



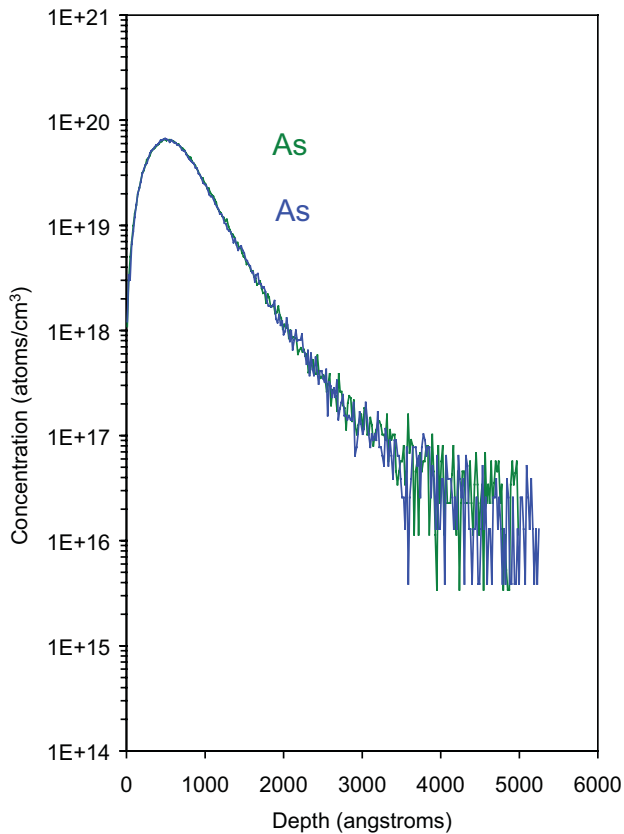
AN 426

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

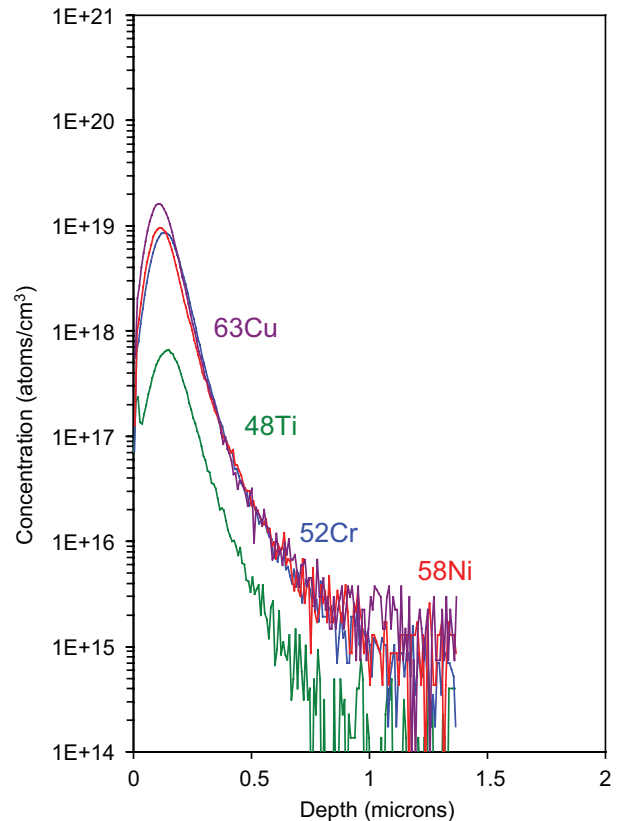
May 7, 2007 (Version 2.0)

O <sub>2</sub> /SIMS Positive Secondary Ion Detection		Cs/SIMS Negative Secondary Ion Detection	
Element	DL (atoms/cm <sup>3</sup> )	Element	DL (atoms/cm <sup>3</sup> )
B	1E+14	H	2E+17
Mg	5E+13	C	1E+16
Al	5E+13	N	2E+16
K	1E+13	F	5E+15
Ti	1E+14	Si	1E+17
Cr	5E+14	P	2E+15
Fe	5E+14	As	1E+16
Ni	1E+15		
Cu	1E+15		
Ga	5E+14		
In	1E+15		
Cd	5E+16		

Example Profiles Provided on Back Side



Overlay of two separate SIMS profiles of an arsenic implant in ZnO. Excellent reproducibility is demonstrated in this example as well as the count-rate-limited detection limits of approximately  $1\text{e}16$  at/cm<sup>3</sup>.



Overlay of multiple species in a single SIMS profile for a ZnO sample containing implants of Ti, Cr, Ni and Cu.

#### United States Locations

Tempe, Arizona  
+1 480 239 0602 info.az@eaglabs.com  
+1 602 470 2655 fax

Sunnyvale, California  
810 Kifer Road  
+1 408 530 3500 info.ca@eaglabs.com  
+1 408 530 3501 fax

1135 E Arques Avenue  
+1 408 738 3033  
+1 408 530 3035 fax

785 Lucerne Drive  
+1 408 737 3892  
+1 408 737 3916 fax

Peabody, Massachusetts  
+1 978 278 9500 info.ma@eaglabs.com  
+1 978 278 9501 fax

Chanhassen, Minnesota  
+1 952 828 6411 info.mn@eaglabs.com  
+1 952 828 6449 fax

East Windsor, New Jersey  
+1 609 371 4800 info.nj@eaglabs.com  
+1 609 371 5666 fax

Syracuse, New York  
+1 315 431 9900 info.ny@eaglabs.com  
+1 315 431 9800 fax

Raleigh, North Carolina  
+1 919 829 7041 info.nc@eaglabs.com  
+1 919 829 5518 fax

Round Rock, Texas  
+1 512 671 9500 info.tx@eaglabs.com  
+1 512 671 9501 fax

#### International Locations

Shanghai, China  
+ 86 21 6879 6088 info.cn@eaglabs.com  
+ 86 21 6879 9086 fax

Tournefeuille, France  
+ 33 5 61 73 15 29 info.fr@eaglabs.com  
+ 33 5 61 73 15 67 fax

Frankfurt, Germany  
+ 49 (0) 693053213 info.de@eaglabs.com  
+ 49 (0) 69307941 fax

Tokyo, Japan  
+ 81 3 5396 0531 info.jp@eaglabs.com  
+ 81 3 5396 1930 fax

HsinChu, Taiwan  
+ 886 3 5632303 info.tw@eaglabs.com  
+ 886 3 5632306 fax

Uxbridge, United Kingdom  
+ 44 (0) 1895 811194 info.uk@eaglabs.com  
+ 44 (0) 1895 810350 fax