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 12-hour shipping is possible if required)
- Energy: (3keV) ~ 10keV to 200keV (up to 400keV using doubly charged ions)
- Dose: $5.0 \times 10^{16} \sim 1.0 \times 10^{17}$ 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, $3 \times 10^{15}$ ions/cm²
- Double-charge ions: 27Al⁺, 400keV, $5 \times 10^{12}$ ions/cm² equivalent

**Be ion implant**

- Single-charge ions: 9Be⁺, 5keV, $1 \times 10^{14}$ ions/cm²
  - 9Be⁺, 130keV, $5 \times 10^{14}$ ions/cm²
- Double-charge ions: 9Be⁺, 390keV, $4.5 \times 10^{13}$ 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

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