

- 1) odstraň hodnoty pod DL
- 2) přepočti analýzy na vzorec pomocí normalizace na 8 kyslíků
- 3) zjisti závislost mezi Na-Ca; Ca-Al; Na-Al; Al-Si pomocí grafu
- 4) rozpočti analýzy na koncové členy (albit, anortit, K-živec)
- 5) vytvoř tabulku s analýzami a přepočtenými vzorci

	Na	Si	Al	Ba	P	K	Ca
mol. hm. prvku	22.98977	28.085	26.98154	137.327	30.97376	39.0983	40.078
	Na ₂ O	SiO ₂	Al ₂ O ₃	BaO	P ₂ O ₅	K ₂ O	CaO
mol. hm. oxidu	61.97954	60.085	101.9631	153.327	141.9475	94.1966	56.078

Oxide

analýza č.	Na ₂ O	SiO ₂	Al ₂ O ₃	BaO	P ₂ O ₅	K ₂ O	CaO
1	3.14	49.84	31.38	0.00	0.00	0.12	14.35
2	2.94	49.60	31.83	0.00	0.00	0.15	15.00
3	2.96	50.22	31.46	0.00	0.00	0.14	14.52
4	6.13	56.89	27.01	0.00	0.00	0.25	8.84
5	5.40	55.38	27.68	0.00	0.02	0.18	10.25
6	0.34	43.42	36.04	0.00	0.02	0.03	19.80
7	0.85	44.73	34.97	0.00	0.02	0.00	18.44
8	0.57	44.12	35.56	0.00	0.02	0.03	19.42
9	4.64	53.82	29.01	0.00	0.01	0.11	11.57
10	6.63	56.95	26.70	0.11	0.00	0.22	8.59
11	7.31	59.38	25.90	0.12	0.00	0.24	7.27
12	11.944	69.384	19.794	0	0.024	0.115	0
13	12.039	69.052	19.789	0	0.068	0.153	0
14	11.829	69.069	19.793	0	0.02	0.123	0.01
15	11.848	69.093	19.638	0	0	0.093	0.021
16	11.905	68.912	19.686	0.026	0.005	0.106	0.026
17	7.306	64.119	21.614	0.187	0.008	4.158	2.821
18	8.524	63.921	21.889	0.17	0.017	2.26	3.092
19	5.041	64.418	20.163	0.22	0.018	8.506	1.648
20	9.416	64.631	22.242	0.058	0.02	0.811	3.275
21	4.028	64.734	19.742	0.291	0	10.277	1.027
22	6.696	64.017	21.574	0.109	0	5.298	2.705
23	8.188	64.158	21.822	0.164	0	2.695	3.078
24	6.265	63.938	21.037	0.15	0	5.737	2.623
25	4.149	64.968	19.948	0.266	0.002	9.87	1.376
26	5.866	63.93	21.064	0.193	0.021	6.89	2.146
27	8.878	64.572	22.108	0.133	0.031	1.629	3.278
28	4.44	65.04	19.788	0.103	0.005	9.398	1.148

Sr
87.62
SrO
103.62

SrO	Total	Weight%							
		Na	Si	Al	Ba	P	K		
0.32	99.17		2.32	23.18	16.52	0	0	0.1	
0.36	99.93		2.17	23.07	16.76	0	0	0.12	
0.32	99.66		2.19	23.36	16.57	0	0	0.12	
0.31	99.45		4.53	26.46	14.22	0	0	0.21	
0.26	99.18		3.99	25.76	14.58	0	0.01	0.15	
0.28	99.98		0.25	20.19	18.98	0	0.01	0.03	
0.26	99.26		0.63	20.8	18.42	0	0.01	0	
0.23	99.93		0.42	20.52	18.73	0	0.01	0.02	
0.23	99.40		3.42	25.03	15.28	0	0	0.09	
0.41	99.78		4.89	26.49	14.06	0.1	0	0.18	
0.41	100.73		5.39	27.61	13.64	0.11	0	0.2	
0	101.276		8.86	32.432	10.476	0	0.011	0.095	
0	101.101		8.931	32.277	10.473	0	0.03	0.127	
0	100.843		8.775	32.285	10.475	0	0.009	0.102	
0	100.692		8.789	32.296	10.393	0	0	0.077	
0	100.67		8.832	32.211	10.419	0.024	0.002	0.088	
0.016	100.293		5.42	29.971	11.439	0.168	0.003	3.452	
0.112	100.058		6.323	29.878	11.585	0.152	0.007	1.876	
0.047	100.076		3.74	30.111	10.671	0.197	0.008	7.062	
0.12	100.653		6.985	30.21	11.772	0.052	0.009	0.673	
0.133	100.256		2.989	30.258	10.448	0.261	0	8.531	
0.101	100.566		4.967	29.923	11.418	0.098	0	4.398	
0.069	100.225		6.075	29.989	11.549	0.147	0	2.237	
0	99.787		4.647	29.886	11.134	0.134	0	4.763	
0.015	100.642		3.078	30.368	10.558	0.238	0.001	8.194	
0.078	100.215		4.352	29.883	11.148	0.173	0.009	5.72	
0	100.729		6.586	30.183	11.7	0.119	0.013	1.352	
0.041	99.977		3.293	30.402	10.473	0.092	0.002	7.802	

Det.Lim ppm

Ca	Sr	O	Total	Na	Si	Al	Ba
10.21	0.27	46.06	98.68	622	403	341	546
10.67	0.3	46.3	99.43	647	447	314	561
10.33	0.27	46.31	99.16	678	449	362	563
6.29	0.26	46.98	98.96	801	446	330	554
7.29	0.22	46.7	98.69	649	426	352	553
14.08	0.24	45.67	99.48	560	406	344	579
13.11	0.22	45.59	98.77	581	399	334	578
13.81	0.19	45.75	99.43	633	430	362	585
8.22	0.19	46.65	98.91	711	443	357	563
6.11	0.35	46.98	99.28	806	435	309	566
5.17	0.35	47.67	100.23	705	419	343	549
0	0	49.39	101.276	585	462	311	-2
0	0	49.263	101.101	543	446	319	0
0.007	0	49.19	100.843	584	420	325	0
0.015	0	49.122	100.692	627	443	327	0
0.019	0	49.073	100.67	592	438	334	530
2.016	0.014	47.761	100.293	467	447	301	559
2.21	0.094	47.874	100.058	529	434	345	542
1.178	0.04	47.059	100.076	481	422	314	545
2.341	0.102	48.448	100.653	554	436	343	551
0.734	0.112	46.904	100.256	418	458	320	557
1.933	0.085	47.692	100.566	554	447	320	560
2.2	0.058	47.931	100.225	475	403	334	555
1.874	0	47.319	99.787	508	426	329	561
0.983	0.013	47.173	100.642	466	423	309	563
1.534	0.066	47.31	100.215	528	434	316	555
2.343	0	48.354	100.729	562	445	335	547
0.821	0.035	47.047	99.977	500	446	285	562

P	K	Ca	Sr	O
245	473	516	838	
220	452	591	817	
225	439	510	845	
222	476	536	856	
219	449	534	902	
227	412	562	832	
198	505	608	858	
218	440	538	829	
224	439	585	871	
228	421	535	877	
219	413	533	872	
344	461	-1	0	
371	492	-1	0	
361	472	265	-3	
-2	426	256	0	
368	443	256	0	
355	486	310	1408	
341	493	293	1359	
295	569	307	1453	
341	467	282	1372	
0	533	304	1317	
0	520	330	1357	
-10	485	309	1370	
0	572	310	-1	
363	467	288	1435	
338	513	311	1359	
352	481	292	-1	
346	523	319	1404	

	Na	Si	Al	Ba	P	K	Ca
mol. hm. prvku	22.98977	28.085	26.98154	137.327	30.97376	39.0983	40.078
	Na ₂ O	SiO ₂	Al ₂ O ₃	BaO	P ₂ O ₅	K ₂ O	CaO
mol. hm. oxidu	61.97954	60.085	101.9631	153.327	141.9475	94.1966	56.078

Oxide

analýza č.	Na ₂ O	SiO ₂	Al ₂ O ₃	BaO	P ₂ O ₅	K ₂ O	CaO
1	3.14	49.84	31.38	0.00	0.00	0.12	14.35
2	2.94	49.60	31.83	0.00	0.00	0.15	15.00
3	2.96	50.22	31.46	0.00	0.00	0.14	14.52
4	6.13	56.89	27.01	0.00	0.00	0.25	8.84
5	5.40	55.38	27.68	0.00	0.02	0.18	10.25
6	0.34	43.42	36.04	0.00	0.02	0.03	19.80
7	0.85	44.73	34.97	0.00	0.02	0.00	18.44
8	0.57	44.12	35.56	0.00	0.02	0.03	19.42
9	4.64	53.82	29.01	0.00	0.01	0.11	11.57
10	6.63	56.95	26.70	0.11	0.00	0.22	8.59
11	7.31	59.38	25.90	0.12	0.00	0.24	7.27

hodnoty nad DL

Na ₂ O	SiO ₂	Al ₂ O ₃	BaO	P ₂ O ₅	K ₂ O	CaO
3.14	49.84	31.38	0.00	0.00	0.12	14.35
2.94	49.60	31.83	0.00	0.00	0.15	15.00
2.96	50.22	31.46	0.00	0.00	0.14	14.52
6.13	56.89	27.01	0.00	0.00	0.25	8.84
5.40	55.38	27.68	0.00	0.00	0.18	10.25
0.34	43.42	36.04	0.00	0.00	0.00	19.80
0.85	44.73	34.97	0.00	0.00	0.00	18.44
0.57	44.12	35.56	0.00	0.00	0.00	19.42
4.64	53.82	29.01	0.00	0.00	0.11	11.57
6.63	56.95	26.70	0.11	0.00	0.22	8.59
7.31	59.38	25.90	0.12	0.00	0.24	7.27

pocet molu oxidu

Na ₂ O	SiO ₂	Al ₂ O ₃	BaO	P ₂ O ₅	K ₂ O	CaO
0.051	0.829	0.308	0.000	0.000	0.001	0.256
0.048	0.825	0.312	0.000	0.000	0.002	0.268
0.048	0.836	0.309	0.000	0.000	0.001	0.259
0.099	0.947	0.265	0.000	0.000	0.003	0.158
0.087	0.922	0.271	0.000	0.000	0.002	0.183
0.006	0.723	0.353	0.000	0.000	0.000	0.353
0.014	0.744	0.343	0.000	0.000	0.000	0.329
0.009	0.734	0.349	0.000	0.000	0.000	0.346
0.075	0.896	0.285	0.000	0.000	0.001	0.206
0.107	0.948	0.262	0.001	0.000	0.002	0.153
0.118	0.988	0.254	0.001	0.000	0.003	0.130

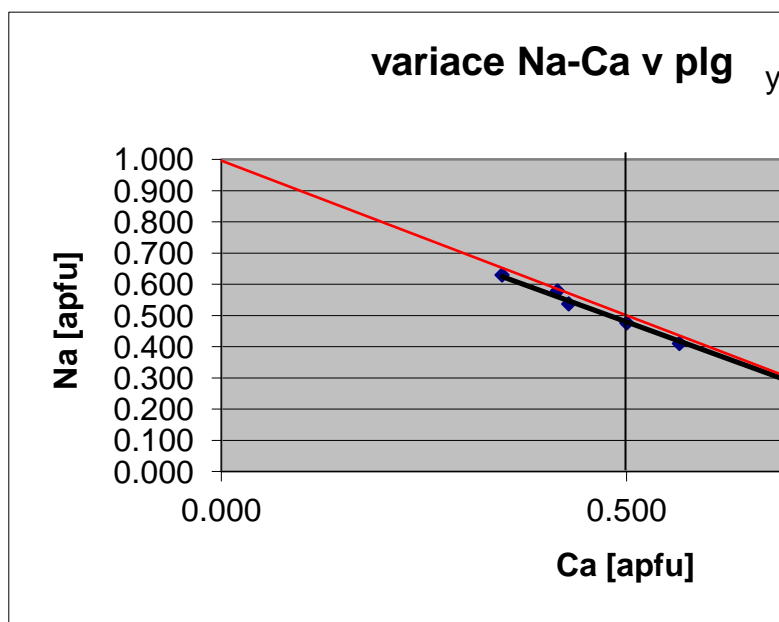
pocet molu kysliku

	1	2	3	1	5	1	1
pocet O v molekule	0.051	1.659	0.923	0.000	0.000	0.001	0.256
	0.048	1.651	0.936	0.000	0.000	0.002	0.268
	0.048	1.672	0.926	0.000	0.000	0.001	0.259
	0.099	1.894	0.795	0.000	0.000	0.003	0.158
	0.087	1.843	0.814	0.000	0.000	0.002	0.183
	0.006	1.445	1.060	0.000	0.000	0.000	0.353
	0.014	1.489	1.029	0.000	0.000	0.000	0.329

0.009	1.469	1.046	0.000	0.000	0.000	0.346
0.075	1.791	0.854	0.000	0.000	0.001	0.206
0.107	1.896	0.786	0.001	0.000	0.002	0.153
0.118	1.976	0.762	0.001	0.000	0.003	0.130

pocet cat. v molekule	pocet molu prvku							
	Na	Si	Al	Ba	P	K	Ca	
2	1	2	1	2	1	2	2	1
0.101	0.829	0.615	0.000	0.000	0.003	0.256		
0.095	0.825	0.624	0.000	0.000	0.003	0.268		
0.096	0.836	0.617	0.000	0.000	0.003	0.259		
0.198	0.947	0.530	0.000	0.000	0.005	0.158		
0.174	0.922	0.543	0.000	0.000	0.004	0.183		
0.011	0.723	0.707	0.000	0.000	0.000	0.353		
0.028	0.744	0.686	0.000	0.000	0.000	0.329		
0.018	0.734	0.697	0.000	0.000	0.000	0.346		
0.150	0.896	0.569	0.000	0.000	0.002	0.206		
0.214	0.948	0.524	0.001	0.000	0.005	0.153		
0.236	0.988	0.508	0.001	0.000	0.005	0.130		

vzorec zivcu prepocten normalizaci na sumu cat.=5							
Na	Si	Al	Ba	P	K	Ca	
0.280	2.294	1.702	0.000	0.000	0.007	0.708	
0.261	2.269	1.716	0.000	0.000	0.009	0.735	
0.264	2.304	1.701	0.000	0.000	0.008	0.714	
0.537	2.572	1.439	0.000	0.000	0.014	0.428	
0.476	2.521	1.485	0.000	0.000	0.011	0.500	
0.031	2.011	1.968	0.000	0.000	0.000	0.983	
0.077	2.080	1.917	0.000	0.000	0.000	0.919	
0.051	2.041	1.939	0.000	0.000	0.000	0.962	
0.410	2.453	1.559	0.000	0.000	0.006	0.565	
0.579	2.564	1.417	0.002	0.000	0.013	0.415	
0.630	2.640	1.357	0.002	0.000	0.014	0.346	



Sr
87.62
SrO
103.62

SrO	Total	Weight%							
		Na	Si	Al	Ba	P	K		
0.32	99.17		2.32	23.18	16.52	0	0	0.1	
0.36	99.93		2.17	23.07	16.76	0	0	0.12	
0.32	99.66		2.19	23.36	16.57	0	0	0.12	
0.31	99.45		4.53	26.46	14.22	0	0	0.21	
0.26	99.18		3.99	25.76	14.58	0	0.01	0.15	
0.28	99.98		0.25	20.19	18.98	0	0.01	0.03	
0.26	99.26		0.63	20.8	18.42	0	0.01	0	
0.23	99.93		0.42	20.52	18.73	0	0.01	0.02	
0.23	99.40		3.42	25.03	15.28	0	0	0.09	
0.41	99.78		4.89	26.49	14.06	0.1	0	0.18	
0.41	100.73		5.39	27.61	13.64	0.11	0	0.2	

SrO
0.32
0.36
0.32
0.31
0.26
0.28
0.26
0.23
0.23
0.41
0.41

SrO
0.003
0.003
0.003
0.003
0.003
0.003
0.003
0.003
0.003
0.002
0.002
0.004
0.004

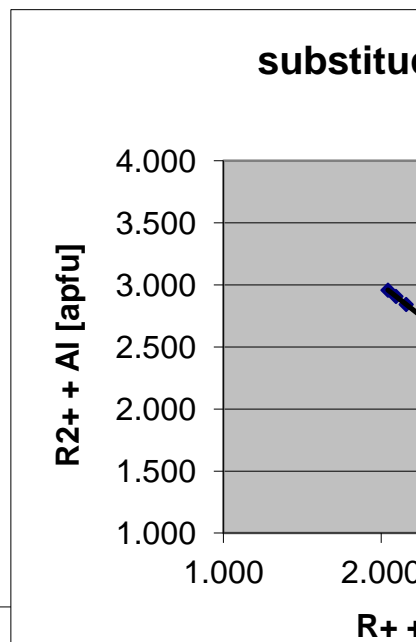
1	suma mol kysliku
0.003	2.893
0.003	2.908
0.003	2.909
0.003	2.951
0.003	2.932
0.003	2.867
0.003	2.863

0.002	2.872
0.002	2.930
0.004	2.949
0.004	2.993

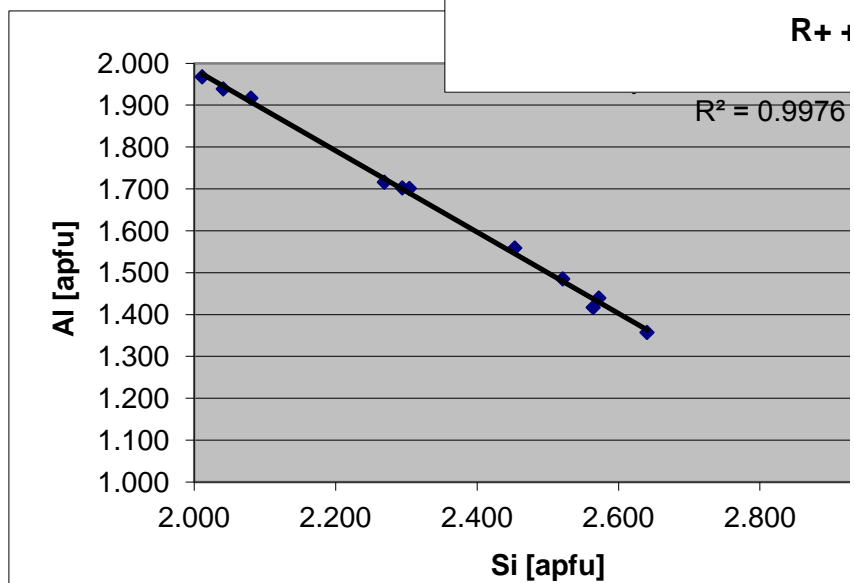
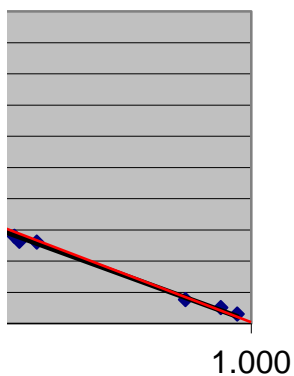
pocet cat. 5

Sr	1	suma mol cat.	koef
0.003		1.808	2.766003
0.003		1.819	2.748711
0.003		1.814	2.757015
0.003		1.841	2.716453
0.003		1.828	2.735489
0.003		1.796	2.78353
0.003		1.789	2.794159
0.002		1.799	2.779801
0.002		1.825	2.738992
0.004		1.848	2.705169
0.004		1.871	2.671771

Sr	O	R+Si	R2+Al
0.009	8.002	2.581	2.419
0.010	7.992	2.539	2.461
0.009	8.019	2.576	2.424
0.008	8.016	3.124	1.876
0.007	8.020	3.008	1.992
0.008	7.980	2.042	2.958
0.007	8.000	2.157	2.843
0.006	7.985	2.093	2.907
0.006	8.024	2.870	2.130
0.011	7.977	3.156	1.844
0.011	7.997	3.284	1.716



$y = -0.9448x + 0.9519$
 $R^2 = 0.998$

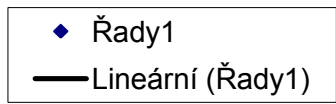
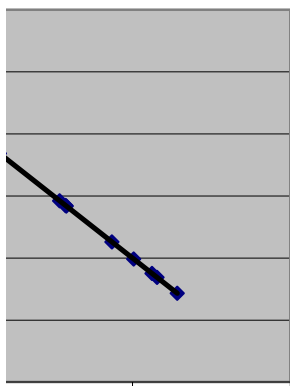


Det.Lim ppm

Ca	Sr	O	Total	Na	Si	Al	Ba
10.21	0.27	46.06	98.68	622	403	341	546
10.67	0.3	46.3	99.43	647	447	314	561
10.33	0.27	46.31	99.16	678	449	362	563
6.29	0.26	46.98	98.96	801	446	330	554
7.29	0.22	46.7	98.69	649	426	352	553
14.08	0.24	45.67	99.48	560	406	344	579
13.11	0.22	45.59	98.77	581	399	334	578
13.81	0.19	45.75	99.43	633	430	362	585
8.22	0.19	46.65	98.91	711	443	357	563
6.11	0.35	46.98	99.28	806	435	309	566
5.17	0.35	47.67	100.23	705	419	343	549

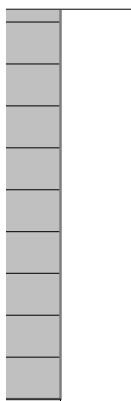
ce R+ + Si vs. R2+ + Al

$$y = -x + 5$$
$$R^2 = 1$$



3.000 4.000

R+ Si [apfu]



3.000

P	K	Ca	Sr	O
245	473	516	838	
220	452	591	817	
225	439	510	845	
222	476	536	856	
219	449	534	902	
227	412	562	832	
198	505	608	858	
218	440	538	829	
224	439	585	871	
228	421	535	877	
219	413	533	872	