

PRESS RELEASE

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MEMS-based ultrasonic transducers for SMEs

Fraunhofer consortium presents one-stop store for micromechanical ultrasound at the SENSOR+TEST trade fair in Nuremberg

The institutes Fraunhofer ISIT, IPMS and ENAS are presenting a pioneering initiative to promote MEMS-based ultrasonic sensor technology at SENSOR+TEST in Nuremberg, Germany. Their one-stop shop offers customized solutions for companies that want to benefit from the advantages of this technology.

Sensors based on microelectromechanical systems (MEMS) have become an integral part of our everyday lives. In ultrasonic sensor technology, they offer numerous advantages in terms of miniaturization, functionality and cost efficiency, enabling innovative solutions for a wide range of applications.

However, the high development complexity and initial costs of these semiconductor-based micromechanical ultrasonic transducers (MUT) prevent many small and medium-sized companies from developing their own solutions. To close this gap, the Fraunhofer Institutes ISIT, IPMS and ENAS are presenting a pioneering initiative: a one-stop shop for the next generation of ultrasonic sensor technology.

The institutes Fraunhofer ISIT, ENAS and IPMS have been leading the development of micromechanical ultrasonic devices and systems within the Research Fab Microelectronics Germany (FMD) for years.

The platform offers not only a broad technology portfolio of electrostatic and piezoelectric solutions, but also has a first-class infrastructure for pilot production in its own clean rooms. From concept development to production, characterization and connection technology to system integration, the institutes work together to offer customized development services along the entire value chain for a wide range of applications in the frequency range from 20 kHz to 20 MHz, for example in production, medical technology and human-machine interaction.

From June 11 to 13, 2024, the three Fraunhofer Institutes will present their groundbreaking technology platform for micromechanical ultrasonic transducers at the SENSOR+TEST in Nuremberg at the joint booth 1-317 and in several lectures at the 22nd GMA/ITG Symposium.

Editor

Franka Balvin | Fraunhofer Institute for Photonic Microsystems IPMS | Phone +49 351 8823-1144 |
Maria-Reiche-Straße 2 | 01109 Dresden | www.ipms.fraunhofer.de | franka.balvin@ipms.fraunhofer.de

FRAUNHOFER INSTITUTE FOR PHOTONIC MICROSYSTEMS IPMS**About Fraunhofer IPMS**

Fraunhofer IPMS is one of the leading international research and development service providers for electronic and photonic microsystems in the application fields of intelligent industrial solutions and manufacturing, medical technology and health, and mobility. In two state-of-the-art clean rooms and with a total of four development sites in Dresden, Cottbus and Erfurt, the institute develops innovative MEMS components and microelectronic devices on 200 mm and 300 mm wafers. Services range from consulting and process development to pilot production.

About Fraunhofer ENAS

The specific strength of the Fraunhofer Institute for Electronic Nano Systems ENAS lies in the development of smart systems – so-called intelligent systems for various applications. These systems combine electronic components, micro- and nano-sensors and actuators with interfaces for communication. Fraunhofer ENAS develops individual components, the technologies for their production, as well as system concepts and system integration technologies and transfers them into practical use. The institute accompanies customer projects from the initial idea through design, technology development or implementation using existing technologies to the tested prototype.

About Fraunhofer ISIT

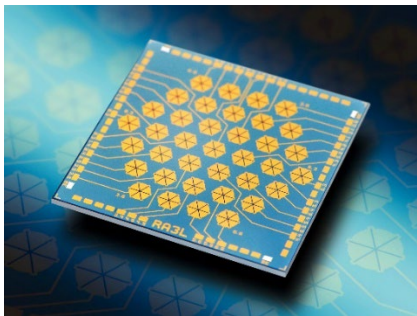
The Fraunhofer Institute for Silicon Technology ISIT works closely with industrial partners to develop power electronic components and microsystems with finely movable structures for sensors (pressure, motion, biochemical analysis, etc.) and actuators (valves, scanners, mirror arrays, etc.), including the necessary packaging technology. These miniaturized components are used in medicine, environmental and traffic engineering, communication technology, the automotive industry and mechanical engineering.

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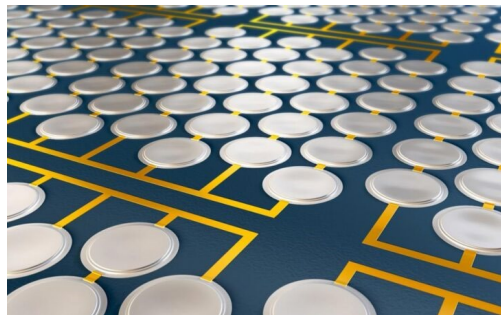
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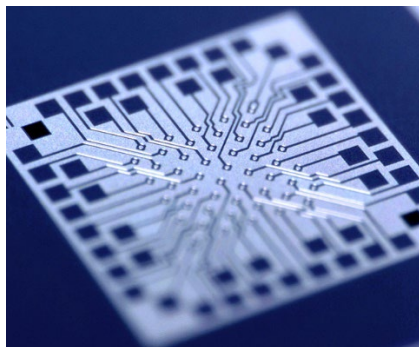
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MEMS ultrasound array for air-guided ultrasound
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Capacitive micromachined ultrasonic transducer
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Piezoelectric micromachined ultrasonic transducer (PMUT)
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