

**Crystal Data:** Tetragonal. *Point Group:*  $\bar{4}2m$ . As irregular grains to 60  $\mu\text{m}$ ; as spherules to 10  $\mu\text{m}$ .

**Physical Properties:** *Cleavage:* n.d. *Tenacity:* n.d. *Fracture:* n.d. *Hardness* = n.d.  
D(meas.) = n.d. D(calc.) = 4.013

**Optical Properties:** Opaque. *Color:* n.d.; yellowish in reflected light. *Streak:* n.d. *Luster:* n.d.  
*Optical Class:* n.d. *Anisotropism:* Weak, light brown to greenish.  
R<sub>1</sub>-R<sub>2</sub>: (471.1) 24.8-26.0, (548.3) 34.9-36.2, (586.6) 37.7-39.1, (652.3) 40.4-41.1

**Cell Data:** *Space Group:*  $I\bar{4}2d$ .  $a = 5.3121(4)$   $c = 10.4772(7)$   $Z = 4$

**X-ray Powder Pattern:** Suizhou meteorite.

3.05 (100), 1.591 (25), 1.875 (20), 1.215 (10), 1.080 (10), 2.652 (5), 1.330 (5)

Chemistry:	(1)	(2)	(3)
Ni	22.37	32.68	32.85
Fe	30.87	30.81	31.26
Cu	10.88	0.55	
Co	0.07	1.89	
S	35.42	34.06	35.89
Total	99.61	100.00	100.00

(1) Suizhou meteorite; average of 4 electron microprobe analyses; corresponds to  $(\text{Ni}^{2+}_{0.69}\text{Cu}^{+}_{0.31})_{\Sigma=1.00}(\text{Fe}^{2+}_{0.69}\text{Fe}^{3+}_{0.31})_{\Sigma=1.00}\text{S}_{2.00}$ . (2) Muong Nong-type tektites, Laos; electron microprobe analysis; corresponds to  $\text{Ni}_{1.007}\text{Fe}_{0.998}\text{Cu}_{0.016}\text{Co}_{0.058}\text{S}_{1.922}$ . (3) NiFeS<sub>2</sub>.

**Occurrence:** In shock melt veins less than 300  $\mu\text{m}$  thick in a meteorite; in spherical heterogeneous, two-phase sulfide inclusions less than 10  $\mu\text{m}$  in terrestrial tektites.

**Association:** Taenite, forsterite, pyroxene, plagioclase glass (maskelynite), troilite (meteorite); troilite, glass (tektite).

**Distribution:** From the shocked (S5) meteorite, Suizhou L6 chondrite; from Australasian Muong Nong-type tektites in Laos (~ 10 km north of the village of Muong Nong).

**Name:** Honors Professors Shangyue Shen (b. 1941) and Xiaoli Zhuang (b. 1961) who first discovered the Ni-rich variety of chalcopyrite in the Suizhou meteorite.

**Type Material:** Natural History Museum, University of Florence, Italy (3238/I).

**References:** (1) Bindi, L. and X. Xie (2018) Shenzhuangite, NiFeS<sub>2</sub>, the Ni-analog of chalcopyrite from the Suizhou L6 chondrite. *Eur. J. Mineral.*, 30(1), 165-169. (2) (2018) *Amer. Mineral.*, 103, 1714 (abs. ref. 1). (3) Křížová, Š., R. Skála, P. Halodová, K. Žák, and L. Ackerman (2019) Near end-member shenzhuangite, NiFeS<sub>2</sub>, found in Muong Nong-type tektites from Laos. *Amer. Mineral.*, 104, 1165-1172.