the communication between the brain and body. On this basis, the research team aims to identify glucose-independent digital biomarkers and characteristic patterns of disturbed metabolic regulation.

The research incubators will initially be funded for two years. A third year may follow after a positive interim evaluation.

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Further information

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