Xiangjiangite $(Fe^{3+}, Al)(UO_2)_4(PO_4)_2(SO_4)_2(OH)\cdot 22H_2O$

Crystal Data: Monoclinic or orthorhombic (?); pseudotetragonal. *Point Group:* n.d. Platy crystals, with squarish to octagonal outlines; microcrystalline, in earthy or powdery aggregates.

Physical Properties: Hardness = 1–2 D(meas.) = 2.9–3.1 D(calc.) = 2.78 Radioactive.

Optical Properties: Semitransparent. *Color:* Yellow to bright yellow; pale yellow in transmitted light. *Streak:* Pale yellow. *Luster:* Silky.
Optical Class: Biaxial (–). *Pleochroism:* Weak. *Orientation:* Parallel or symmetrical extinction. $\alpha = 1.558$ $\beta = 1.576$ $\gamma = 1.593$ 2V(meas.) = n.d.

Cell Data: *Space Group:* n.d. $a = 7.17$ $b = 7.17$ $c = 22.22$ $Z = 1$

X-ray Powder Pattern: "Hunan, China".
11.11 (10), 3.74 (8), 3.294 (8), 2.938 (7), 4.621 (6), 5.58 (5), 2.175 (5)

Chemistry:

	(1)
UO_3	59.96
SO_3	6.02
P_2O_5	8.69
Al_2O_3	0.96
Fe_2O_3	2.17
CaO	0.28
H_2O^+	10.51
H_2O^-	11.41
Total	[100.00]

(1) "Hunan, China"; recalculated to 100% after deduction of quartz, pyrite, and insoluble 5.36%, from an original total of 99.16%; corresponds to $(Fe_{0.52}Al_{0.36})_{\Sigma=0.88}Ca_{0.10}(UO_2)_{4.00}(PO_4)_{2.34}(SO_4)_{1.44}(OH)_{0.95}\cdot 22.79H_2O$.

Occurrence: In the oxidized zone of a uranium deposit.

Association: Sabugalite, variscite, pyrite, quartz.

Distribution: In an unspecified uranium deposit in "Hunan [Province], China".

Name: For the Xiang Jiang (Hsiang Chiang) River, China.

Type Material: n.d.

References: (1) Hunan 230 Institute and X-ray Laboratory, Wuhan Geologic College (1978) Xiangjiangite – a new uranium mineral discovered in China. Sci. Geol. Sinica, 2, 183–188 (in Chinese with English abs.). (2) (1979) Amer. Mineral., 64, 466 (abs. and discussion of ref. 1). (3) (1978) Mineral. Abs., 29, 483 (abs. ref. 1).