energies

Article

Explosive Burning of a Mechanically Activated Al and CuO Thermite Mixture

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Supplementary Materials

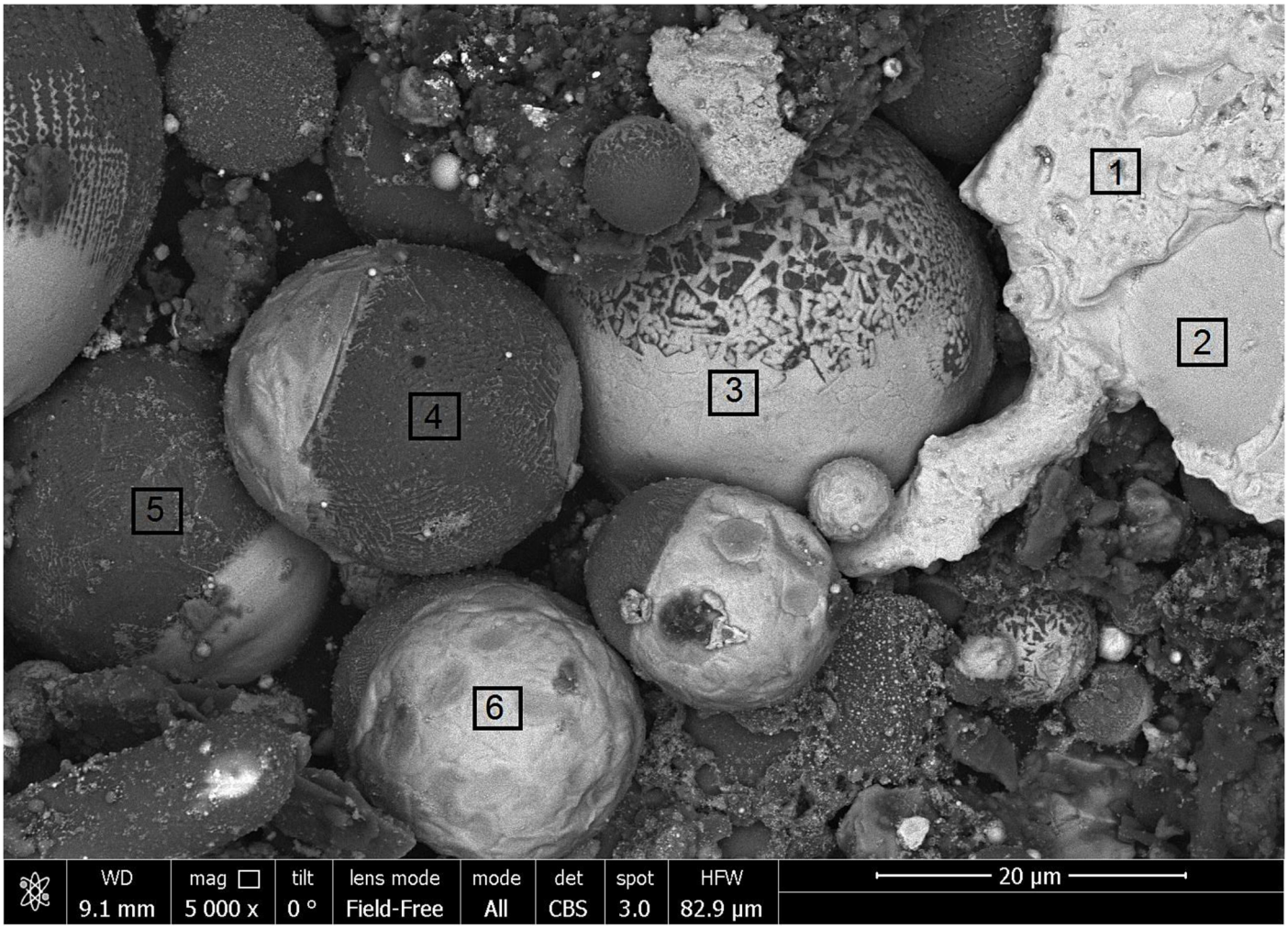

Figure S1. Products of burning 20Al + 80CuO and EDAX spectra for zones 1–6.

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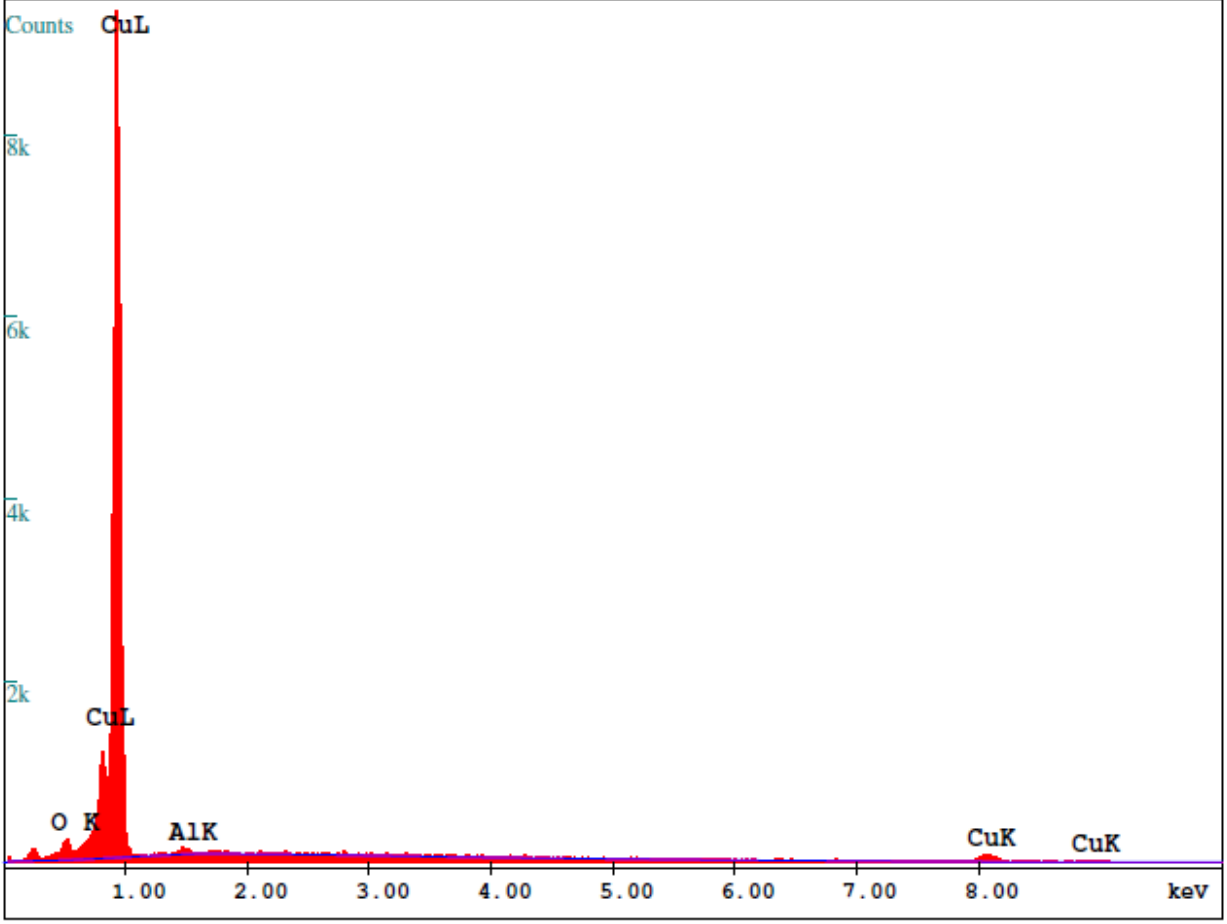

EDAX ZAF Quantification (Standardless)
Element Normalized
SEC Table : User C:\Users\supervisor\Desktop\GenSec\O_10kV_L.sec

Element	Wt %	At %	K-Ratio	Z	A	F
O K	3.45	12.30	0.0242	1.2405	0.5634	1.0023
CuL	95.58	85.67	0.9270	0.9885	0.9810	1.0000
AlK	0.96	2.03	0.0062	1.1543	0.5627	1.0000
Total	100.00	100.00				

Element	Net Inte.	Bkgd Inte.	Inte. Error	P/B
O K	5.96	0.68	3.24	8.72
CuL	282.88	2.01	0.43	140.50
AlK	2.72	3.92	8.54	0.69

Figure S2. Zone 1.

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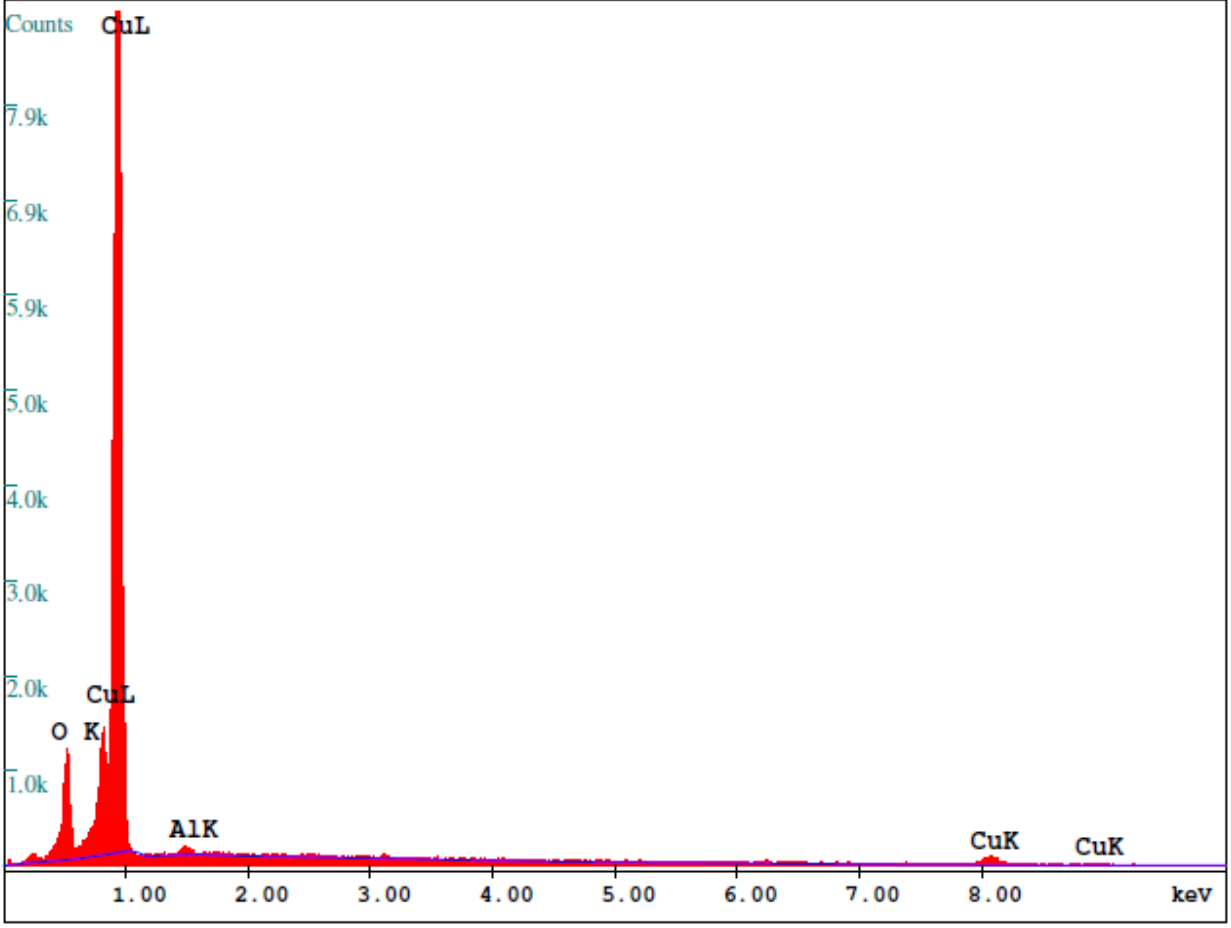

EDAX ZAF Quantification (Standardless)
Element Normalized
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Element	Wt %	At %	K-Ratio	Z	A	F
O K	11.23	33.18	0.0804	1.2138	0.5881	1.0020
CuL	87.97	65.43	0.7999	0.9676	0.9397	1.0000
AlK	0.79	1.39	0.0052	1.1279	0.5806	1.0000
Total	100.00	100.00				

Element	Net Inte.	Bkgd Inte.	Inte. Error	P/B
O K	24.00	1.55	1.55	15.48
CuL	296.09	4.86	0.42	60.98
AlK	2.74	4.63	9.02	0.59

Figure S3. Zone2.

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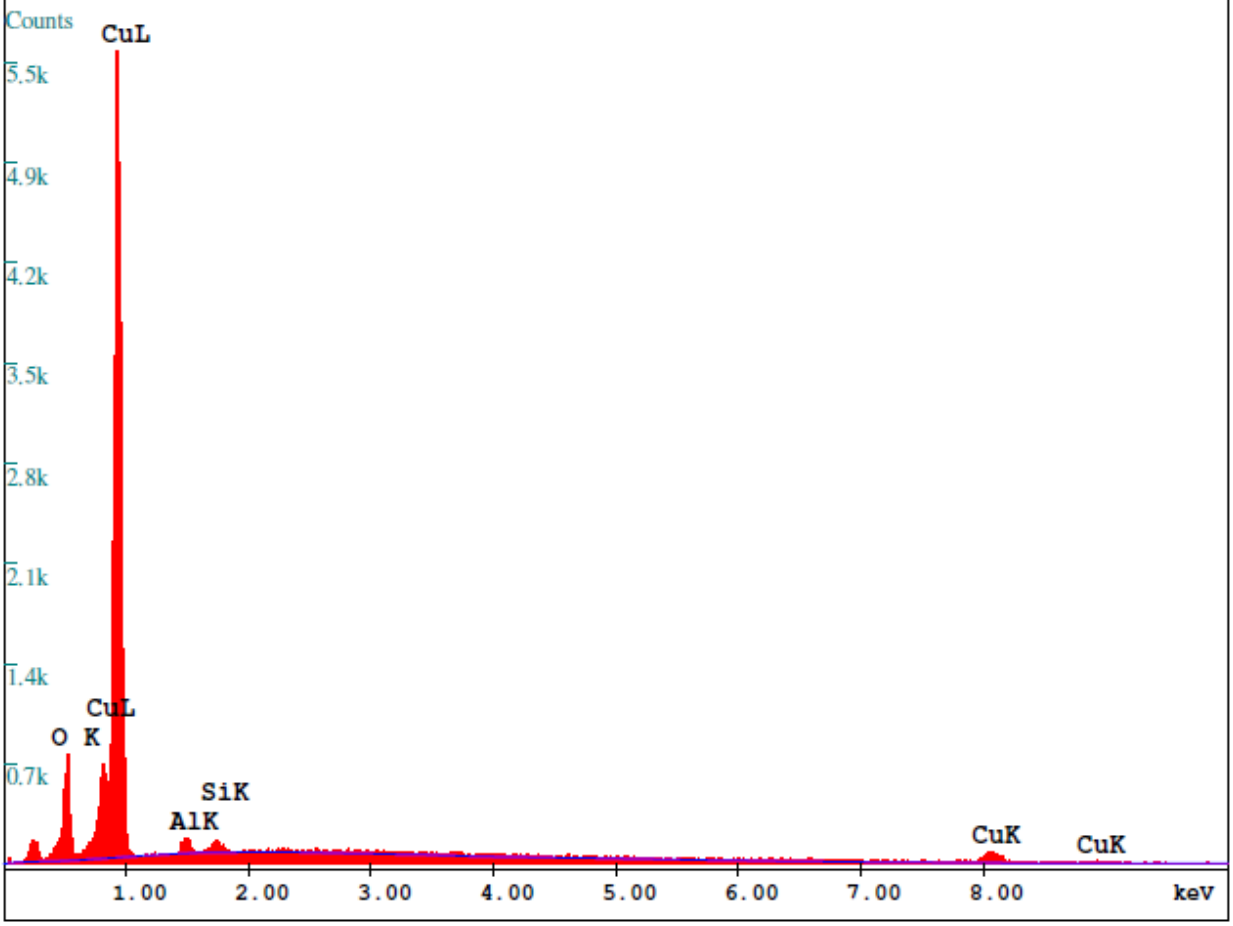

EDAX ZAF Quantification (Standardless)
Element Normalized
SEC Table : User C:\Users\supervisor\Desktop\GenSec\O_10kV_L.sec

Element	Wt %	At %	K-Ratio	Z	A	F
O K	12.44	35.00	0.0884	1.2047	0.5887	1.0019
CuL	84.35	59.75	0.7561	0.9605	0.9331	1.0001
AlK	1.81	3.02	0.0120	1.1189	0.5910	1.0002
SiK	1.39	2.23	0.0111	1.1428	0.6963	1.0000
Total	100.00	100.00				

Element	Net Inte.	Bkgd Inte.	Inte. Error	P/B
O K	14.67	0.51	1.92	28.86
CuL	155.49	1.51	0.58	102.63
AlK	3.51	2.92	6.21	1.20
SiK	2.79	3.19	7.73	0.88

Figure S4. Zone3.

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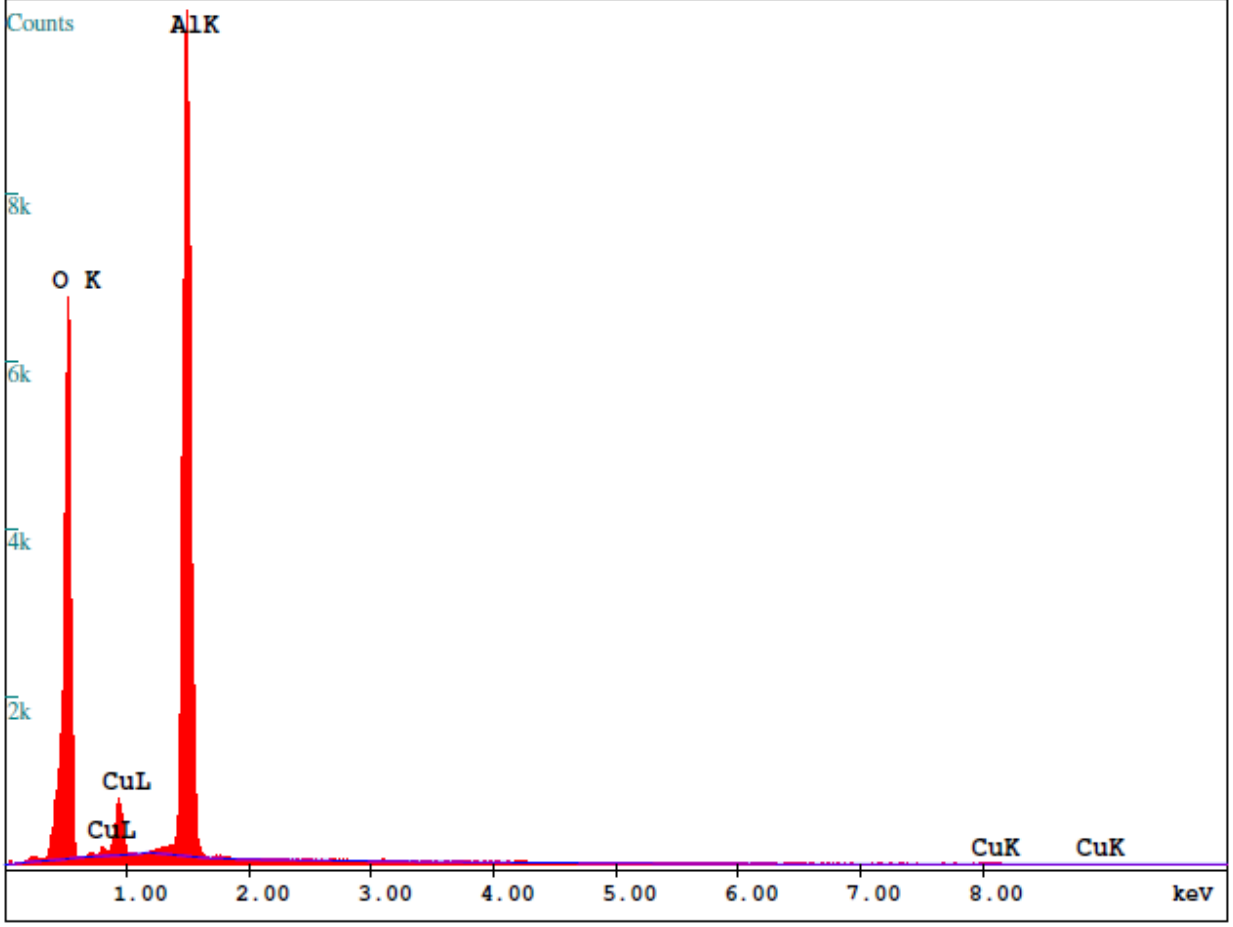

EDAX ZAF Quantification (Standardless)
Element Normalized
SEC Table : User C:\Users\supervisor\Desktop\GenSec\O_10kV_L.sec

Element	Wt %	At %	K-Ratio	Z	A	F
O K	45.83	60.21	0.3233	1.0512	0.6708	1.0005
CuL	5.38	1.78	0.0354	0.8398	0.7813	1.0029
AlK	48.79	38.01	0.4185	0.9647	0.8892	1.0000
Total	100.00	100.00				

Element	Net Inte.	Bkgd Inte.	Inte. Error	P/B
O K	149.68	1.88	0.59	79.45
CuL	20.32	4.28	1.89	4.75
AlK	342.45	4.40	0.39	77.75

Figure S5. Zone4.

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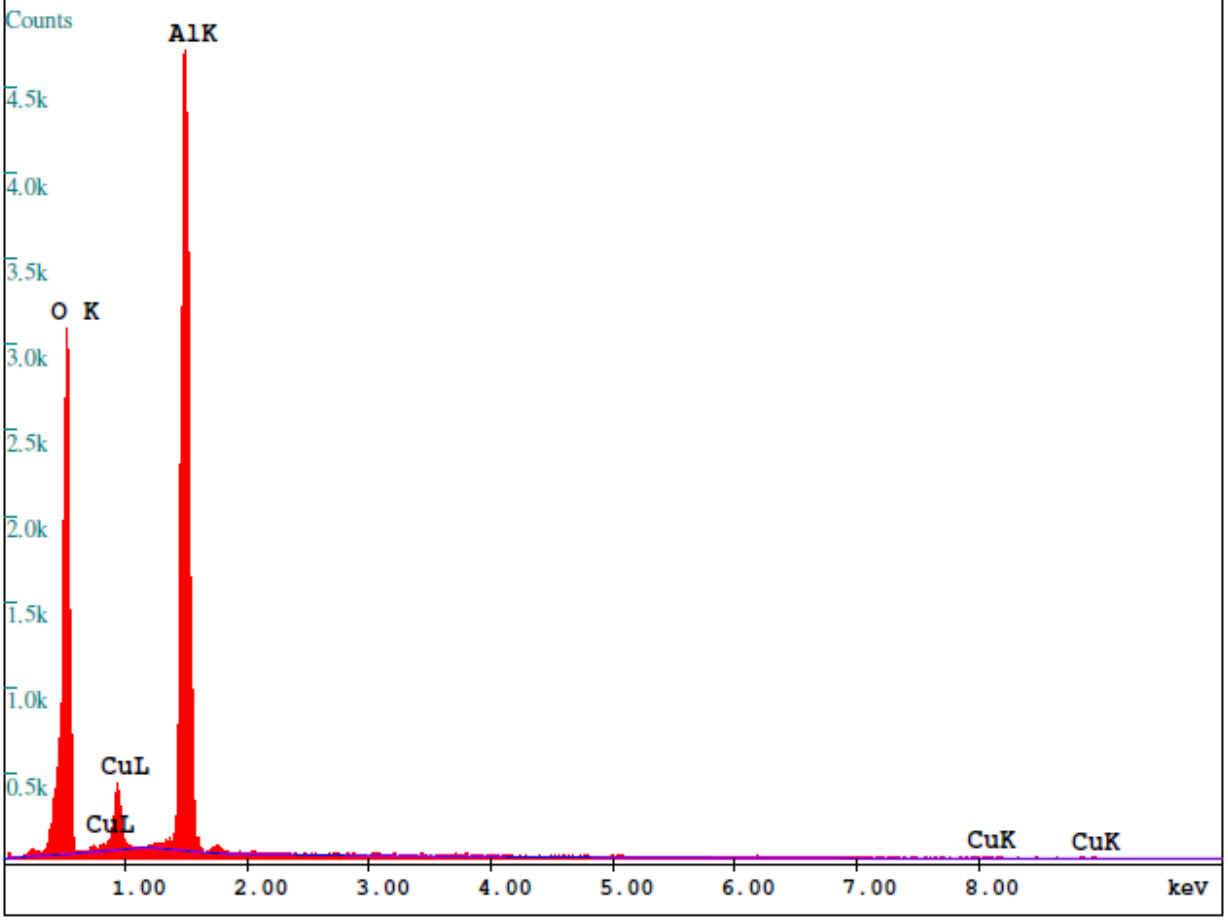

EDAX ZAF Quantification (Standardless)
Element Normalized
SEC Table : User C:\Users\supervisor\Desktop\GenSec\O_10kV_L.sec

Element	Wt %	At %	K-Ratio	Z	A	F
O K	44.83	59.43	0.3150	1.0531	0.6669	1.0005
CuL	6.21	2.07	0.0411	0.8412	0.7855	1.0029
AlK	48.97	38.50	0.4193	0.9665	0.8860	1.0000
Total	100.00	100.00				

Element	Net Inte.	Bkgd Inte.	Inte. Error	P/B
O K	62.04	0.66	0.91	93.94
CuL	10.04	1.81	2.62	5.55
AlK	145.97	1.84	0.60	79.16

Figure S6. Zone 5.

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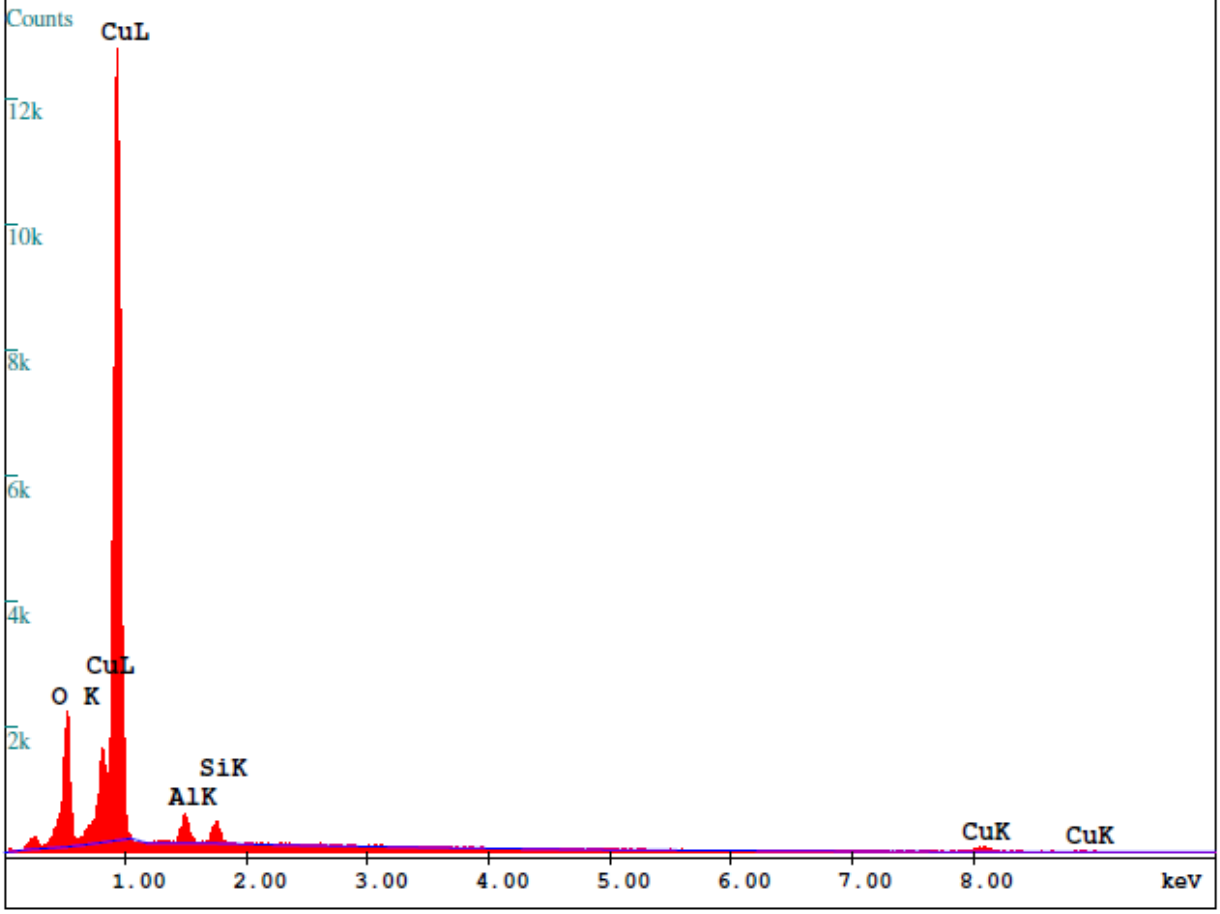

EDAX ZAF Quantification (Standardless)
Element Normalized
SEC Table : User C:\Users\supervisor\Desktop\GenSec\O_10kV_L.sec

Element	Wt %	At %	K-Ratio	Z	A	F
O K	15.54	40.38	0.1106	1.1911	0.5965	1.0018
CuL	79.39	51.94	0.6918	0.9497	0.9174	1.0002
AlK	2.91	4.49	0.0195	1.1053	0.6045	1.0003
SiK	2.15	3.19	0.0172	1.1293	0.7049	1.0000
Total	100.00	100.00				

Element	Net Inte.	Bkgd Inte.	Inte. Error	P/B
O K	46.68	2.30	1.10	20.27
CuL	361.84	7.04	0.38	51.39
AlK	14.52	6.15	2.55	2.36
SiK	11.01	5.95	3.11	1.85

Figure S7. Zone 6.