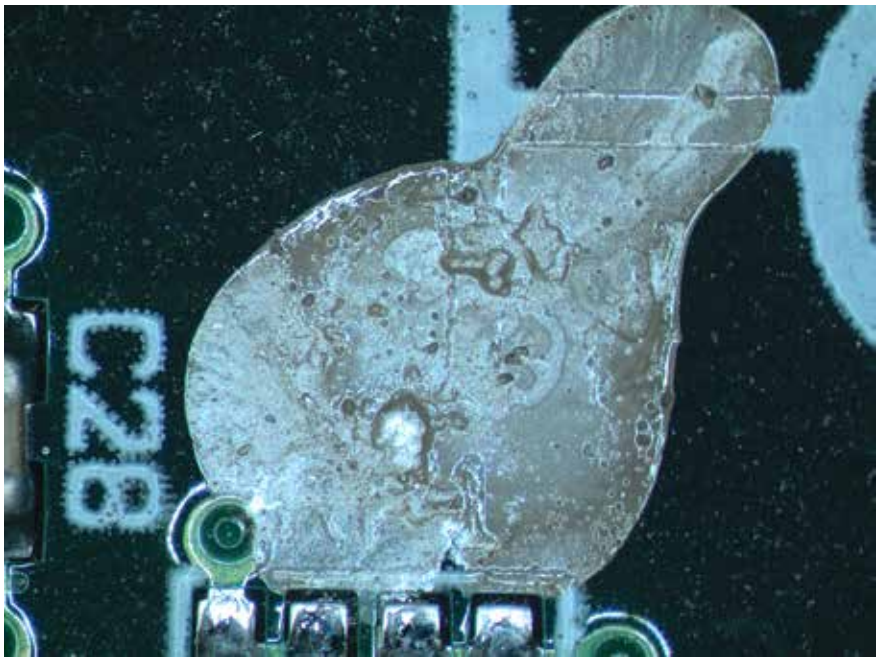
PICTURE BOOK

EDX of Contamination on PCB

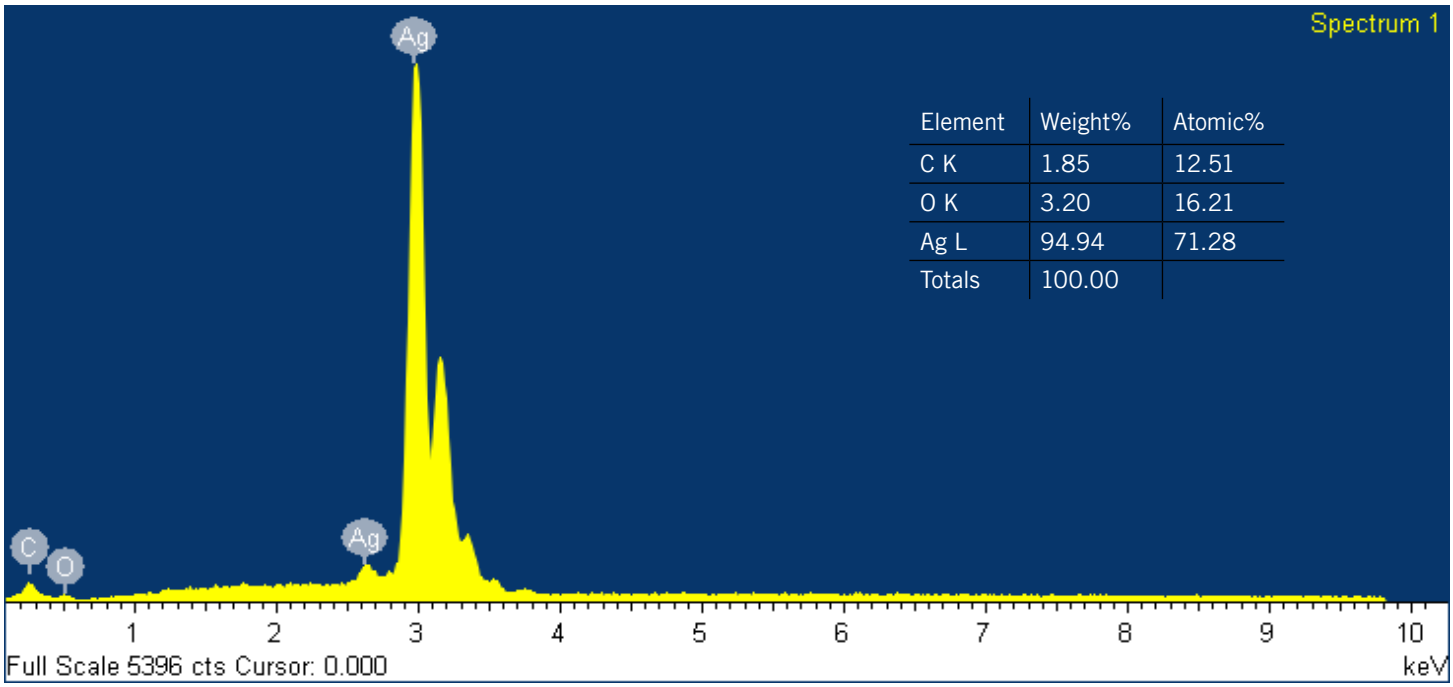
Energy Dispersive X-ray spectroscopy enables determination of the elemental composition of materials. The technique is typically done in a SEM. The area analyzed is 3-5 micron deep and one-micron diameter or larger. The detection limits are 0.1 – 1 atomic percent excluding H and He.



Optical image of contamination causing shorting

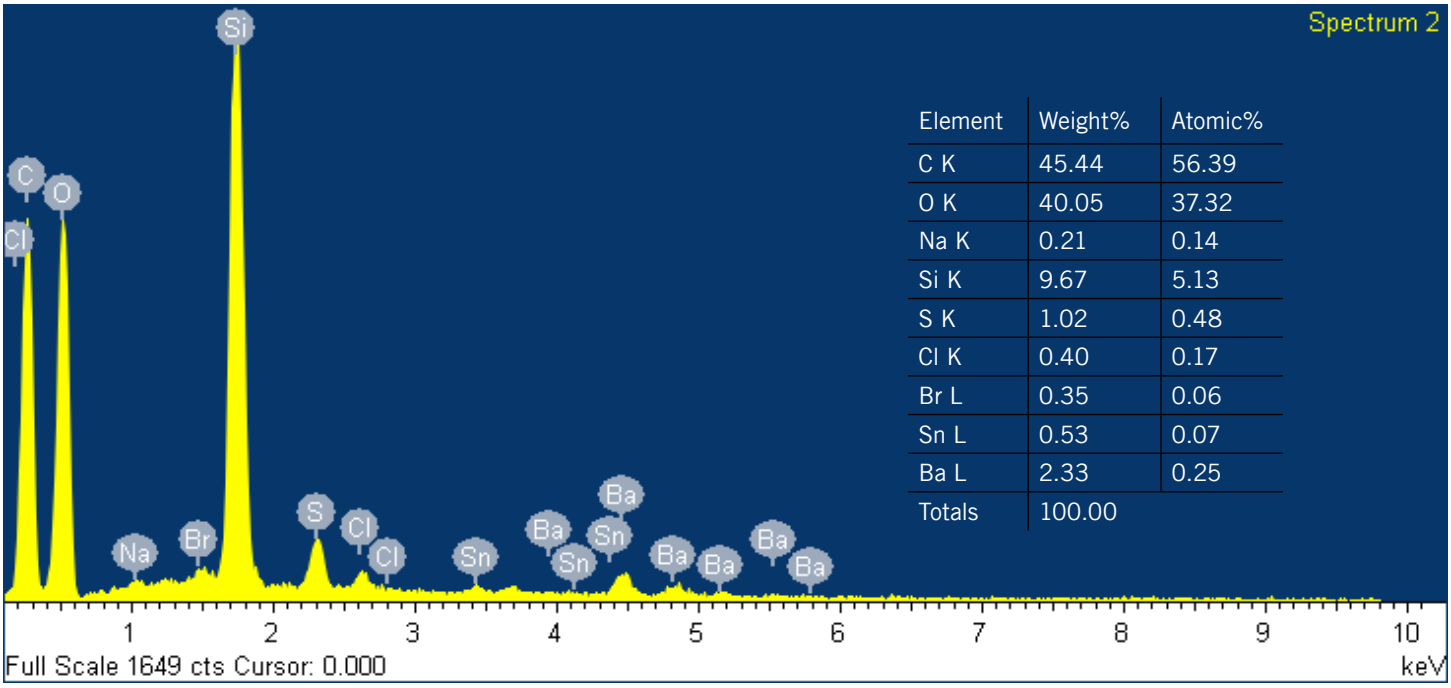
SEM image of contamination causing shorting

EDX of Contamination on PCB



Element	Weight%	Atomic%
C K	1.85	12.51
O K	3.20	16.21
Ag L	94.94	71.28
Totals	100.00	

EDX spectrum showing the contamination area contains silver

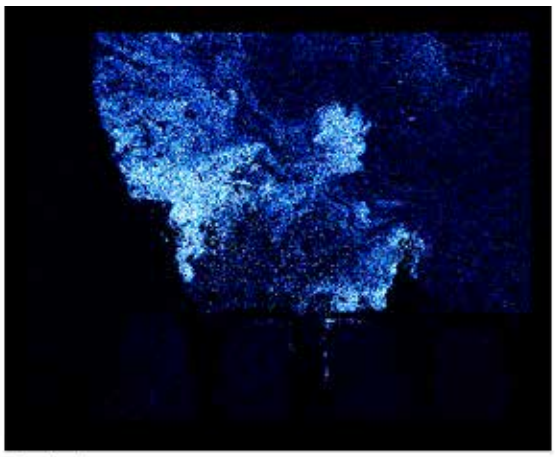


Element	Weight%	Atomic%
C K	45.44	56.39
O K	40.05	37.32
Na K	0.21	0.14
Si K	9.67	5.13
S K	1.02	0.48
Cl K	0.40	0.17
Br L	0.35	0.06
Sn L	0.53	0.07
Ba L	2.33	0.25
Totals	100.00	

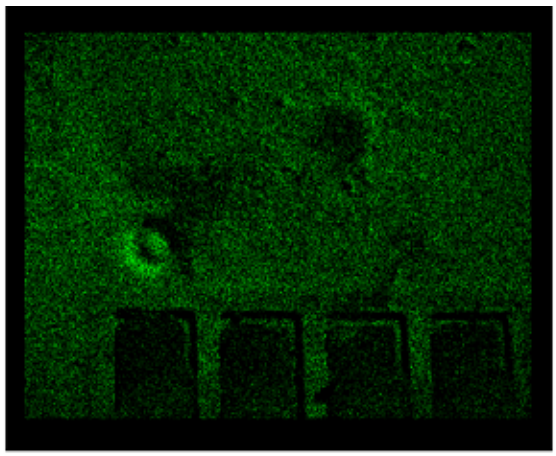
Spectrum #2 off the contamination area shows the materials the PCB contains

EDX of Contamination on PCB

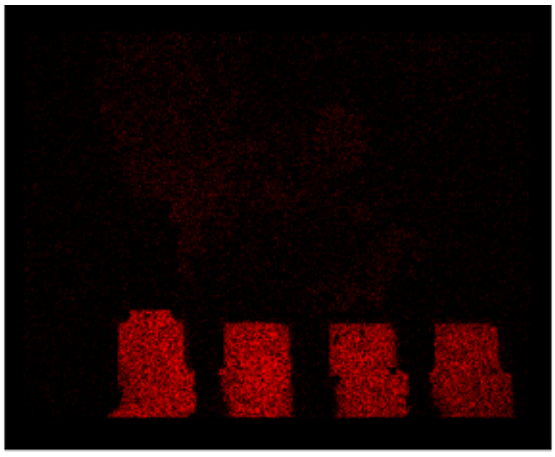
An elemental map may also be created to show where the different elements are located on the sample



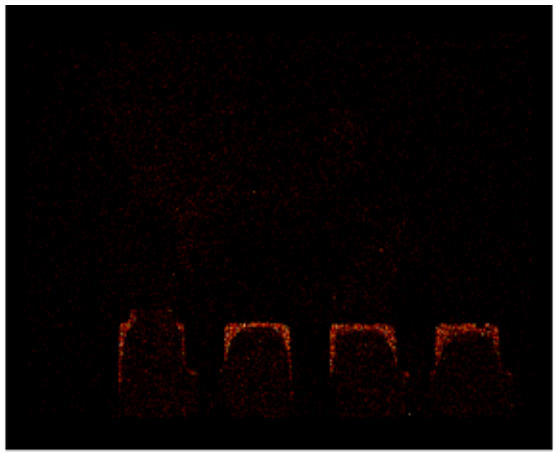
Ag La1



C Ka1_2



Sn La1



Cu Ka1