

Ion Implantation Services in TRC

Aluminum, Beryllium, Iron, Copper and Potassium are new lineups.

Implanter :

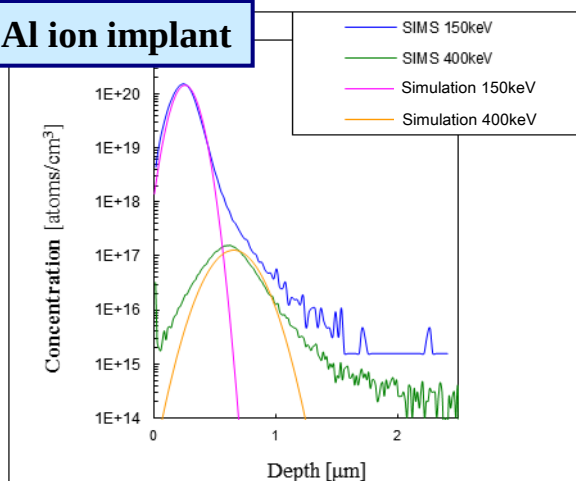
- **ULVAC IMX-3500RS** (Medium current implanter, electrostatic scan system)

Capabilities :

- Rapid turnaround (within-12hour-shipping is possible if required)
- Energy : (3keV)~10keV to 200keV (up to 400keV using doubly charged ions)
- Dose : $5.0 \times 10^{10} \sim 1.0 \times 10^{17}$ ions/cm²
- Irregularly shaped substrate, 2 to 6inch wafers are available

Simulation is free of charge to determine implant conditions

Al ion implant



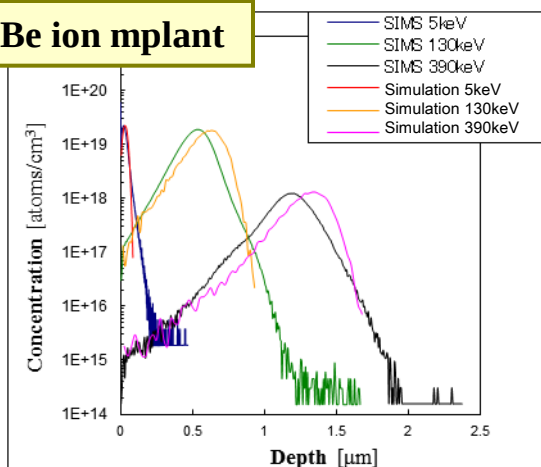
Single-charge ions

27Al⁺, 150keV, 3×10^{15} ions/cm²

Double-charge ions

27Al²⁺, 400keV, 5×10^{12} ions/cm² equivalent

Be ion mplant



Single-charge ions

9Be⁺, 5keV, 1×10^{14} ions/cm²

9Be⁺, 130keV, 5×10^{14} ions/cm²

Double-charge ions

9Be²⁺, 390keV, 4.5×10^{13} ions/cm² equivalent

■TRC implanter

- ULVAC IMX-3500RS
(Medium current machine)

■Overseas Collaboration Laboratories

INNOVION (CA,USA),
Materials Diagnostics(MD) (NY,USA)

- Energy **1keV to 4.2MeV**
- **Heated implantation** to 600°C
- **Cooled implantation** using LN₂
- **Outsourcing for production**
- Up to 12 inch wafer available

H																	He						
Li	Be															B	C	N	O	F	Ne		
Na	Mg															Al	Si	P	S	Cl	Ar		
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr						
	Sr	Y	Zr	Nb	Mo						Ag	In	Sn	Sb	Te	I	Xe						
Cs	Ba		Hf	Ta	W						Au	Hg	Pb	Bi									
		La	Ce	Pr	Nd					Eu	Gd					Ho	Er		Yb				
		D	H ₂ O	N ₂	BeF	CO	BF	O ₂	BCl	SiF	BF ₂	SiF ₂	BF ₃	SiF ₃	CF ₃								

Italic : Overseas Collaboration Labs

Over 80 species available

<http://www.toray-research.co.jp/taishou/semicon/index.html>