Contract manufacturing of micro- and nanoelectronic devices

VTT Memsfab Ltd carries out commercial production of microelectromechanical systems (MEMS) and other micro- and nanoelectronic devices. The company offers versatile contract manufacturing services based on extensive technical expertise and unique equipment environment.

**Services**
We offer contract manufacturing and design support based on the following micro and nanotechnologies:

- Thin-film surface micromachining
- Silicon-on-insulator (SOI) MEMS or MOEMS
- Superconductive devices
- Other devices, see [www.vttmemsfab.com](http://www.vttmemsfab.com)

We use 150 mm silicon, SOI, cavity-SOI or fused silica wafers in our production line. Our products are typically partly or fully processed wafers, delivered undiced or diced on a dicing tape.

**Why to collaborate with VTT Memsfab Ltd**
The staff at VTT Memsfab Ltd have long experience in MEMS and sensor manufacturing, thin-film technology and passive/active device integration. Also, VTT’s R&D services are easily accessible for device development. Production of several surface-micromachined and superconductive devices has already been successfully ongoing for more than 10 years.

**Additional information**
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Equipment and processes

**Lithography**
- i-line stepper, 5:1, 0.35 µm CD
- Contact/proximity aligners
- Electron-beam writing
- Nanoimprinting (step&stamp)

**Etching**
- Polysilicon/nitride
- Oxide; thin film and Advanced Oxide Etching
- Metals; Al, Mo, Ti-W, Nb (TCP)
- Deep silicon etching; production and R&D
- Anhydrous HF vapour
- Wet etching, various; critical-point drying

**Deposition**
- Six sputtering tools
- LPCVD of nitride, poly, and oxide (TEOS, LTO)
- PECVD; nitride and oxide
- ALD: aluminium oxide, titanium oxide
- Parylene

**Ion implantation**
- Medium-current; n- or p-type doping of silicon

**Plating, spin-coating**
- Cu (via or wiring), Ni, Sn-Ag, Sn-Pb, In-Sn, Au
- Polymide, BCB

**3D integration**
- CMP of Si/oxide or copper
- Direct wafer bonding
- Grinding
- Spin-etching
- Thin-wafer handling

**Backend**
- Dicing, flip-chip and wire bonding