

Providing Customized Implantation Solutions Tailored to Meet Your Needs

Core Systems is the world-wide leader for out-sourced ion implantation services. With ISO9001-registered Production and Specialty divisions, Core has been providing low cost, high quality implant solutions for well over a decade. Whether you're a new start-up, or an established manufacturer in need of additional production capability, Core can provide ion implantation services exclusively tailored to meet your needs.



Production Implant Services

Core's standard quick-turn service—typically within 12 hours—makes us an ideal choice for companies faced with added production demands. With high throughput capability for wafer sizes of 2" to 300mm, we are equipped to meet the dedicated or back-up implant requirements of most large fabs. Also, start-ups and smaller companies find Core to be the ideal implant alternative to the capital outlay and ongoing operational and maintenance expenses associated with ion implanter ownership.

As a provider of disk and platen design and refurbishment, Core is uniquely positioned to meet your requirements for non-standard processes and wafer sizes. We often design and build special disks for double-sided implants and tile substrates. Common applications include: Solar, SOI (high dose H+ and He+), VCSEL, IGBT, Optical Sensor, MEMS and DRAM.

Specialty Implant Services

Research and Development projects and custom implants are our Specialty. We regularly implant ions of over 75 species and routinely process unusual and irregularly shaped substrate materials. Our uniquely configurable and controlled implanters offer you a wide range of implantation services; from isotopically separated SIMS standards to heavy metals. Common applications include: Custom Solar (including CIGS), Optoelectronic, SiC, Surface Modification and R&D substrates (pieces ok).

Process Engineering Support

Core's Process Engineering team comes with years of experience in implant foundry operation wherein a variety of processes and species is standard operation. Our staff is specially trained to provide high-level support with dose matching, fab or "first implanter" start-ups, contamination audits and other implant-related issues. Especially popular is our Implant Process Training, where we give you the tools to optimize your implant processes to increase yield and productivity. These classes are offered both offsite and onsite.



Profile Code™

Our proprietary implant characterization software, Profile Code, provides a quick calculation of the implanted and annealed atom distribution into a variety of surfaces under a range of conditions. It lets the user rapidly size a problem, determine a profile, or otherwise "experiment" with a computer or laptop prior to actually performing an implantation. It is a research tool intended to solve "what if" types of problems in as general a manner as possible. Customers can purchase their own copy from Core or contract our process engineers to assist with implant recipe development, anneal and other pre and post implant steps.

ION IMPLANTATION SERVICES

Ion Implant Capabilities

- Wafer sizes 2" through 300mm
- Energy as low as 1keV (Boron, Phosphorous, Beryllium, etc.)
- Energy as high as 400keV (B, P, As, Be, H, He, Si, Ge, etc.)
- Heated and Cooled implants from (-120°C to 600°C) for 2" to 6" wafers
- Over 75 implantation species available for production and R&D
- High tilt angles up to 89° and wafer orientation within 1°
- Custom wheel and platen design for non-wafer substrates as well as double-sided implants

Species List

Species currently available for Ion Implantation
(Additional species available on request)

Ag	Co	He	¹⁵ N	³⁰ Si
Al	Cr	Hf	N ₂ *	Se
Ar	Cs	Hg	Na	Sn
As	Cu	Ho	Nb	Sr
B	D	I	Ne	Ta
BF ₂	D ₂	In	Ni	Te
Ba	Er	Ir	¹⁸ O	Ti
Be	Eu	K	¹⁸ O	Tl
Bi	F	Kr	O ₂ *	V
Br	Fe	La	P	W
¹² C	Ga	Li	Pb	Xe
¹³ C	Ge	Mg	S	Y
Ca	Gd	Mn	Sb	Yb
Ce	H	Mo	²⁸ Si	Zn
Cl	H ₂	¹⁴ N	²⁹ Si	Zr

Periodic Table of Elements

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
H Hydrogen	He Helium											B Boron	C Carbon	N Nitrogen	O Oxygen	F Fluorine	Ne Neon		
Li Lithium	Be Beryllium											Al Aluminum	Si Silicon	P Phosphorus	S Sulfur	Cl Chlorine	Ar Argon		
Na Sodium	Mg Magnesium	Sc Scandium	Ti Titanium	V Vanadium	Cr Chromium	Mn Manganese	Fe Iron	Co Cobalt	Ni Nickel	Cu Copper	Zn Zinc	Ga Gallium	Ge Germanium	As Arsenic	Se Selenium	Br Bromine	Kr Krypton		
K Potassium	Ca Calcium	Y Yttrium	Zr Zirconium	Nb Niobium	Mo Molybdenum	Tc Technetium	Ru Ruthenium	Rh Rhodium	Pd Palladium	Ag Silver	Cd Cadmium	In Indium	Sn Tin	Sb Antimony	Te Tellurium	I Iodine	Xe Xenon		
Rb Rubidium	Sr Strontium	* Lanthanides		Lu Lutetium	Hf Hafnium	Ta Tantalum	W Tungsten	Re Rhenium	Os Osmium	Ir Iridium	Pt Platinum	Au Gold	Hg Mercury	Tl Thallium	Pb Lead	Bi Bismuth	Po Polonium	At Astatine	Rn Radon
Cs Cesium	Ba Barium	** Actinides		Lr Lawrencium	Rf Rutherfordium	Db Dubnium	Sg Seaborgium	Bh Bohrium	Hs Hassium	Mt Meitnerium	Ds Darmstadtium	Uub Ununbium	Uub Ununbium	Uuq Ununquadium	Uuq Ununquadium	Uuo Ununoctium	Uuo Ununoctium	Uuo Ununoctium	Uuo Ununoctium

*Either isotope

* Lanthanides	La Lanthanum	Ce Cerium	Pr Praseodymium	Nd Neodymium	Pm Promethium	Sm Samarium	Eu Europium	Gd Gadolinium	Tb Terbium	Dy Dysprosium	Ho Holmium	Er Erbium	Tm Thulium	Yb Ytterbium
** Actinides	Ac Actinium	Th Thorium	Pa Protactinium	U Uranium	Np Neptunium	Pu Plutonium	Am Americium	Cm Curium	Bk Berkelium	Cf Californium	Es Einsteinium	Fm Fermium	Md Mendelevium	No Nobelium

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The Leader in Fab Services

ISO 9001 REGISTERED

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