



Micro and Nano-technologies

Technology for Fabrication of Microelectromechanical Systems (MEMS) Transducers

[application areas]

The developed photolithography-based fabrication technology may be applied to produce microactuators and microsensors suitable for numerous applications, e.g. telecom, automotive, medical, measurement and various industrial equipment. This surface micromachining technology uses a combination of different thin film deposition and etching processes such as wet and reactive ion etching, electron-beam vacuum evaporation, electroplating, etc. The technology was successfully implemented for fabrication of electrostatic microrelays and micromotors.

[year of invention] 2005.

[authors]

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[features, technical specifications]

The technology may be applied for fabrication of micromechanical components with dimensions ranging from several to several hundred microns.

[novelty]

MEMS transducers may be fabricated on high-resistivity semiconductor substrates, which enables integration of microstructures into monolithic ICs or they may be realized on dielectric substrates, which enables their integration into hybrid circuits.

[technological readiness level]

Available technological infrastructure enables small-batch fabrication as well as electric and dynamic characterization of MEMS transducers.

[what are we looking for in this stage of development?]

Searching for partners for joint R&D projects.

[patenting]

LR patent No. 5208

“Method of production of Microelectromechanical switch”.

[commercialisation]

Have not been commercialised yet. MEMS production technologies ensuring broader opportunities are entering the market rapidly.

[alternatives]

MUMPs (MEMSCAP Inc.), SUMMiT (Sandia), iMEMS (Analog Devices), MIDIS, MOSIS

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