

APPLICATION NOTE

SIMS Detection Limits of Selected Elements in HgCdTe Under Normal Depth Profiling Conditions

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 a HgCdTe matrix for normal depth profiling conditions. Lower detection levels can be obtained for many species under optimal analytical conditions on a case-by-case situation.

O ₂ ⁺ Primary Ion Beam Positive Ions		Cs ⁺ Primary Ion Beam Negative Ions		Cs ⁺ Primary Ion Beam Positive Ions (CsM ⁺)	
Element	DL (atoms/cm ³)	Element	DL (atoms/cm ³)	Element	DL (atoms/cm ³)
Li	1E+12	H	5E+16	Zn	2E+15
Be	1E+14	C	1E+16	As	2E+14
B	5E+13	N	2E+16	-	-
Na	1E+13	O	2E+16	-	-
Mg	1E+13	F	1E+14	-	-
Al	5E+12	Si	5E+15	-	-
K	5E+12	P	2E+14	-	-
Ca	1E+13	S	5E+14	-	-
Ti	2E+13	Cl	1E+15	-	-
V	1E+13	Cu	1E+16	-	-
Cr	2E+13	As	1E+15	-	-
Mn*	2E+14	Br	1E+14	-	-
Fe*	5E+13	Sb	1E+16	-	-
Ni*	5E+14	I	1E+13	-	-
Cu*	3E+14	Au	5E+13	-	-
Zn	2E+16	-	-	-	-
Ga	2E+13	-	-	-	-
As	1E+16	-	-	-	-
Mo	1E+14	-	-	-	-
Ag	5E+14	-	-	-	-
In	2E+13				
Sb	3E+15				
W	2E+14				

* Special Instrument Setup