



SIMS Detection Limits of Selected Elements in Gallium Oxide Under Normal Depth Profiling

DISCUSSION

SIMS is a powerful analytical technique which allows detection of all elements from H to U with excellent sensitivity. The table provides a list of typical detection limits for impurities in Gallium Oxide (Ga_2O_3). These detection levels are for normal depth profiling conditions of blanket wafers. Detection levels for device samples depends on the size of the available analysis area.

O ₂ ⁺ Primary Ion Beam Positive Ions		Cs ⁺ Primary Ion Beam Negative Ions	
Element	DL (atoms/cm ³)	Element	DL (atoms/cm ³)
Li	5e13	H	5e16
B	5e14	C	5e16
Na	5e13	N	5e15
Mg	1e14	F	2e15
Al	1e14	Si	2e15
Si	5e14	P	5e15
K	5e13	S	2e15
Ca	1e14	Cl	2e15
Ti	5e14	Ge	5e15
V	5e14	As	5e15
Cr	1e14	Br	2e15
Mn	2e14	Sn	2e15
Fe	5e14	-	-
Ni	5e14	-	-
Cu	5e14	-	-
Sn	5e14	-	-