

# MEMS material for talk

## Resources:

Where	Title	Ranking
<a href="#">Semiconductor international</a> / Prof. Föll	MEMS e-insite.net/semiconductor	introduction, markets, major organisations
<a href="#">Materials Today</a> / Prof. Föll	Optical MEMS	fabrication, special optical applications
<a href="#">Materials Today</a> / Prof. Föll	Micromechanics senses biomolecules	biological applications of MEMS, good
Prof. Föll	Semiconductor Micromachining – Vol. 2 (!)	only written book available at the faculty
<a href="http://www.tu-hamburg.de/mst/deutsch/lehre/mikrosystemtechnik/mst_eng.shtml">http://www.tu-hamburg.de/mst/deutsch/lehre/mikrosystemtechnik/mst_eng.shtml</a>	Microsystem Engineering	Lecture notes from Prof. Kasper, TU Hamburg-Harburg, detailed, but good
<a href="http://www.mst-world.com/">http://www.mst-world.com/</a>	World of MEMS	very good, good links, overview etc.
<a href="http://www.memsguide.com">http://www.memsguide.com</a>	Memsguide.com	mixed site, good links
Phys.Jour. (german) <b>1</b> (2002) 39 / Library	Mikrosystemtechnik im Automobil	Introduction, technique, major commercial applications
Prof. Föll	Micromirrors	Several documents from Peter Merz, ISIT concerning MEMS micro mirrors, also demonstrators available!! (ask Prof. Föll)
<a href="http://www.iop.org/EJ/S/3/249/journal/0960-1317">http://www.iop.org/EJ/S/3/249/journal/0960-1317</a>	Journal of Micromechanics and Microengineering	Scientific journal on MEMS, not reviewed
<a href="http://www.e-insite.net/semiconductor/">http://www.e-insite.net/semiconductor/</a>	Semiconductor international	General journal, good entry, but you have to search it
<a href="http://www.materialstoday.com">http://www.materialstoday.com</a>	Materials Today	Good reviews, good entry, but you have to search it
Spektrum der Wissenschaften Dossier / Prof. Föll (german)	Mikrosystemtechnik	old, but much content
<a href="http://www.nexus-emsto.com/">http://www.nexus-emsto.com/</a>	Network Microsystems European	Europe's largest MEMS organisation, no substantial information
<a href="http://www.memsindustrygroup.org">http://www.memsindustrygroup.org</a>	MEMS Industry group	mostly American MEMS industry association, good link list, business/market analysis

## Key words:

- ?? meaning of MEMS, typical sizes, history
- ?? technique: anisotropic etching, difference bulk/surface micromachining/LIGA, plasma etching
- ?? process integration
- ?? difference and examples for sensors / actuators; current products & their principle of operation (airbag, inkjet nozzles, Texas instruments projector, BioMEMS, ...)
- ?? markets

?? limiting factors (also ecomically!!!)