



1 MST Lab&Fab equipment

KICKOFF: NEW GENERATION OF MORE INTELLIGENT SYSTEMS

Fraunhofer Institute for Microelectronic Circuits and Systems IMS

Finkenstr. 61
D - 47057 Duisburg
phone +49 203 37 83-0
fax +49 203 37 83-266
www.ims.fraunhofer.de

contact
Michael Bollerott
phone +49 203 37 83-227
vertrieb@ims.fraunhofer.de

The Fraunhofer Institute for Microelectronic Circuits and Systems wins the scientific competition "NanoMikro + Werkstoffe.NRW" and invests 16 Million Euro in a new Microsystems technology lab (MST-Lab).

North Rhine-Westphalia and the Federal Ministry of Research contribute 25 % of the subsidy amount each. The European Commission contributes another 50 % of the amount. With the new equipment Fraunhofer IMS will expand the existing capabilities in MEMS-Technology (Micro-Electro-Mechanical-Systemy) for micro-bolometer arrays (incl. galvanic and flip chip bonding for encapsulation) with a stepper capable of alignment to the wafer backside, thinning and through Silicon via processes, deposition and etching of special dielectrics and metals, as well as a broad range of process control tools. Furthermore this allows the development and combination of absolutely new and unique mechanical elements such as sensors and actors with electronic components on a common silicon substrate. Our customers will benefit directly from the new competences like:

- Bio-compatible metallizations will allow

higher flexibility for advanced implanted pressure monitors.

- In the automotive sector, miniaturized infrared sensors warn drivers against invisible pedestrians and colour enabled CMOS cameras with high dynamic range enable drivers detailed rear view even in situations with blocked rear vision.
- Surveillance in low light conditions will be improved by single photon detection systems, enabled by the sophisticated processes to be developed in the new facilities.
- Rugged and simply constructed pressure sensors for industrial applications will be possible with newly available processes like Through Silicon Via etch, wafer bonding and thinning.

Business companies as well as public research centers collaborate with Fraunhofer IMS in order to develop new MEMS which are asked for in different commercial sectors e.g. automotive industry, consumer electronics and medical technology.

The current partners include:

Fraunhofer IPMS, Carl Zeiss Optronics GmbH, Vitron GmbH, DIAS Infrared GmbH, Hella KGaA, BMW AG, EPCOS AG.

