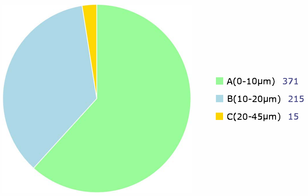
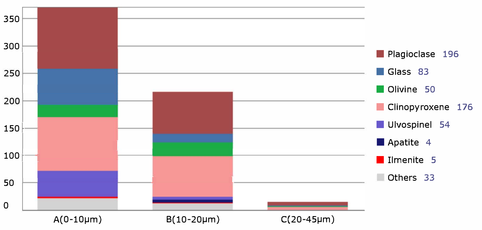
Analysis No. 1a

Mineral Statistics

Material	# Particles	Area%	Sum area	Volume%	Sum volume	Min size(µm)	Max size(µm)	Mean(µm)	Median(µm)	Std Dev
Plagioclase	196	34.6 %	18939.7	36.1 %	187109	3.9	35.4	10.1	9.0	4.7
Clinopyroxene	176	32.9 %	18007.4	33.2 %	171932	4.4	29.4	10.6	9.6	4.2
Olivine	50	11.8 %	6466.8	13.5 %	70141.3	4.8	29.7	11.8	10.2	4.9
Glass	83	10.0 %	5476.2	9.2 %	47711.3	3.7	33.3	8.5	8.1	3.5
Ulvospinel	54	4.3 %	2376.2	2.8 %	14249	4.0	17.3	7.1	6.9	2.4
Quartz	8	1.3 %	737.1	1.1 %	5938.42	5.7	15.2	10.4	10.7	3.1
Apatite	4	1.1 %	611.3	1.1 %	5830.8	12.1	16.4	13.8	12.1	1.8
Ilmenite oxidized	17	1.6 %	868.1	1.0 %	5369.83	4.7	12.8	7.7	7.1	2.5
Ilmenite	5	0.9 %	495.6	0.8 %	3961.13	9.4	15.3	11.0	9.7	2.2
Orthopyroxene	5	0.7 %	392.8	0.6 %	2906.77	6.0	13.6	9.6	8.6	2.7
Cristobalite	2	0.5 %	282.2	0.5 %	2523.59	13.1	13.7	13.4	13.7	0.3
Merrillite	1	0.1 %	34.2	0.0 %	150.179	6.6	6.6	6.6	6.6	0.0

Size Categories





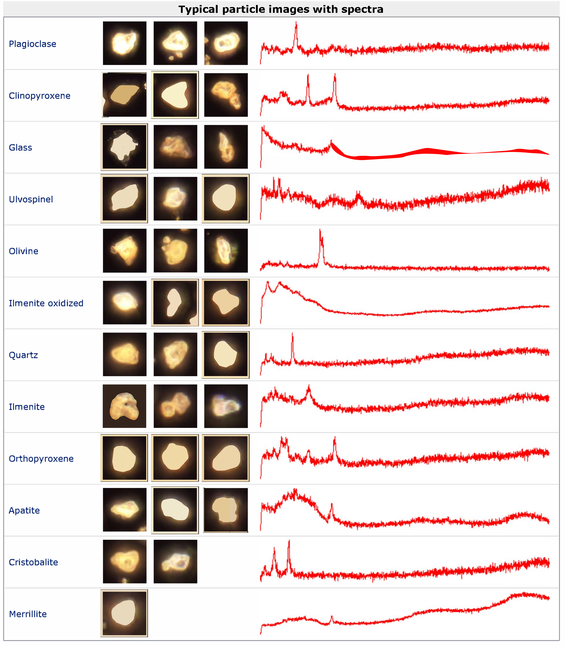
Particle Count for each Category

Material	A(0-10µm)	B(10-20µm)	C(20-45µm)
Plagioclase	113	76	7
Glass	66	16	1
Olivine	23	25	2
Clinopyroxene	97	74	5
Ulvospinel	48	6	
Apatite		4	
Ilmenite	3	2	
Quartz	3	5	
Cristobalite		2	
Orthopyroxene	3	2	
Ilmenite oxidized	14	3	
Merrillite	1		
All	371	215	15

Material groups sorted by total group area

Plagioclase 196
Clinopyroxene 176
Olivine 50
Glass 83
Ulvospinel 54
Others 42

Typical particle images with spectra

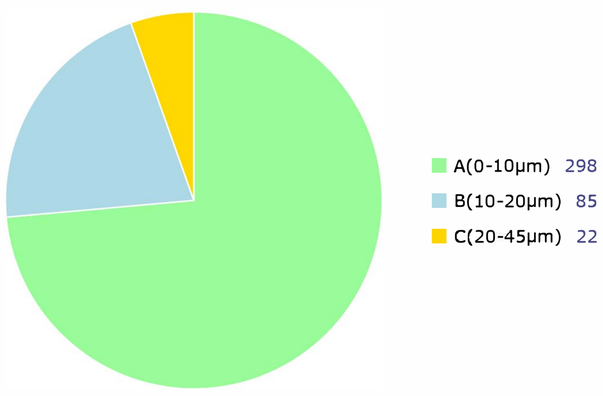


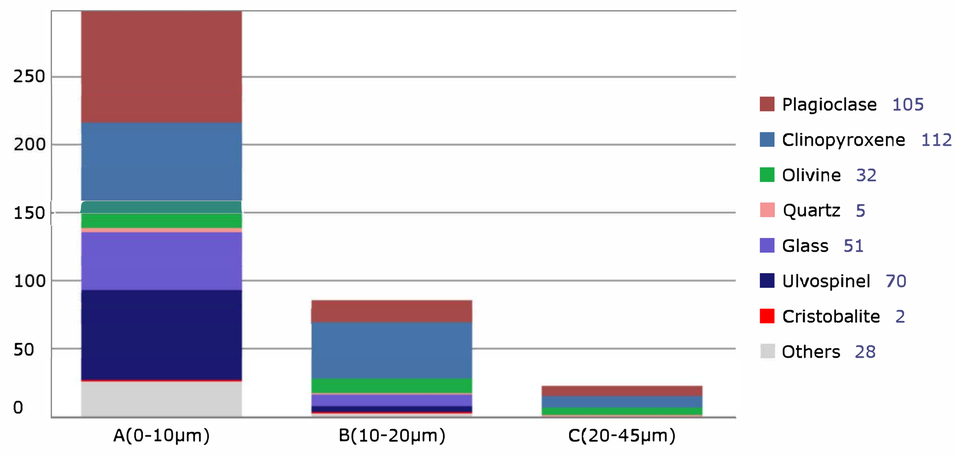
Analysis No. 1b

Mineral Statistics

Material	# Particles	Area%	Sum area	Volume%	Sum volume	Min size(µm)	Max size(µm)	Mean(µm)	Median(µm)	Std Dev
Clinopyroxene	112	39.3 %	11880.2	41.0 %	128508	2.6	31.7	10.2	9.4	5.5
Plagioclase	105	25.7 %	7781.0	28.4 %	89019	2.9	35.4	7.9	6.1	5.6
Olivine	32	14.7 %	4442.2	16.7 %	52244.9	3.0	24.6	11.8	10.4	6.2
Glass	51	8.2 %	2469.2	5.7 %	17893.3	2.5	16.8	6.9	6.1	3.7
Ulvospinel	70	6.9 %	2092.0	3.7 %	11649.9	2.5	16.5	5.6	4.9	2.6
Quartz	5	2.1 %	638.8	2.8 %	8711.93	2.7	24.5	10.2	8.7	7.7
Cristobalite	2	0.7 %	211.3	0.7 %	2166.6	3.6	16.0	9.8	16.0	6.2
Ilmenite oxidized	19	1.3 %	403.0	0.5 %	1683.66	2.9	10.0	4.9	4.7	1.8
Ilmenite	6	0.8 %	245.9	0.5 %	1484.24	2.9	11.0	6.5	4.0	3.1
Apatite	2	0.1 %	34.7	0.0 %	110.011	4.2	5.1	4.7	5.1	0.4
Merrillite	1	0.1 %	24.1	0.0 %	88.7272	5.5	5.5	5.5	5.5	0.0

Size Categories

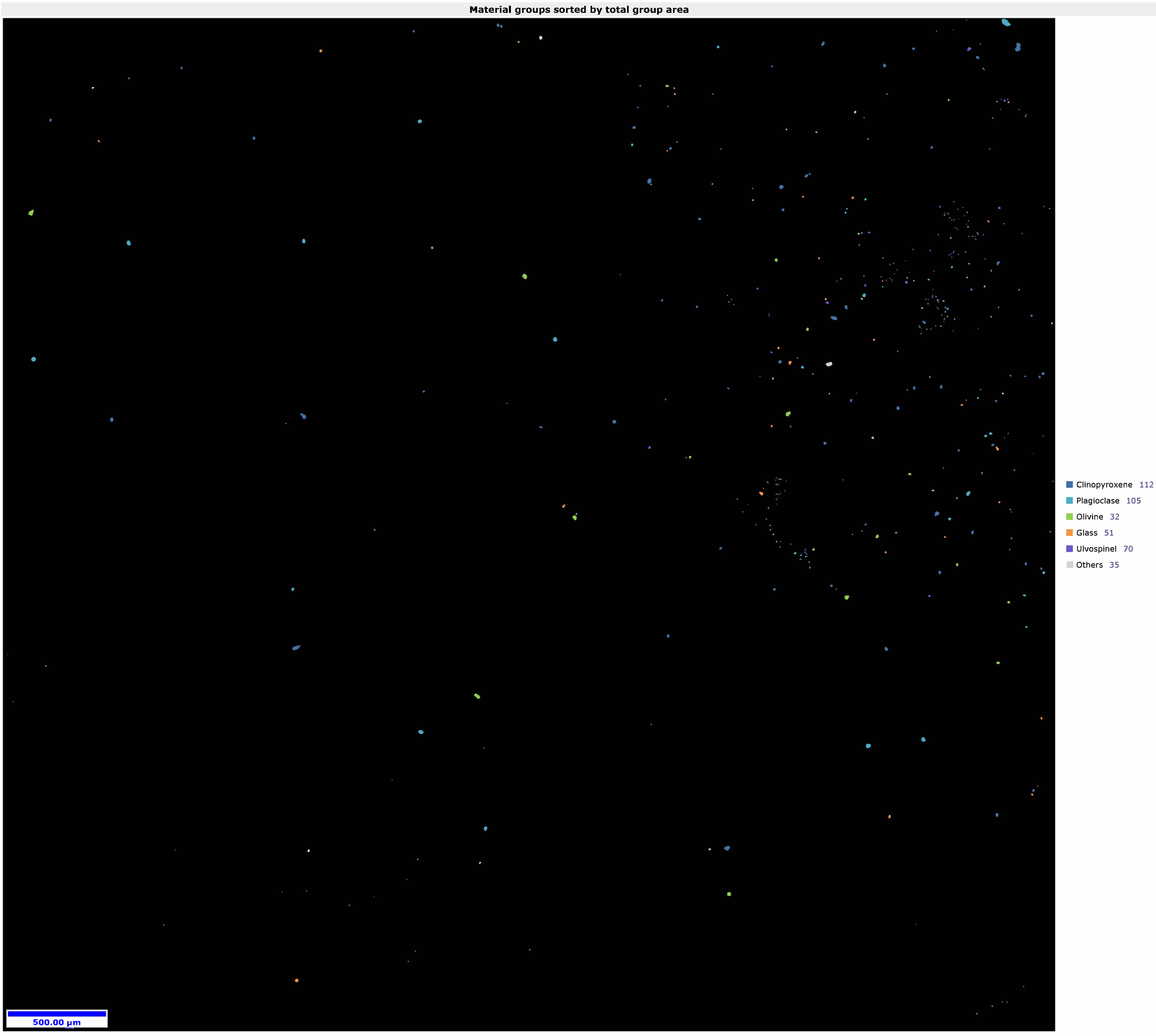




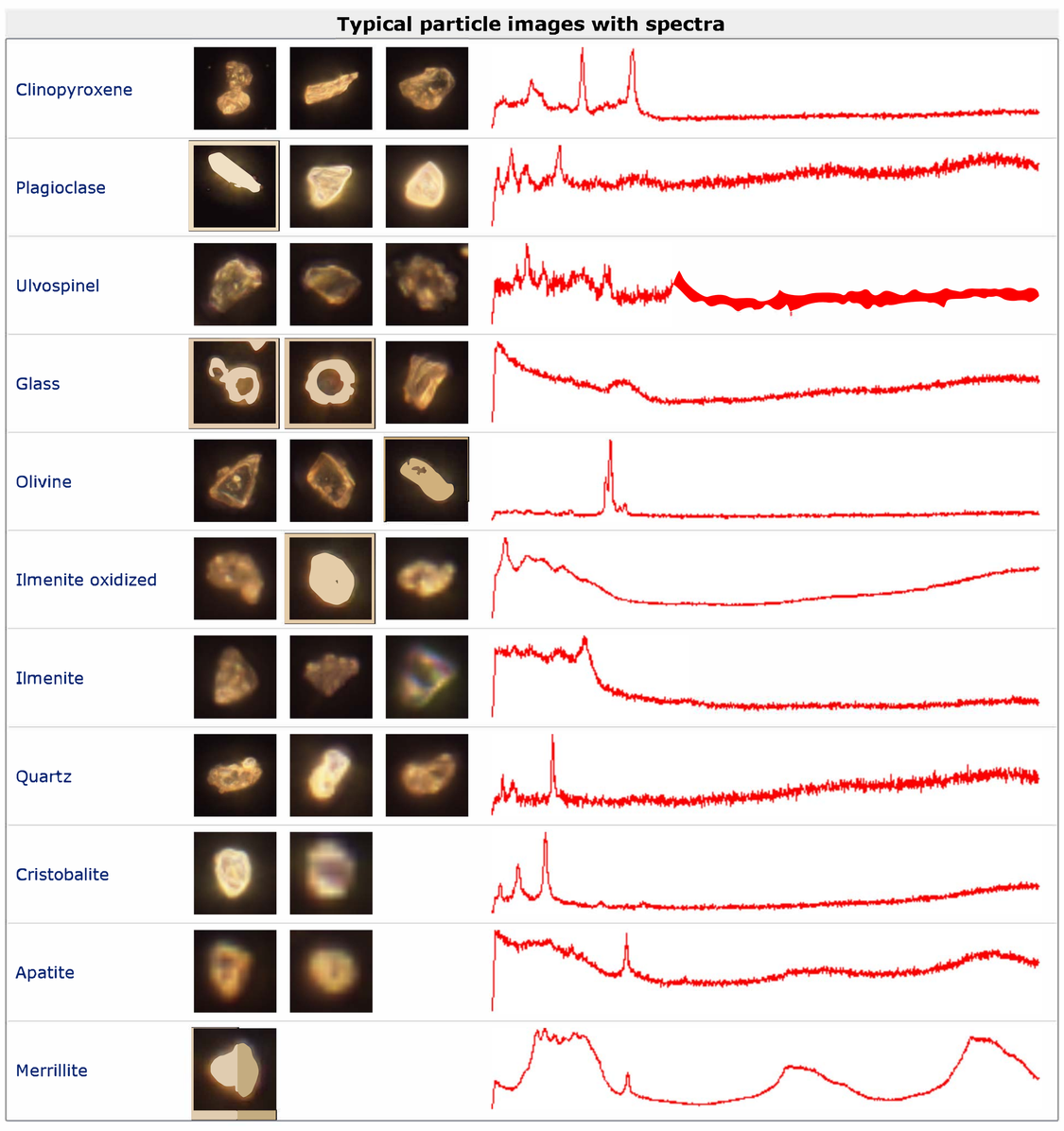
Particle Count for each Category

Material	A(0-10µm)	B(10-20µm)	C(20-45µm)
Plagioclase	82	16	7
Clinopyroxene	63	41	8
Olivine	15	11	6
Quartz	3	1	1
Glass	43	8	
Ulvospinel	65	5	
Cristobalite	1	1	
Ilmenite	5	1	
Ilmenite oxidized	18	1	
Merrillite	1		
Apatite	2		
All	298	85	22

Material groups sorted by total group area



Typical particle images with spectra

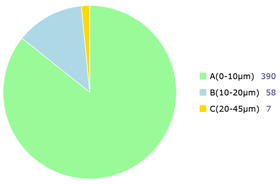


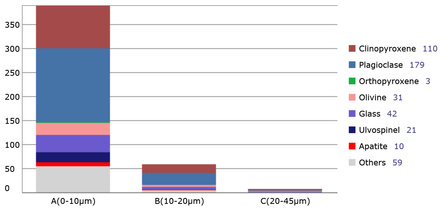
Analysis No. 2a

Mineral Statistics

Material	# Particles	Area%	Sum area	Volume%	Sum volume	Min size(µm)	Max size(µm)	Mean(µm)	Median(µm)	Std Dev
Clinopyroxene	110	29.0 %	5535.6	32.3 %	49725.2	2.3	27.1	6.7	4.8	4.5
Plagioclase	179	34.8 %	6654.0	30.2 %	46528.2	2.5	23.6	6.0	4.8	3.4
Olivine	31	10.5 %	1996.0	12.8 %	19735.9	2.4	21.3	7.3	5.7	5.3
Glass	42	9.8 %	1864.7	9.0 %	13855.9	2.4	20.1	6.5	5.8	3.7
Orthopyroxene	3	2.3 %	445.6	4.4 %	6724.93	2.9	23.4	9.9	3.6	9.5
Ulvospinel	21	3.5 %	671.0	3.7 %	5697.12	2.9	20.1	5.1	3.5	3.8
Ilmenite oxidized	50	5.7 %	1085.1	3.4 %	5301.96	2.0	12.0	4.7	4.3	2.3
Apatite	10	2.8 %	534.0	3.0 %	4665.92	2.9	18.0	6.8	4.1	4.7
Cristobalite	4	1.1 %	207.4	0.9 %	1410.18	4.7	12.7	7.5	4.9	3.2
Quartz	2	0.3 %	57.0	0.2 %	267.846	3.5	7.8	5.6	7.8	2.1
Ilmenite	2	0.2 %	31.8	0.1 %	95.803	4.2	4.7	4.5	4.7	0.3
Merrillite	1	0.1 %	15.6	0.0 %	46.3543	4.5	4.5	4.5	4.5	0.0

Size Categories

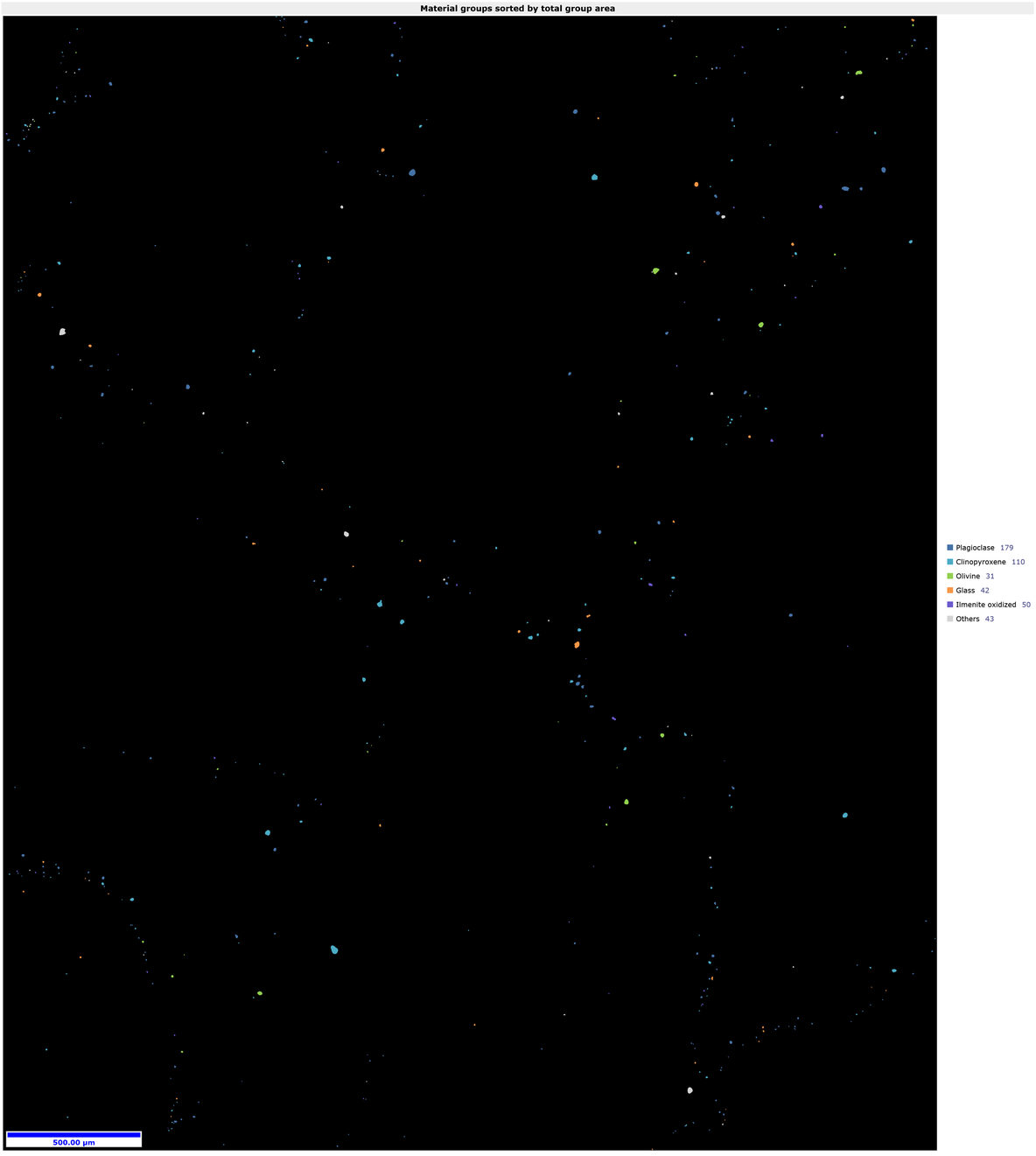




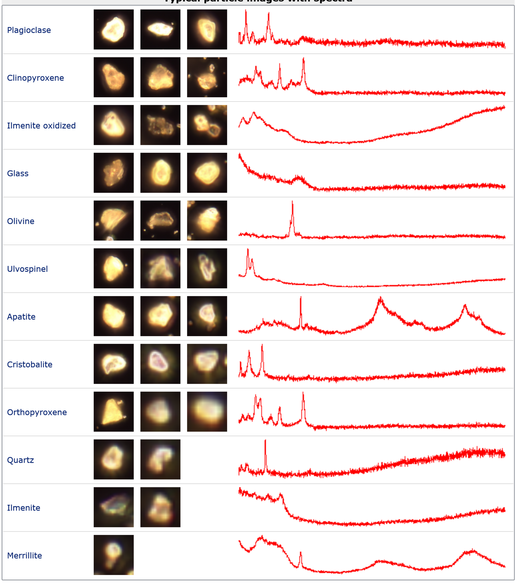
Particle Count for each Category

Material	A(0-10µm)	B(10-20µm)	C(20-45µm)
Clinopyroxene	90	18	2
Plagioclase	154	24	1
Orthopyroxene	2		1
Olivine	25	5	1
Glass	36	5	1
Ulvospinel	20		1
Apatite	8	2	
Cristobalite	3	1	
Ilmenite oxidized	47	3	
Quartz	2		
Ilmenite	2		
Merrillite	1		
All	390	58	7

Material groups sorted by total group area



Typical particle images with spectra

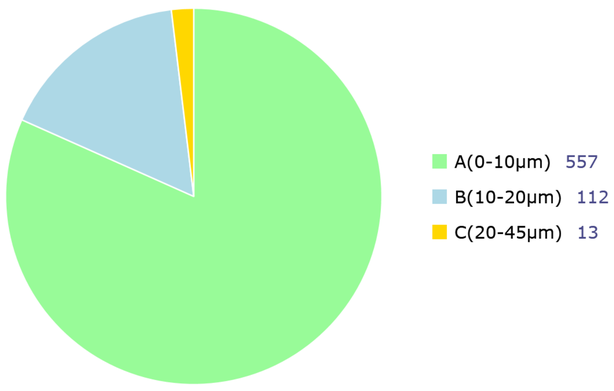


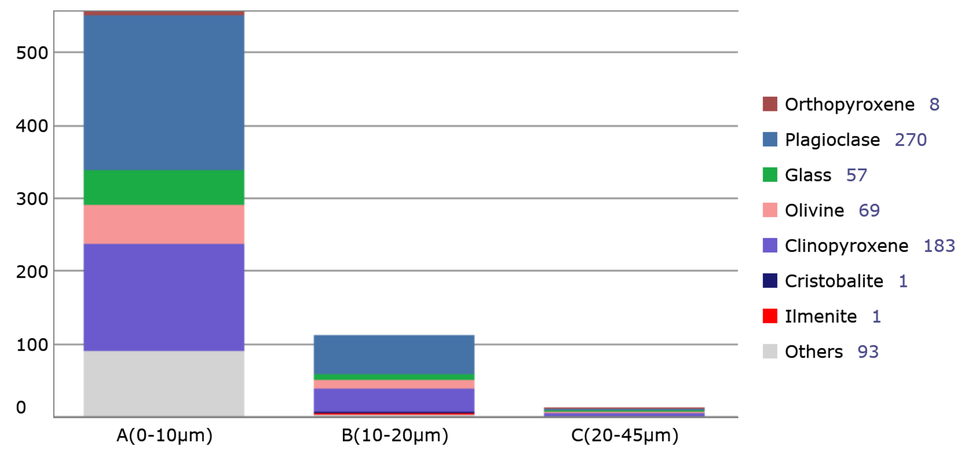
Analysis No. 2b

Mineral Statistics

Material	# Particles	Area%	Sum area	Volume%	Sum volume	Min size(µm)	Max size(µm)	Mean(µm)	Median(µm)	Std Dev
Plagioclase	270	40.9 %	16340.4	40.7 %	154015	3.0	36.3	7.7	6.3	4.3
Clinopyroxene	183	29.0 %	11564.5	27.4 %	103604	3.0	22.8	7.8	6.4	4.5
Orthopyroxene	8	3.9 %	1546.0	9.3 %	35194.2	4.2	40.1	11.0	7.9	11.1
Olivine	69	10.5 %	4208.7	9.3 %	35038.6	3.4	25.6	7.9	7.0	3.8
Glass	57	8.5 %	3385.8	8.8 %	33180.1	3.6	27.9	7.4	5.9	4.5
Ilmenite oxidized	49	2.8 %	1106.1	1.3 %	4891.37	3.0	12.9	5.0	4.7	1.8
Ulvospinel	30	2.2 %	892.9	1.3 %	4731.22	3.3	13.5	5.7	5.0	2.3
Cristobalite	1	0.7 %	275.3	0.9 %	3435.98	18.7	18.7	18.7	18.7	0.0
Ilmenite	1	0.5 %	210.1	0.6 %	2290.9	16.4	16.4	16.4	16.4	0.0
Quartz	6	0.5 %	211.5	0.3 %	1008.01	4.5	8.8	6.5	5.7	1.4
Apatite	7	0.4 %	175.3	0.2 %	736.417	3.8	8.4	5.4	4.7	1.5
Zircon	1	0.0 %	18.4	0.0 %	59.1718	4.8	4.8	4.8	4.8	0.0

Size Categories

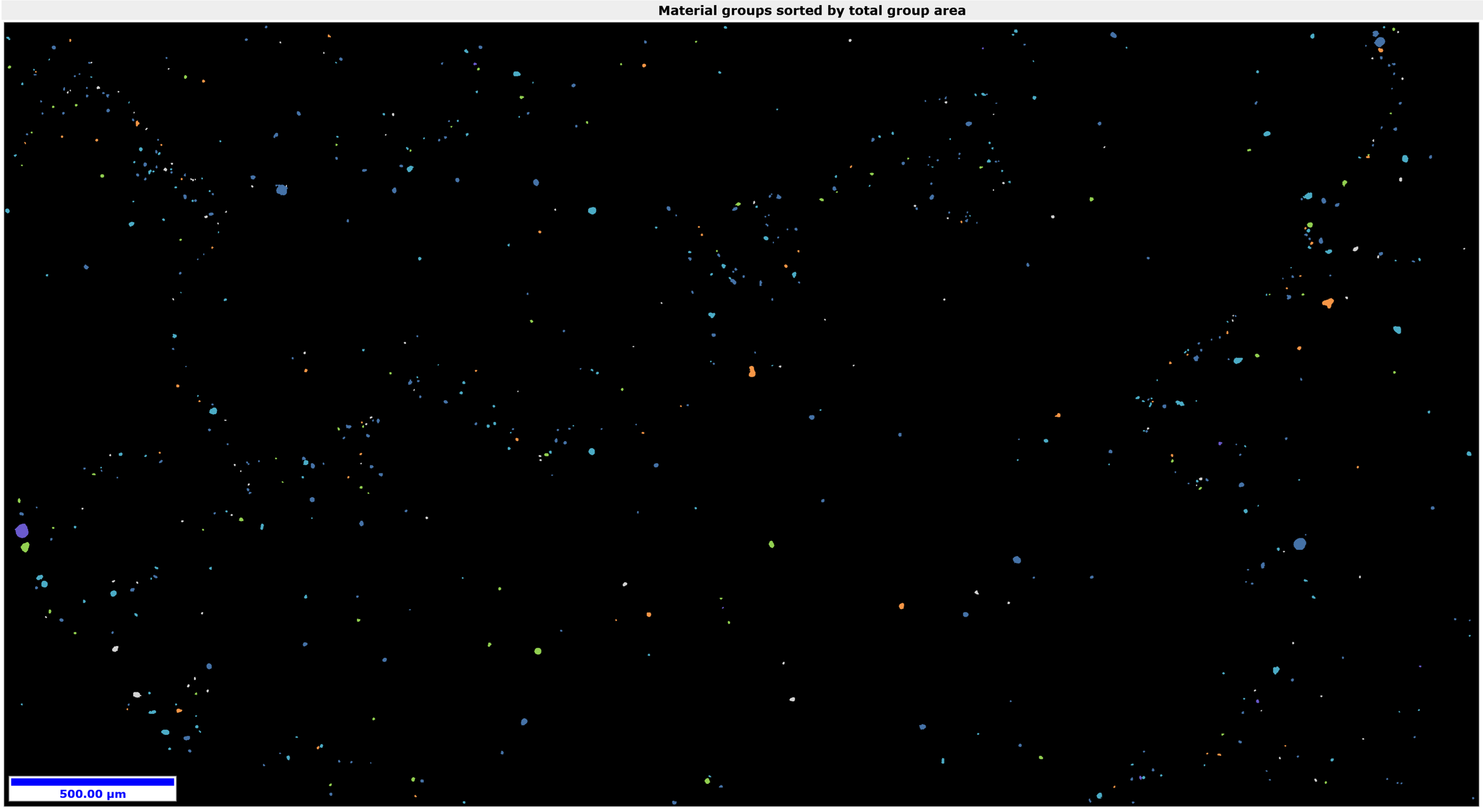




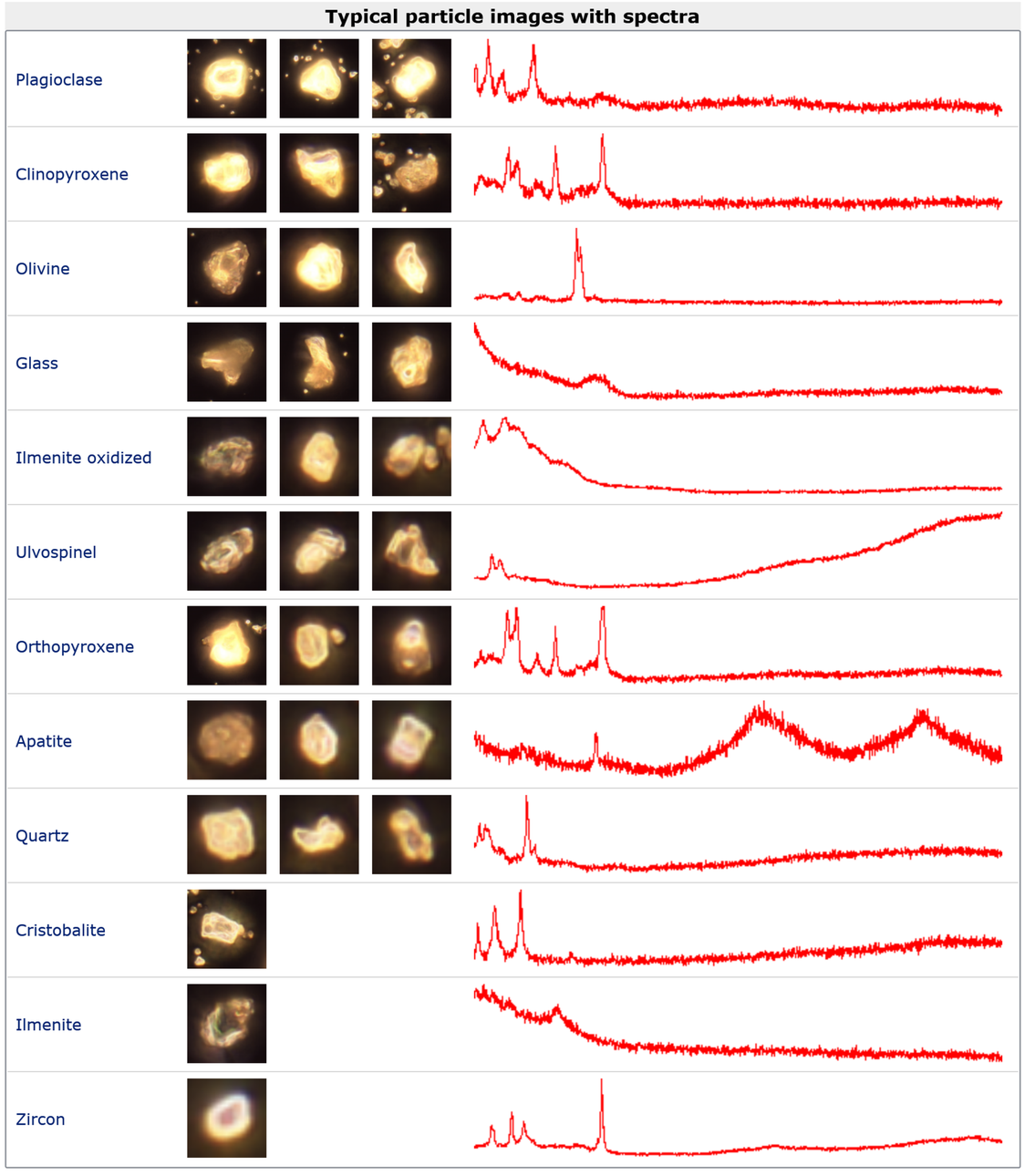
Particle Count for each Category

Material	A(0-10µm)	B(10-20µm)	C(20-45µm)
Orthopyroxene	7		1
Plagioclase	212	54	4
Glass	47	8	2
Olivine	55	13	1
Clinopyroxene	147	31	5
Cristobalite		1	
Ilmenite		1	
Ulvospinel	27	3	
Ilmenite oxidized	48	1	
Quartz	6		
Apatite	7		
Zircon	1		
All	557	112	13

Material groups sorted by total group area



Typical particle images with spectra

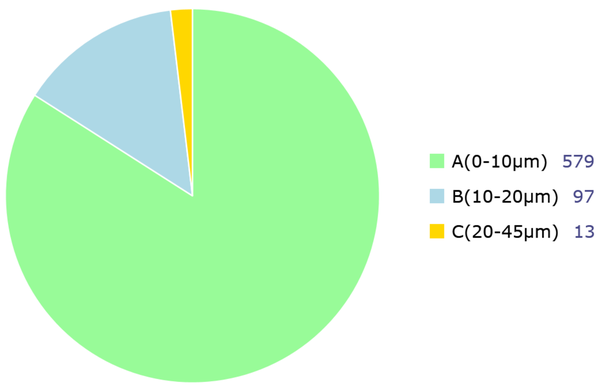


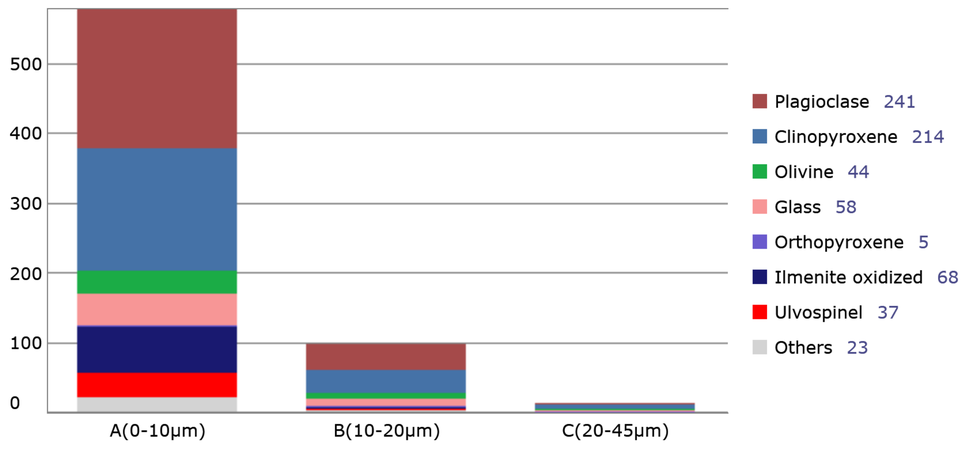
Analysis No. 2c

Mineral Statistics

Material	# Particles	Area%	Sum area	Volume%	Sum volume	Min size(µm)	Max size(µm)	Mean(µm)	Median(µm)	Std Dev
Plagioclase	241	36.1 %	14235.2	39.0 %	156477	3.2	46.2	7.3	6.0	4.6
Clinopyroxene	214	34.6 %	13633.5	35.2 %	141317	3.2	37.5	7.7	6.1	4.7
Olivine	44	9.1 %	3569.1	9.6 %	38598.4	3.5	26.3	8.6	6.6	5.4
Glass	58	8.8 %	3476.0	7.7 %	30756	3.6	25.6	7.6	5.7	4.4
Orthopyroxene	5	2.5 %	995.8	3.3 %	13437.9	4.6	24.3	14.0	16.2	7.6
Ilmenite oxidized	68	4.1 %	1633.8	2.3 %	9072.46	2.7	19.3	5.0	4.5	2.3
Ulvospinel	37	2.9 %	1130.2	1.8 %	7137.94	2.9	18.6	5.6	5.1	2.8
Quartz	9	0.9 %	352.2	0.6 %	2411.22	2.8	14.4	6.2	4.9	3.4
Cristobalite	2	0.5 %	178.6	0.3 %	1290.47	9.5	11.7	10.6	11.7	1.1
Apatite	10	0.5 %	199.9	0.2 %	763.307	3.3	8.1	4.8	4.2	1.4
Ilmenite	2	0.1 %	23.0	0.0 %	60.5115	3.2	4.3	3.8	4.3	0.6

Size Categories

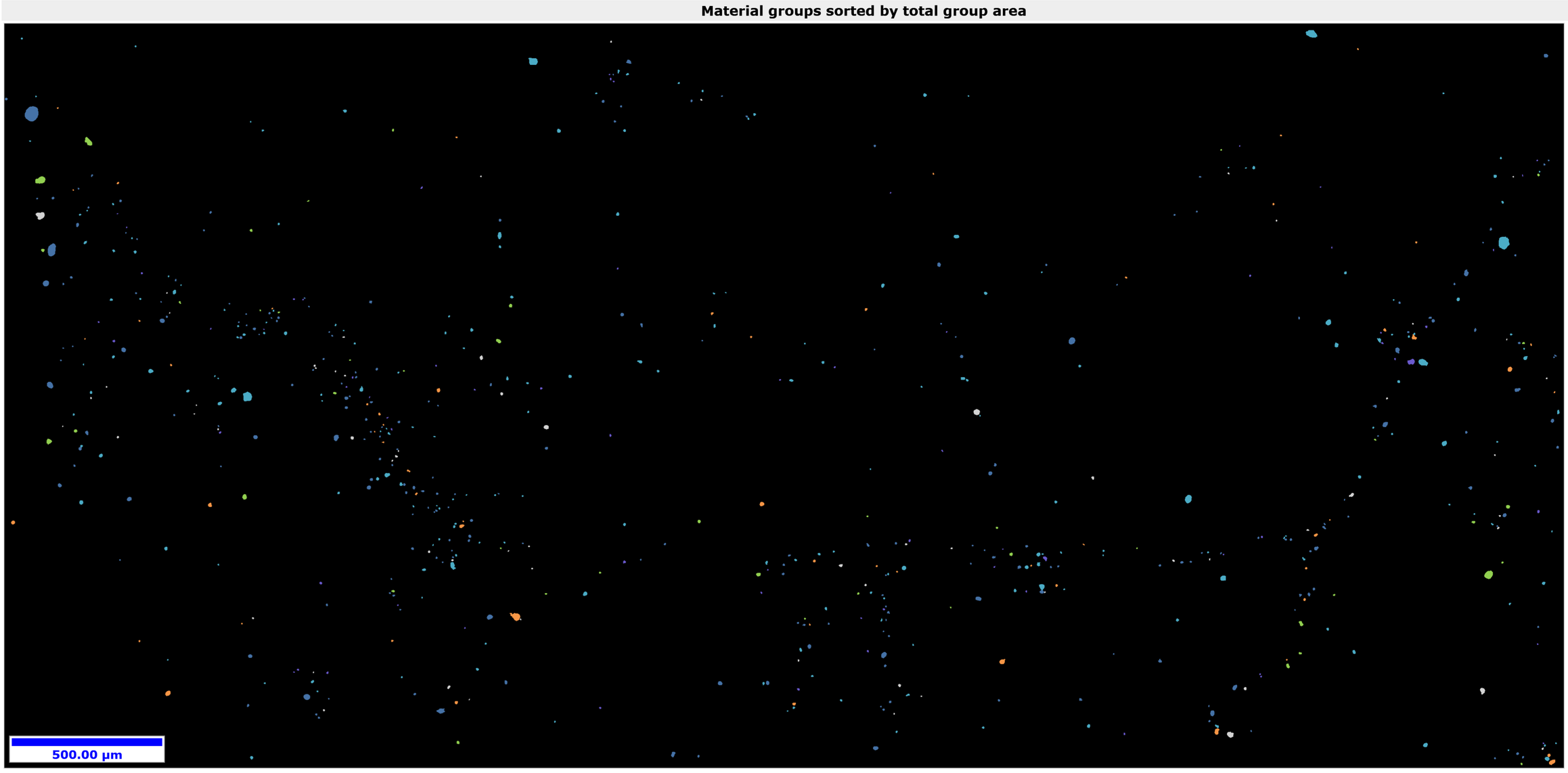




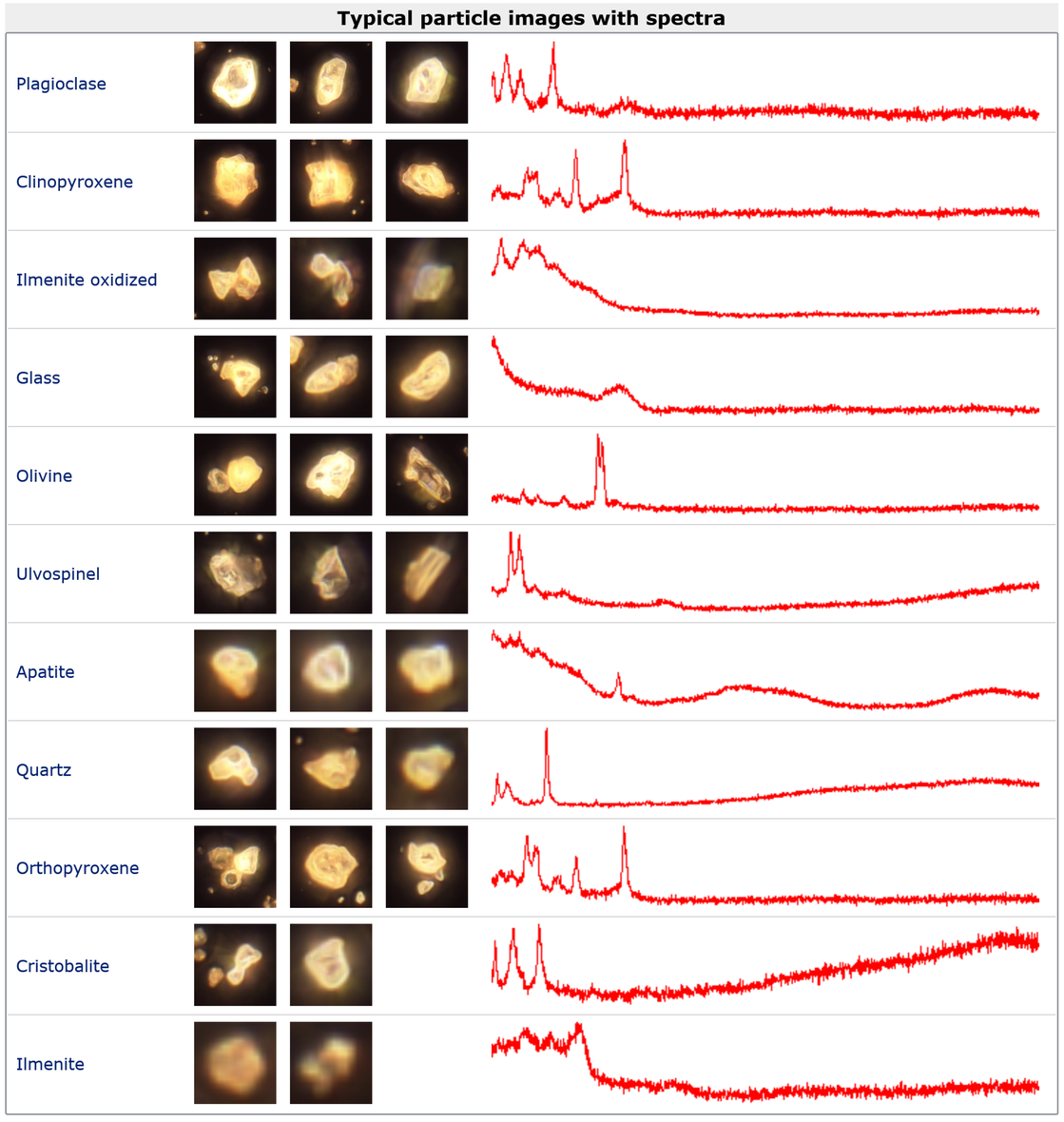
Particle Count for each Category

Material	A(0-10µm)	B(10-20µm)	C(20-45µm)
Plagioclase	201	37	2
Clinopyroxene	175	33	6
Olivine	33	8	3
Glass	46	11	1
Orthopyroxene	2	2	1
Ilmenite oxidized	66	2	
Ulvospinel	35	2	
Quartz	8	1	
Cristobalite	1	1	
Apatite	10		
Ilmenite	2		
All	579	97	13

Material groups sorted by total group area



Typical particle images with spectra

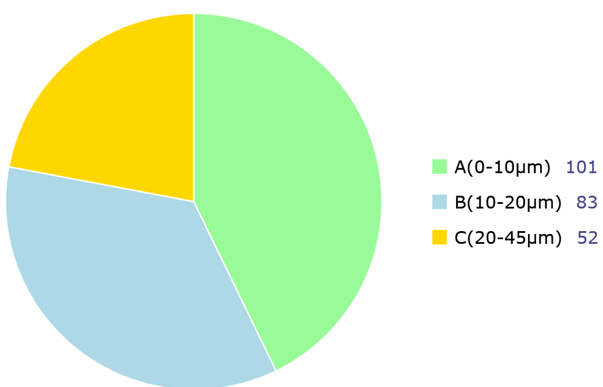


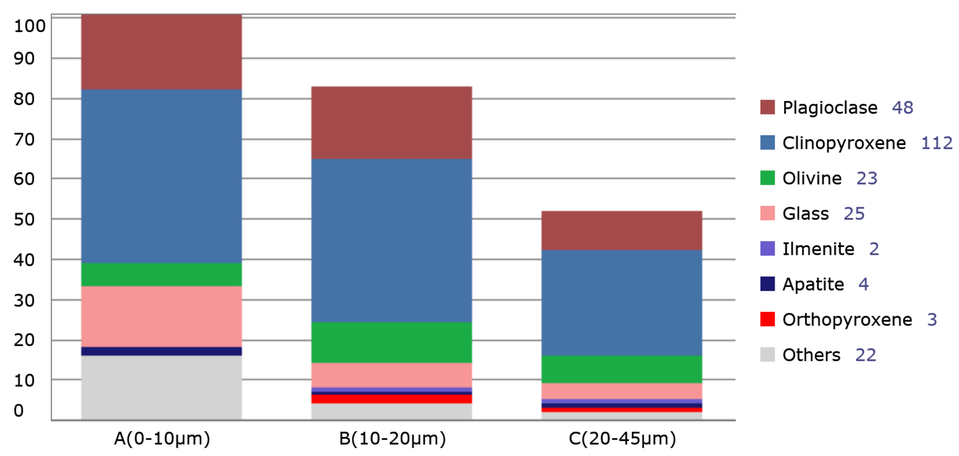
Analysis No. 3

Mineral Statistics

Material	# Particles	Area%	Sum area	Volume%	Sum volume	Min size(µm)	Max size(µm)	Mean(µm)	Median(µm)	Std Dev
Clinopyroxene	112	50.9 %	30227.3	52.2 %	578594	5.4	51.8	15.7	12.2	9.9
Plagioclase	48	21.2 %	12612.4	23.2 %	257295	5.5	55.5	15.1	11.2	10.3
Olivine	23	13.1 %	7772.2	13.0 %	144347	6.9	40.6	18.4	17.4	9.6
Glass	25	5.7 %	3358.5	4.0 %	44569.9	5.6	32.9	11.3	8.6	6.5
Ulvospinel	12	3.0 %	1760.0	2.2 %	24385.5	5.5	27.7	11.6	8.9	7.2
Ilmenite	2	1.6 %	959.9	1.7 %	18505.1	14.4	31.9	23.1	31.9	8.8
Orthopyroxene	3	1.8 %	1046.5	1.6 %	17673.3	13.7	30.3	19.7	15.1	7.5
Apatite	4	1.6 %	955.9	1.6 %	17497	6.4	31.5	14.1	7.2	10.2
Ilmenite oxidized	9	1.1 %	643.4	0.4 %	4635.17	5.6	14.3	9.1	8.4	2.8
Quartz	1	0.1 %	60.1	0.0 %	350.389	8.7	8.7	8.7	8.7	0.0

Size Categories

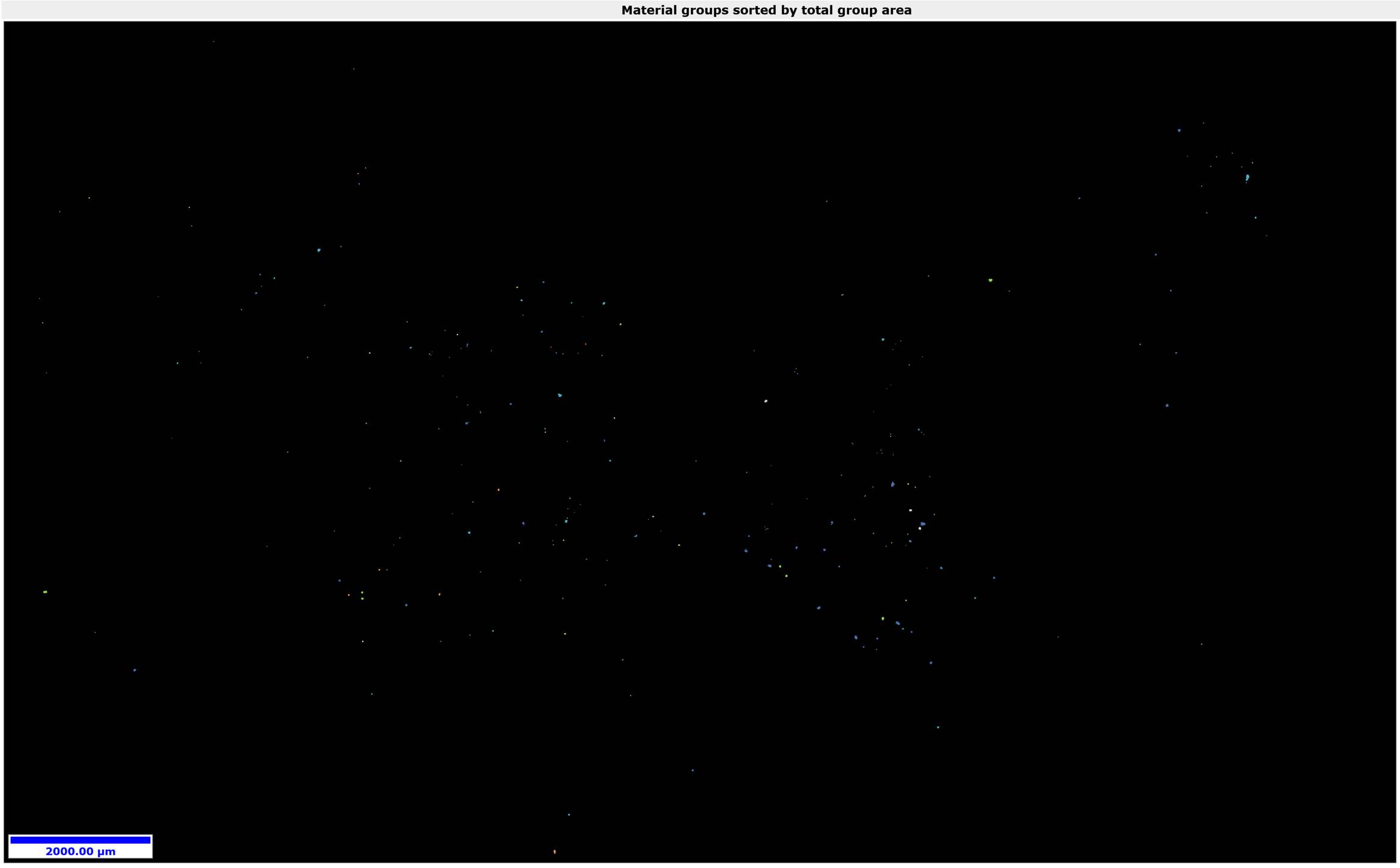




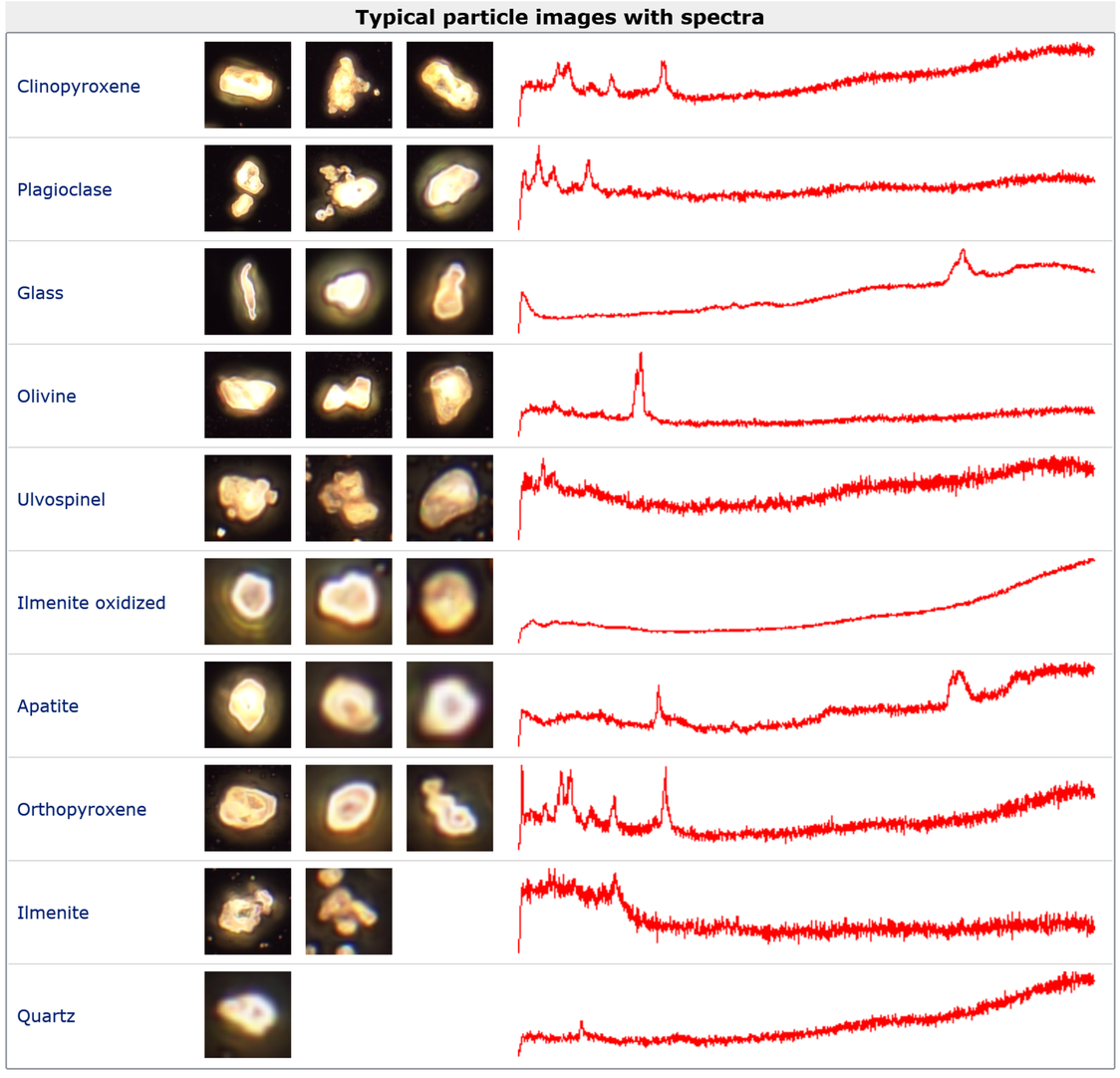
Particle Count for each Category

Material	A(0-10µm)	B(10-20µm)	C(20-45µm)
Plagioclase	19	18	10
Clinopyroxene	43	41	26
Olivine	6	10	7
Glass	15	6	4
Ilmenite		1	1
Apatite	2	1	1
Orthopyroxene		2	1
Ulvospinel	9	1	2
Ilmenite oxidized	6	3	
Quartz	1		
All	101	83	52

Material groups sorted by total group area



Typical particle images with spectra

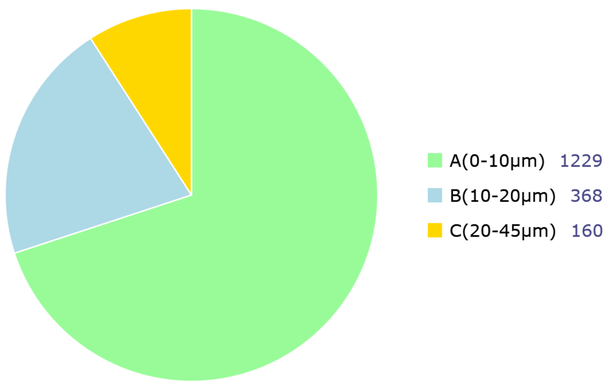


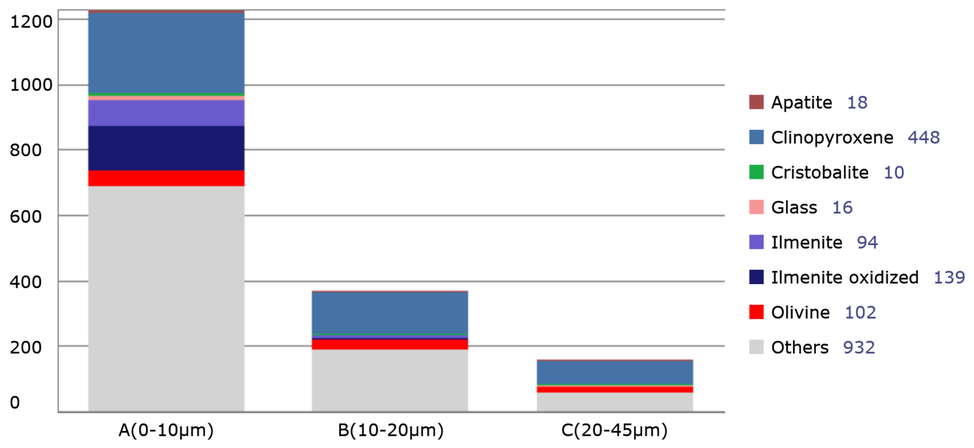
Analysis No. 5a

Mineral Statistics

Material	# Particles	Area%	Sum area	Volume%	Sum volume	Min size(µm)	Max size(µm)	Mean(µm)	Median(µm)	Std Dev
Clinopyroxene	448	37.3 %	77585.3	40.9 %	1.19812E+06	4.4	44.0	12.5	9.3	8.0
Plagioclase	557	34.4 %	71646.3	35.4 %	1.03628E+06	4.6	48.1	10.7	8.1	7.0
Olivine	102	10.9 %	22709.0	13.7 %	401151	4.8	46.0	14.0	10.7	9.3
Ulvospinel	355	8.4 %	17510.2	3.8 %	111528	4.4	22.6	7.5	6.8	2.6
Orthopyroxene	10	1.0 %	1988.9	1.2 %	35525.3	5.5	35.5	12.6	6.9	9.8
Ilmenite	94	2.3 %	4702.6	1.1 %	32611.6	4.8	22.4	7.4	6.5	2.9
Ilmenite oxidized	139	2.6 %	5508.3	1.0 %	29418.7	4.8	18.6	6.9	6.7	1.8
Cristobalite	10	0.9 %	1784.1	0.9 %	26485.5	5.0	27.2	12.6	8.3	8.3
Quartz	10	0.8 %	1719.9	0.9 %	26279.8	6.2	32.0	12.5	7.8	8.0
Apatite	18	0.9 %	1894.2	0.7 %	20672	4.8	25.7	10.2	8.5	5.5
Glass	16	0.5 %	1113.6	0.3 %	9291.05	4.8	21.0	8.7	7.7	3.6

Size Categories

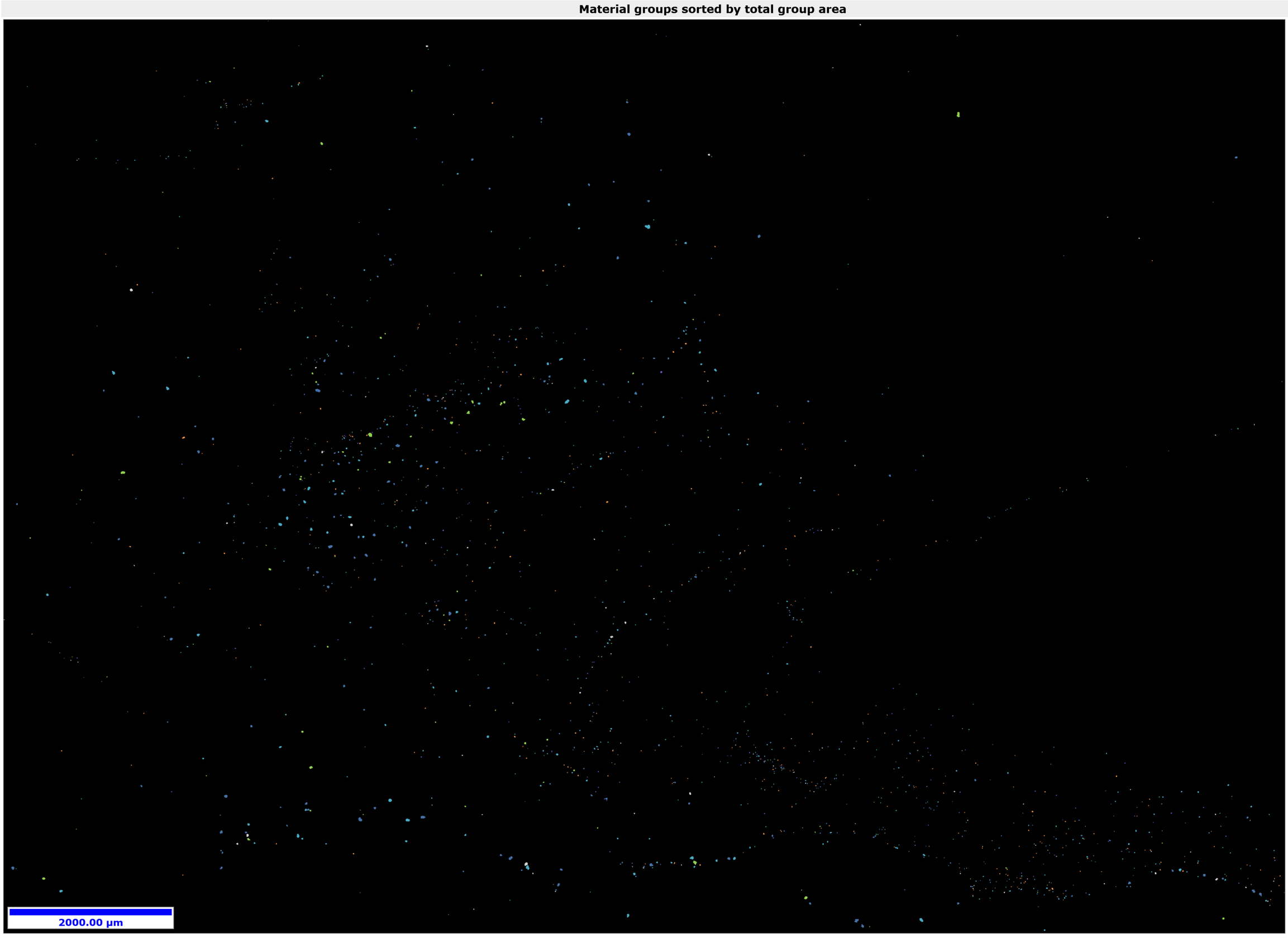
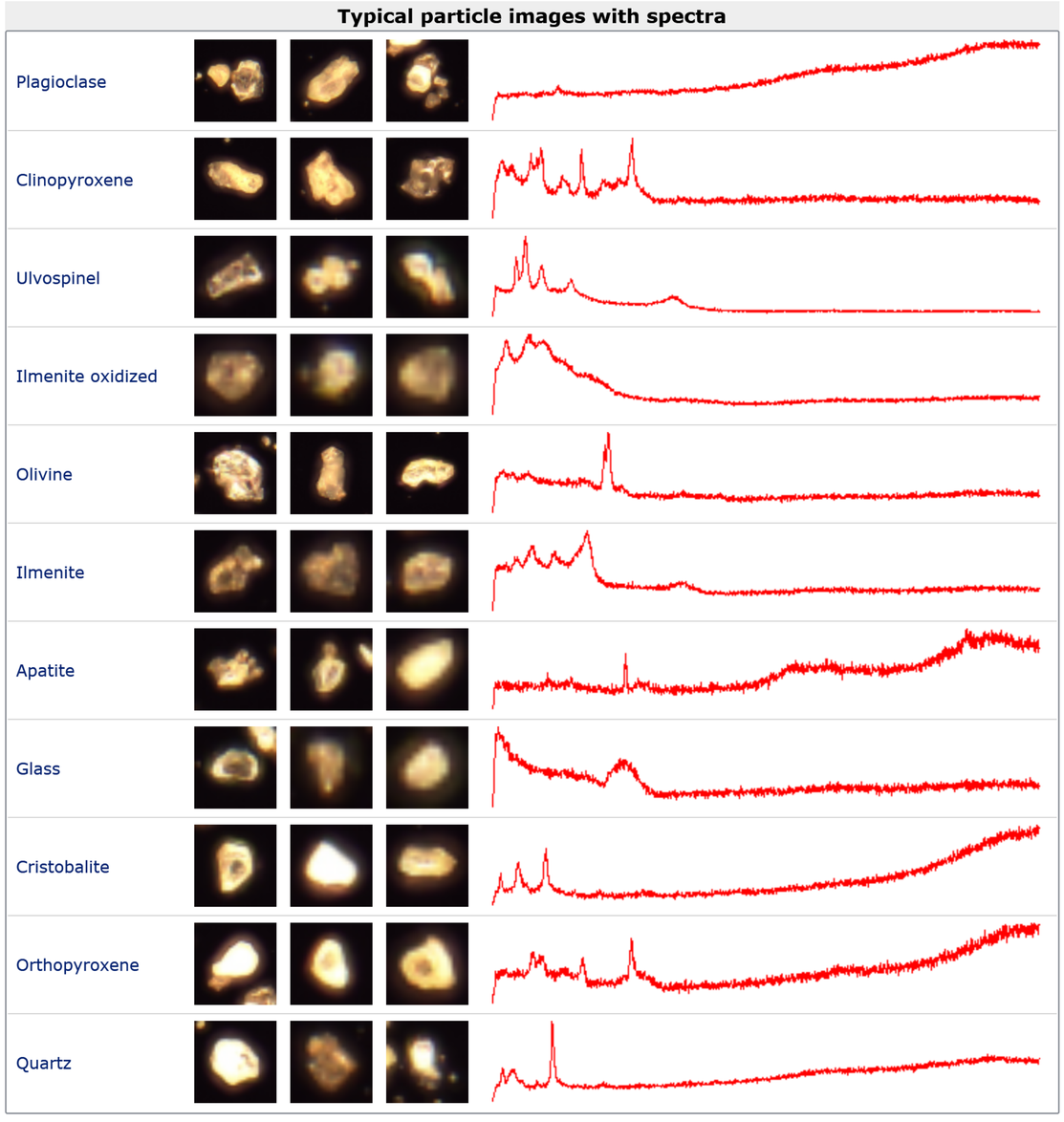




Particle Count for each Category

Material	A(0-10µm)	B(10-20µm)	C(20-45µm)
Apatite	11	6	1
Clinopyroxene	247	124	77
Cristobalite	6	2	2
Glass	12	3	1
Ilmenite	83	10	1
Ilmenite oxidized	134	5	
Olivine	49	31	21
Orthopyroxene	7		3
Plagioclase	366	138	52
Quartz	6	3	1
Ulvospinel	308	46	1
All	1229	368	160

Material groups sorted by total group area



Typical particle images with spectra