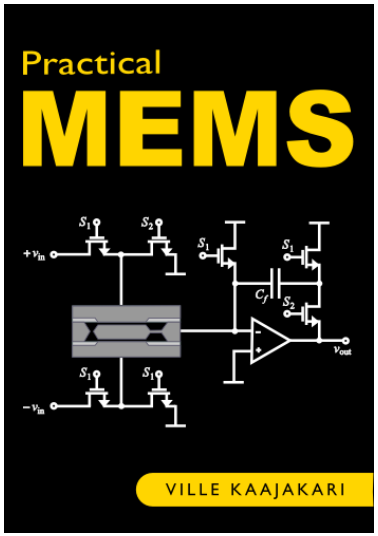
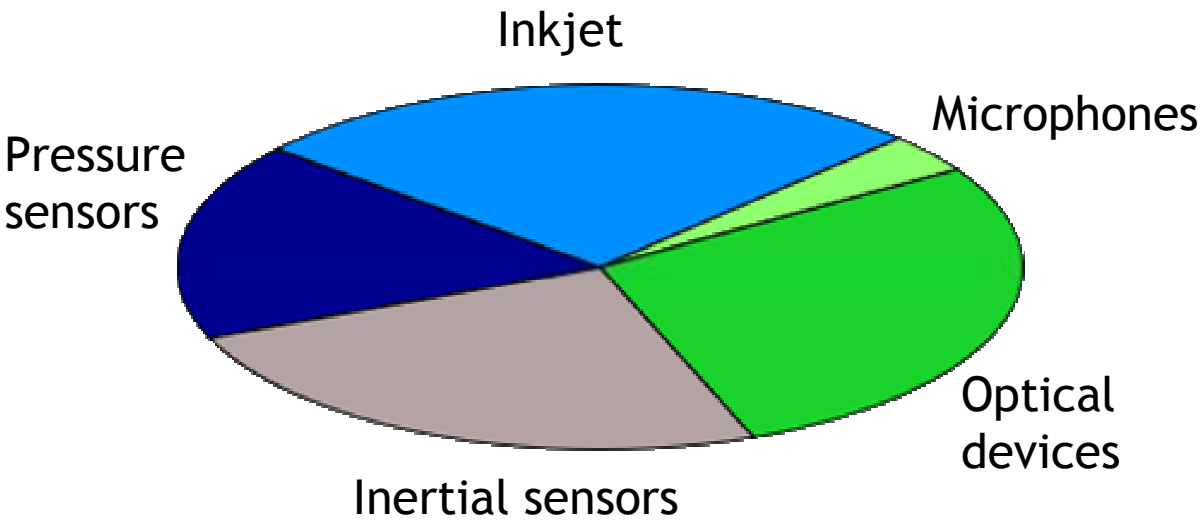
Practical MEMS

Chapter 1: Introduction



http://www.kaajakari.net/PracticalMEMS

MEMS market is diverse

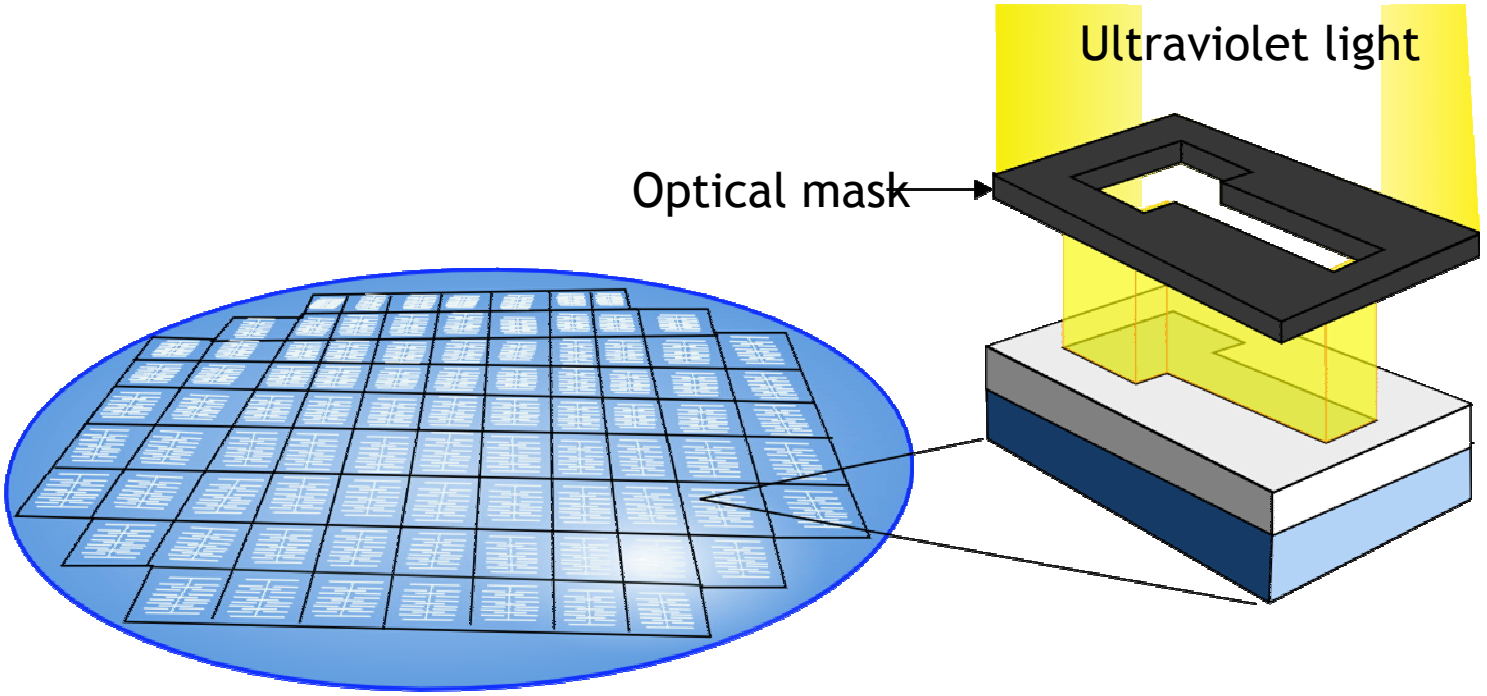


MEMS applications generating revenues over $500M/year ($100M for microphones)

Emerging applications:

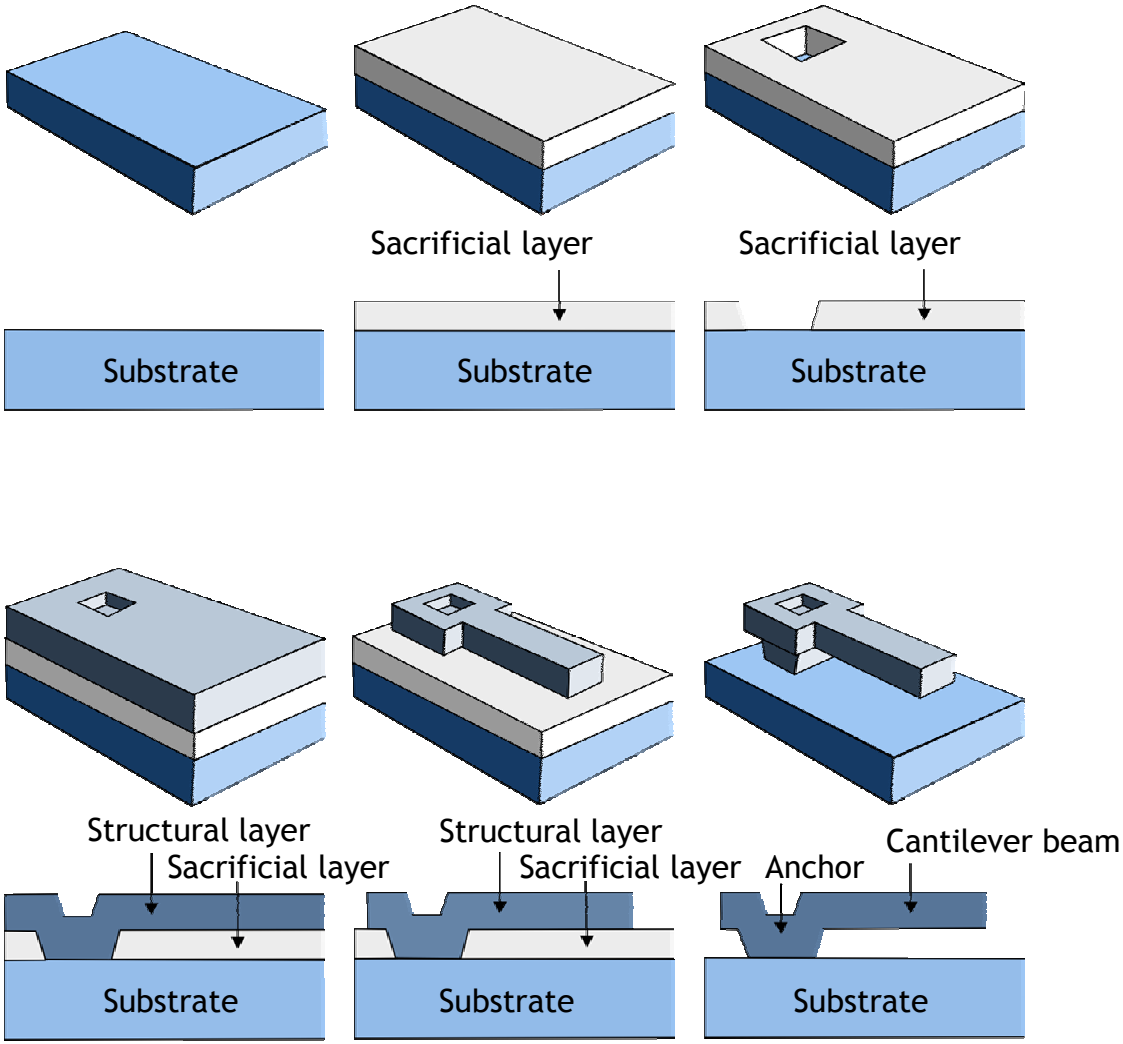
- RF resonators
- RF switches
- Lab-on-a-chip
- Drug delivery systems
- Optical switches
- Microspectrometers

Batch fabrication enables low cost



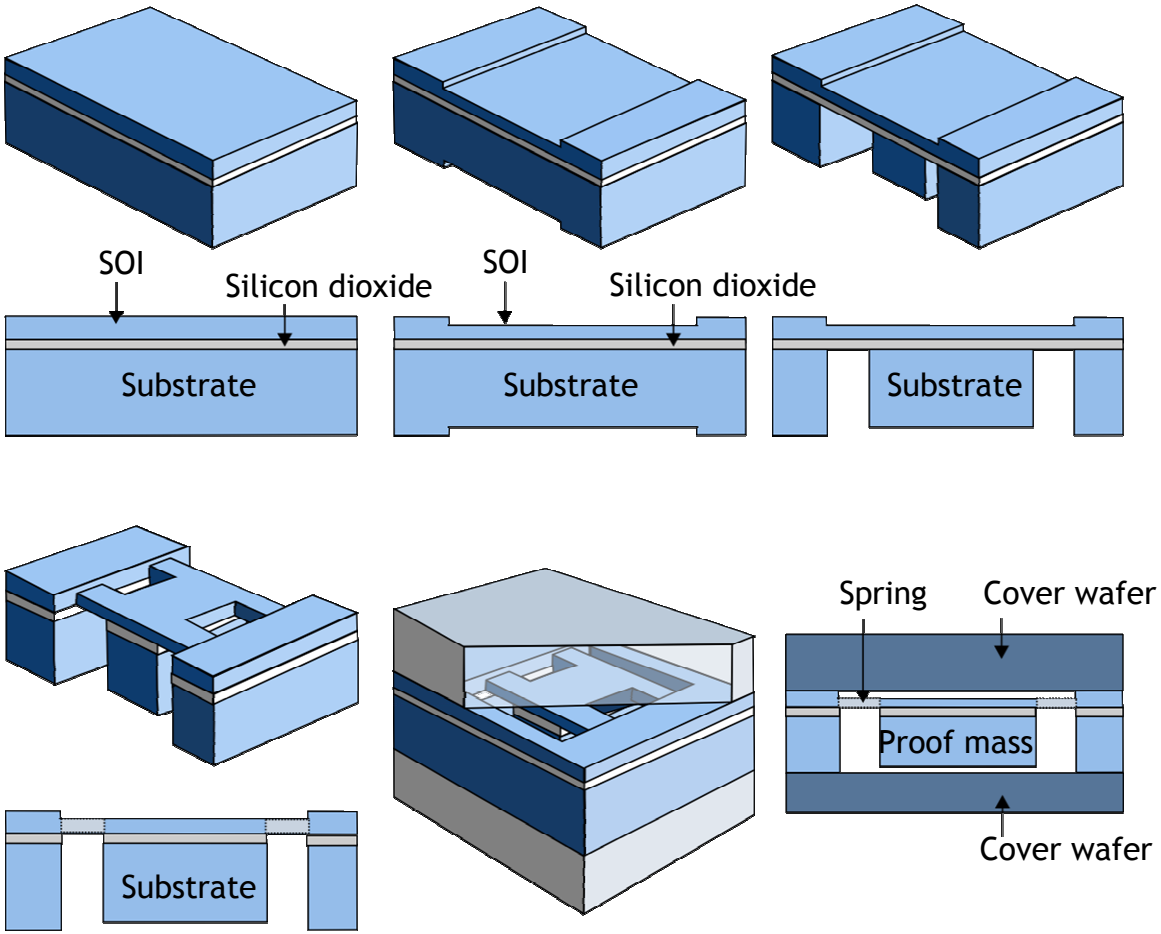
Thousands of devices are obtained from a single wafer!

Surface micromachining makes thin structures



Semi-3D structures are made, by repeating the steps of film deposition and film patterning.

Bulk micromachining makes thick structures



Thick structures are made of etching the entire silicon wafer. Device is encapsulate with wafer bonding.