

Crystal Data: Orthorhombic. *Point Group:* *mm*2. Euhedral to subhedral crystals to ~120 nm commonly display {100}, {010}, {00 $\bar{1}$ }, {011}, and {1 $\bar{1}$ 1}. *Twinning:* On (110) with twin boundaries of (110), (100), and (130) due to pseudo-hexagonal symmetry.

Physical Properties: *Cleavage:* n.d. *Tenacity:* n.d. *Fracture:* n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = 4.905 Large magnetic coercivity (the ability to withstand an external magnetic field).

Optical Properties: *Color:* Dark brown. *Streak:* n.d. *Luster:* n.d. *Optical Class:* n.d.

Cell Data: *Space Group:* *Pna*2₁. *a* = 5.0647(3) *b* = 8.7131(6) *c* = 9.3842(5) *Z* = 4

X-Ray Diffraction Pattern: Menan Volcanic Complex, near Rexburg, Idaho, USA. 2.708 (100), 1.507 (40.7), 1.458 (37.2), 2.437 (35.8), 2.945 (29.1), 3.197 (27.3), 1.716 (24.4)

Chemistry:	(1)
Fe ₂ O ₃	88.94
Al ₂ O ₃	7.93
MgO	1.22
TiO ₂	0.91
Total	100.77

(1) Menan Volcanic Complex, near Rexburg, Idaho, USA; average electron microprobe analysis; corresponding to Fe_{1.71}Al_{0.24}Mg_{0.02}Ti_{0.03}O₃.

Polymorphism & Series: A polymorph of hematite and maghemite.

Occurrence: An oxidation product of Fe-bearing basaltic glass in vesicles in basaltic scoria.

Association: Maghemite, hematite, quartz, hydronium jarosite.

Distribution From the Menan Volcanic Complex, near Rexburg, Idaho, USA.

Name: Honors Chinese Professor *Luo Gufeng* (b. 1933), who has passionately taught crystallography and mineralogy at Nanjing University of China for more than 50 years.

Type Material: Geology Museum, Department of Geoscience, University of Wisconsin-Madison, USA (UWGM 2341, 2342, and 2343).

References: (1) Xu, H., S. Lee, and H. Xu (2017) Luogufengite: A new nano-mineral of Fe₂O₃ polymorph with giant coercive field. *Amer. Mineral.*, 102, 711-719.