Shchurovskyite $K_2CaCu_6O_2(AsO_4)_4$

Crystal Data: Monoclinic. *Point Group*: 2. As tabular to prismatic crystals to 0.15 mm.

Physical Properties: *Cleavage*: None. *Fracture*: Uneven. *Tenacity*: Brittle. Hardness = 3
D(meas.) = n.d. D(calc.) = 4.28

Optical Properties: Transparent. *Color*: Olive-green to dark olive-green, typically with a gray hue or olive drab. *Streak*: Pale greenish. *Luster*: Vitreous.
Optical Class: Biaxial (+). $\alpha = 1.795(5)$ $\beta = 1.800(5)$ $\gamma = 1.810(6)$ 2V(meas.) = 70(15)°
2V(calc.) = 71° *Pleochroism*: Weak; $Z = Y$ = grass-green; X = yellowish green.
Absorption: $Z \geq Y > X$.

Cell Data: *Space Group*: $C2$. $a = 17.2856(9)$ $b = 5.6705(4)$ $c = 8.5734(6)$ $\beta = 92.953(6)°$ $Z = 2$

X-ray Powder Pattern: Arsenatnaya fumarole, Tolbachik volcano, Kamchatka Peninsula, Russia.
8.61 (100), 2.757 (63), 2.842 (47), 2.373 (36), 5.400 (32), 2.974 (32), 2.297 (31)

Chemistry:	(1)	(2)
K_2O	8.85	8.66
Rb_2O	0.11	
CaO	4.94	5.16
CuO	43.19	43.90
ZnO	0.42	
Al_2O_3	0.04	
P_2O_5	0.59	
V_2O_5	0.01	
As_2O_5	40.72	42.28
SO_3	0.35	.
Total	99.22	100.00

(1) Arsenatnaya fumarole, Tolbachik volcano, Kamchatka Peninsula, Russia; average of 4 electron microprobe analyses supplemented by Raman spectroscopy; corresponds to $K_{2.05}Rb_{0.01}Ca_{0.96}Cu_{5.92}Zn_{0.06}Al_{0.01}P_{0.09}S_{0.05}As_{3.98}O_{18}$. (2) $K_2CaCu_6O_2(AsO_4)_4$.

Occurrence: As sublimate incrustations and/or the product of reaction between rock and volcanic gas on the surface of basalt scoria in an active fumarole.

Association: Dmisokolovite, bradaczekite, tenorite, johillerite, tilasite, melanarsite, hematite, aphthitalite, langbeinite, orthoclase.

Distribution: At the Arsenatnaya fumarole, Second scoria cone, Northern Breakthrough of the Great Tolbachik Fissure Eruption, Tolbachik volcano, Kamchatka Peninsula, Russia.

Name: Honors Grigory Efimovich Shchurovsky (1803-1884), a Russian geologist, mineralogist, and specialist in mineral deposits, Moscow State University.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (94144 & 94145).

References: (1) Pekov, I.V., N.V. Zubkova, D.I. Belakovskiy, V.O. Yapaskurt, M.F. Vigasina, E.G. Sidorov, and D.Y. Pushcharovsky (2015) New arsenate minerals from the Arsenatnaya fumarole, Tolbachik volcano, Kamchatka, Russia. IV. Shchurovskyite, $K_2CaCu_6O_2(AsO_4)_4$ and dmisokolovite, $K_3Cu_5AlO_2(AsO_4)_4$. Mineral. Mag., 79(7), 1737-1753. (2) (2016) Amer. Mineral., 101, 2572-2573 (abs. ref. 1).