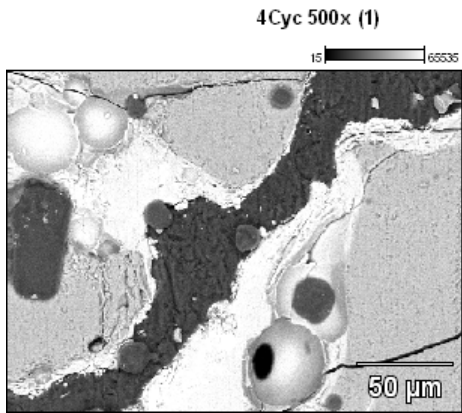


Project: SEMÅA-group 5

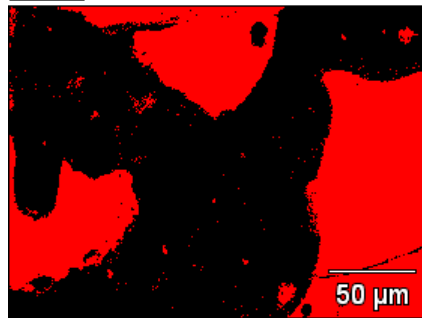


Accelerating Voltage: 15.0 kV

Magnification: 500

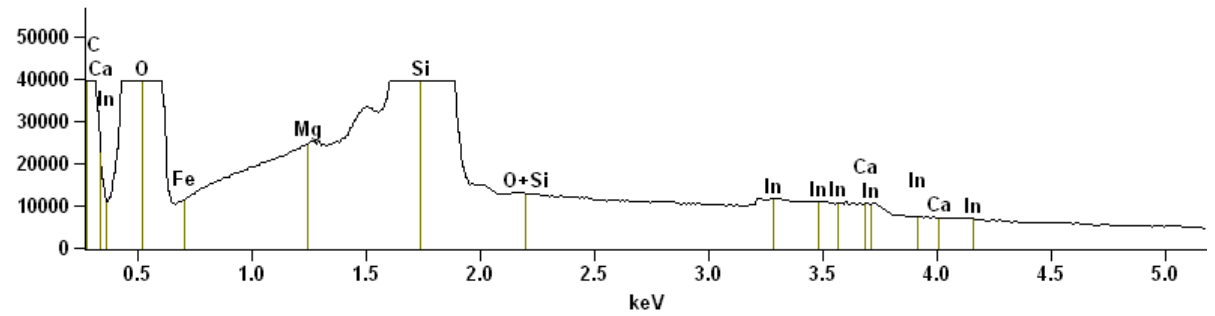
Auto Phases From Counts

Phase1

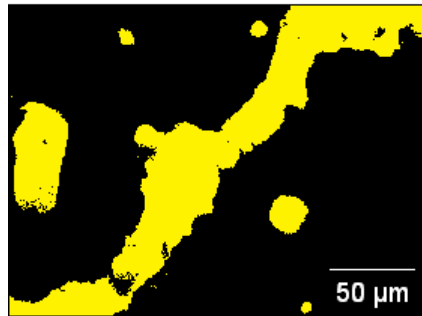


Full scale counts: 39569

4Cyc 500x (1) Phase1

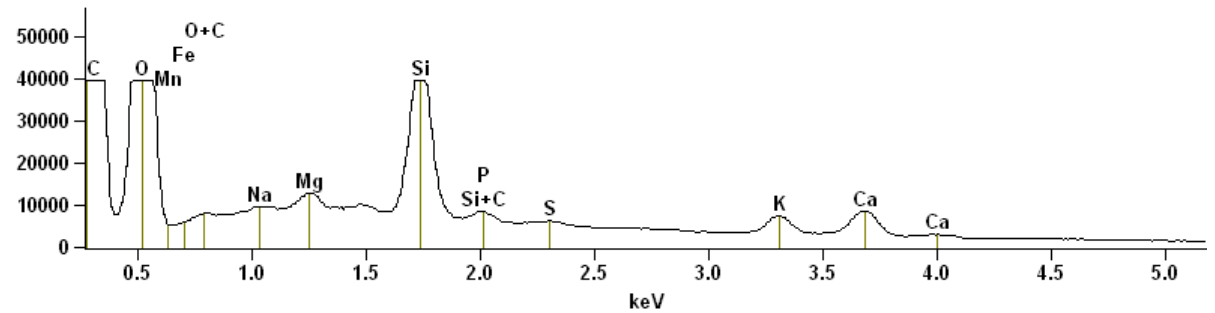


Phase2

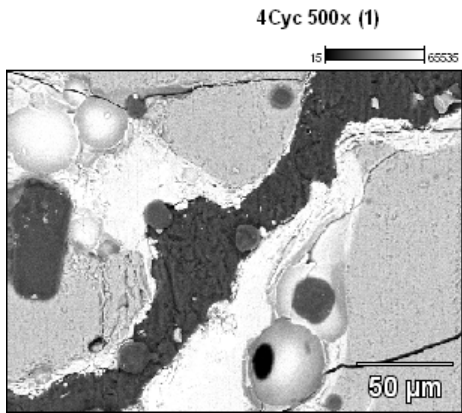


Full scale counts: 39569

4Cyc 500x (1) Phase2



Project: SEMÅA-group 5

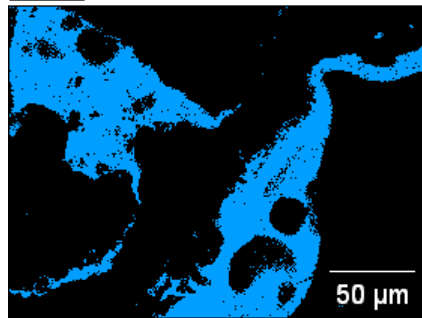


Accelerating Voltage: 15.0 kV

Magnification: 500

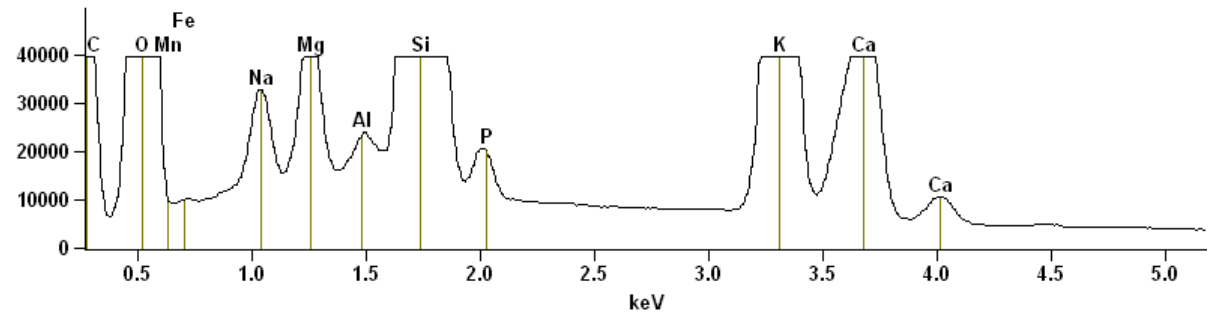
Auto Phases From Counts

Phase3

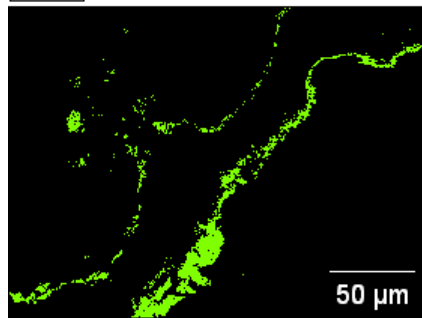


Full scale counts: 39569

4Cyc 500x (1) Phase3

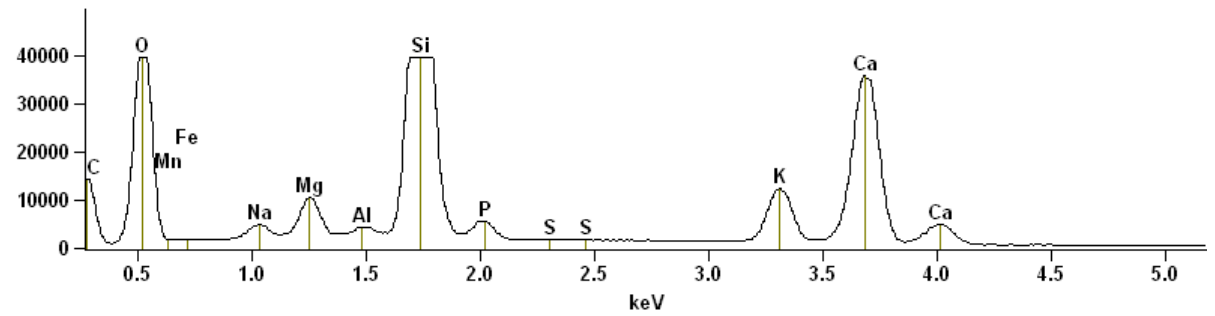


Phase4

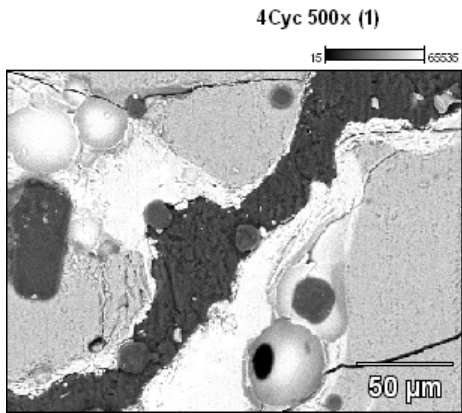


Full scale counts: 39569

4Cyc 500x (1) Phase4



Project: SEMÅA-group 5

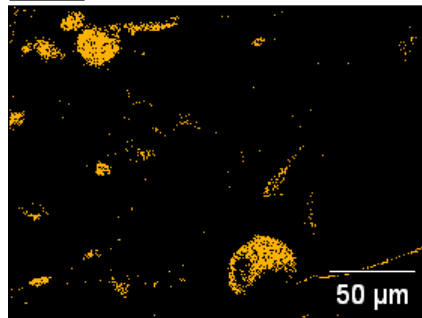


Accelerating Voltage: 15.0 kV

Magnification: 500

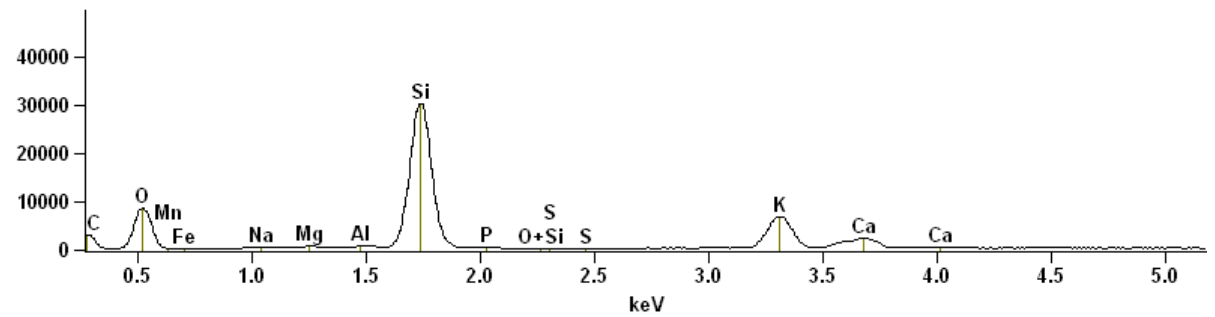
Auto Phases From Counts

Phase5

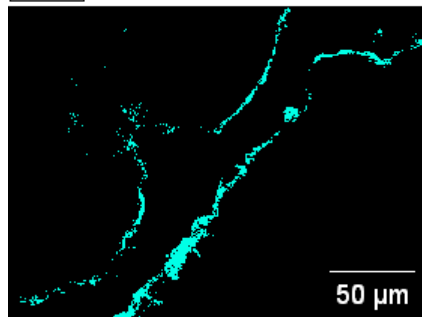


Full scale counts: 39569

4Cyc 500x (1) Phase5

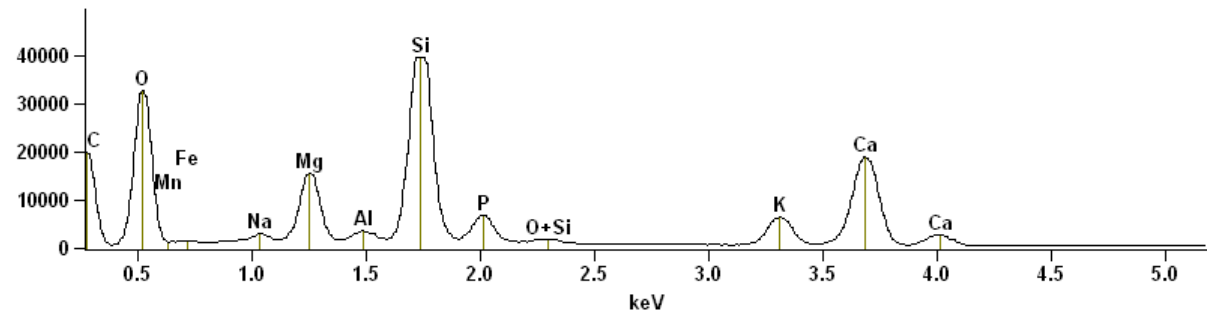


Phase6

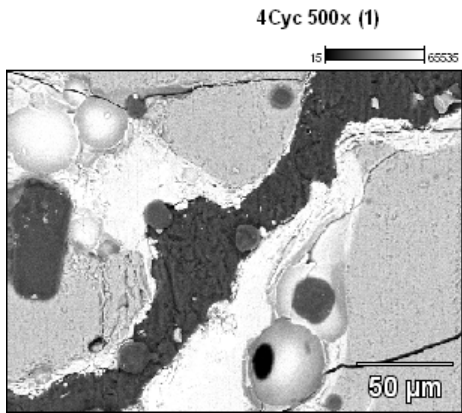


Full scale counts: 39569

4Cyc 500x (1) Phase6



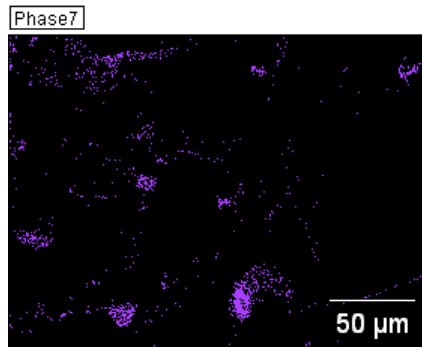
Project: SEMÅA-group 5



Accelerating Voltage: 15.0 kV

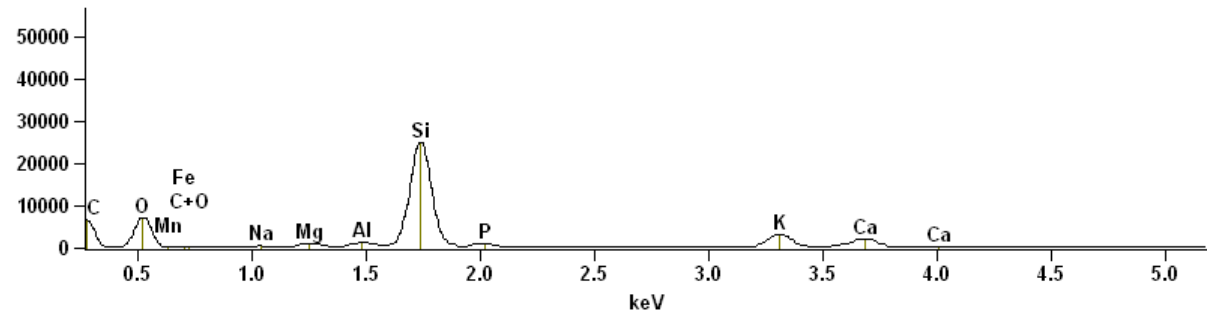
Magnification: 500

Auto Phases From Counts



Full scale counts: 39569

4Cyc 500x (1) Phase7



Project: SEMÅA-group 5

Quantitative Results for: 4Cyc 500x (1) Phase1

<i>Element Line</i>	<i>Weight %</i>	<i>Weight % Error</i>	<i>Atom %</i>	<i>Formul a</i>	<i>Compnd %</i>
<i>O K</i>	52.97S	---	66.58		---
<i>Mg K</i>	0.03	+/- 0.00	0.03	MgO	0.05
<i>Si K</i>	46.41	+/- 0.09	33.24	SiO2	99.29
<i>Ca K</i>	0.13	+/- 0.01	0.07	CaO	0.18
<i>Fe K</i>	0.04	+/- 0.01	0.01	Fe2O3	0.05
<i>In L</i>	0.42	+/- 0.02	0.07	In	0.42
<i>Total</i>	100.00		100.00		100.00

Project: SEMÅA-group 5

Quantitative Results for: 4Cyc 500x (1) Phase2

<i>Element Line</i>	<i>Weight %</i>	<i>Weight % Error</i>	<i>Atom %</i>	<i>Formul a</i>	<i>Compnd %</i>
<i>O K</i>	45.59S	---	62.05		---
<i>Na K</i>	1.33	+/- 0.07	1.26	Na2O	1.80
<i>Mg K</i>	2.25	+/- 0.07	2.01	MgO	3.73
<i>Si K</i>	28.84	+/- 0.11	22.36	SiO2	61.69
<i>P K</i>	2.13	+/- 0.13	1.49	P2O5	4.87
<i>S K</i>	1.26	+/- 0.05	0.86	SO3	3.16
<i>K K</i>	6.24	+/- 0.11	3.47	K2O	7.51
<i>Ca K</i>	10.83	+/- 0.13	5.88	CaO	15.15
<i>Mn K</i>	0.75	+/- 0.10	0.30	MnO	0.96
<i>Fe K</i>	0.79	+/- 0.11	0.31	Fe2O3	1.13
<i>Total</i>	100.00		100.00		100.00

Project: SEMÅA-group 5

Quantitative Results for: 4Cyc 500x (1) Phase3

<i>Element Line</i>	<i>Weight %</i>	<i>Weight % Error</i>	<i>Atom %</i>	<i>Formul a</i>	<i>Compnd %</i>
<i>O K</i>	43.92S	---	60.43		---
<i>Na K</i>	1.65	+/- 0.01	1.58	Na2O	2.22
<i>Mg K</i>	1.56	+/- 0.01	1.42	MgO	2.59
<i>Al K</i>	0.25	+/- 0.01	0.20	Al2O3	0.47
<i>Si K</i>	31.35	+/- 0.06	24.57	SiO2	67.06
<i>P K</i>	0.82	+/- 0.01	0.58	P2O5	1.87
<i>K K</i>	14.25	+/- 0.04	8.02	K2O	17.17
<i>Ca K</i>	4.85	+/- 0.02	2.67	CaO	6.79
<i>Mn K</i>	0.76	+/- 0.02	0.30	MnO	0.98
<i>Fe K</i>	0.59	+/- 0.03	0.23	Fe2O3	0.84
<i>Total</i>	100.00		100.00		100.00

Project: SEMÅA-group 5

Quantitative Results for: 4Cyc 500x (1) Phase4

<i>Element Line</i>	<i>Weight %</i>	<i>Weight % Error</i>	<i>Atom %</i>	<i>Formul a</i>	<i>Compnd %</i>
<i>O K</i>	41.22S	---	59.32		---
<i>Na K</i>	1.24	+/- 0.03	1.24	Na2O	1.67
<i>Mg K</i>	2.08	+/- 0.02	1.97	MgO	3.45
<i>Al K</i>	0.34	+/- 0.01	0.29	Al2O3	0.65
<i>Si K</i>	22.97	+/- 0.05	18.83	SiO2	49.15
<i>P K</i>	1.46	+/- 0.01	1.08	P2O5	3.34
<i>S K</i>	0.00	---	0.00	SO3	0.00
<i>K K</i>	5.69	+/- 0.04	3.35	K2O	6.86
<i>Ca K</i>	22.17	+/- 0.07	12.74	CaO	31.02
<i>Mn K</i>	1.21	+/- 0.05	0.51	MnO	1.56
<i>Fe K</i>	1.60	+/- 0.06	0.66	Fe2O3	2.29
<i>Total</i>	100.00		100.00		100.00

Quantitative Results for: 4Cyc 500x (1) Phase5

Element Line	Weight %	Weight % Error	Atom %	Formul a	Compnd %
<i>O K</i>	43.92S	---	61.03		---
<i>Na K</i>	0.60	+/- 0.04	0.58	Na2O	0.81
<i>Mg K</i>	0.51	+/- 0.01	0.47	MgO	0.84
<i>Al K</i>	0.45	+/- 0.02	0.37	Al2O3	0.84
<i>Si K</i>	31.68	+/- 0.09	25.08	SiO2	67.77
<i>P K</i>	0.66	+/- 0.05	0.48	P2O5	1.52
<i>K K</i>	13.82	+/- 0.10	7.86	K2O	16.65
<i>Ca K</i>	5.25	+/- 0.10	2.91	CaO	7.34
<i>Mn K</i>	1.33	+/- 0.17	0.54	MnO	1.71
<i>Fe K</i>	1.68	+/- 0.10	0.67	Fe2O3	2.40
<i>Mo L</i>	0.11	+/- 0.04	0.03	Mo	0.11
<i>Total</i>	100.00		100.00		100.00

Quantitative Results for: 4Cyc 500x (1) Phase6

<i>Element Line</i>	<i>Weight %</i>	<i>Weight % Error</i>	<i>Atom %</i>	<i>Formul a</i>	<i>Compnd %</i>
<i>O K</i>	41.65S	---	59.37		---
<i>Na K</i>	0.78	+/- 0.04	0.78	Na ₂ O	1.05
<i>Mg K</i>	5.74	+/- 0.04	5.39	MgO	9.52
<i>Al K</i>	0.71	+/- 0.02	0.60	Al ₂ O ₃	1.34
<i>Si K</i>	19.94	+/- 0.07	16.19	SiO ₂	42.65
<i>P K</i>	3.57	+/- 0.06	2.63	P ₂ O ₅	8.18
<i>K K</i>	4.92	+/- 0.05	2.87	K ₂ O	5.93
<i>Ca K</i>	18.95	+/- 0.08	10.78	CaO	26.51
<i>Mn K</i>	1.35	+/- 0.04	0.56	MnO	1.75
<i>Fe K</i>	1.57	+/- 0.08	0.64	Fe ₂ O ₃	2.25
<i>Mo L</i>	0.82	+/- 0.06	0.19	Mo	0.82
<i>Total</i>	100.00		100.00		100.00

Project: SEMÅA-group 5

Quantitative Results for: 4Cyc 500x (1) Phase7

<i>Element Line</i>	<i>Weight %</i>	<i>Weight % Error</i>	<i>Atom %</i>	<i>Formul a</i>	<i>Compnd %</i>
<i>O K</i>	46.45S	---	62.67		---
<i>Na K</i>	0.50	+/- 0.03	0.47	Na2O	0.68
<i>Mg K</i>	0.94	+/- 0.02	0.83	MgO	1.55
<i>Al K</i>	1.05	+/- 0.02	0.84	Al2O3	1.99
<i>Si K</i>	33.05	+/- 0.11	25.40	SiO2	70.71
<i>P K</i>	1.67	+/- 0.07	1.16	P2O5	3.83
<i>K K</i>	8.01	+/- 0.09	4.42	K2O	9.65
<i>Ca K</i>	6.42	+/- 0.06	3.46	CaO	8.99
<i>Mn K</i>	0.79	+/- 0.14	0.31	MnO	1.01
<i>Fe K</i>	1.11	+/- 0.09	0.43	Fe2O3	1.59
<i>Total</i>	100.00		100.00		100.00

Project: SEMÅA-group 5

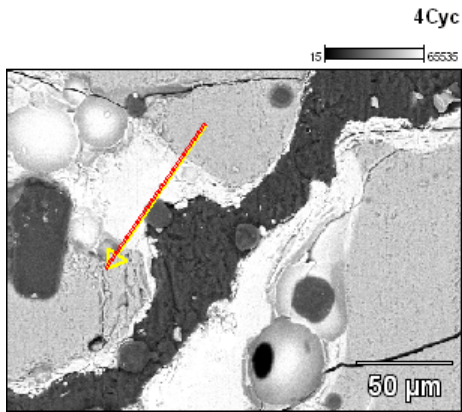
Segments

No segmentation data is available.

Combinations

<i>Combinations</i>	<i>Color</i>	<i>Area %</i>	<i>Combinations</i>
<i>Phase1</i>	Custom	38.13	C 1
<i>Phase2</i>	Custom	23.20	C 2
<i>Phase3</i>	Custom	25.60	C 3, C 13
<i>Phase4</i>	Custom	4.27	C 4
<i>Phase5</i>	Custom	3.75	C 5
<i>Phase6</i>	Custom	2.81	C 7
<i>Phase7</i>	Custom	2.24	C 10

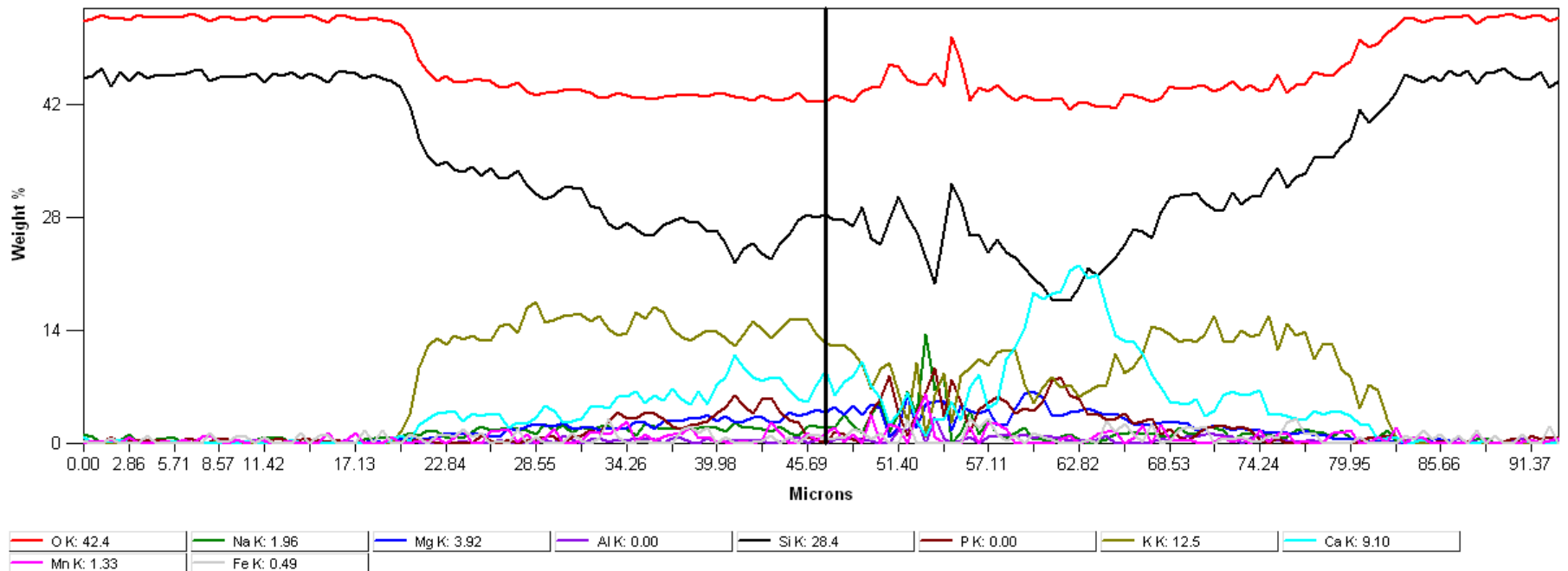
Project: SEMÅA-group 5



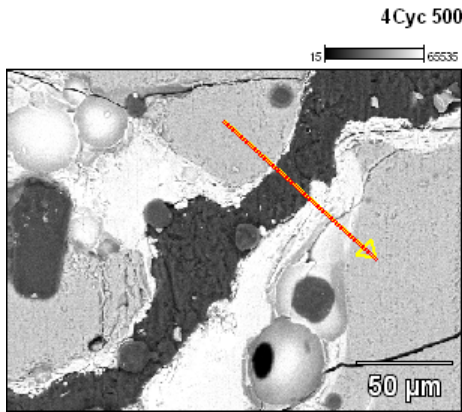
Accelerating Voltage: 15.0 kV

Magnification: 500

4Cyc 500x (1)Extract



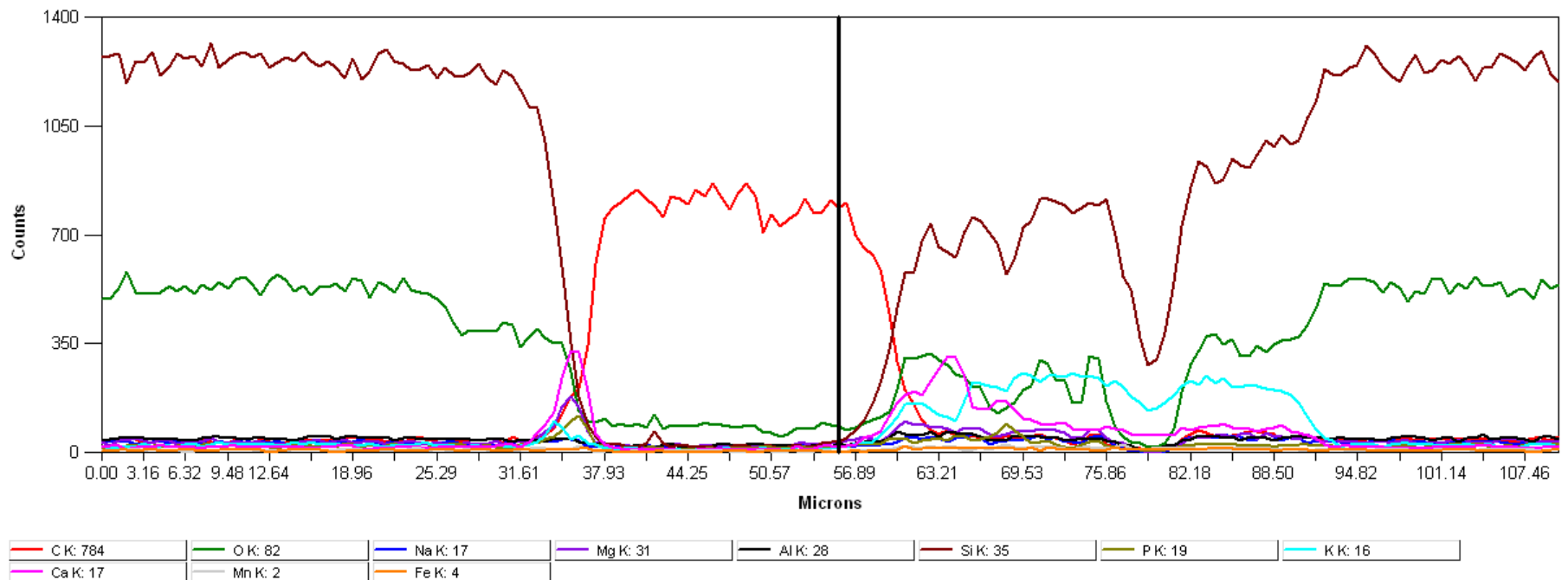
Project: SEMÅA-group 5



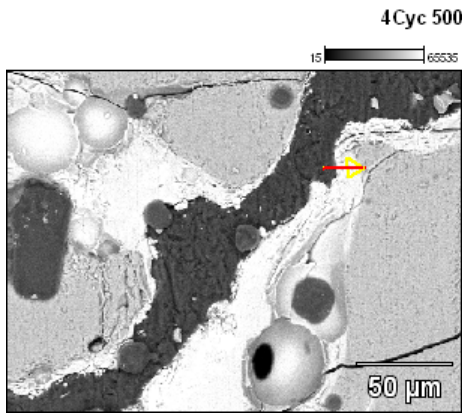
Accelerating Voltage: 15.0 kV

Magnification: 500

4Cyc 500x (1)Extract



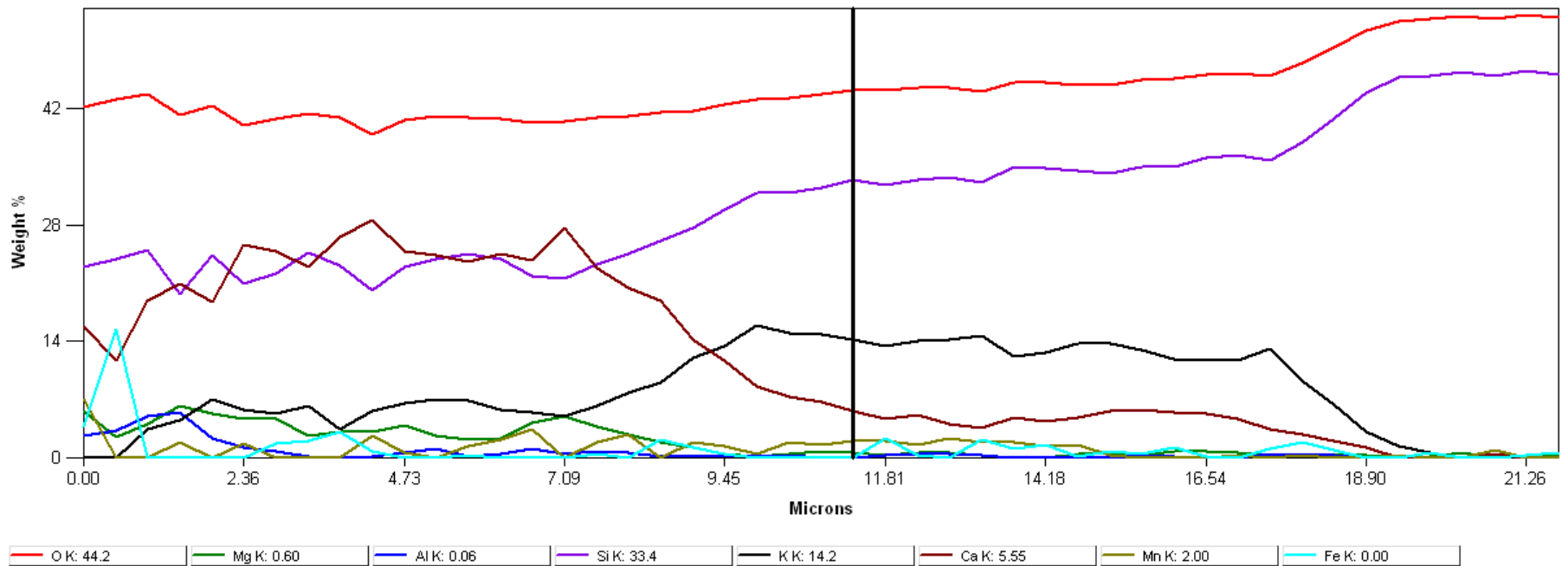
Project: SEMÅA-group 5



Accelerating Voltage: 15.0 kV

Magnification: 500

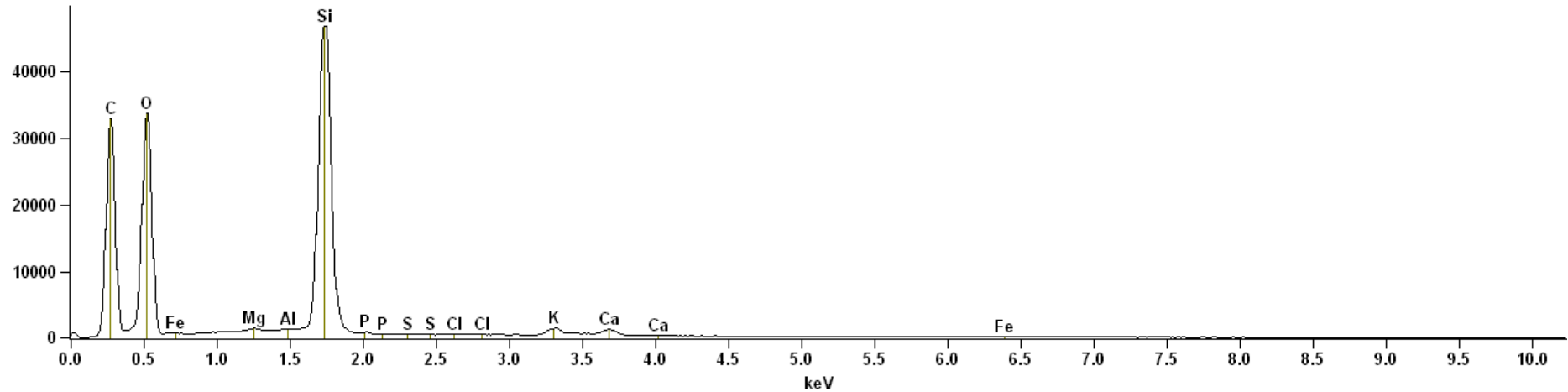
4Cyc 500x (1)Extract



Project: SEMÅA-group 5

Full scale counts: 46796

4Cyc 30x area04



Live Time:30.0 sec.

Acc.Voltage: 15.0 kV Take Off Angle: 33.5 deg.

Quantitative Results for: 4Cyc 30x area04

Element Line	Weight %	Weight % Error	Atom %	Formul a	Compnd %
O K	51.70S	---	65.80		---
Mg K	0.34	+/- 0.03	0.29	MgO	0.56
Al K	0.03	+/- 0.02	0.02	Al2O3	0.06
Si K	43.92	+/- 0.11	31.84	SiO2	93.96
P K	0.19	+/- 0.03	0.12	P2O5	0.43
S K	0.01	+/- 0.02	0.00	SO3	0.02
Cl K	0.01	+/- 0.02	0.00	Cl	0.01
K K	1.90	+/- 0.03	0.99	K2O	2.29
Ca K	1.63	+/- 0.07	0.83	CaO	2.28
Fe K	0.27	+/- 0.06	0.10	Fe2O3	0.39
Total	100.00		100.00		100.00

4 cyclone leg sample 500x

- Phase 1 represents the sand particles from the bed which is SiO_2
- Phase 2 is the epoxy used in the sample preparation.
- Phase 3 and phase 5 are the bridge between sand particles. These phases are rich in K and Si contents which indicate the presence of K_2SiO_4 . The K_2SiO_4 has relatively low melting point and may act as glue to combine the sand particles together forming agglomerates.
- Phase 4 and phase 6 are the coating surface of the sand particles. This coating layer is rich in Ca and Si contents, possibly in the form of CaSiO_4 .