Xiangjiangite  
\((\text{Fe}^{3+}, \text{Al})(\text{UO}_2)_4(\text{PO}_4)_2(\text{SO}_4)_2(\text{OH}) \cdot 22\text{H}_2\text{O})\)

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**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  
\(D(\text{meas.}) = 2.9–3.1\)  
\(D(\text{calc.}) = 2.78\)  
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.  
\(\alpha = 1.558\)  
\(\beta = 1.576\)  
\(\gamma = 1.593\)  
\(2V(\text{meas.}) = \text{n.d.}\)

**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:**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>(\text{UO}_3)</td>
<td>59.96</td>
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<td>(\text{SO}_3)</td>
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<td>(\text{P}_2\text{O}_5)</td>
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<tr>
<td>(\text{Al}_2\text{O}_3)</td>
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<td>(\text{Fe}_2\text{O}_3)</td>
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<td>(\text{CaO})</td>
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<tr>
<td>(\text{H}_2\text{O}^+)</td>
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<td>(\text{H}_2\text{O}^-)</td>
<td>11.41</td>
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<tr>
<td><strong>Total</strong></td>
<td>[100.00]</td>
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</table>

(1) “Hunan, China”; recalculated to 100% after deduction of quartz, pyrite, and insoluble 5.36%, from an original total of 99.16%; corresponds to \((\text{Fe}_{0.52}\text{Al}_{0.36})\Sigma=0.88\text{Ca}_{0.10}(\text{UO}_2)_{4.00}(\text{PO}_4)_{2.34}(\text{SO}_4)_{1.44}(\text{OH})_{0.95} \cdot 22.79\text{H}_2\text{O}\).

**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)  
(2) (1979) Amer. Mineral., 64, 466 (abs. and discussion of ref. 1).  