Jaszczakite $[(Bi,Pb)_3S_3][AuS_2]$

Crystal Data: Orthorhombic. *Point Group*: 2/*m* 2/*m* 2/*m*. As subhedral to anhedral grains to 250 μm intergrown with other phases.

Physical Properties: *Cleavage*: None. *Tenacity*: Brittle. *Fracture*: Irregular. Hardness = 2.5-3 VHN = 115-132 122 average (5 g load). D(meas.) = n.d. D(calc.) = 7.237

Optical Properties: Opaque. *Color*: Tin-white. *Streak*: Black. *Luster*: Metallic.
Bireflectance: Weak. *Pleochroism*: Weak, light gray to slightly bluish gray.
Anisotropism: Distinct, shades of green and purple.
Optical Class: n.d.
R_1-R_2: (471.1) 49.4-50.9, (548.3) 47.1-48.8, (586.6) 46.5-47.7, (652.3) 48.8-49.5

Cell Data: *Space Group*: *Pmmn*. a = 3.858(1) b = 12.552(3) c = 9.289(2) Z = 2

X-ray Powder Pattern: Nagybörzsöny deposit, northern Hungary.
7.47 (100), 3.10 (90), 6.29 (80), 2.78 (40), 5.18 (30), 2.095 (25), 4.36 (20)

Chemistry:

	(1)	(2)
Au	19.90	20.01
Ag	0.22	
Bi	46.29	63.70
Pb	16.50	
Cd	0.11	
Sb	0.12	
As	0.08	
S	16.17	16.29
Se	0.16	.
Total	99.55	100.00

(1) Nagybörzsöny deposit, northern Hungary; average of 5 electron microprobe analyses; corresponds to $Au_{1.00}Ag_{0.02}Bi_{2.18}Pb_{0.78}Cd_{0.01}Sb_{0.01}As_{0.01}S_{4.97}Se_{0.02}$ or structurally $[(Bi_{2.18}Pb_{0.78}Ag_{0.02}Cd_{0.01}Sb_{0.01}As_{0.01})_{\Sigma=3.01}S_3][AuS_2]$. (2) $AuBi_3S_5$.

Occurrence: From a mineralized breccia pipe hosted within calc-alkaline rocks.

Association: Jonassonite, arsenopyrite, cosalite, pyrite, marcasite, sphalerite, chalcopyrite, gold, bismuth, bismuthinite, ikunolite, quartz.

Distribution: From the Nagybörzsöny deposit (known also as Deutschpilsen), Alsó-Rózsa, northern Hungary.

Name: Honors John A. Jaszczak (b. 1961), Professor of Physics at the Michigan Technological University, and Adjunct Curator at the A.E. Seaman Mineral Museum, for his studies on the complexities of the morphology and structure of natural graphite.

Type Material: Natural History Museum, University of Florence, Italy (3237/I).

References: (1) Bindi, L. and W.H. Paar (2017) Jaszczakite, $[(Bi,Pb)_3S_3][AuS_2]$, a new mineral species from Nagybörzsöny, Hungary. Eur. J. Mineral., 29(4), 673-677. (2) (2018) Amer. Mineral., 103, 832 (abs. ref. 1).