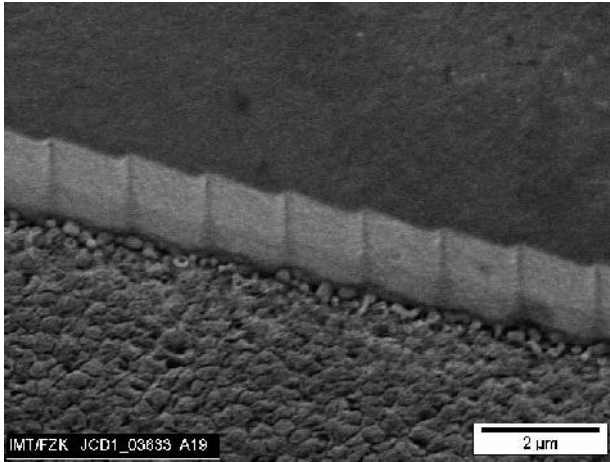
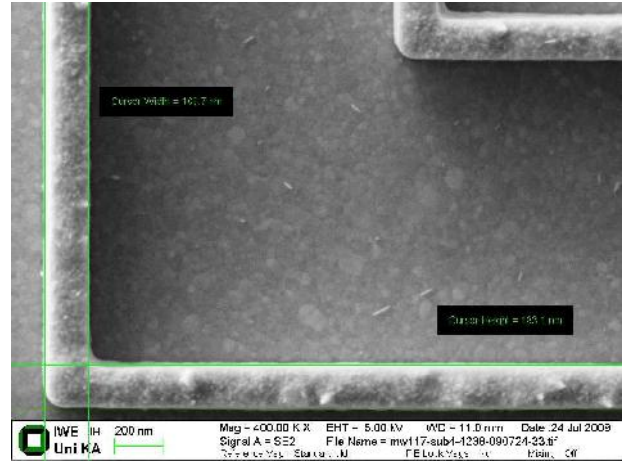


Properties of E-Beam LIGA structures in gold



Step grating in gold, approximately 2.5μm high.
The step height is near 0.2μm.



A 180nm wide gold line with 0.8μm height.

Fabrication method	Electroplating of gold or gold alloy into polymer structures that have been patterned by e-beam lithography		
Height of structures	0.1 μm to 2.5 μm		
Lateral detail of structures	50nm possible		
Smallest hole or pin dimensions	One quarter of structure height		
Repeatability of lateral dimensions	Less than +- 10%		
Properties of available gold material	Pure gold (>99%)	Hardness ~70Hv0.1	Density ~19g/cm ³
	Hard gold (>98%)	Hardness >160Hv0.1	Density ~19g/cm ³
Substrates	4- or 6- inch silicon wafer, typically with 1μm thermal oxide and thin seed layer for electroplating		
Roughness of peripheral area	Less than 50nm		

Examples – Application Areas:

- Highly precise apertures, faceplates or diaphragms
- High resolution reference patterns for X-ray imaging
- Absorber patterns for X-ray lithography

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