Wireless & Transponder Systems

Condition Monitoring of Overhead Lines

In the context of climate protection, the importance of energy efficiency is increasing, as is the share of electricity from renewable energies. Thousands of wind farms, solar modules and biogas plants already generate large quantities of green electricity. The expansion of wind power plants in particular has led to leaps in performance in recent years. In addition to the optimal utilization of the high-voltage overhead lines, the rapid detection of hazardous situations is a central issue. Fraunhofer IMS has developed a sensor system with energy self-sufficient sensor modules for monitoring the operating parameters.
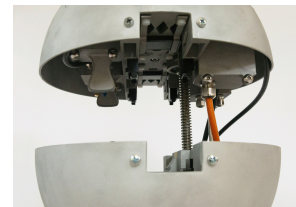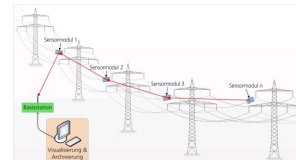
MORE INFO

Artificial intelligence for microcontrollers and embedded systems

Machine learning for sensors

Today microcontrollers can be found in almost any technical device, from washing machines to blood pressure meters and wearables. Researchers at the Fraunhofer Institute for Microelectronic Circuits and Systems IMS have developed AIfES, an artificial intelligence (AI) concept for microcontrollers and sensors that contains a completely configurable artificial neural network. AIfES is a platform independent machine learning library which can be used to realize self-learning microelectronics requiring no connection to a cloud or to high performance computers. The sensor related AI system recognizes handwriting and gestures, enabling for example gesture control of input when the library is running on a wearable.

MORE INFO

The video shows that a feedforward neural network (FNN) can be trained with AIfES on a microcontroller. To demonstrate this, the calibration of a Fraunhofer IMS capacitive pressure sensor with an FNN is performed directly on a microcontroller.

→ Video: AIfES – Train an artificial neural network on a microcontroller

Embedded Systems

Fraunhofer IMS develops AI platform for health, care and social participation

- Platform should build an ecosystem for health

economy

- Fraunhofer-Gesellschaft is participating with the institutes IMS and IIS as consortium partners and wants to help SMEs with the integration of AI solutions
- VDE wins with the project "CareFul KI" in the AI innovation competition that was organized by the BMWi and thereby proving themselves against 130 other applicants
- Contest of the BMWi proves considerable application potential in Germany

MORE INFO

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inHaus-Center

A Weekend for the Entrepreneurs of the Future

On the first "Techstarts Startup Weekend Duisburg", 30 international young talents met at the Fraunhofer-inHaus-Center to discuss their innovative ideas. In the first steps to their own companies they inspired the jury with their elaborated business ideas and team spirit. There were no limits to creativity.

MORE INFO

CMOS Image Sensors

9th CMOS Imaging Workshop was a great success

The 9th CMOS Imaging Workshop took place on May 7 and 8, 2019 at Fraunhofer-inHaus-Center. 117 participants from 14 countries discussed the recent developments in hot imaging topics like LiDAR, Quantum Imaging, and Space applications.
The evening event in the Duisburg Landscape Park was particularly great and was a source of enthusiasm for many participants.

We thank all our participants, speakers, and sponsors for contributing to the success of the CMOS Imaging Workshop!

MORE INFO

Research Fab Microelectronics Germany

Meet our Experts: FMD goes SENSOR+TEST 2019

FMD visited its member institutes at SENSOR+TEST trade fair in Nuremberg.
Meet Karsten Seidl from Fraunhofer IMS presenting their latest development of pressure sensors. Get to know Katrin Tina Möbius from Fraunhofer EMFT. She demonstrates a electro-chemical measurement kit.

→ Video: Meet our Experts

CMOS Image Sensors

Fraunhofer IMS on the Laser World of Photonics 2019

The Laser World of Photonics in Munich was again an opportunity to present the latest developments.

Fraunhofer IMS presented on its booth:

- LiDAR industrial sensor with simultaneous human detection
- Live demonstration with CSPAD LiDAR Sensor
- People counting with IR
- Live demo of the thermal image evaluation camera
- Visualization of BackSide Illuminated (BSI) sensor technology

The fair was very successful and a great experience.
We will exhibit again in 2 years and are looking forward to your visit!

Annual Report 2017

Dear Mr. Utz,

We would like to invite you to take a look at our annual report. Here you will find interesting information about our eight divisions and selected projects as well as a list of our publications and scientific theses that you should not miss.

Our diverse applied research has been centered around human needs and well-being for over 30 years. Consequently, we're putting a lot of energy into our work in relevant medical questions and thus into human health. Therefore, the focus of this year's annual report is on the topic **"medical technology"**.

→ Download can be found here

Fairs

17. - 19. September 2019
AutoSens in Brüssel

This year Fraunhofer IMS will for the first time be a part of the most important European event for automotive sensing.

In the exhibition area IMS will present a **true solid-state LiDAR sensor** and a **customized thermal imaging camera.**

We are looking forward to this exciting event.

MORE INFO

18th - 21st November 2019 in Dusseldorf, Hall 10, Booth G05 - H04

COMPAMED 2019 – Melting pot for high-tech solutions

At the COMPAMED we present:

- Artificial intelligence,
- miniaturized pressure sensor systems and
- tactile sensors for medical application

COMPAMED
Leading International Trade Fair
DÜSSELDORF, GERMANY
18–21 NOVEMBER 2019
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→ Video: Theranostic implants - today and tomorrow

Kontakt
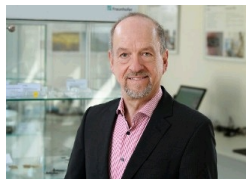
Michael Bollerott
Marketing / Vertrieb

Fraunhofer-Institut für Mikroelektronische
Schaltungen und Systeme IMS
Finkenstr. 61
47057 Duisburg

Telefon +49 203 3783-227
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