

Lab : LMIS2
Operator Name : MT-BA students
Supervisor Name : A. SAYAH
Process Flow Date : 11/09/2024

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☐ Semestral Project ☐ Master Project ☐ Thesis ☒ Other

TP Micro 332

Description of the fabrication project

The TP MICRO 332 focuses on the use of the cleanroom in CMI to fabricate and characterize a metallic resistor structure. Students are exposed to lithography, etching, and electrical characterization as part of this process. Such a structure could be used as an interconnect to connect components together in a microprocessor, for example, or could be used to implement a resistive sensor such as a temperature detector or a chemical sensor.

Technologies used			
Photolithography, positive resist, wet etching, Hamatech HMR900			
Photolitho masks			
Mask #	Critical Dimension	Critical Alignment	Remarks
Mask 1	2 μm		For Contrast Curve
Mask 2	2 μm		For aluminium etch
Substrate Type and size			
Silicon <100>, Ø100mm, 525um thick, Single Side polished, p type Aluminum on Glass Wafer, Ø100mm, Aluminium thickness 0.8 μm			

Interconnections and packaging of final device

Thinning/grinding/polishing of the samples is required at some stage of the process.

☒ No ☐ Yes => confirm involved materials with CMi staff

Dicing of the samples is required at some stage of the process.

☒ No ☐ Yes => confirm dicing layout with CMi staff

Wire-bonding of dies, with glob-top protection, is required at the end of the process.

☒ No ☐ Yes => confirm pads design (size, pitch) and involved materials with CMi staff

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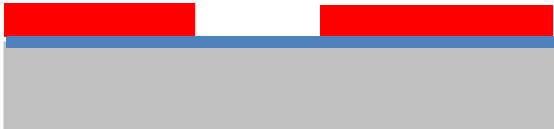
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Part 1: Photolithography

Step	Process description	Cross-section after process
01	Substrate: SiO ₂ / Si test Thickness: 0.5 μ m	
02	<i>Photolith PR coat</i> Machine: ACS 200 Coater (Z1) PR : AZ ECI 3007– 1 μ m Pr: C4_H_3007_1ux_EC (With HMDS)	
03	<i>Photolith expo+ develop</i> Machine: Süss MA6 Gen3 (Z6) ACS 200 (Z1) : DEVELOPER AZ 726 MIF	

Part 2: Wet etching

Step	Process description	Cross-section after process
01	Substrate: Al/Glass Thickness: $0.8\ \mu\text{m}$	
02	<i>Photolith PR coat</i> Machine: ACS 200 Coater (Z1) PR : AZ ECI 3007– $1\ \mu\text{m}$ Pr: C4_D_3007_1ux_EC (Without HMDS)	
03	<i>Photolith expo+ develop</i> Machine: Süss MA6 Gen3 (Z6) ACS 200 (Z1) : DEVELOPER AZ 726 MIF	
04	<i>Wet Etch</i> Material : Al (Z2) Plade metal : APN depth : $0.8\ \mu\text{m}$	
05	<i>Resist Strip</i> Material: AZ ECI 3007– $1\ \mu\text{m}$ (Z2) Bain remover 1165	