Determining some of the Chemical Characteristic in Stalactites

Nunu Labartkava

E-mail: nunu.labartkava@tsu.ge
Department of Chemistry, Chair of Physical and Analytical Chemistry, Iv. Javakhishvili Tbilisi State University,
3, I. Chavchavadze Ave. Tbilisi

Annotation

We have studied a chemical composition of several stalactites in Prometheus (Kumistavi, Ghliani) and Solkoti caves.

Humidity, heat losses, calcium, magnum, sodium, potassium and iron contents, as well as the content of microelement copper and zinc are identified using the standard methods in the stalactite samples taken from the caves. Samples were taken from different places.

Results are given in Tables 1 and 2.

N	Sample	Place	Humidity %	Heat Losses %	Ca^{2+} mg/g	Mg^{2+} mg/g	K^{+} mg/g	Na^{+} mg/g	Fe^{3+} mg/g
1	Stalactite	Prom. C.	0.15	16.97	320.0	36.5	0.0	2.30	0.78
2	Stalactite	Prom. C.	0.54	16.97	297.4	42.3	0.0	1.93	3.45
3	Stalactite	Prom. C.	0.18	16.74	289.7	48.8	0.0	1.60	0.60
4	Stalactite	Solk. C.	0.08	13.18	349.0	24.3	0.0	1.45	1.73
5	Fractured wall	Siphonal lake	8.81	23.82	179.6	54.8	0.1	1.40	14.01

N	Sample	Place	Cu ppm	Zn ppm
1	Stalactite	Prom. C.	4.99	<1.0
2	Stalactite	Prom. C.	4.46	<1.0
3	Stalactite	Prom. C.	5.00	<1.0
4	Stalactite	Solk. C.	1.00	<1.0
5	Fractured wall	Sip. lake	10.48	25.0

As expected, calcium is the main component of the stalactite.

It is seen from obtained results, that chemical composition (both macro- and micro) of stalactites is almost the same.

As to chunk of cliff adjacent to siphonal lake, its chemical composition is clearly different. Increased contents of iron, copper and zinc are worth noticing.