PRESS RELEASE

Research expertise for the healthcare industry of tomorrow

At the DMEA trade fair, Fraunhofer will present innovative research projects for the healthcare lead market

How can software applications support professionals and patients in prevention, diagnostics and therapy? How can cardiovascular diseases be detected at an early stage? How can medical treatments be digitalized holistically? Experts from the Fraunhofer-Gesellschaft will answer these and other questions about the digitalized healthcare of today and tomorrow at the DMEA 2022 trade fair, held from April 26 to 28, 2022 in Berlin (joint Fraunhofer booth E106 in Hall 2.2).

Health research occupies a central position in the Fraunhofer-Gesellschaft's portfolio. From prevention and diagnostics to therapy and care, numerous institutes are researching innovative and affordable solutions. When it comes to healthcare, these innovations often emerge at the intersections of scientific disciplines. Health researchers at Fraunhofer therefore focus on the central topics of drugs, diagnostics, devices and data, the so-called 4D. Improving medical capabilities and optimizing processes are always key priorities, but so too is the goal of making healthcare affordable for everyone.

The joint Fraunhofer booth at the DMEA trade fair in Hall 2.2, Booth E106, will also showcase the Fraunhofer MED²ICIN lighthouse project, a digital patient twin.

Digital patient twins for personalized treatment
At the DMEA trade fair, the Fraunhofer MED²ICIN lighthouse project will present its prototype of a clinical decision support system based on a digital patient twin. The system collates all of a patient's health information and matches it with disease-specific data. Clinical guidelines and health economic aspects are also included in the holistic digital patient model. The goals are to improve treatment and optimize the use of healthcare spending. The University Hospital Frankfurt is currently testing the prototype on chronic inflammatory bowel diseases.

Optimized healthcare process with digital solutions
The Fraunhofer Institute for Computer Graphics Research IGD is making a contribution to personalized medicine with its digital solutions. The software applications support professionals and patients in prevention, diagnostics and therapy. At the DMEA trade fair, Fraunhofer IGD will present the CareCam software (a health coach for employees who work with computer screens), the EU project PlatformUptake, which evaluates

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open platform solutions for care facilities, and software solutions for analyzing medical image data. The Guardio® app, which transforms heart movements into an ECG when the smartphone is placed on the patient's chest, will also be showcased.

Tomorrow's digital healthcare
The Fraunhofer Institute for Integrated Circuits IIS has developed a management system for monocenter and multicenter clinical studies, called DPM.research. The system enables a smooth, automated exchange among all those involved in the study while at the same time effectively evaluating the study objectives and measures. With an app and various wearables, such as CardioTEXTIL for medical-grade arrhythmia monitoring, the data is measured directly on the patient in real time, in clinical and home environments, while adhering to privacy requirements.

Reliable ECG remote diagnosis from the living room
The Fraunhofer Cluster of Excellence Cognitive Internet Technologies CCIT will present a secure, wirelessly connected medical sensor application in the MEDISEC project: CardioTEXTIL, a textile carrier system with integrated sensor technology, enables early detection of cardiovascular diseases using a 3-channel ECG. Tamper-proof sensor electronics, IoT security protocols and state-of-the-art encryption methods ensure that information is processed in a privacy-compliant manner.

Digitalization of clinical treatment pathways
Treatment pathways can be holistically digitalized by linking clinical information systems with novel measurement technology and robotic handling systems. Emphasis is placed on the operating room, patient admission and their medical history. The Fraunhofer Institute for Manufacturing Engineering and Automation IPA will present the topic using the example of the ProM²etheus process management system. The system is being developed for comprehensive control when treating oligometastatic cancer patients at the M²OLIE research campus.

Reliably connected medical technology
When it comes to our health, it is essential that we can rely on technology. Researchers at the Fraunhofer Institute for Production Systems and Design Technology IPK are creating information technology solutions for medical technology so that devices and systems can communicate with each other end-to-end and be used seamlessly. This benefits medical staff, device manufacturers and ultimately patients. At the DMEA trade fair, experts will show how they develop and integrate connected architectures.

Managing the growing complexity of medicine
The Fraunhofer Institute for Digital Medicine MEVIS aims to make the growing complexity of medicine manageable. At the DMEA trade fair, Fraunhofer MEVIS researchers will present solutions for multicenter research and development projects based on medical image data. SATORI integrates data curation, training and application of AI models with intuitive, customized workflows and visualization. Together with industry,

the experts are developing technologies for tomorrow's precision diagnostics and personalized therapy planning.

MED²ICIN: Digital patient model as the basis for personalized and cost-optimized treatment

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