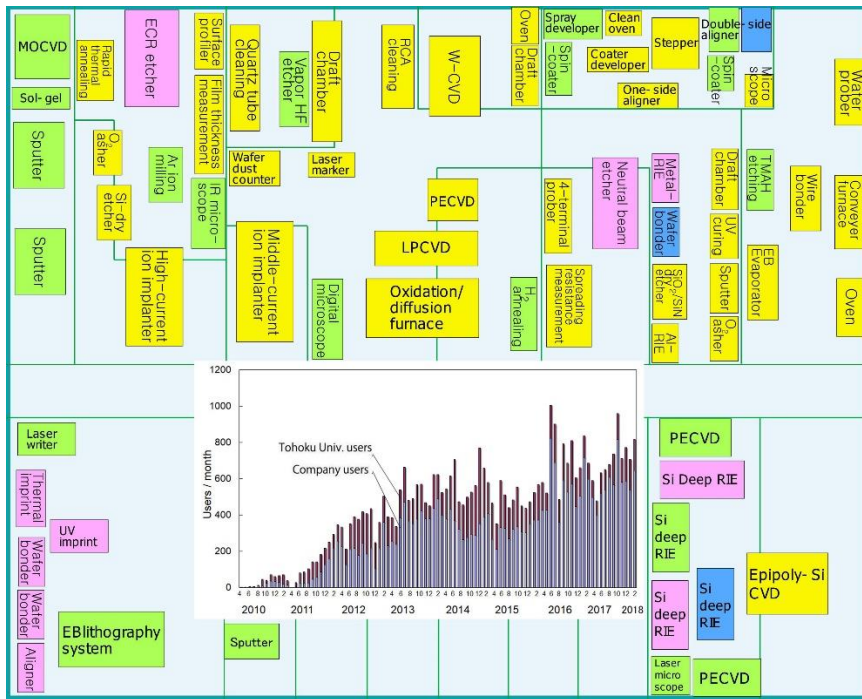


Hands-on access fab. (K.Totsu et.al.)

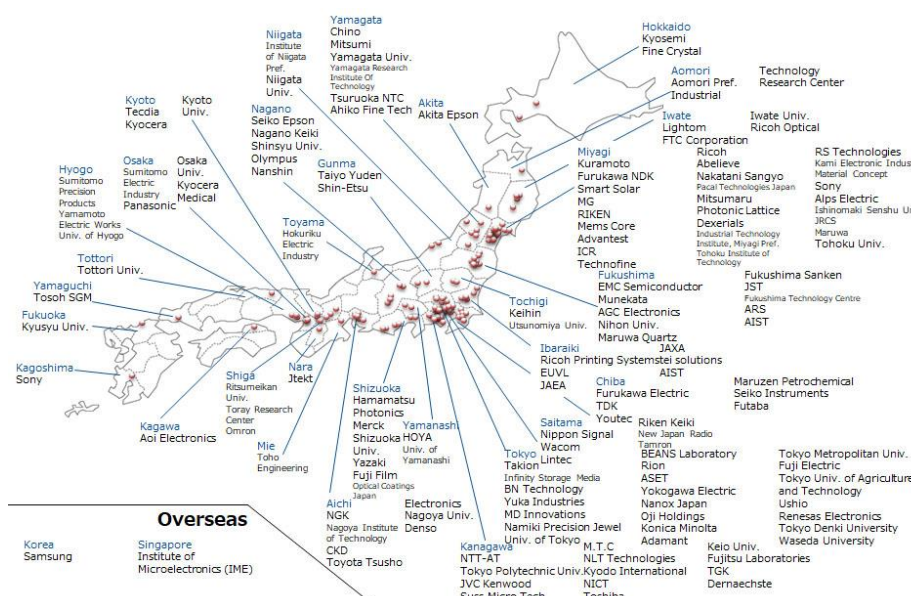
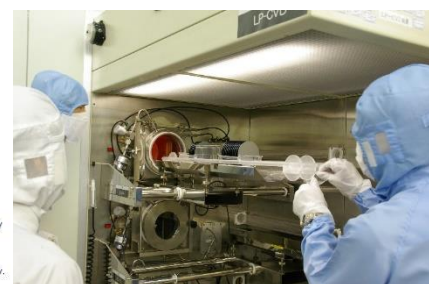
Shared facility for industry to prototype MEMS devices (4 / 6 inch). Companies which cannot prepare their own facility dispatch their employees to operate equipments by themselves. The facility is located in 1800m² clean room, which was used for the production of power transistor and newly installed MEMS fabrication equipments.

<http://www.mu-sic.tohoku.ac.jp/coin/index.html>

Contact person: Associate professor Kentaro Totsu Phone 022-229-4113, totsu@mems.mech.tohoku.ac.jp



Layout and number of users



More than 200 users (companies and institute)

Hands-on-access Fab. Equipment List



Draft chamber
~6"
HF/HNO₃/H₂SO₄/HCl etc.



Vacuum oven
~6"
Yamato DP-31



Brush scrubber
~6"
Zenkyo
post polishing



Spin dryer
4", 6"
SEMITOOL PSC101 x3



Spin dryer
~6"
Toho Kasei ZAA-4 x2



Inert oven
~6"
Yamato DN63H



UV curing
~4"
Ushio UMA-802



Curing oven
~6"
Yamato DN43H



Pattern generator
~6"
NSK TZ-310
For emulsion / Cr mask
making, up to 7inch



Laser writer
~9"
Heidelberg instruments
DWL2000CE



Spin coater
~6"
Actes ASC-4000 x2
Mikasa 1H-DXII x2



Clean oven
~6"
Yamato DE62 x2



EB lithography
~6"
Elionx ELS-G125S
Max130keV, 4mm, up to 6"



Stepper
4", 6"
Canon FPA1550M4W
g-line, 0.65µm, 4inch



Double-side aligner
~6"
Suss MA8iBA0 x2



Spray developer
~6"
Actes ADE-3000S
~8 inch, vacuum/mechanical
chuck



Oxidation/diffusion
furnace
~6"
TEL XL-7



Middle-current ion
implanter
~4"
Nissin ion NH-20SR
Max. 160keV, 0.6mA



Annealing
~6"
AG Associates AG4100
1000°C



Metal diffusion
furnace
~4"
Koyo Iindberg Model270



Asher
~6"
Branson IPC4000
13.56MHz, 600W



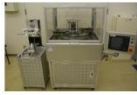
Plasma cleaner
~6"
Yamato PDC210



Surface planer
4", 6"
Disco DAS8920



Water laser
~8"
Shibuya LAMIGS AQL-1900



Wafer polisher
~6"
BN technology
Bri52, Bri62



Electroplating
~6"
Yamamoto
Cu, Ni, Sn, Au



Wafer bonder
~6"
Suss SB6e



Dicer
~6"
Disco DAD522E



Wire bonder
Chip
West Bond etc.
Al, Au



Reflow furnace
~4"
Shinko FB-260HTE



Laser marker
~4"
GSI WM-1



Sand bluster
~6"
Shinto



Wafer aligner
8"
EVG Smart View



Wafer bonder
8"
EVG 520



Epoxy injection
chamber
8"
EVG 520



UV imprinting
~4"
Toshiba machine ST50



Thermal imprinting
~50mm
Origin electric Reprina-T50A
MAX 650°C, 30kN



TOF-SIMS
CAMECATOF-SIMS IV



FIB
~3"
SII SM9200



AFM
~8"
Digital Instruments
Dimension3100



LP-CVD
~6"
Kokusai
SiN, Poly-Si, NSG



熱CVD
~6"
Kokusai
Epi-Poly Poly-Si, 1100°C



PE-CVD
~6"
JPVELVDS-5600
SiN, SiO₂



PE-CVD
~8"
Sumitomo MPX-CVD
SiN, SiO₂



PE-CVD
~8"
Sumitomo MPX-CVD
TEOS SiO₂



Sputtering
~6"
Anelva SPF-730
8inch target x3
Al, AISi



Sputtering
~8"
Shibaura CFS-4ESII
3inch target x 3
Stage cooling x1, heating x1



Sputtering
~8"
Shibaura I-Miller
3inch target x 4, Load lock,
Automatic transfer x 10 wafers



W-CVD
4"
Applied materials
Precision 5000



EB evaporation
~6"
Anelva EVC-1501



Automatic sol-gel
deposition
~4"
Technofine PZ-604



MOCVD
~8"
Wacom Doctor-T
PZT, up to Binch



Sputtering
(high temp.)
8"
Youtec 21-0604



ALD
~6"
Technofine ALK-600



ICP-RIE
~6"
ULVACNE-550



Chemical dry etcher
(CDE)
~4"
Shibaura CDE-7



Si Deep-RIE x4
~8"
Sumitomo MUC-21
SF₆, C₄F₈



Dry etcher
4"
Anelva DEA-506
For SiN, SiO₂ etching



Dry etcher
4"
Anelva L-507DL
For Si etching



AI RIE
4"
Shibaura HIRRE-100
Cl₂, BCl₃



RIE
~6"
Uvac RH-1515Z
Cl₂, BCl₃, SF₆, CF₄, CHF₃,
Ar, O₂, N₂



ECR etcher
3"
Anelva ECR6001
3 inch GaAs, AlGaIn, etc



Vapor HF
~8"
Sumitomo Primax uEtch



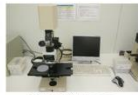
KOH-TMAH
~6"



Ar ion milling
6" x 4, 4" x 6
NS, Hakuto 20IBE-C



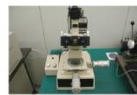
Wafer dust counter
~6"
Topcon WM-3



Film thickness
measurement
~6"
Nanometric
NanoSpec 3000



Surface profiler
~6"
Dektak8
Tenchor AlphaStep 500



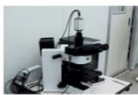
Depth measurement
~6"
Union Hisomet



4-terminal probe
~6"



Spreading resistance
measurement
Solid State Measurements
SSM150



IR microscope
~6"
Olympus, Hamamatsu



Laser/white light
confocal microscope
~6"
Lasertec
OPTELICS HYBRID L3-SD



Digital microscope
~8"
Keyence and Kunoh



SEM
~12"
Hitachi S3700N
EDX



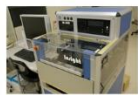
FE-SEM
Chip
Hitachi S5000



Ellipsometry
~6"
Photonic lattice SE-101
ULVAC



X-ray micro CT
~6"
Comscan techno
ScanMate D160TS110



Ultrasonic
microscope
~12"
Insight IS350



Line-focus-beam
acoustic
microscope