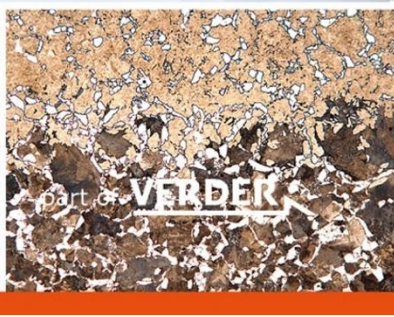
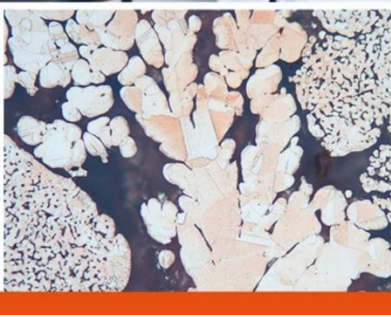
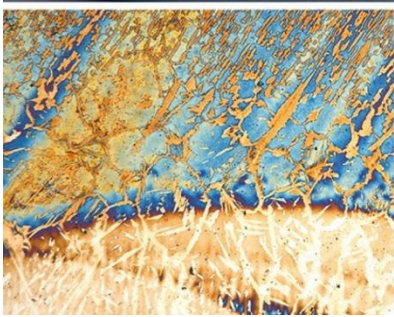


Application lab. report

Preparation to analyze the
microelectronic component



QATM-Preparation method

Objective:

The microelectronic samples should be prepared without scratches and deformations. The mounting was carried out with Qpox 92 and the grinding and polishing with the Qpol 250 A1. Detailed parameters and figures can be found in the following report.

Note: The item numbers of the consumables, clamping tools and sample holders could be found in a table at the end of the report.

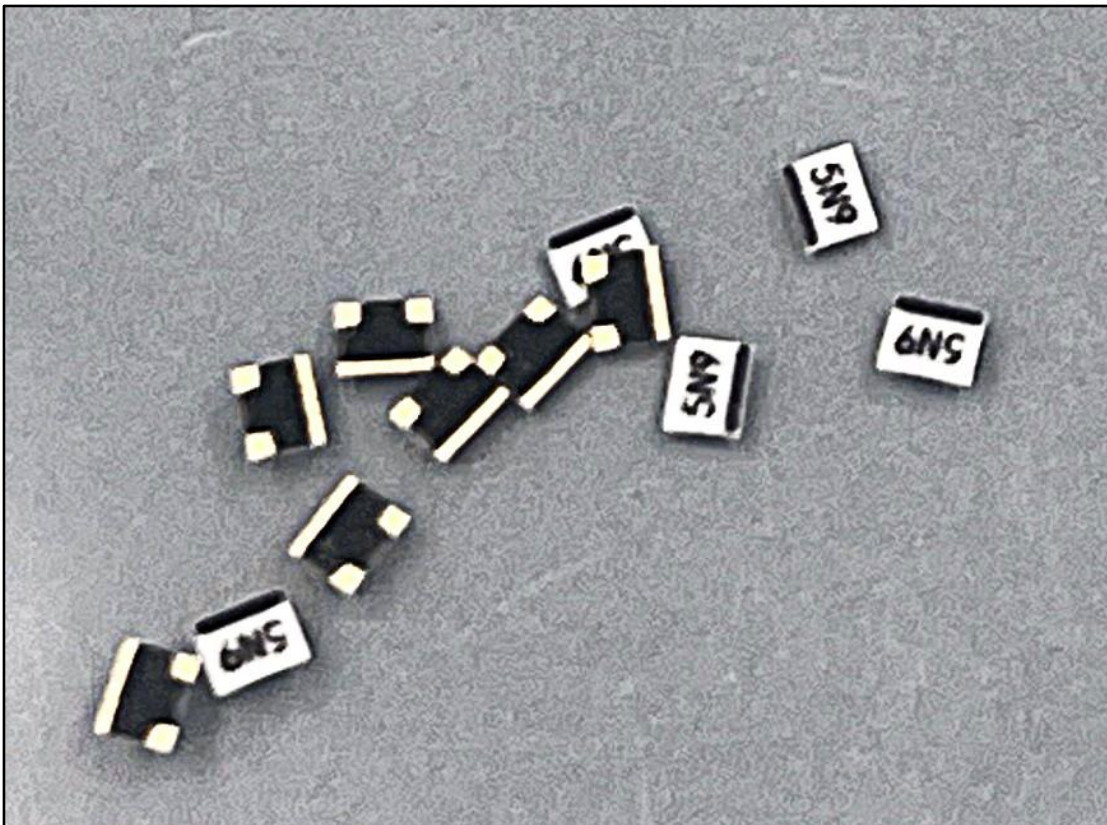


Figure 1. As-received samples.

QATM-Preparation method

Cold mounting

	Mounting	
Consumable	Mixing ratio Weight	Curing time
Qpox 92	100 : 23,2	8-12 h
Mold PP – mould Ø 30 mm	Additional equip. -Mixing cup -Mixing stick -Scale -Superglue -Infiltration unit	
Notes		
-Before mounting, the samples were glued to the mould bottom for stabilization.		



Figure 2. Qpox 92.

QATM-Preparation method



Figure 3. Samples glued to the bottom of the mould.

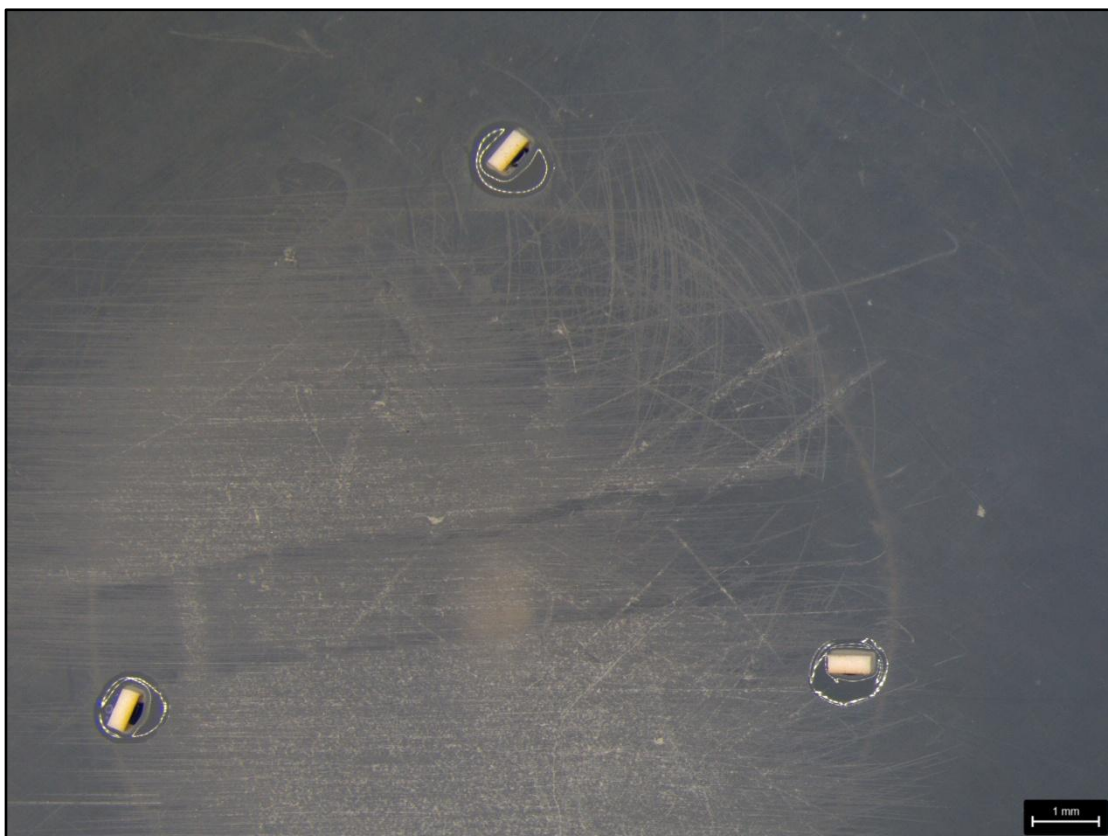


Figure 4. Samples glued to the bottom of the mould.

QATM-Preparation method

Grinding/Polishing

Device	Samples holder	Pressure mode					
QPOL 250 A1 Eco	Z5445022	Single					
Step	MEDIUM		 RPM		 N	 min	
 Planar grinding	Polaris H 30µm	H ₂ O	250	120 ▶▶	15		Till flat in the layer
 Grinding	Polaris H 15µm	H ₂ O	250	120 ▶▶	15		1:00
 Polishing	DELTA	Diamond-sus. Poly, 3µm + Lubricant	150	120 ▶▶	10		3:00
 Fine polishing	OMEGA	Eposal 0,06µm	100	90 ◀▶	5		1:30

Notes

- Pre-dosing for 3 µm: 3 s
Dosing interval and dosing duration for Dia. Suspension 3µm:
Every 30 s for 1,3 s
- Dosing interval and dosing duration for lubricant:
Every 45 s for 1,3 s
- Dosing interval and Dosing duration for fine polishing suspension + water:
Every 20 s for 1,3 s

QATM-Preparation method

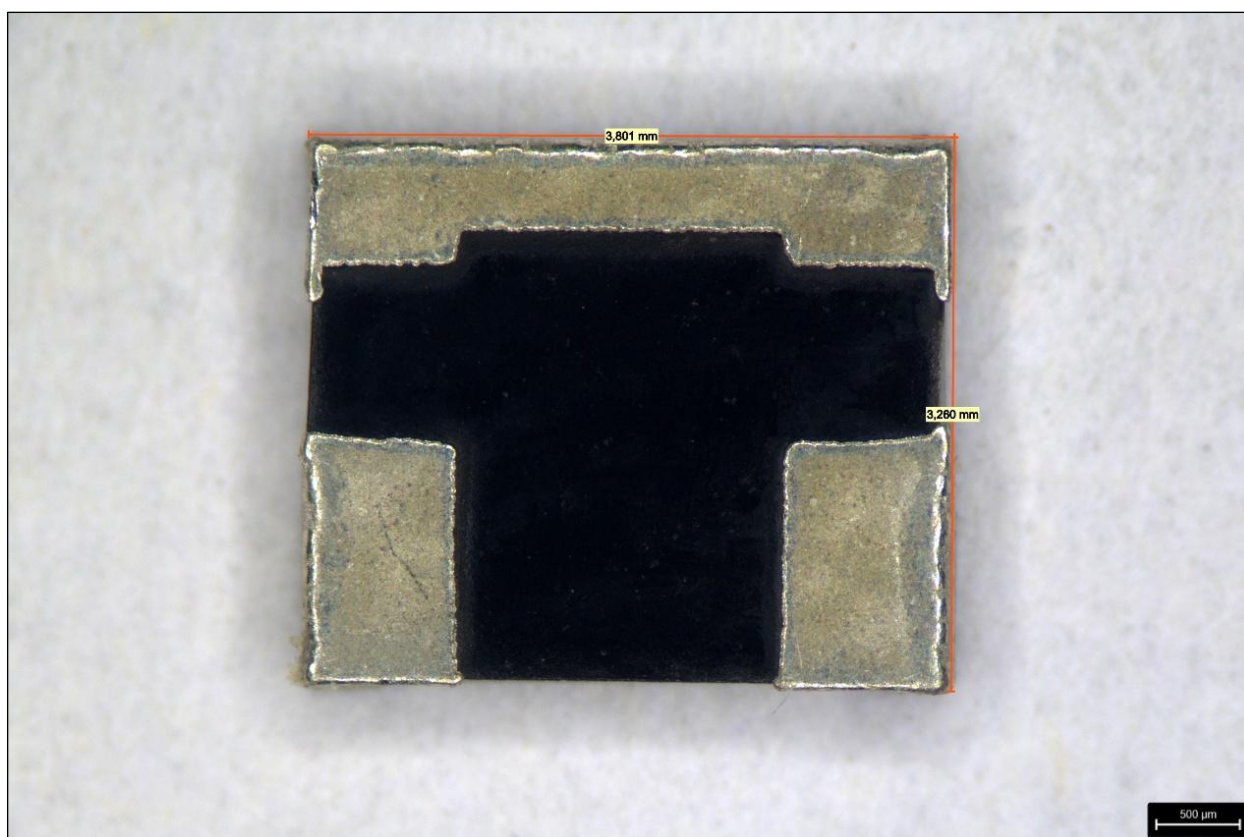


Figure 5. Sample Overview – 25:1.

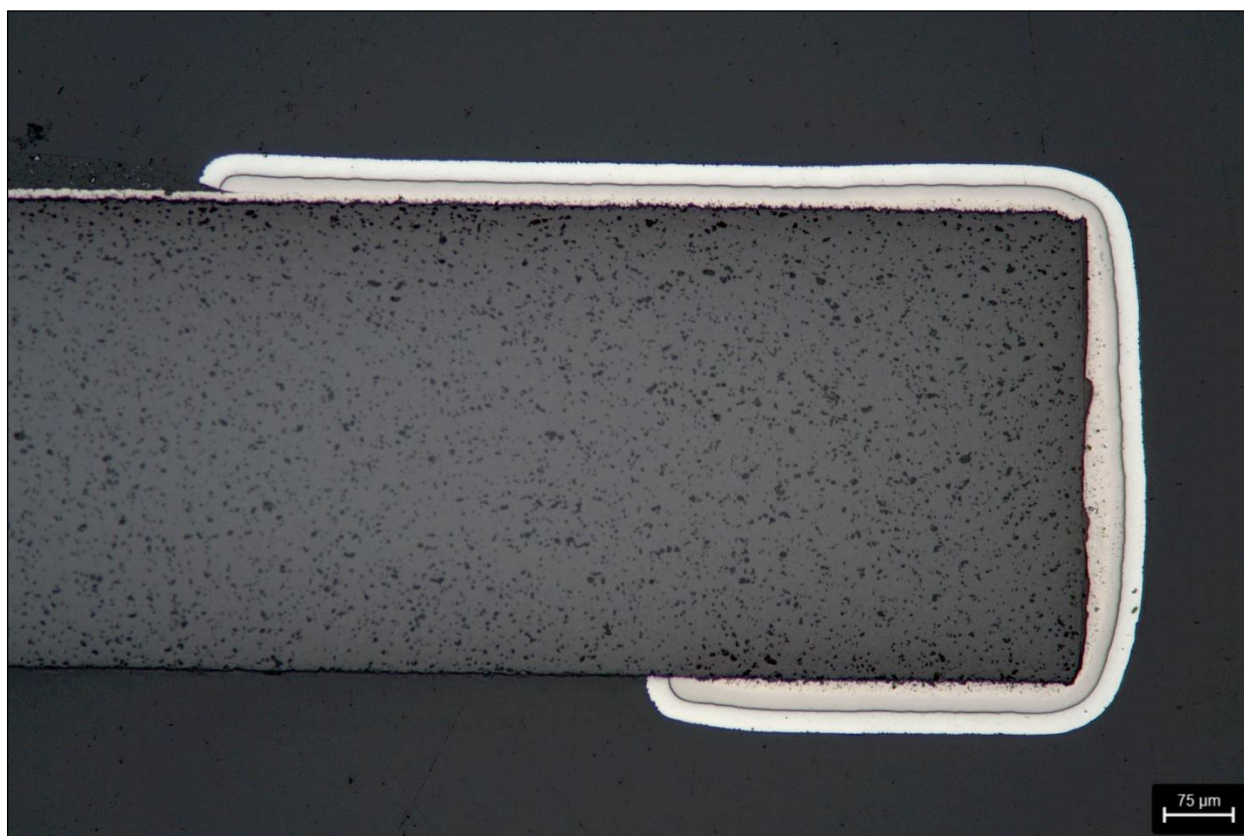


Figure 6. Sample – 100:1.

QATM-Preparation method



Figure 7. Sample – 200:1.

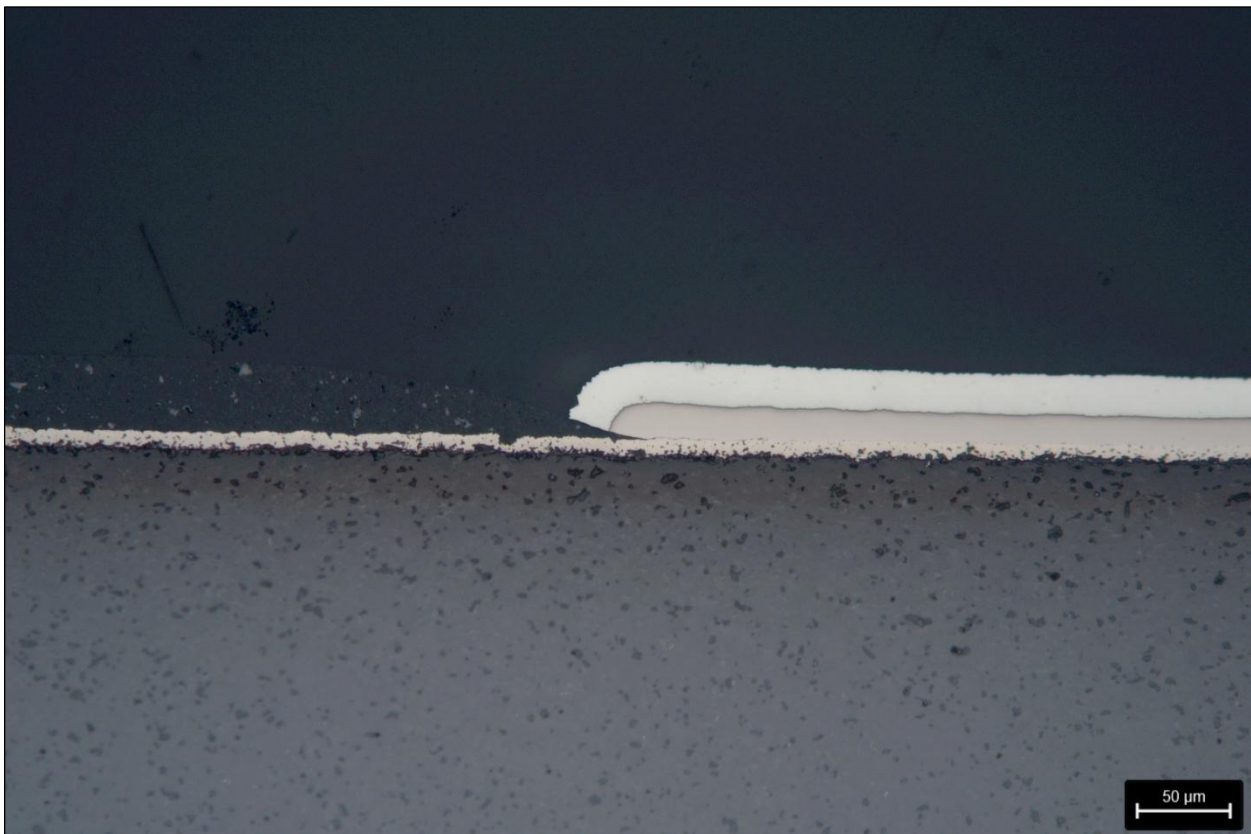


Figure 8. Sample – 200:1.

QATM-Preparation method



Figure 9. Sample – 200:1.

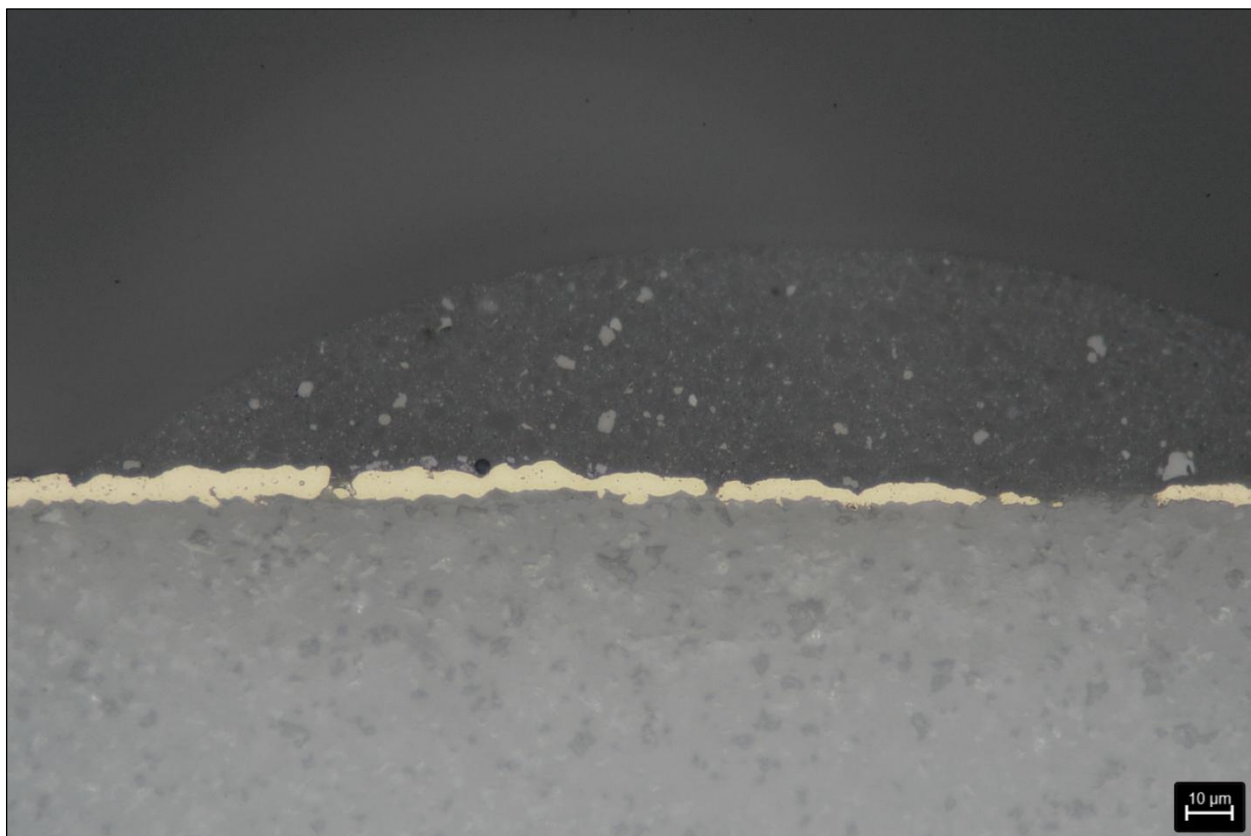


Figure 10. Sample – 500:1.

QATM- Preparation method

Consumables and accessories used:

	Consumables and accessories	Article description	Item number
Mounting	Cold mounting material	Qpox 92	95017316
	Mounting accessories	Mixing sticks	92001717
	Mounting mould	PP – ø 30 mm	95017318
Grinding	Sample holder	Sample holder M	Z5445022
	Grinding disc	Polaris H 30 µm	95015012
	Grinding disc	Polaris H 15 µm	95015013
Polishing	Polishing cloth	DELTA	95001414
	Diamond suspension	Diamond-sus. poly. 3µm	92004799
	Diamond lubricant	Lubricant blue	95000901
	Polishing cloth	OMEGA	95005780
	Diamond suspension	Eposal 0,06 µm	92002534

Conclusion:

To mount the samples upright, they were first fixed to the mounting mould bottom with superglue (see figure 3 and 4). The M 125 C microscope was used as an aid for gluing in all samples.

When polishing, use short polishing times with low pressure on hard polishing cloths. This prevents the edges from becoming rounded.