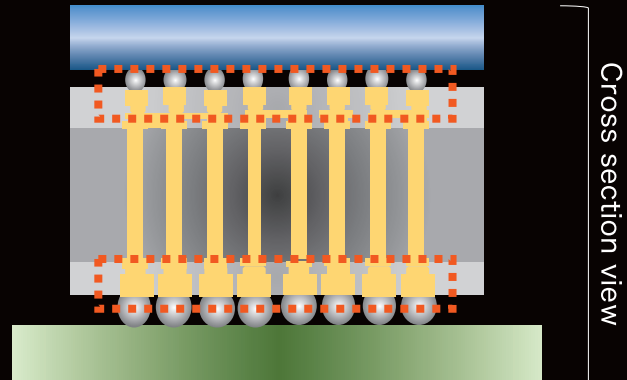
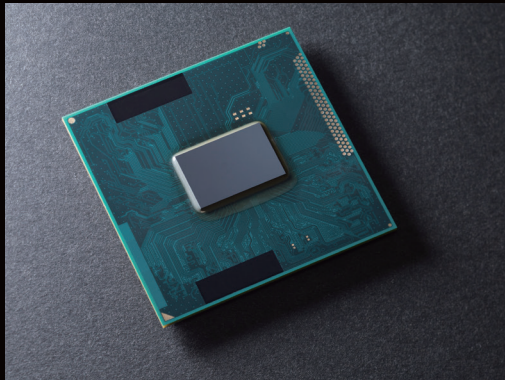


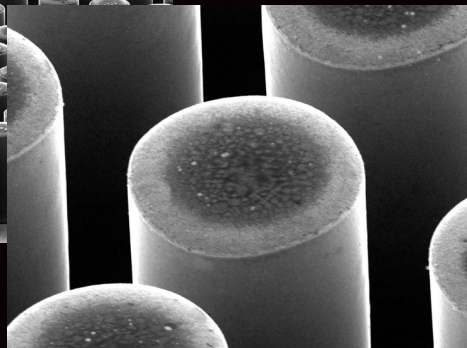
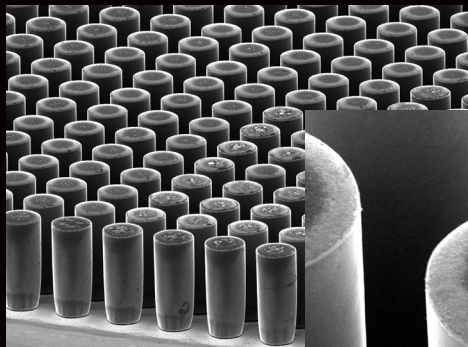
Acid copper plating additive to FO-PLP/WLP
for copper pillar formation

TORYZA LCN SP

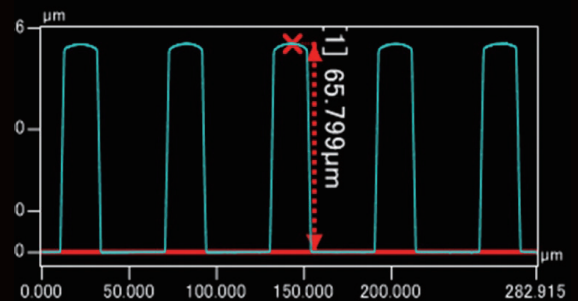
- ▶ Can form Cu pillar with high thickness uniformity
- ▶ Can make small diameter pillar, can apply for narrow pitch
- ▶ Flat top and uniform shapes are obtained



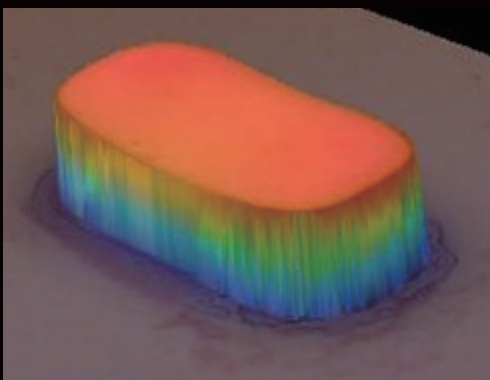
Flat top surface, high thickness uniformity



Current density: $8\text{A}/\text{dm}^2$
Pillar height: $65\mu\text{m}$
Pillar diameter: $15\mu\text{m}$
Pitch: $15\mu\text{m}$



Flat surface formation



Current density: $5\text{A}/\text{dm}^2$
Pillar height: $30\mu\text{m}$

**Flat shape is obtained at the top
to realize high connection reliability**