Tamuraite Ir5Fe<sub>10</sub>S<sub>16</sub>

**Crystal Data**: Hexagonal. *Point Group*:  $\overline{3}$  2/m. As droplet-like inclusions  $\leq$  20  $\mu$ m in roundish composite polymineralic grains.

**Physical Properties**: Cleavage: n.d. Tenacity: n.d. Fracture: n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = 6.30

**Optical Properties**: Opaque. *Color*: Gray to brownish gray in reflected light. *Streak*: n.d. *Luster*: Metallic.

Optical Class: Anisotropism: Weak, gray to light yellow. Pleochroism: Slight to none, grayish to light brown tints.

**Cell Data**: *Space Group*:  $R\bar{3}$  m. a = 7.073(1) c = 34.277(8) Z = 3

**X-Ray Diffraction Pattern**: Ko River, central Siberia, near Krasnoyarsk, Eastern Sayans, Russia. 3.011 (100), 1.770 (71), 1.758 (65), 2.799 (55), 2.996 (50), 5.774 (45), 3.053 (43)

Chemistry:		(1)	(2)
	Ir	29.30	47.28
	Rh	9.57	
	Pt	1.85	
	Ru	0.05	
	Os	0.06	
	Fe	13.09	27.48
	Ni	12.18	
	Cu	6.30	
	Co	0.06	
	S	27.23	25.24
	Total	99.69	100.00

(1) Ko River, central Siberia, near Krasnoyarsk, Eastern Sayans, Russia; average electron microprobe analysis; corresponding to  $(Ir_{2.87}Rh_{1.75}Pt_{0.18}Ru_{0.01}Os_{0.01})_{\Sigma=4.82}(Fe_{4.41}Ni_{3.90}Cu_{1.87}Co_{0.02})_{\Sigma=10.20}S_{15.98}$ . (2)  $Ir_5Fe_{10}S_{16}$ .

**Polymorphism & Series**: Member of the tamuraite-kuvaevite-torryweiserite solid-solution series.

Mineral Group: Fe-dominant analogue of kuvaevite.

**Occurrence**: In a fluvial placer deposit derived from ultramafic rocks of a layered complex.

**Association**: Rh-rich pentlandite, Ir-bearing members of the laurite-erlichmanite series, Ir-bearing osmium.

**Distribution**: From the Sisim Placer Zone, river Sisim basin, Ko River, southern portion of Krasnoyarskiy Kray, central Siberia, near Krasnoyarsk, southwestern Eastern Sayans, Russia.

**Name**: Honors Dr. Nobumichi *Tamura* (b. 1966), senior scientist at the Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, California, USA, for his innovative investigations of minerals and materials by synchrotron microdiffraction.

**Type Material**: Central Siberian Geological Museum, Sobolev Institute of Geology and Mineralogy, Novosibirsk, Russia (III-102/2).

**References**: (1) Barkov, A.Y., N.D. Tolstykh, R.F. Martin, and A.M. McDonald (2021) Tamuraite, Ir<sub>5</sub>Fe<sub>10</sub>S<sub>16</sub>, a new species of platinum-group mineral from the Sisim Placer Zone, Eastern Sayans, Russia. Minerals, 11(5), 545, 1-13. (2) (2022) Amer. Mineral., 107, 779 (abs. ref. 1).