

# Field Emission Scanning Electron Microscopy (FESEM) (Zeiss GeminiSEM 300)

The Zeiss GeminiSEM 300 system is a high resolution FESEM that provides up to 2,000,000X magnification (Resolution: 8Å at 15kV under High vacuum mode). Additionally, it is equipped with an energy dispersive X-Ray spectrometer (EDX), which can provide both structural and elemental composition analysis.

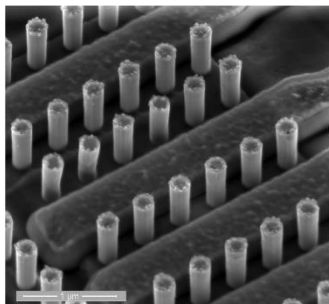


### Features and capabilities:

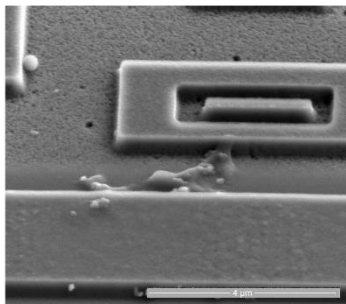
- Equipped with different detectors, BSE, SE, In-lens, STEM which provide the best imaging mode for various materials
- Equipped with charge compensator which allows focal charge compensation to eliminate charging artifacts for non-conducting samples
- Equipped with plasma cleaner which allows in-situ surface cleaning on the samples during the analysis.
- Acquire large sets of SEM images with operator supervision and perform photo stitching automatically.

### Application examples

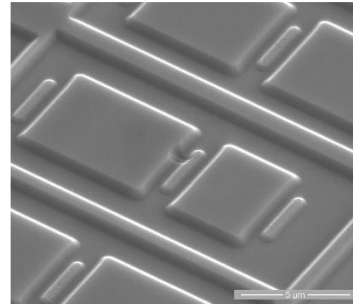
#### Surface morphology study on integrated circuit



Contact of Polysilicon layer

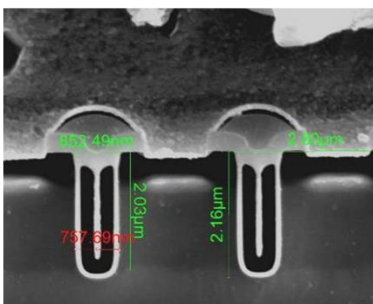


Foreign matter on the substrate

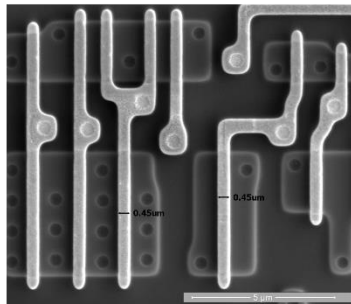


Substrate damaged

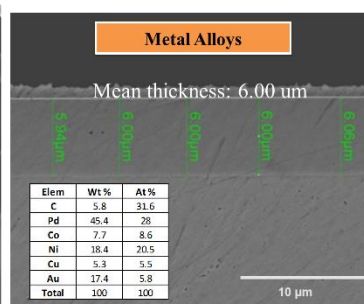
#### Structural measurement and compositional analysis on integrated circuit and thin films



Measurement of die structure

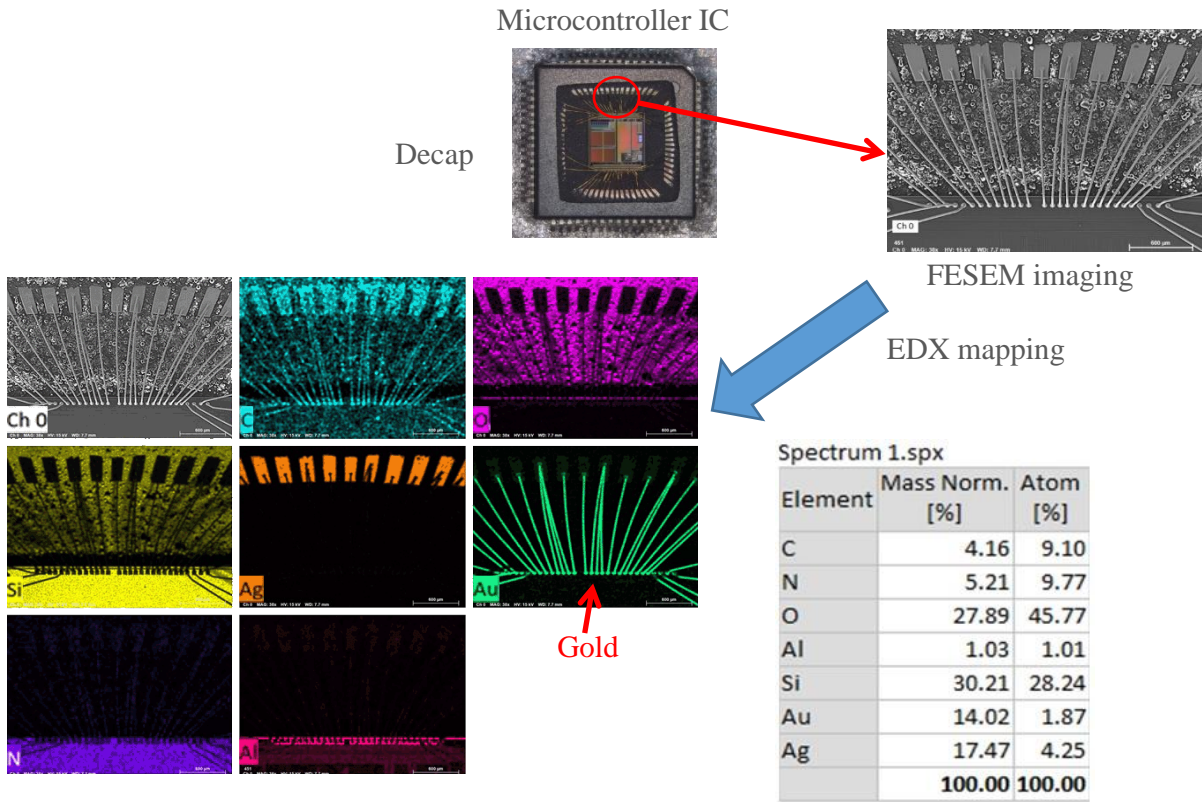


Measurement of Polysilicon layer

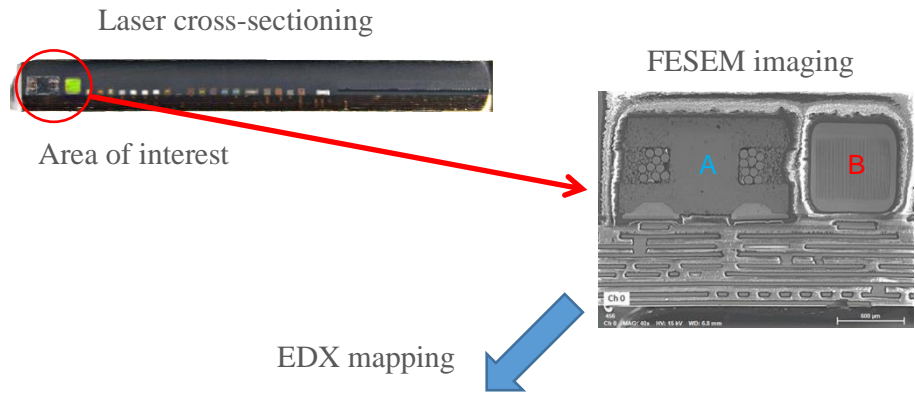


Film thickness and composition analysis

# EDX Elemental Mapping

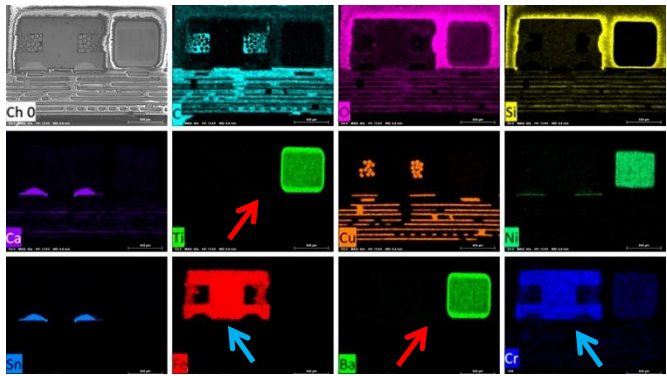


802.11ac Wifi & Bluetooth 4.0



Spectrum 2.spx

Element	Mass Norm. [%]	Atom [%]
C	22.59	41.71
O	25.11	34.80
Si	11.28	8.90
Ca	0.54	0.30
Ti	1.57	0.73
Cr	1.21	0.51
Fe	17.96	7.13
Ni	3.15	1.19
Cu	10.77	3.76
Sn	0.87	0.16
Ba	4.95	0.80
	<b>100.00</b>	<b>100.00</b>



A: Choke with a ferrite core  
 B: Barium titanate based