



Point-One

Pole of innovative technology on nanoelectronics and embedded systems

MEMSLand

Cost Effective MEMS to Develop a Sustainable High Tech Business

Demo10 Scanning mirror

Diederik van Lierop, Philips Applied Technologies

Application: Laser based displays

Small projection displays to be used in:

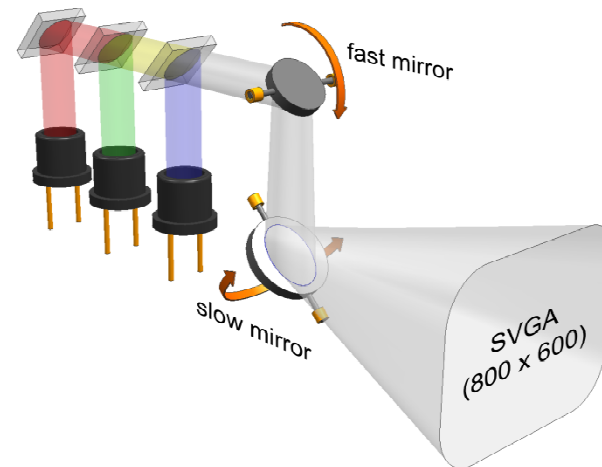
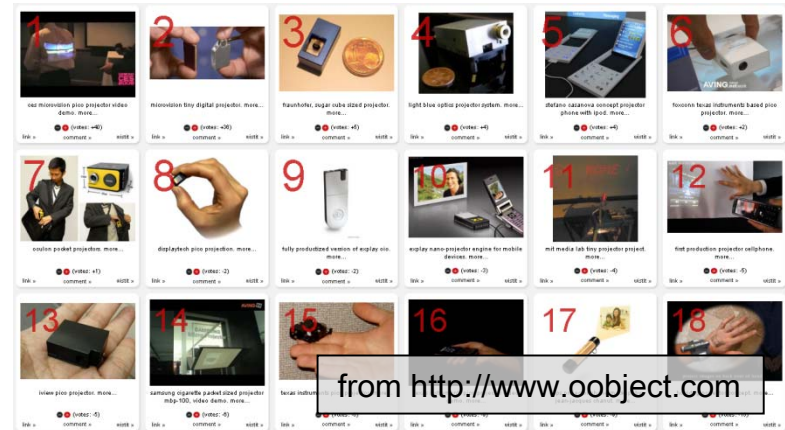
- Automotive head up displays
- Pico projectors
- Mobile devices (laptops, phones)
- Wearable displays (e.g. in glasses)

Major companies working on this:

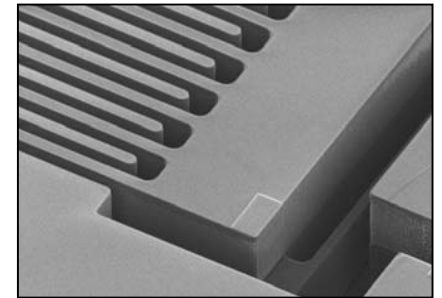
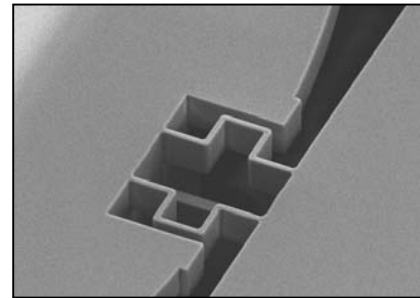
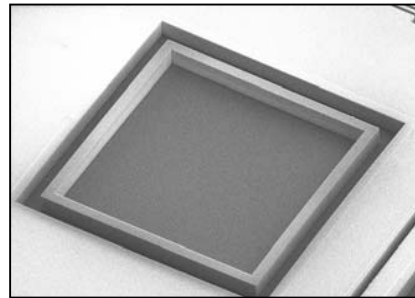
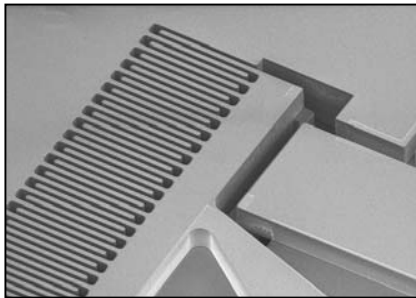
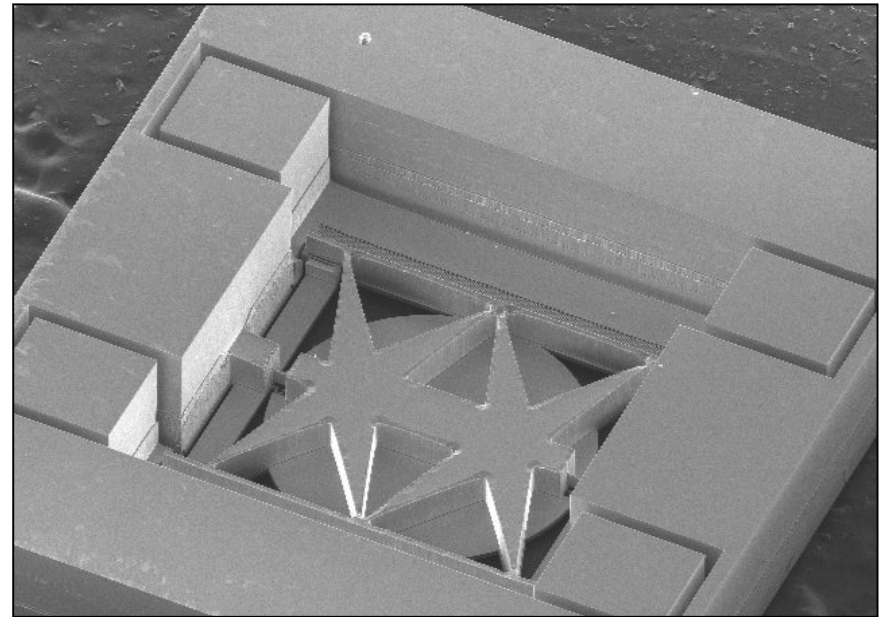
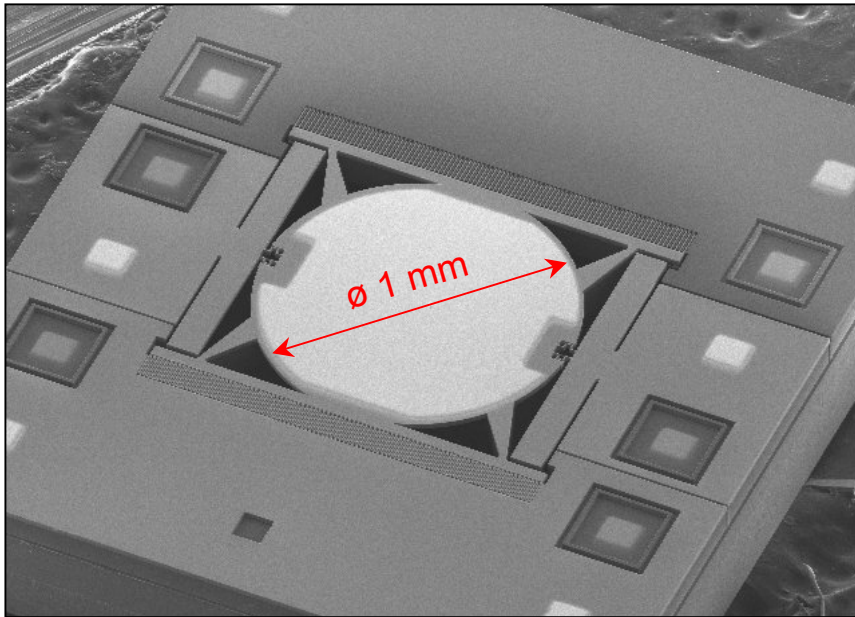
- TI, Samsung, LG Zeiss, 3M, Motorola

Cheap & small only possible with laser based projection, requiring:

- Modulateable green laser
- Combining 3 beams to single beam
- Tilting micro mirrors

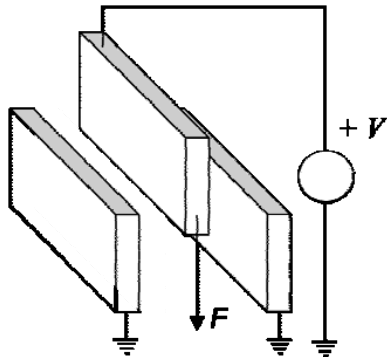


Cooperation with MEMS Foundry

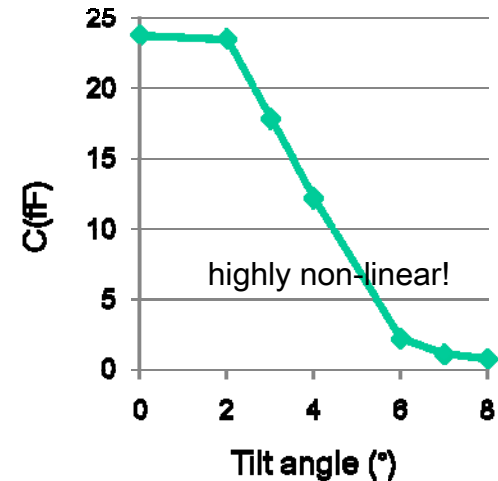
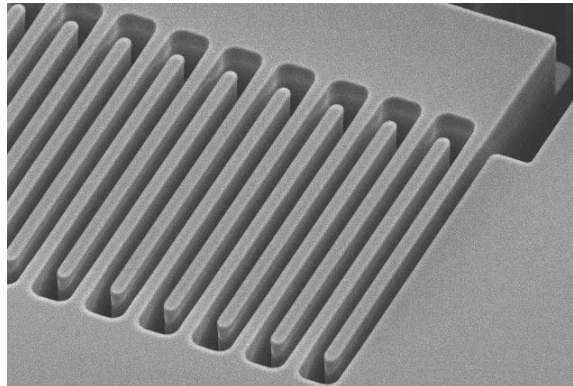


Cooperation with Univ. Twente

- Feasibility of capacitive sensing

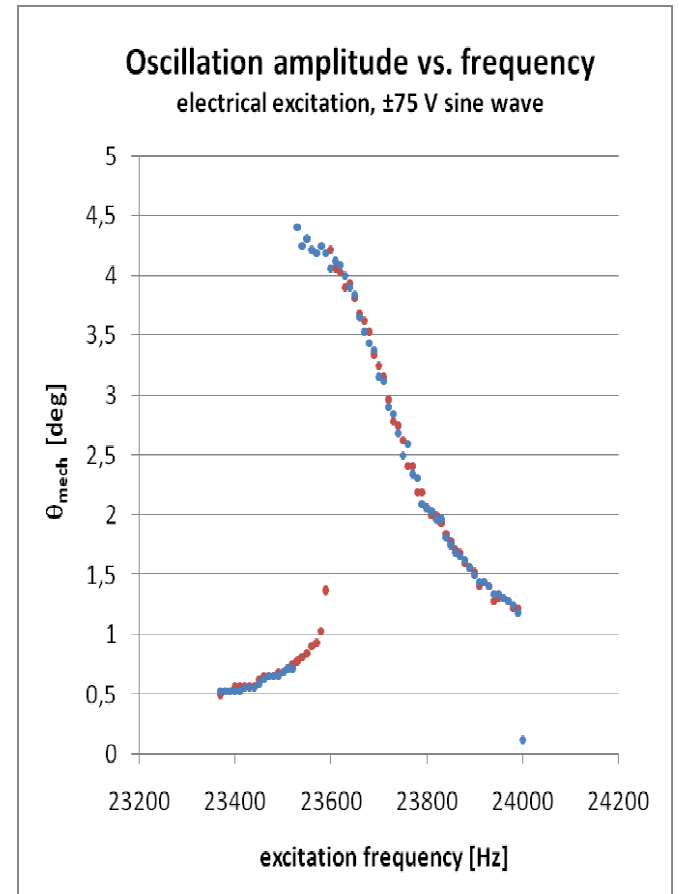
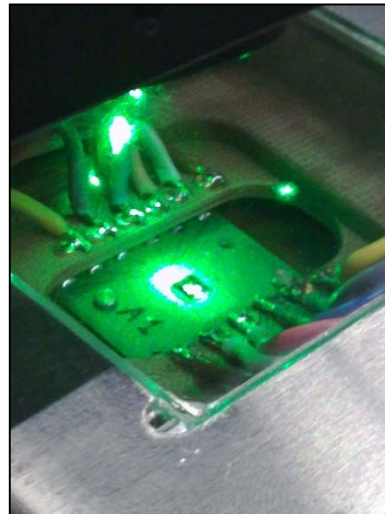
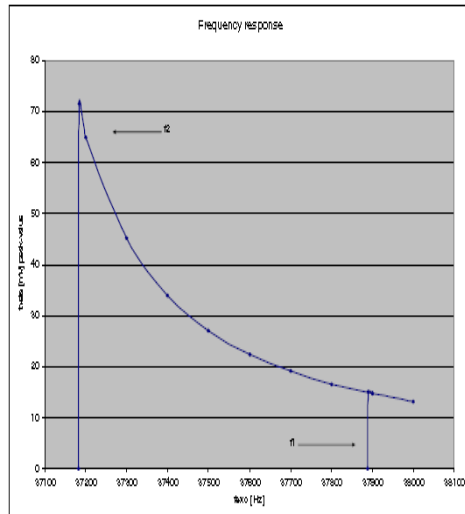
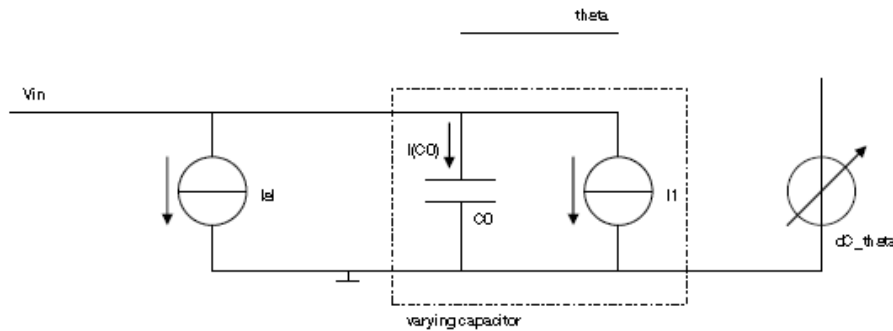


$$C_{\max} = 2 \cdot N \frac{\epsilon_0 l h}{d}$$



Cooperation with Bruco

- Investigation of driving and control of non-linear electrostatic actuator



Activities

Current activities

- Characterization
- Discussion with potential customer
- Closing the loop using external sensor

Planned:

- Upgrading our demonstrator
- Closing the loop with integrated sensor

Dissemination:

- ASPE Conference (Oct. '08)
- SPIE Photonics West (Jan. '09)