

EPIDOTE

Chemical formula: $\text{Ca}_2\text{Al}_2(\text{Fe}^{3+},\text{Al})[\text{O}|\text{OH}|\text{SiO}_4|\text{Si}_2\text{O}_7]$

Crystal system: monoclinic

Color in thin section: strongly pleochroic with:

X = colorless, pale yellow, pale green

Y = yellow-green

Z = colorless, pale yellow-green

Form: allotriomorphic grains, granular aggregates, columnar or bladed crystals

Cleavage: perfect on {001}

Indices of refraction: $n_\alpha = 1.715 - 1.751$ $n_\beta = 1.725 - 1.784$ $n_\gamma = 1.734 - 1.797$

Birefringence: 0.012 – 0.049

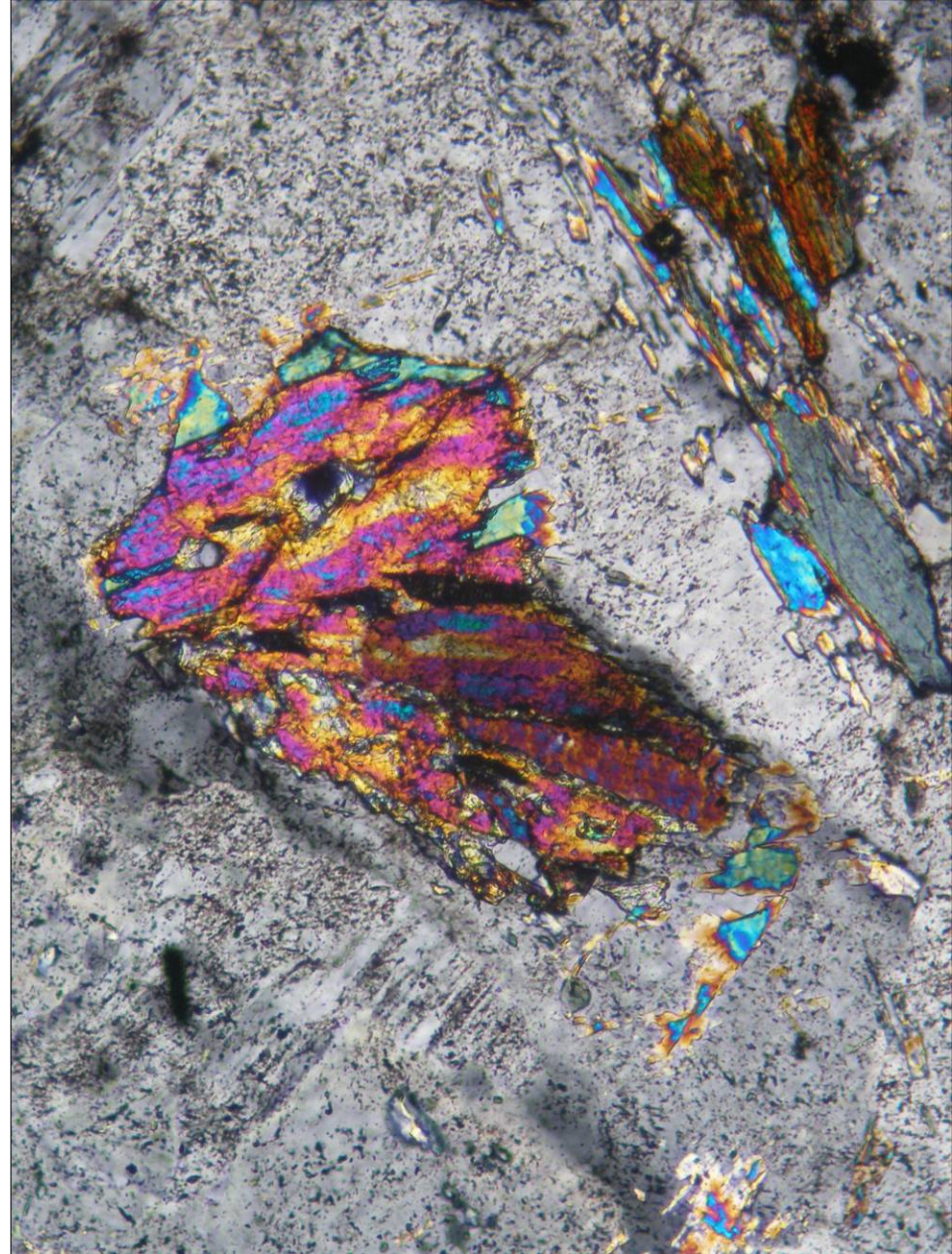
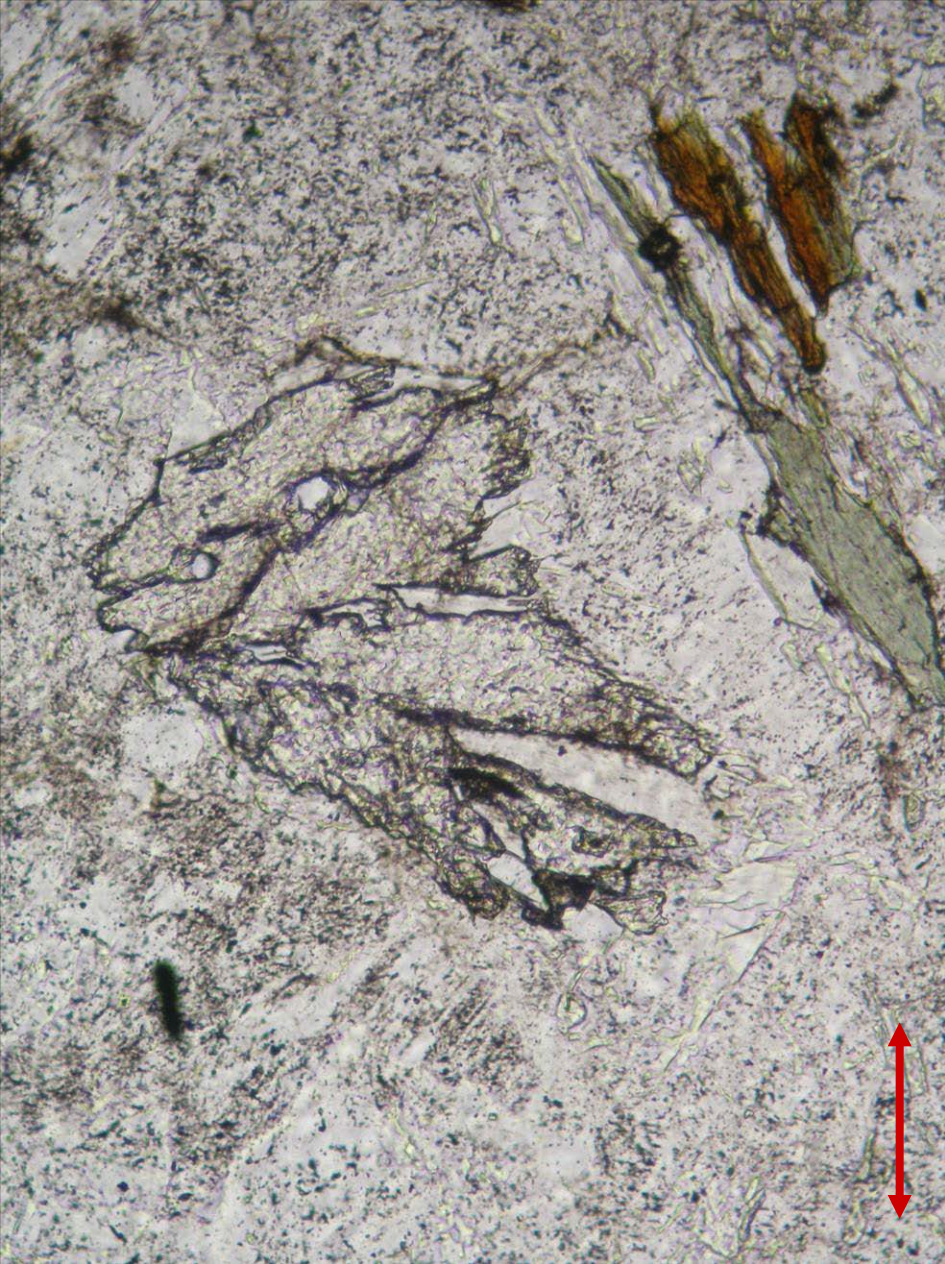
Optic sign: biaxial negative

Sign of elongation: positive or negative

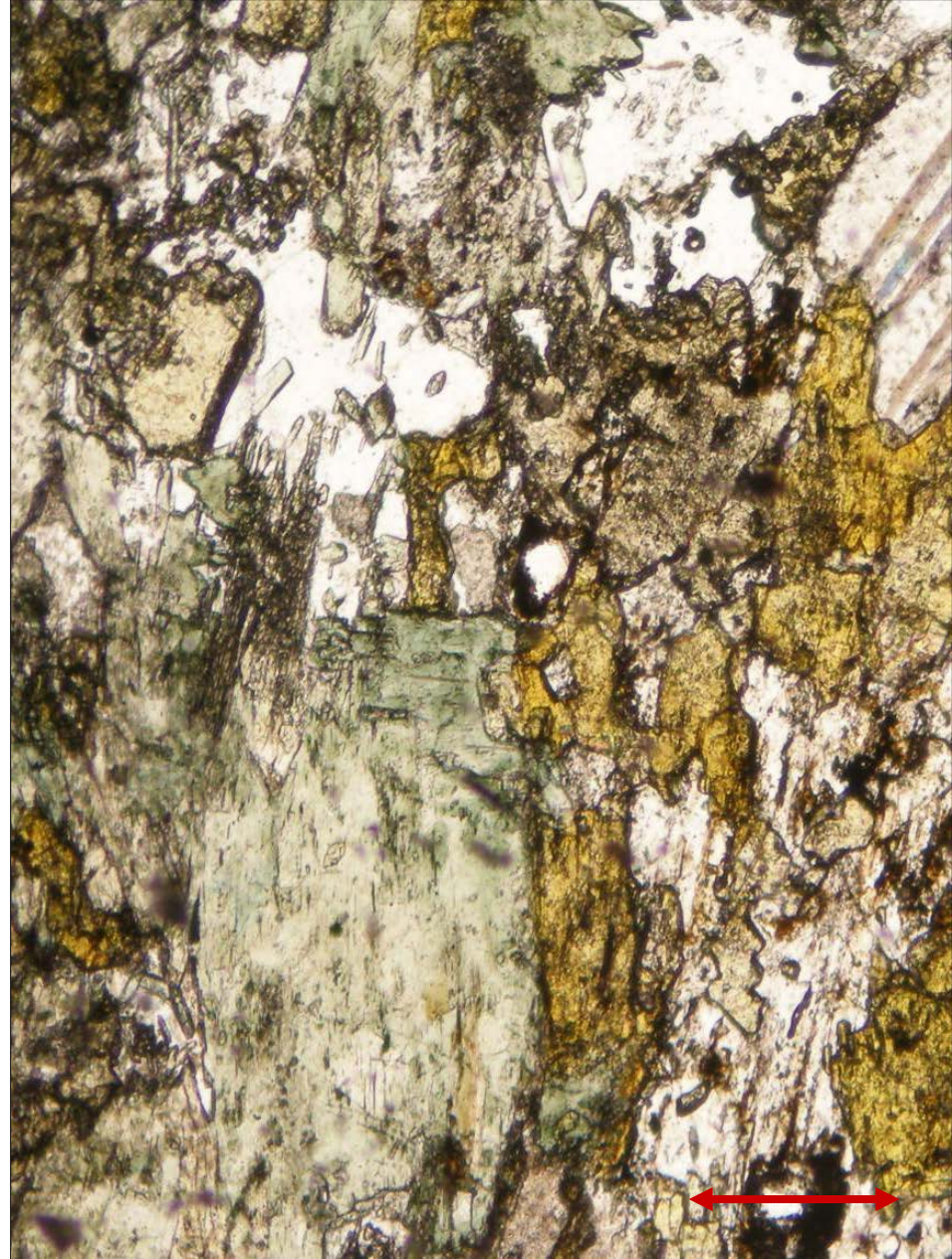
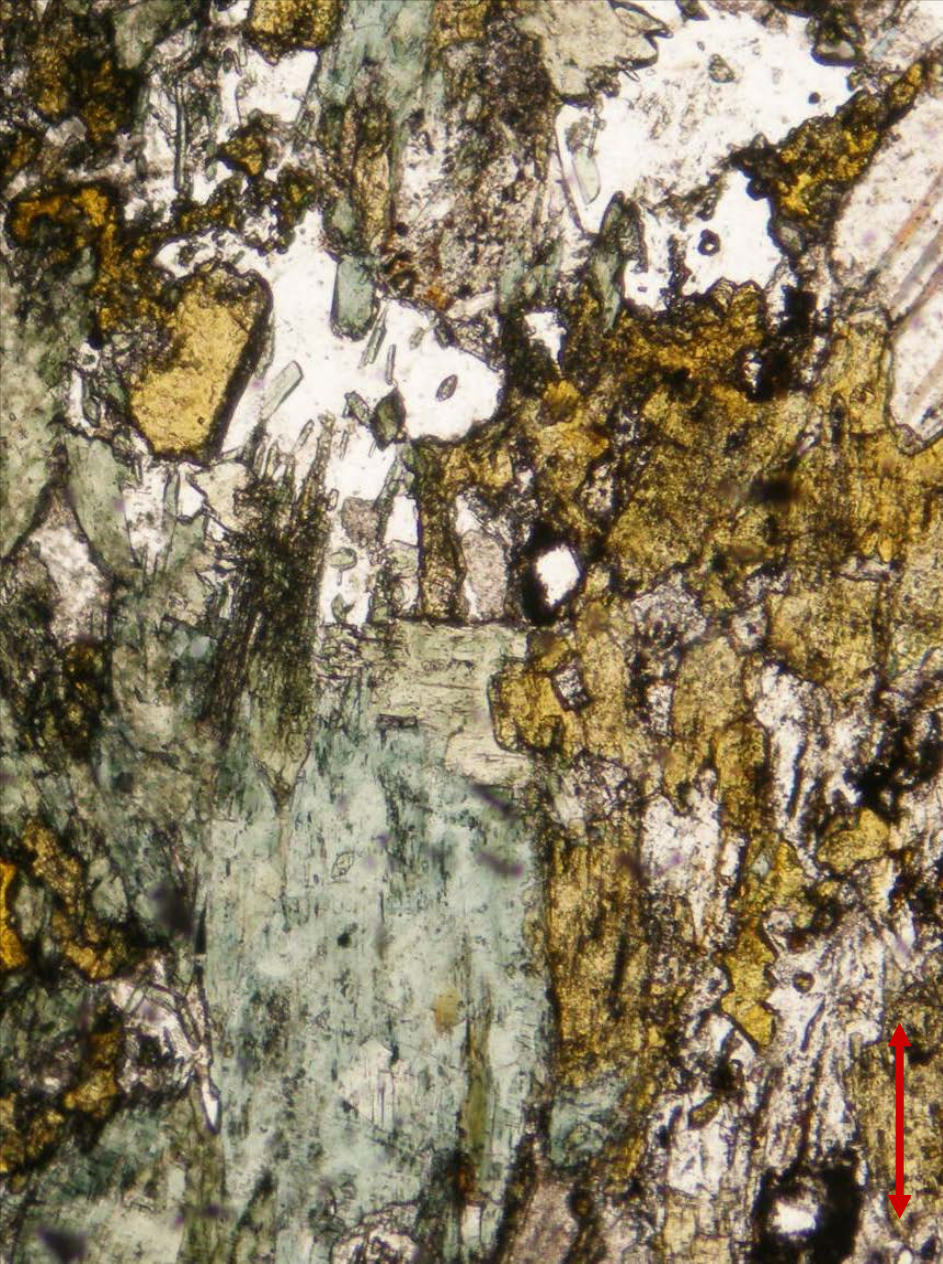
Occurrence: metamorphic rocks (amphibolite, greenschist, slate, phyllite, chlorite schist, mica schist, gneiss, calc-silicate rocks, marble, quartzite), in igneous rocks as a product of deuteric or hydrothermal alterations of biotite, hornblende or pyroxene; plagioclase may be altered to saussurite (a fine-grained aggregate of albite, epidote, clinozoisite, zoisite, calcite and sericite); may be present in hydrothermal veins of the Alpine-type

Similar minerals in thin sections: pyroxene (different cleavage)

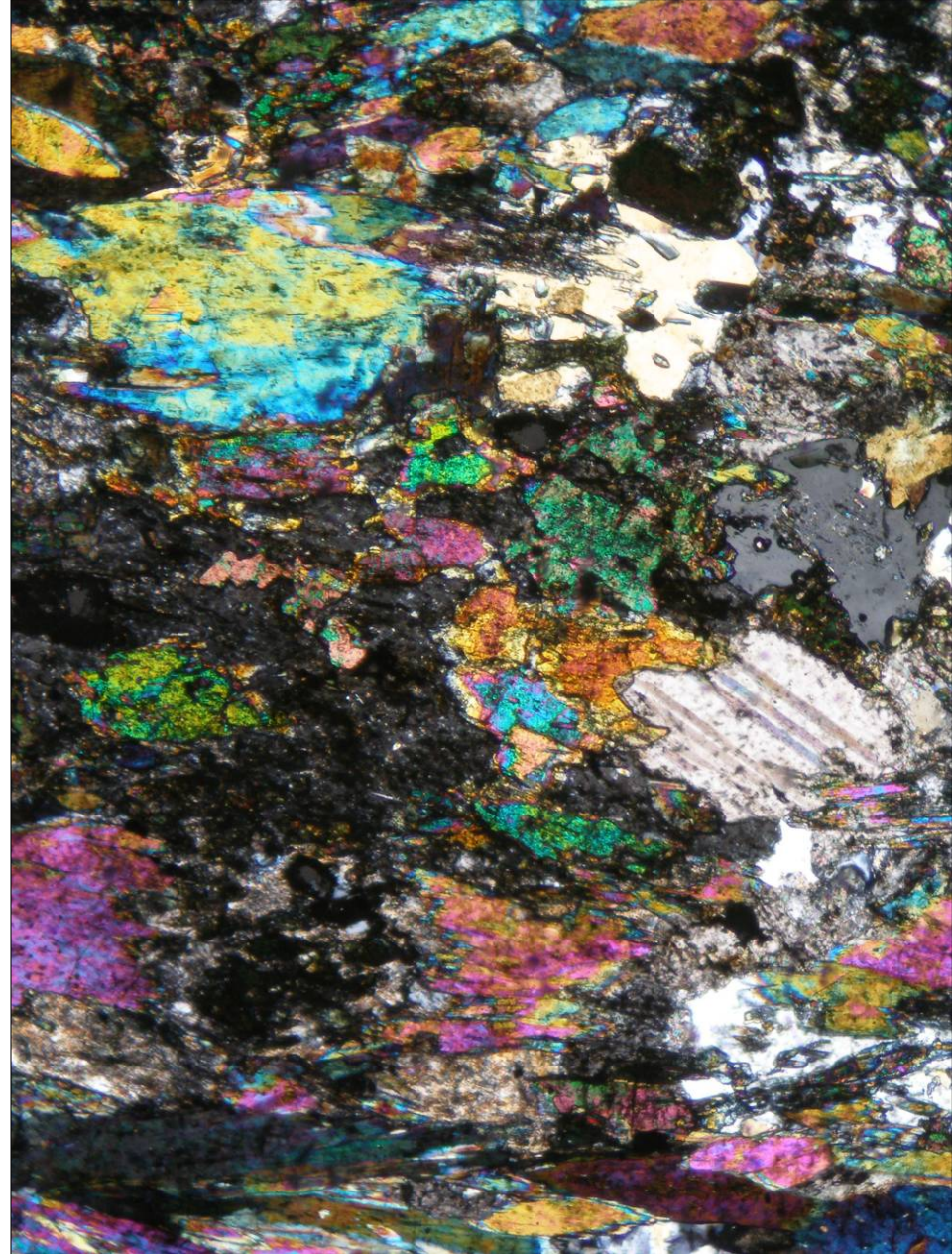
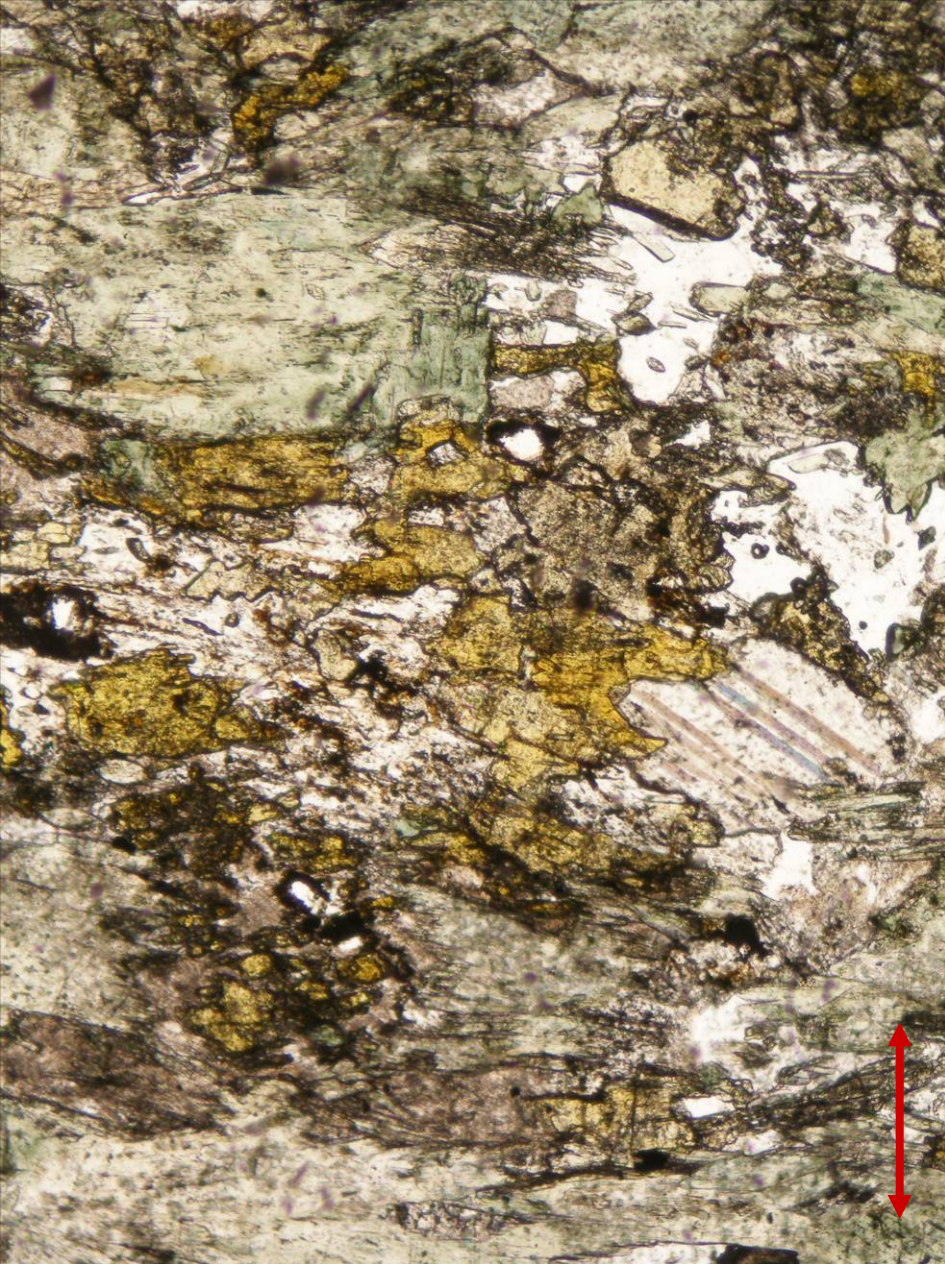
Note: sometimes lamellar twinning



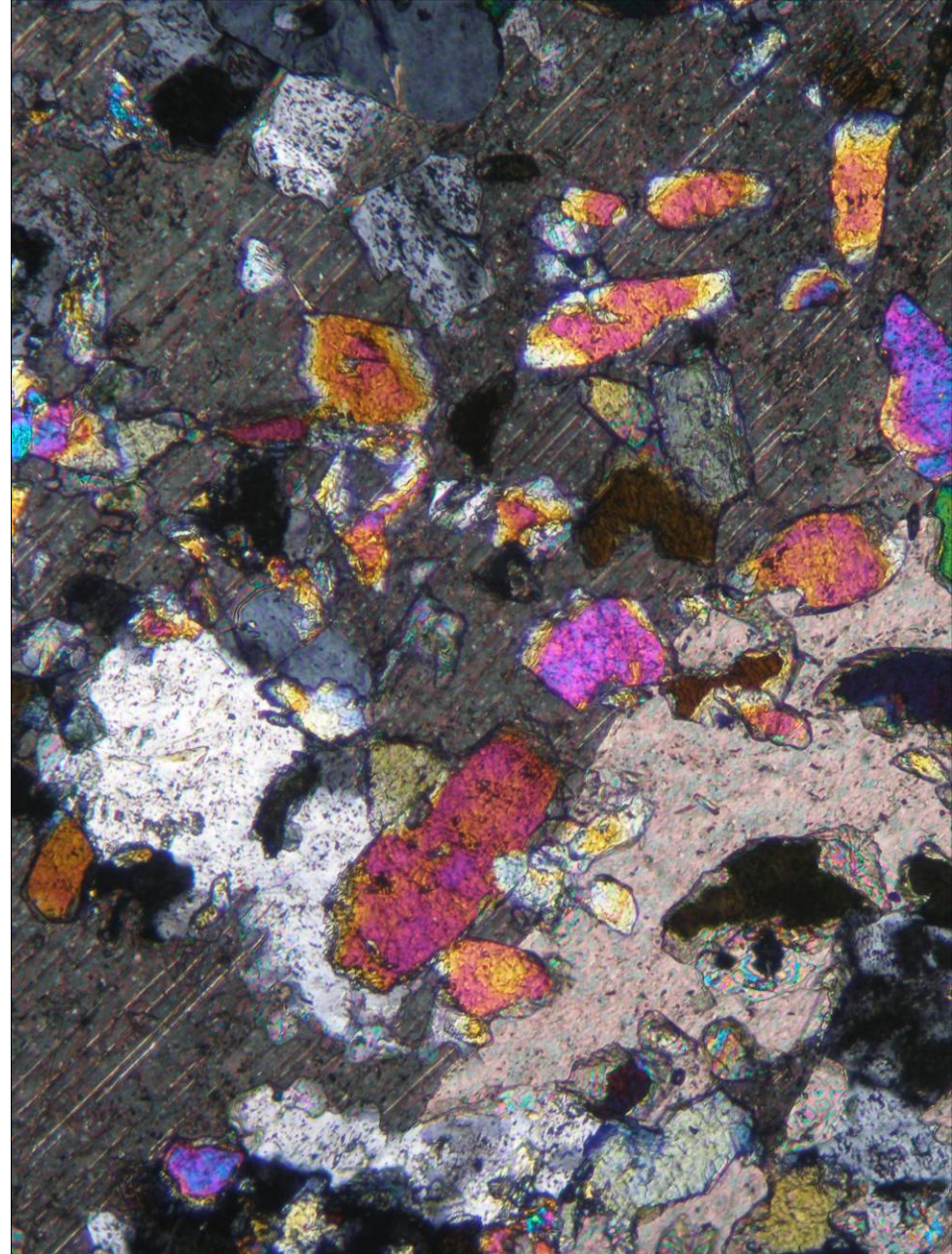
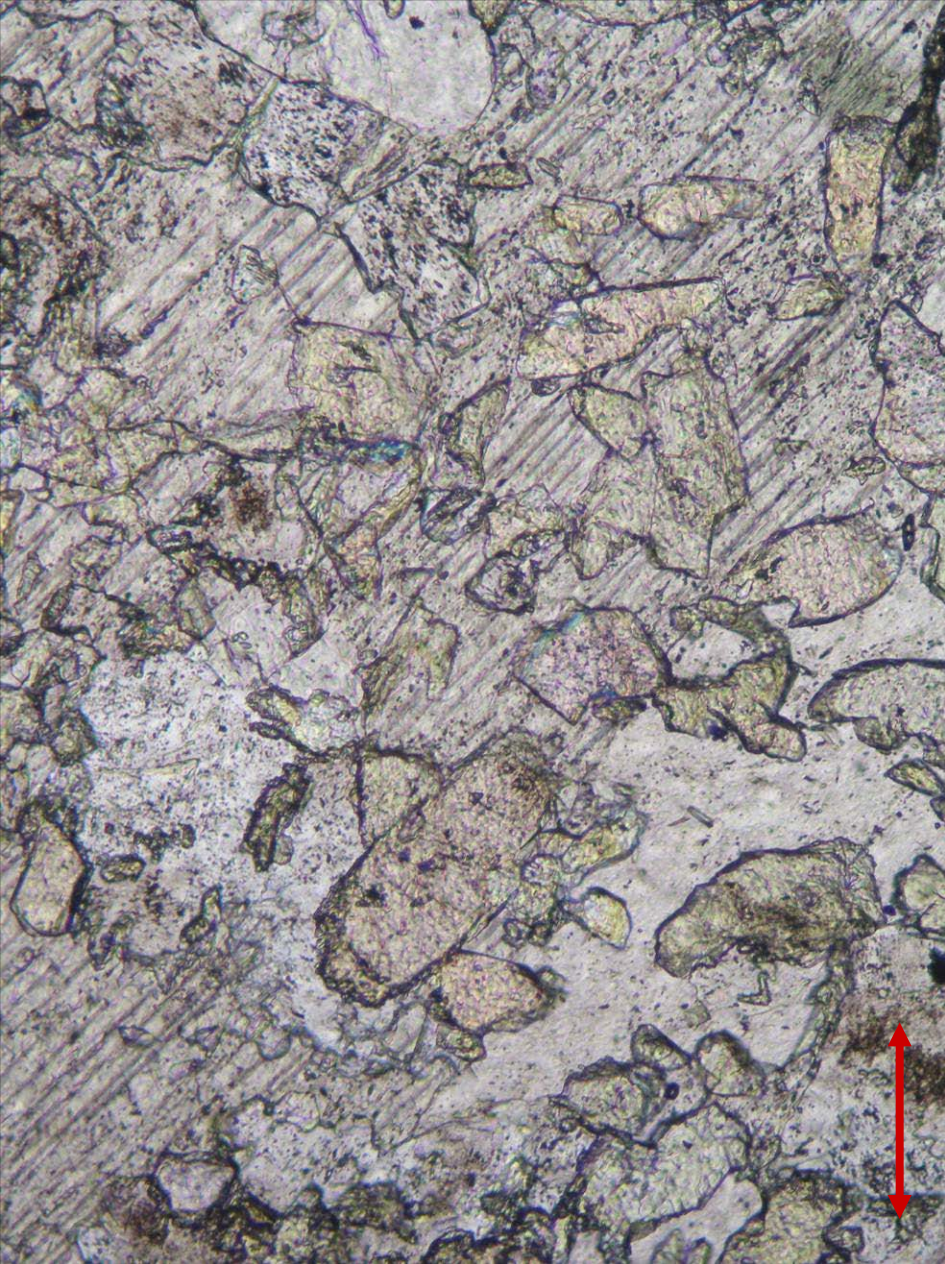
Epidote in aplomatite from Černá Voda, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.8 mm. Photo: JiZi.



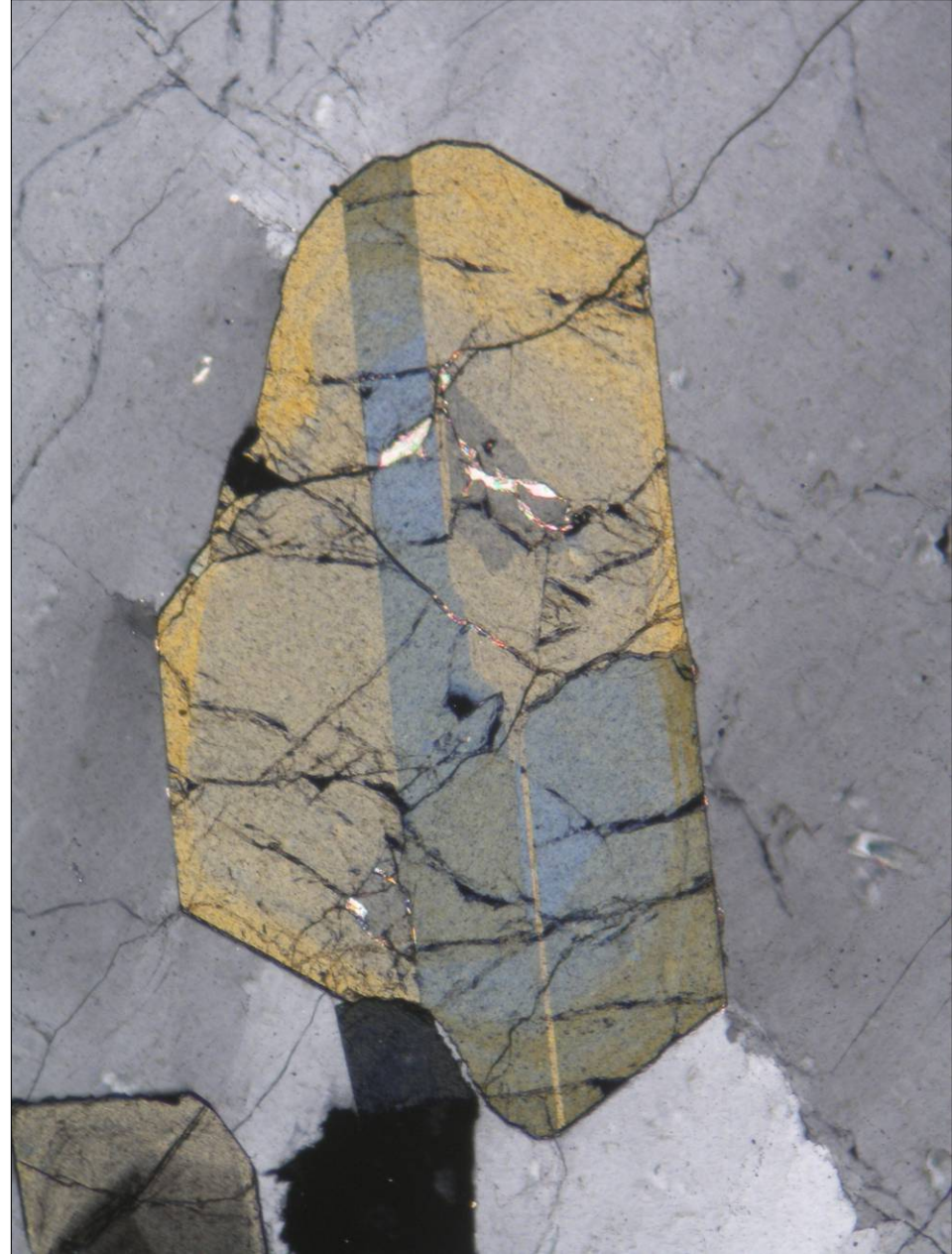
Pleochroism of epidote in the Alpine-type vein from Vernířovice, the Czech Republic; PPL. Width of fields of view is ca. 0.8 mm. Photo: JiZi.



Epidote in the Alpine-type vein from Vernířovice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.2 mm. Photo: JiZi.



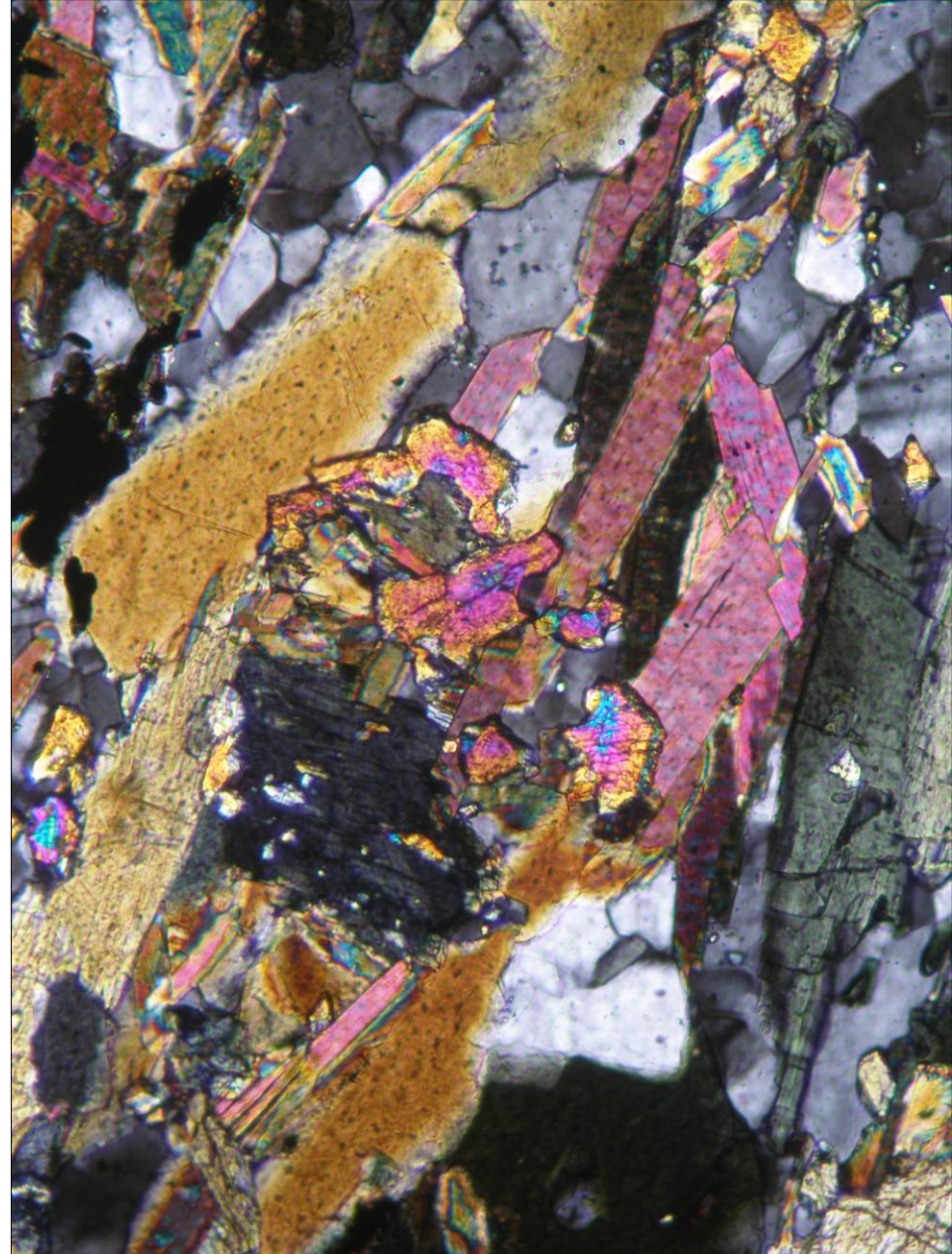
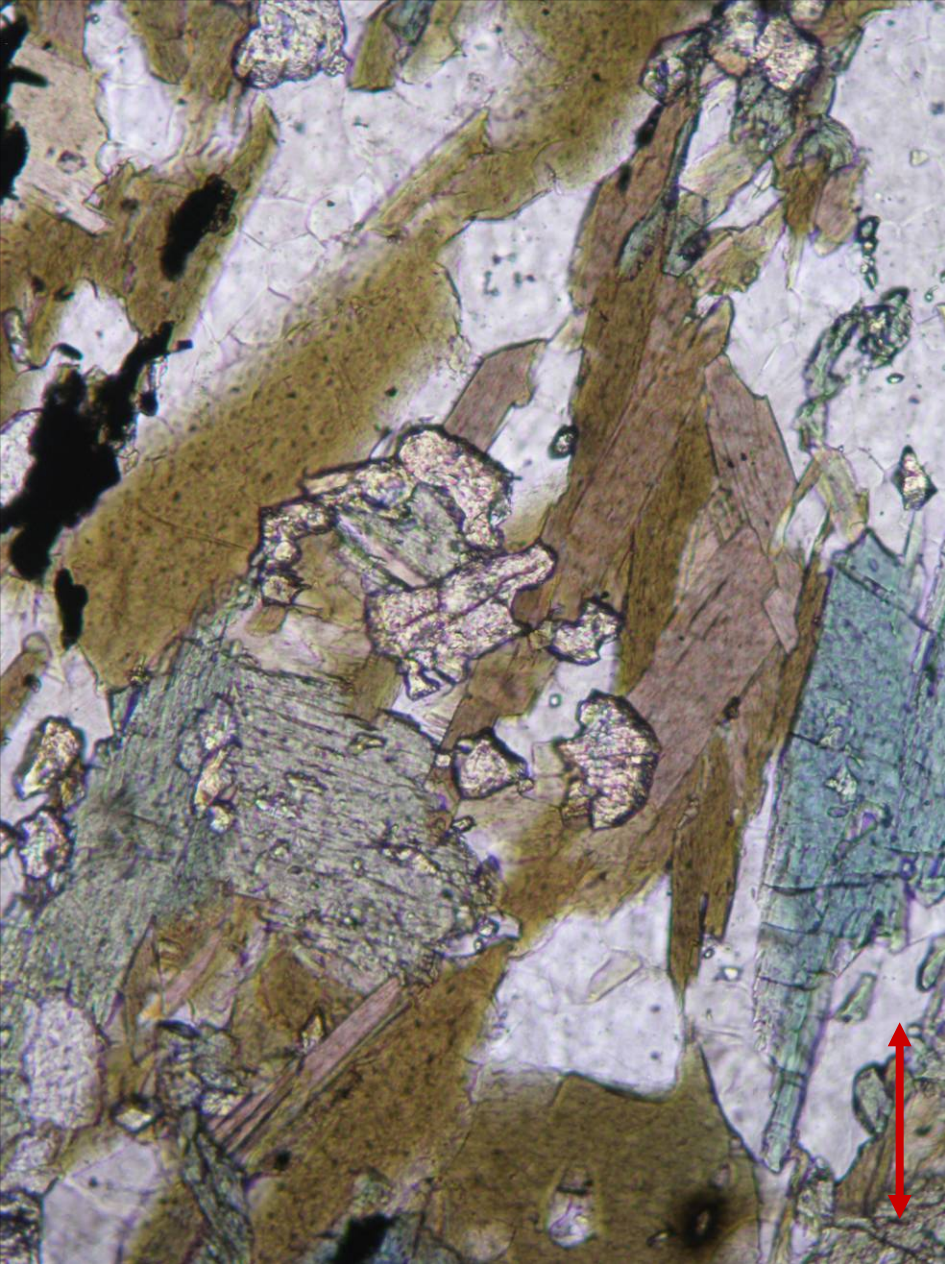
Epidote and calcite in the Alpine-type vein from Krásné near Hraběšice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.8 mm. Photo: JiZi.



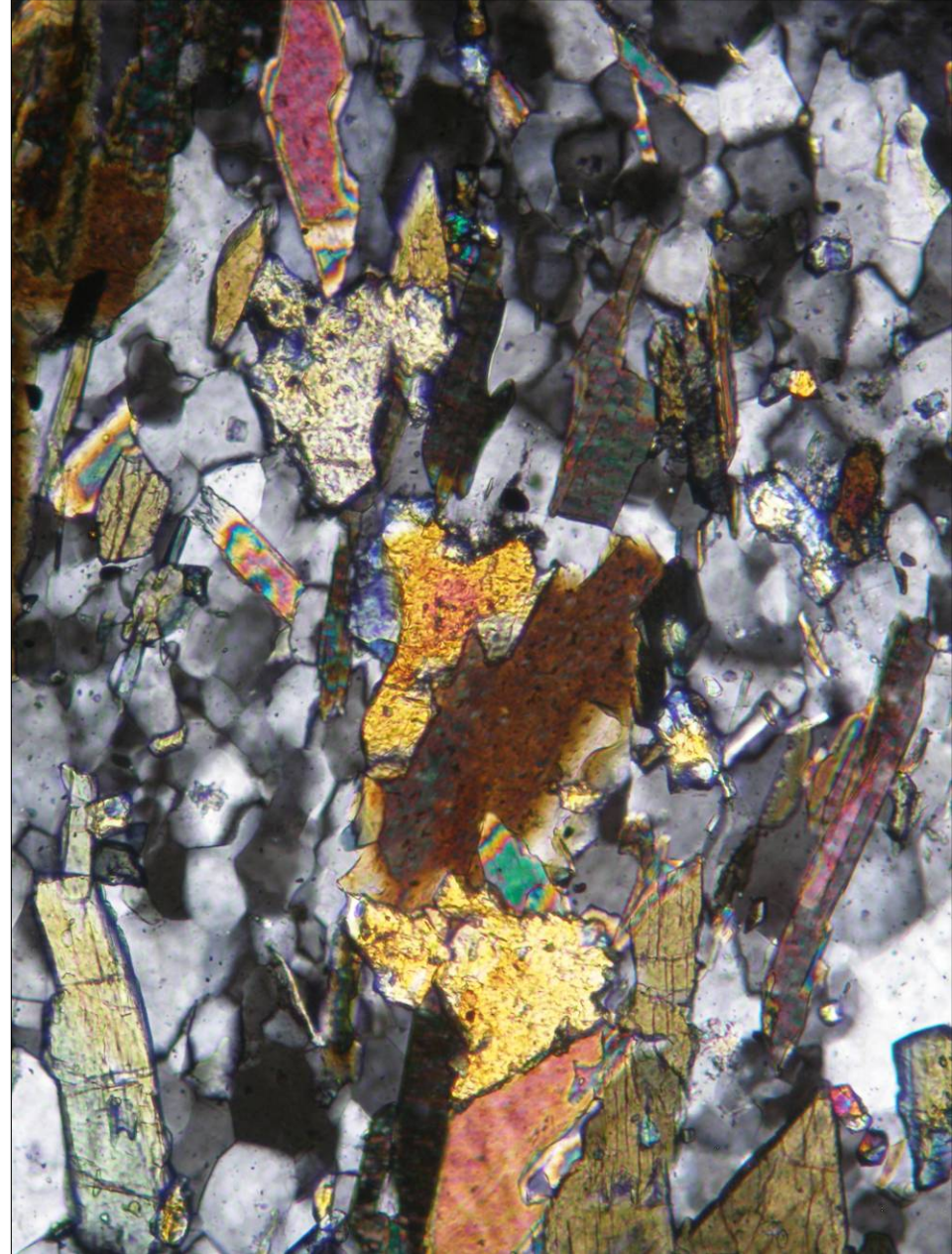
Epidote and quartz in the Alpine-type vein from Krásné near Hraběšice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.7 mm. Photo: JiZi.



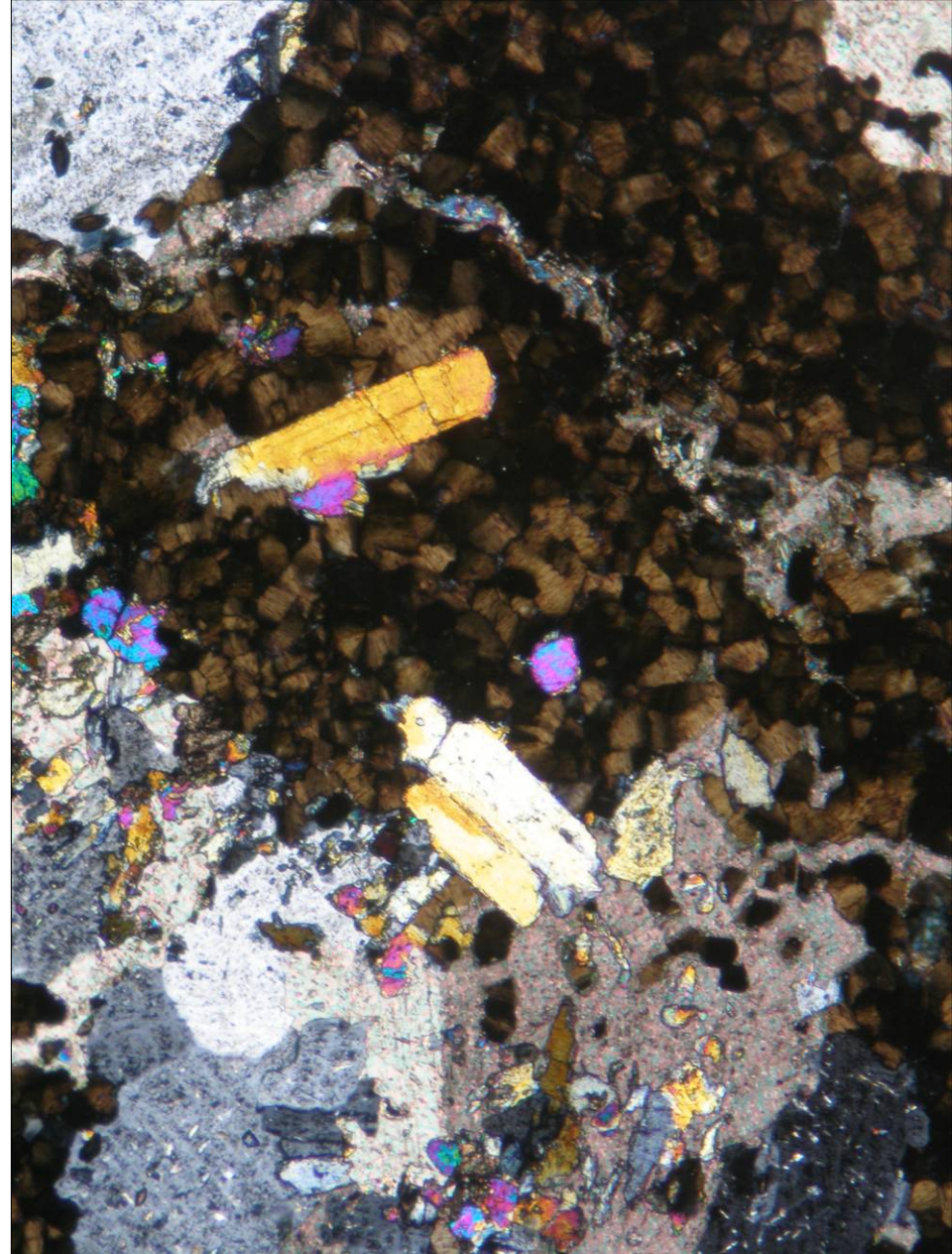
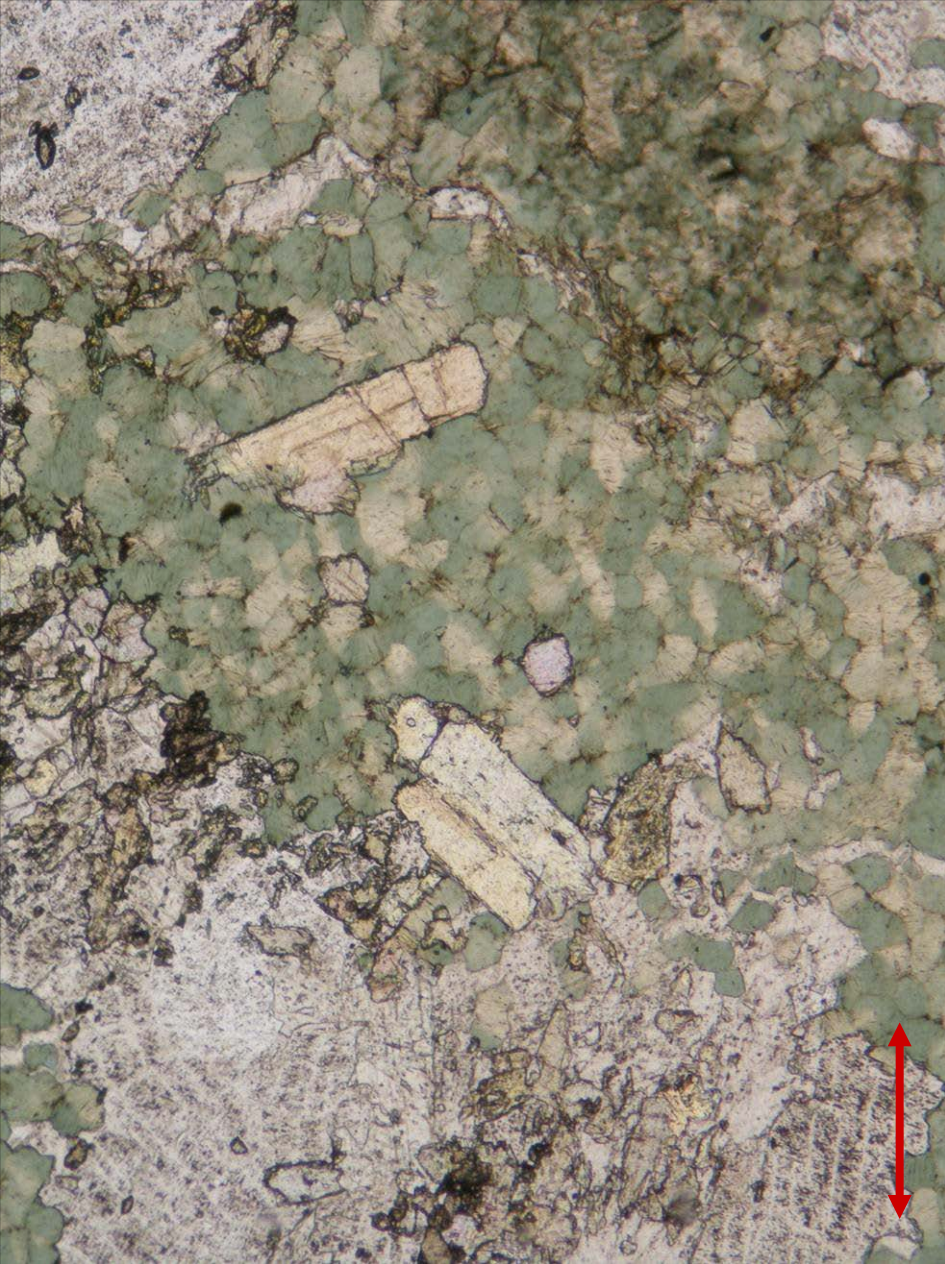
Epidote, quartz and calcite in the Alpine-type vein from Krásné near Hraběšice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.7 mm. Photo: JiZi.



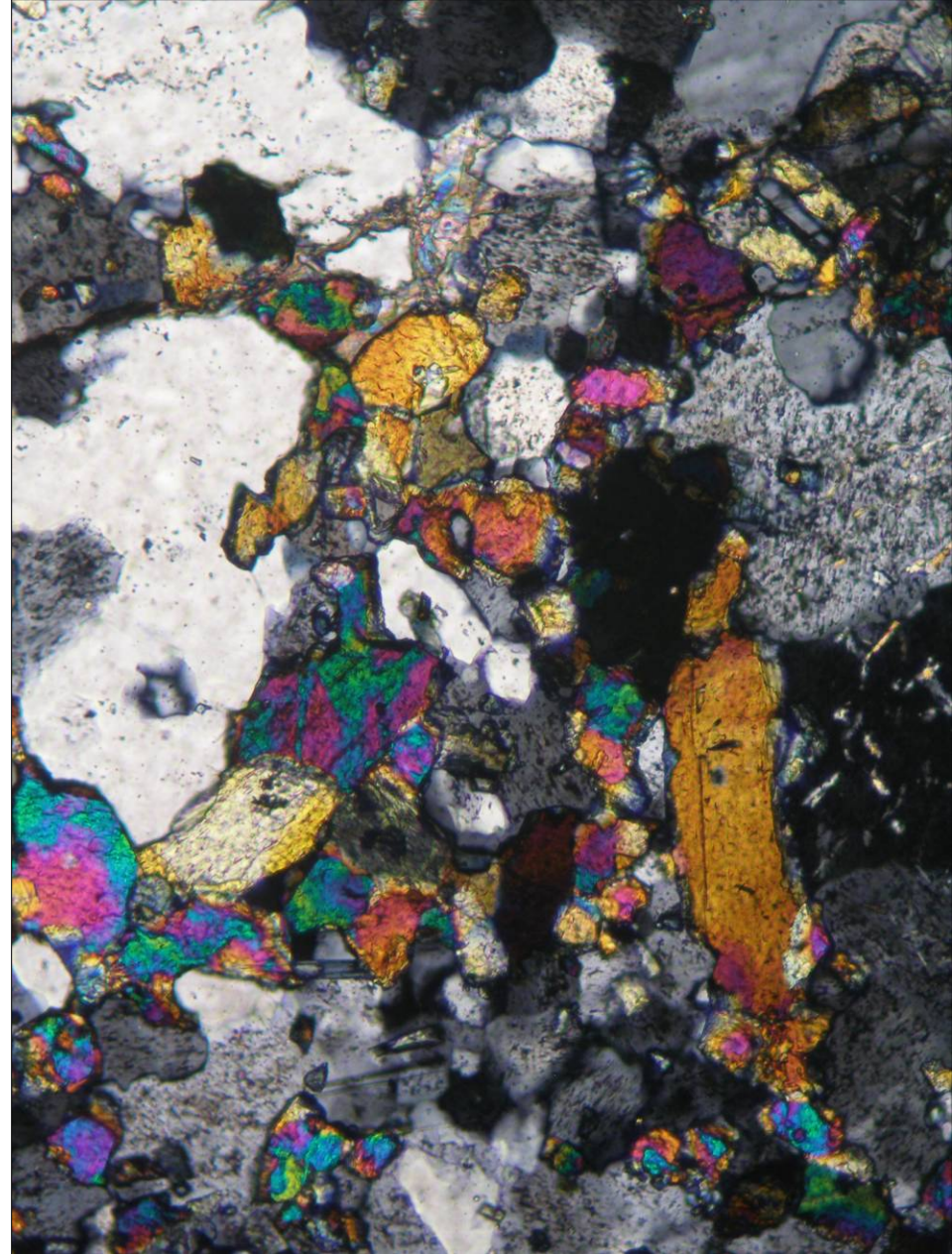
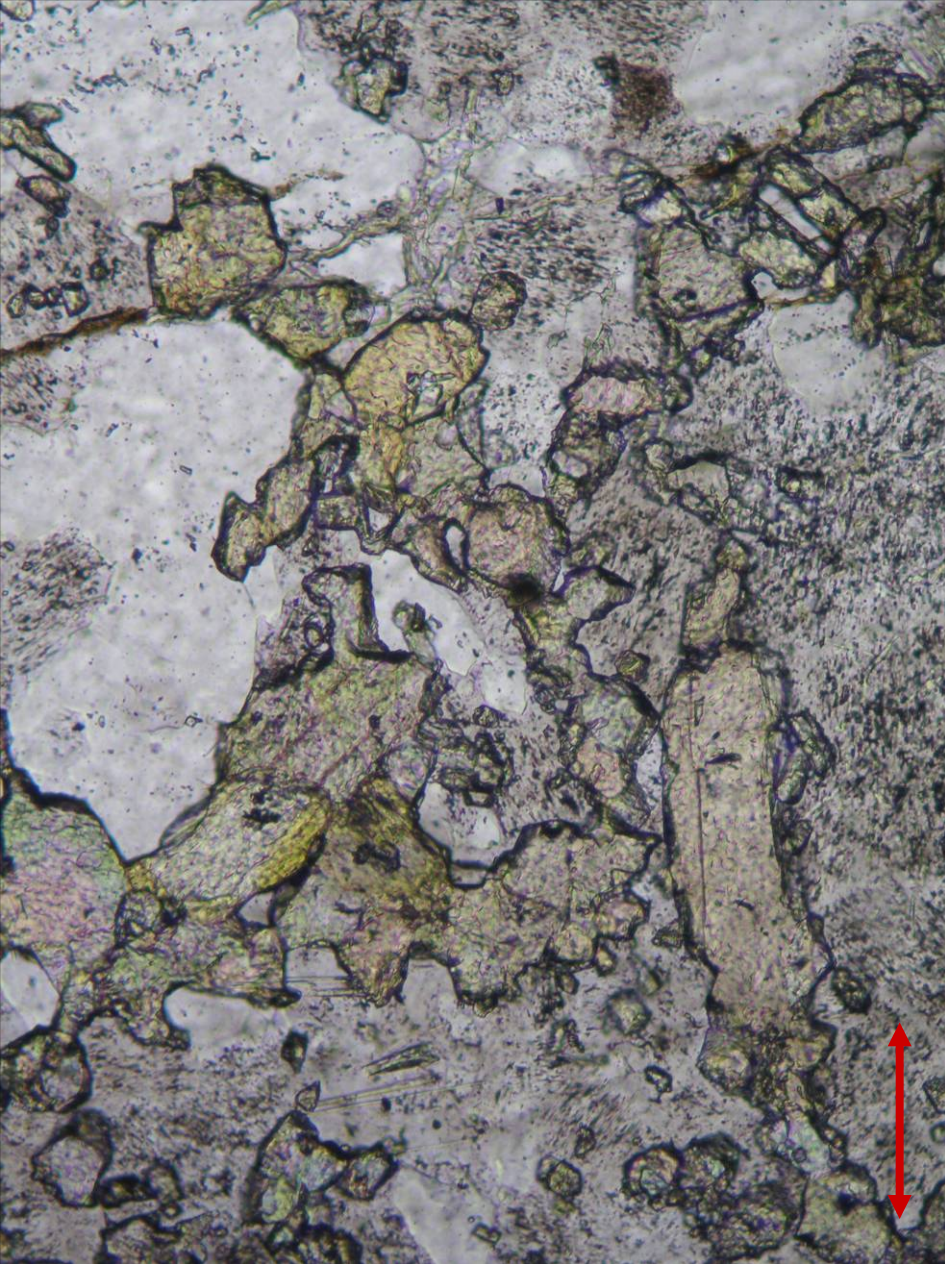
Epidote in hornblende gneiss from Krásné near Hraběšice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.6 mm. Photo: JiZi.



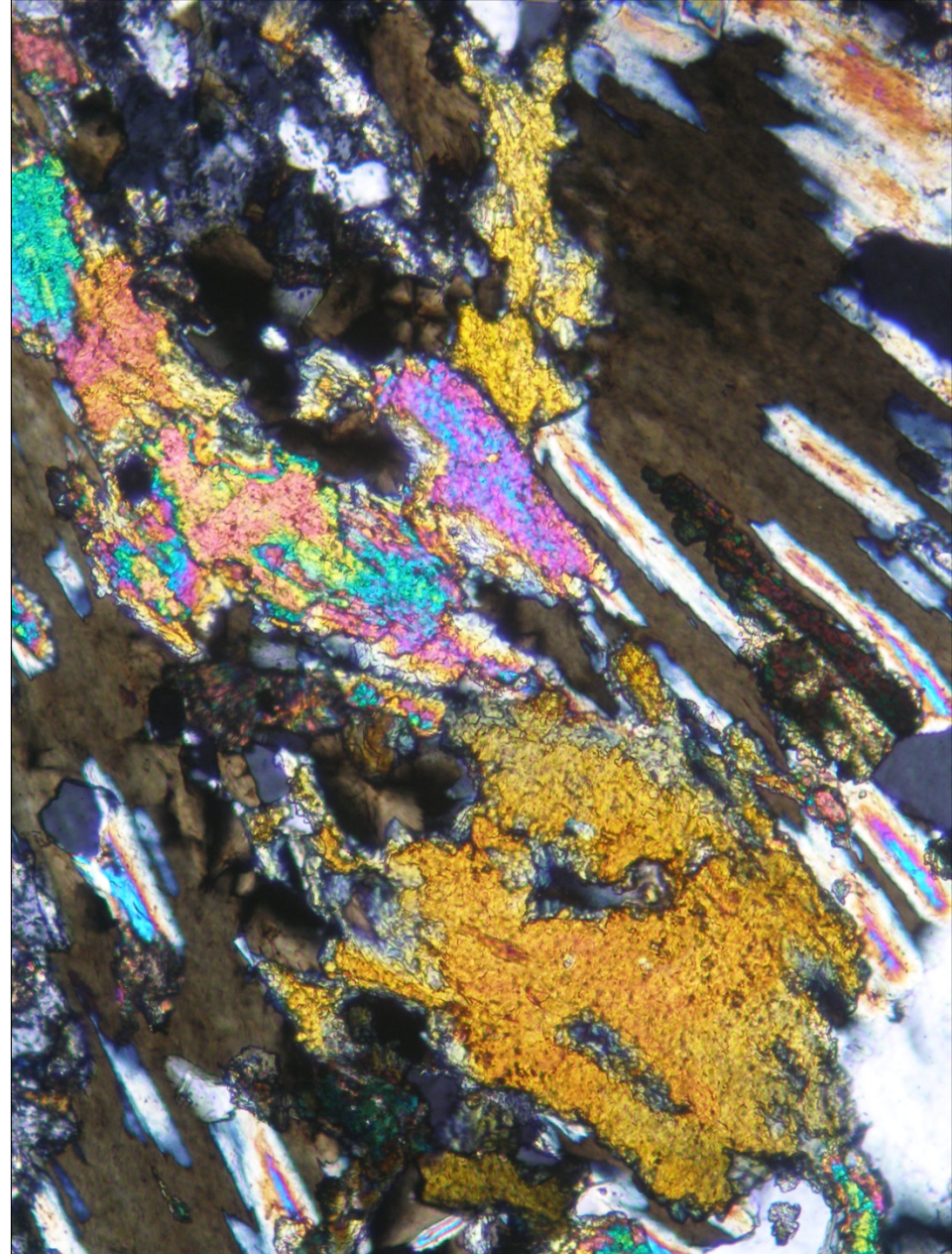
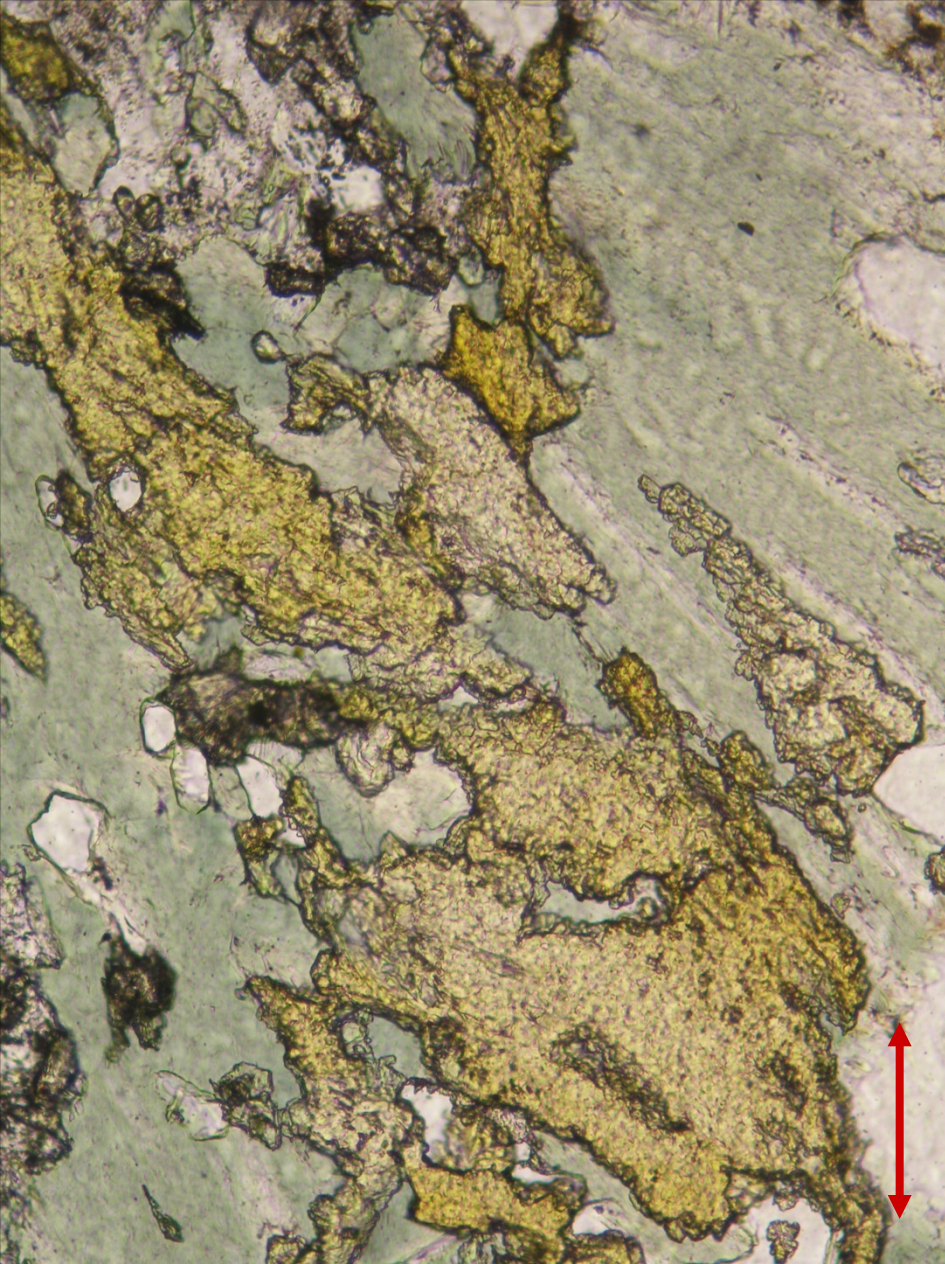
Epidote in hornblende gneiss from Krásné near Hraběšice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.8 mm. Photo: JiZi.



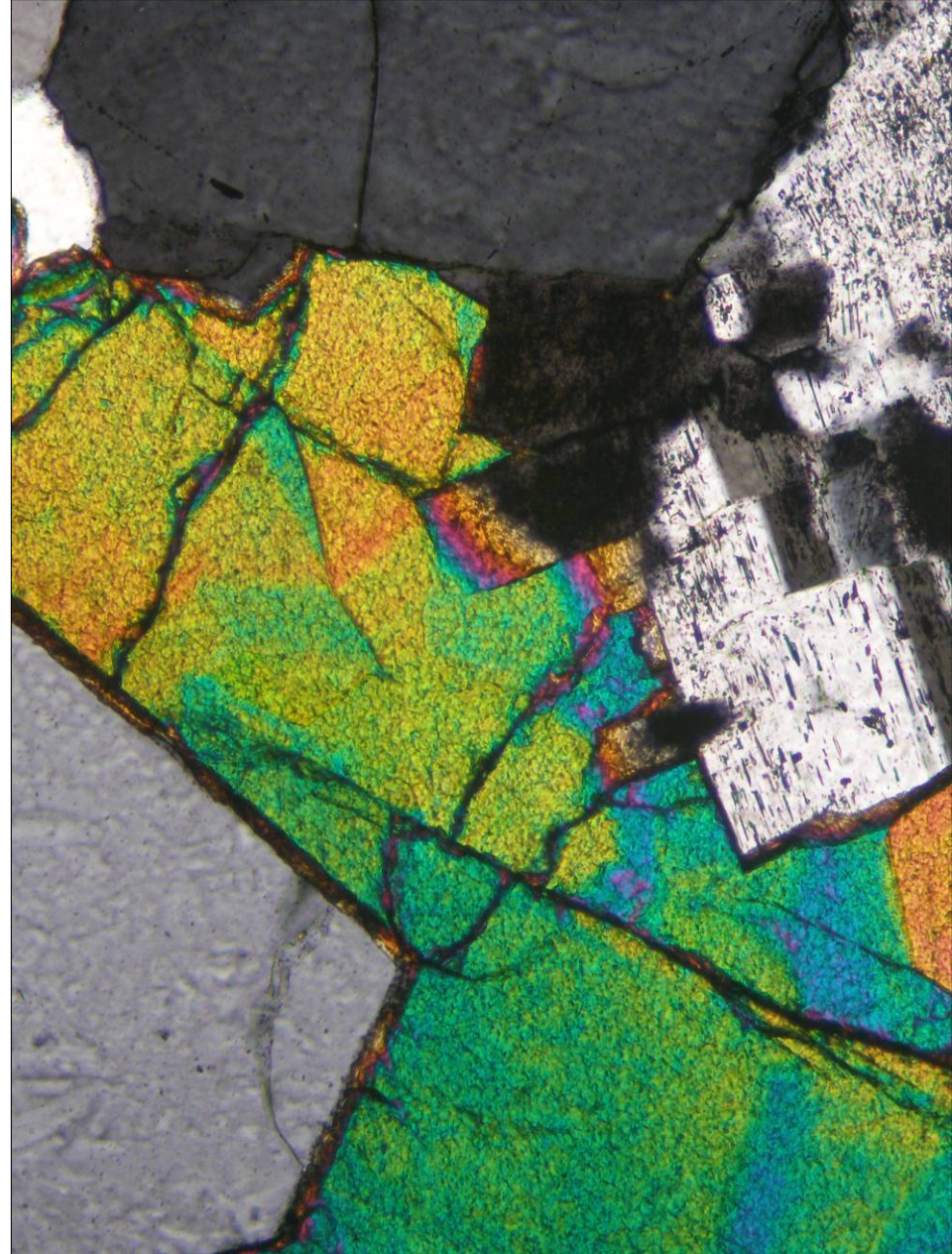
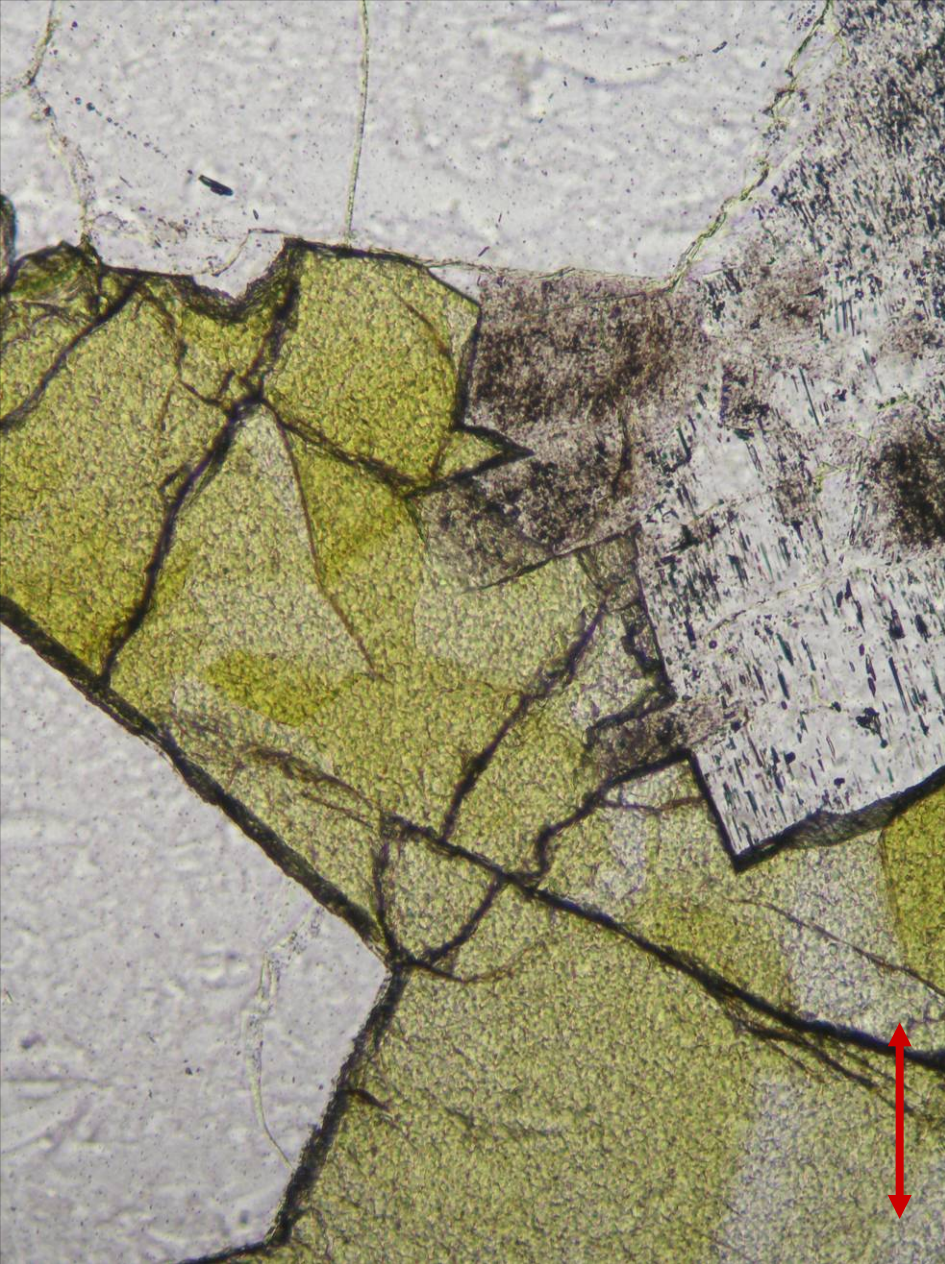
Epidote and chlorite in the Alpine-type vein from Krásné near Hraběšice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.8 mm. Photo: JiZi.



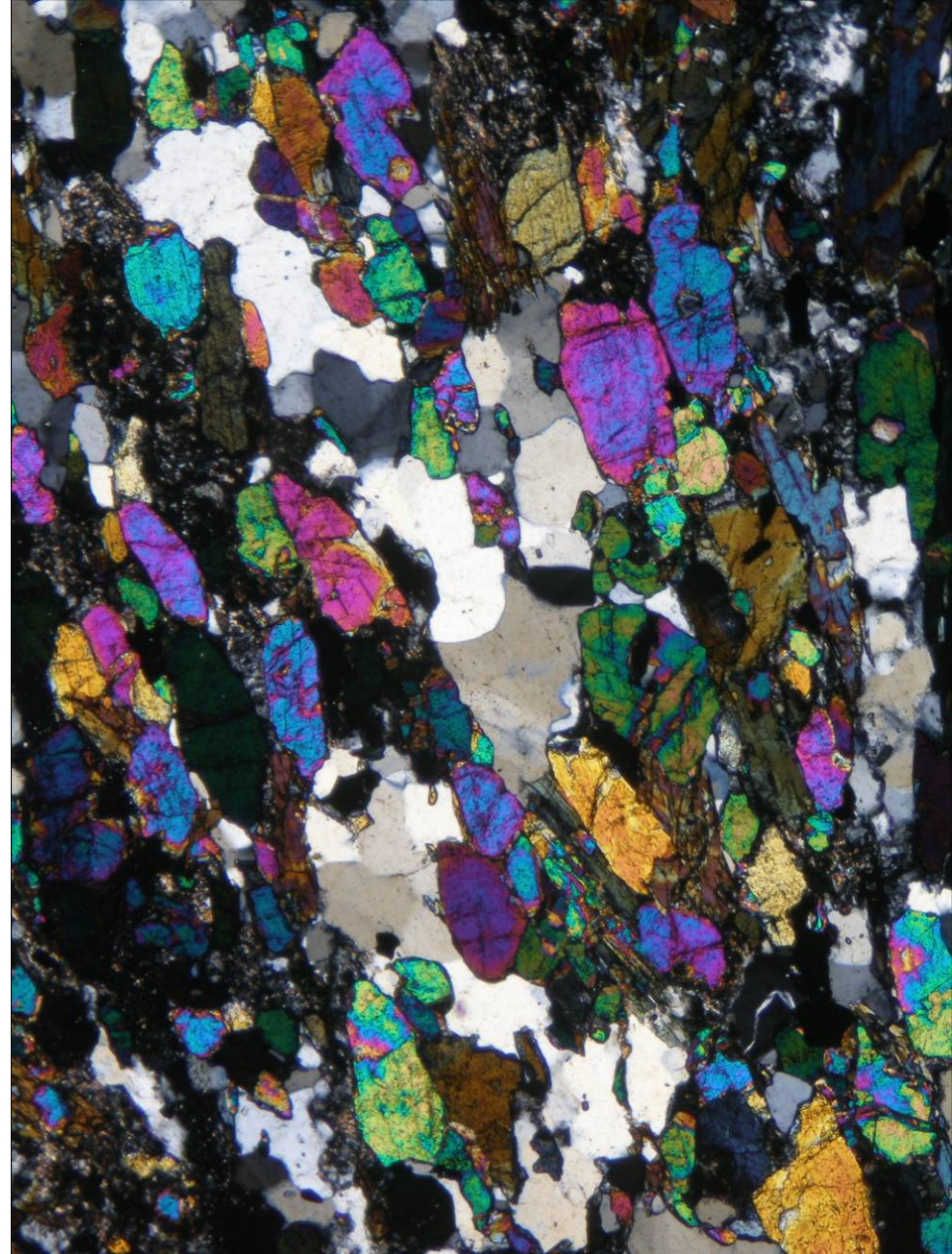
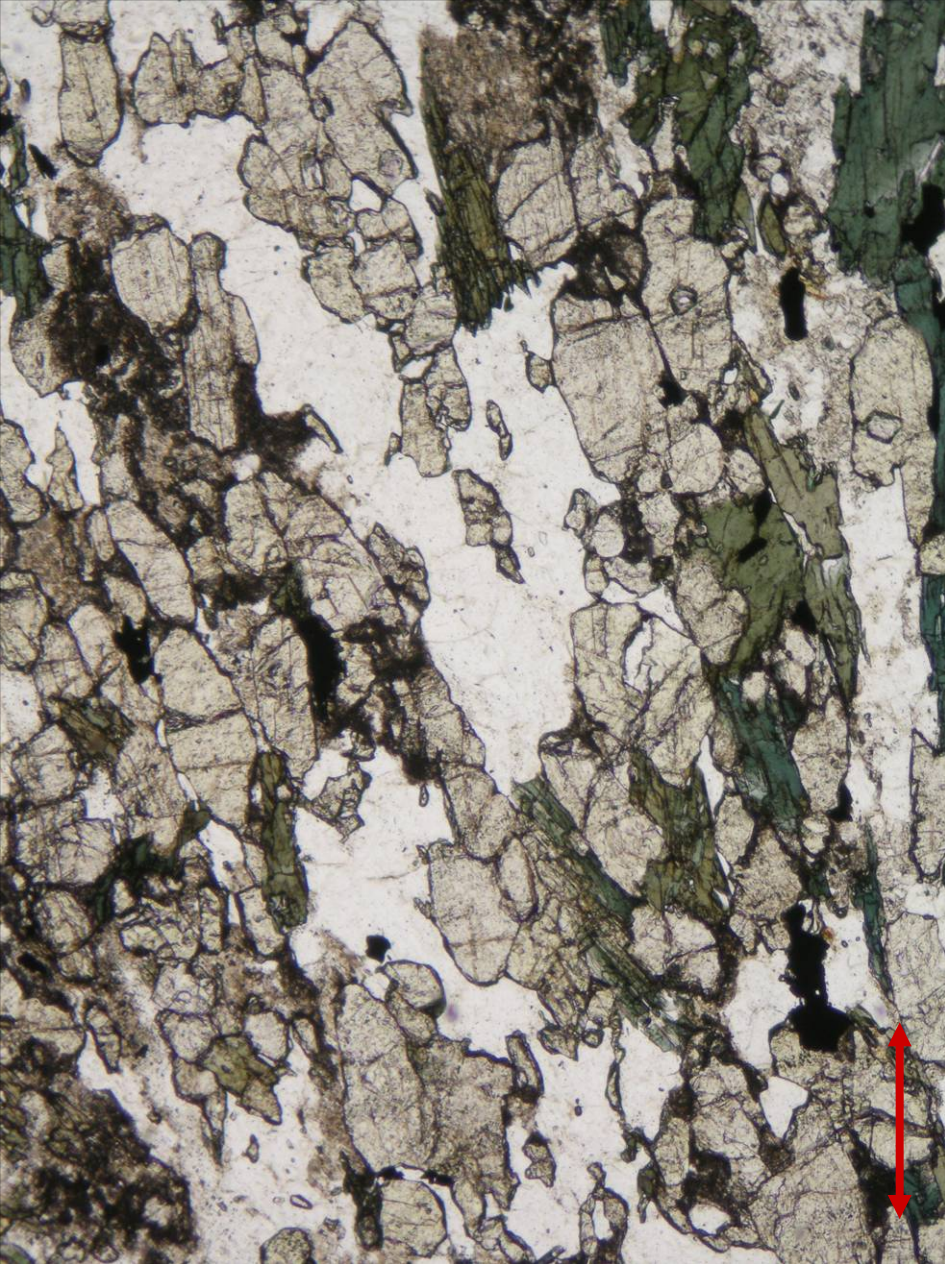
Epidote, altered feldspars and quartz in the Alpine-type vein from Krásné near Hraběšice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.8 mm. Photo: JiZi.



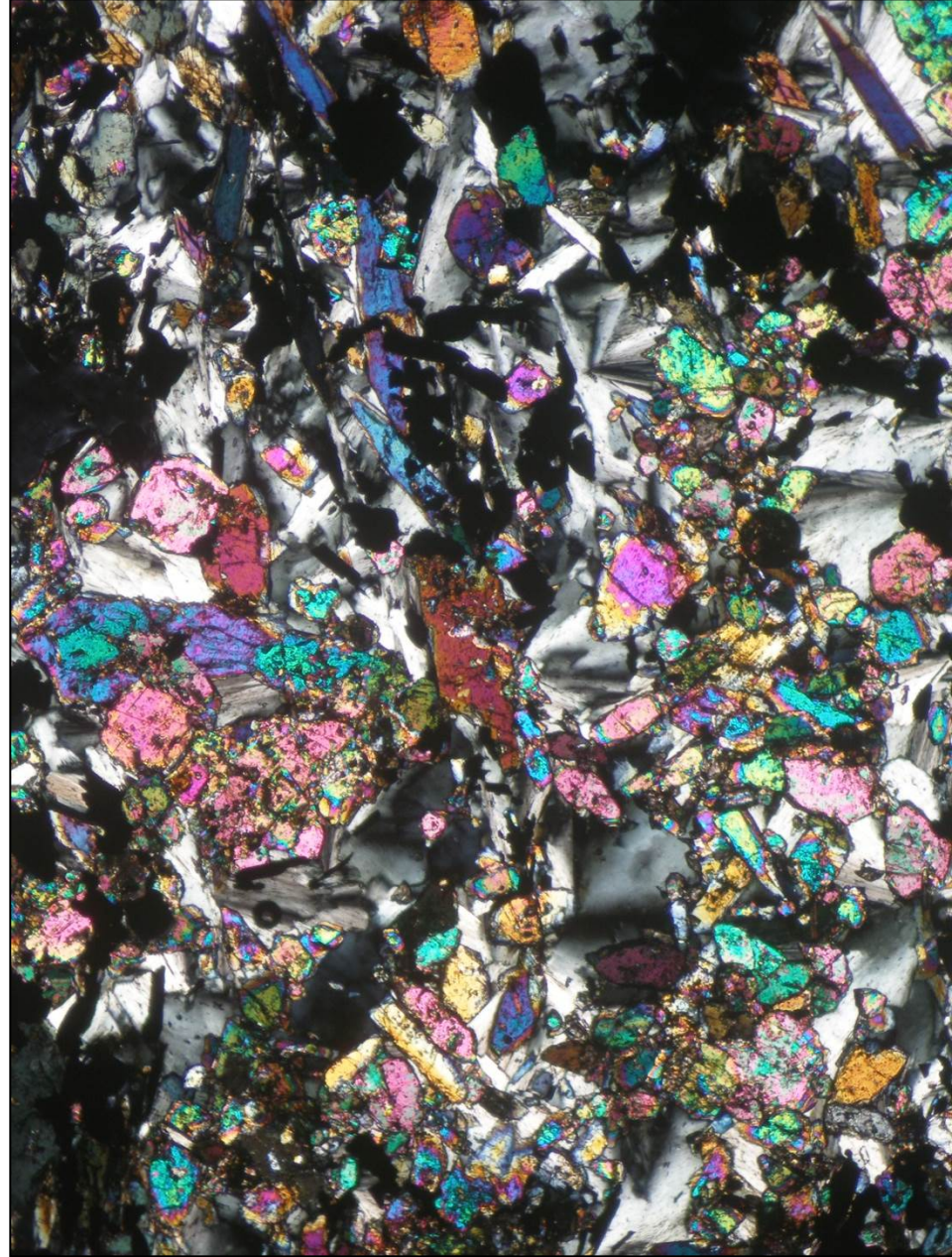
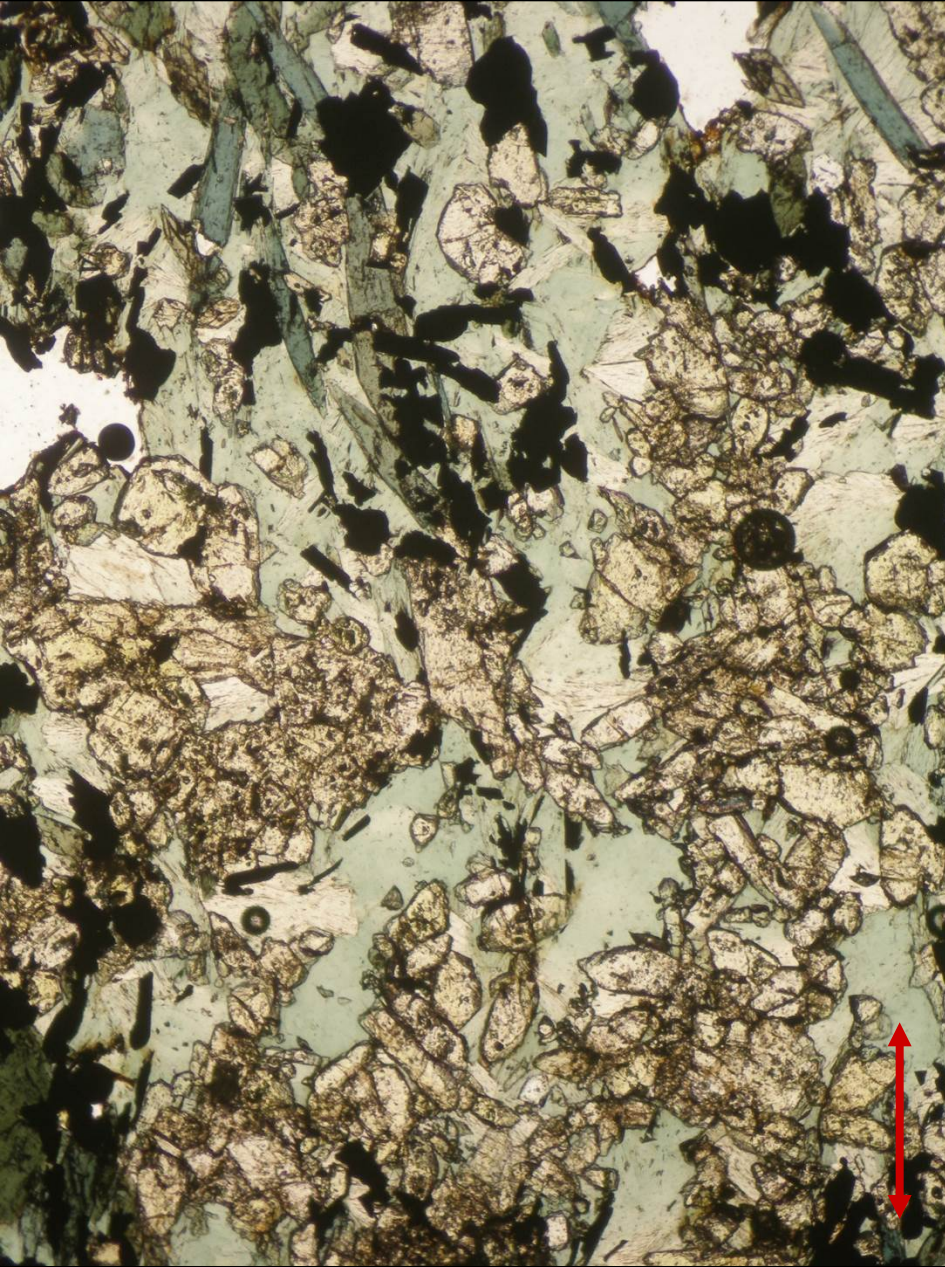
Epidote with chlorite in the Alpine-type vein in gneiss from Vernířovice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.7 mm. Photo: JiZi.



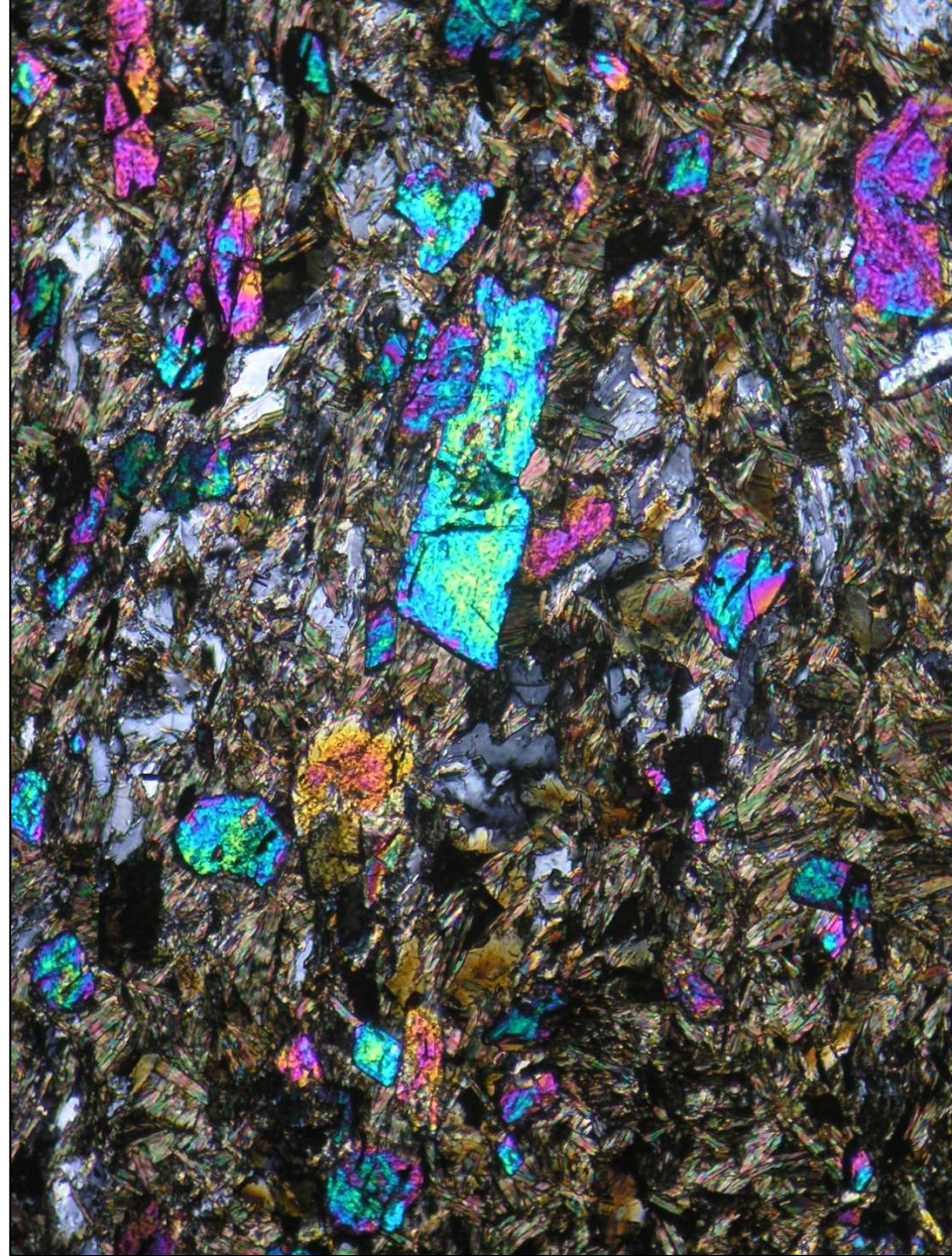
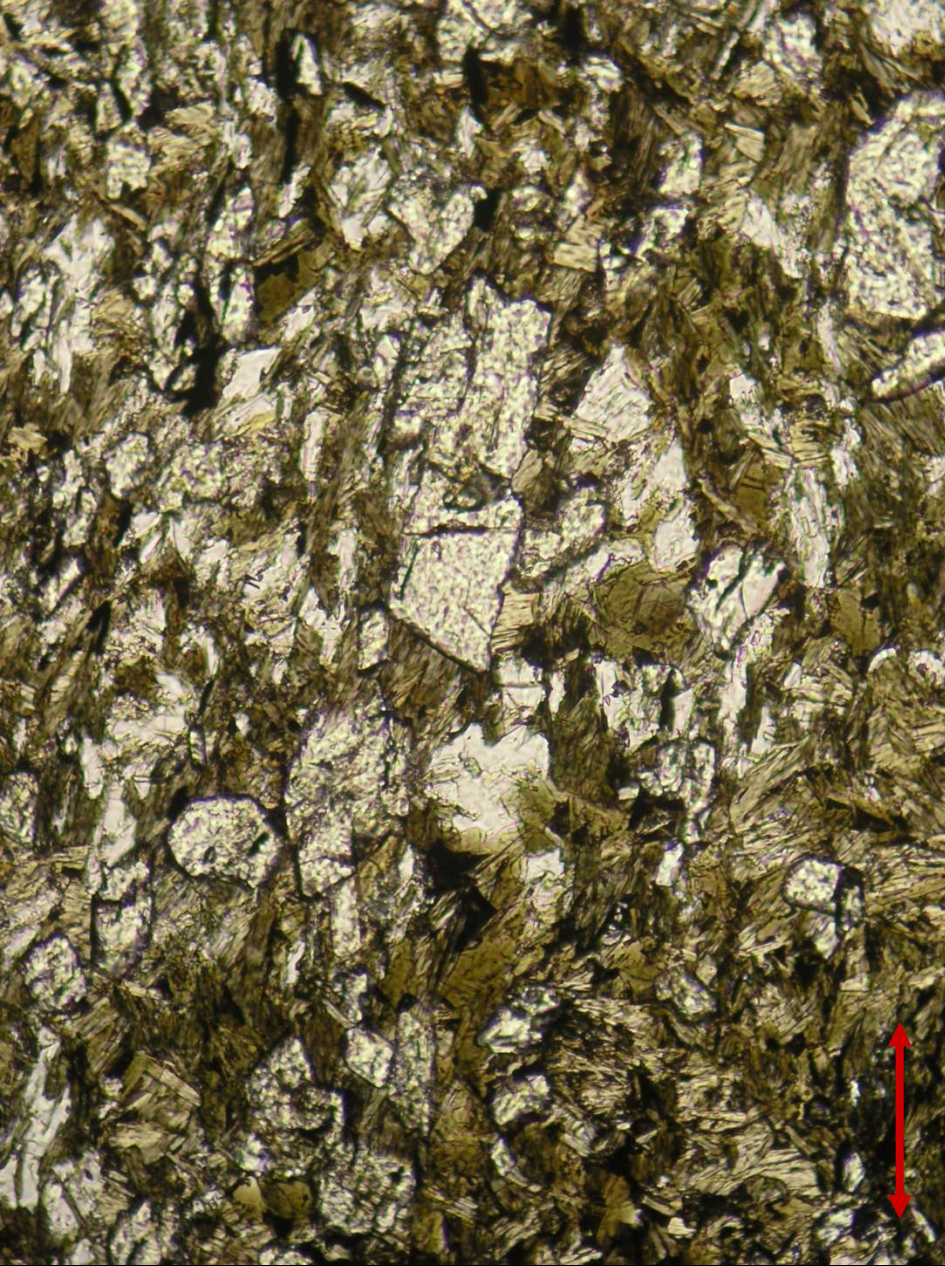
Epidote with quartz and albite in the Alpine-type vein in gneiss from Vernířovice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.0 mm. Photo: JiZi.



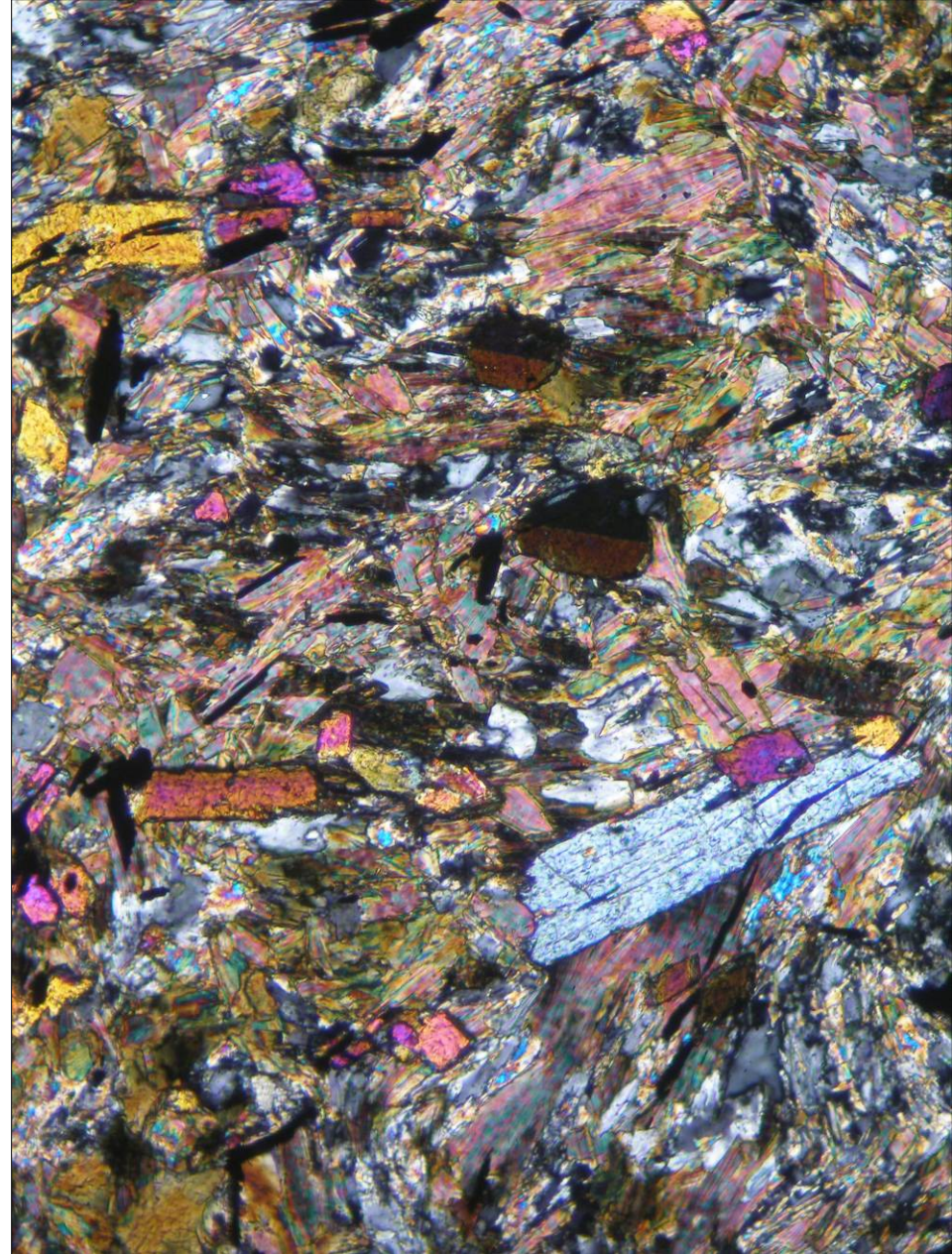
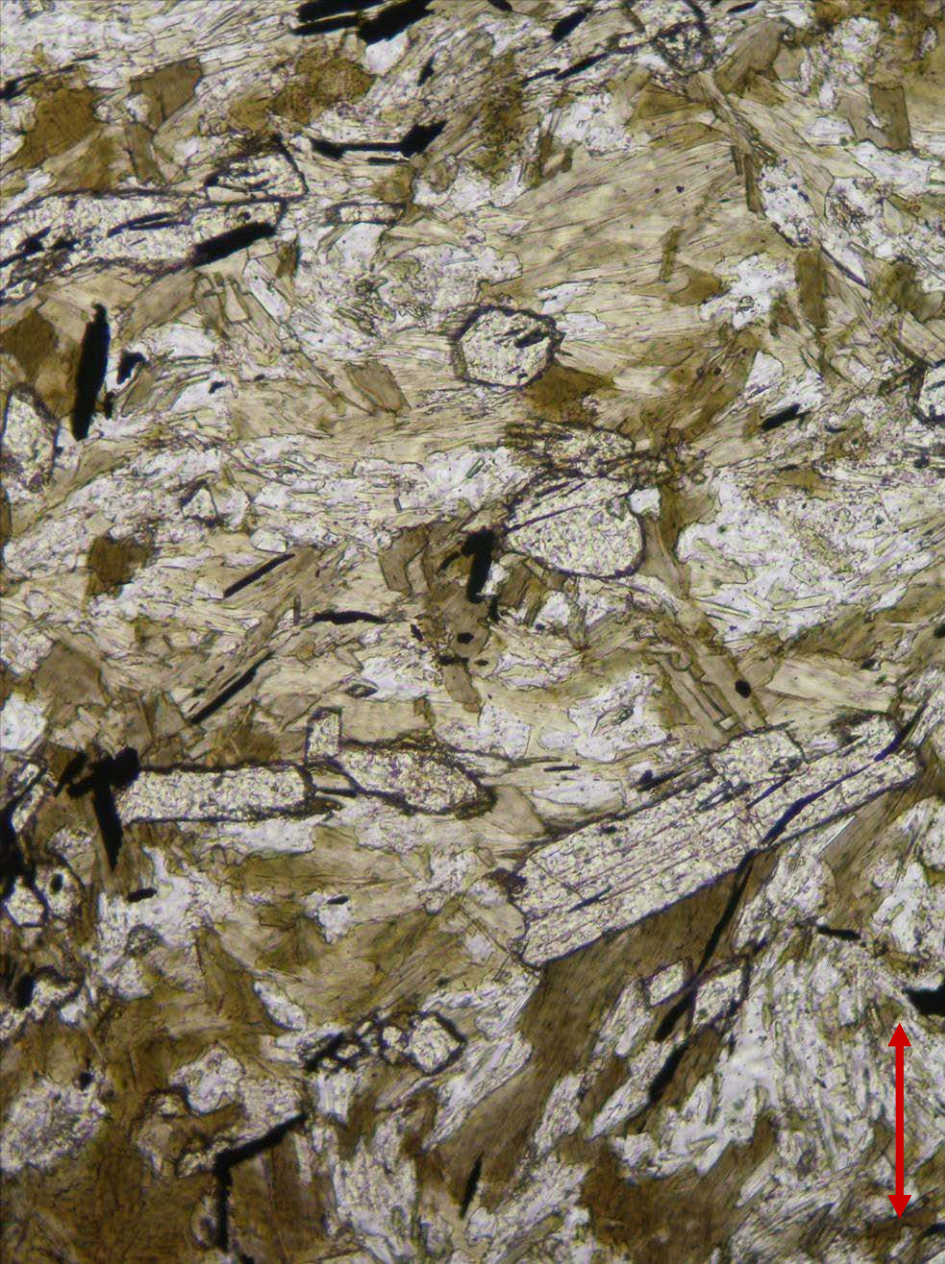
Epidote in hornblende gneiss from Sobotín, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.8 mm. Photo: JiZi.



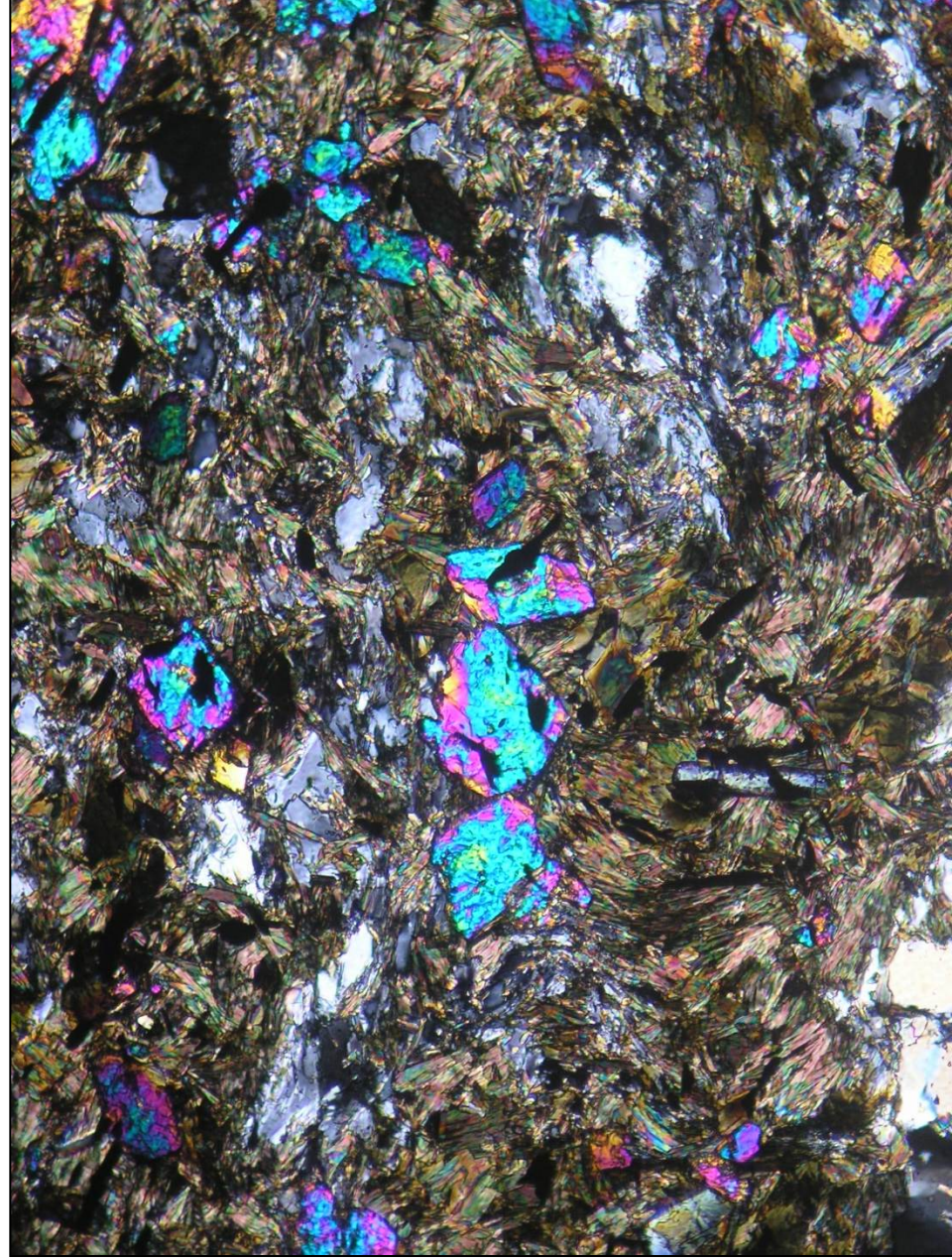
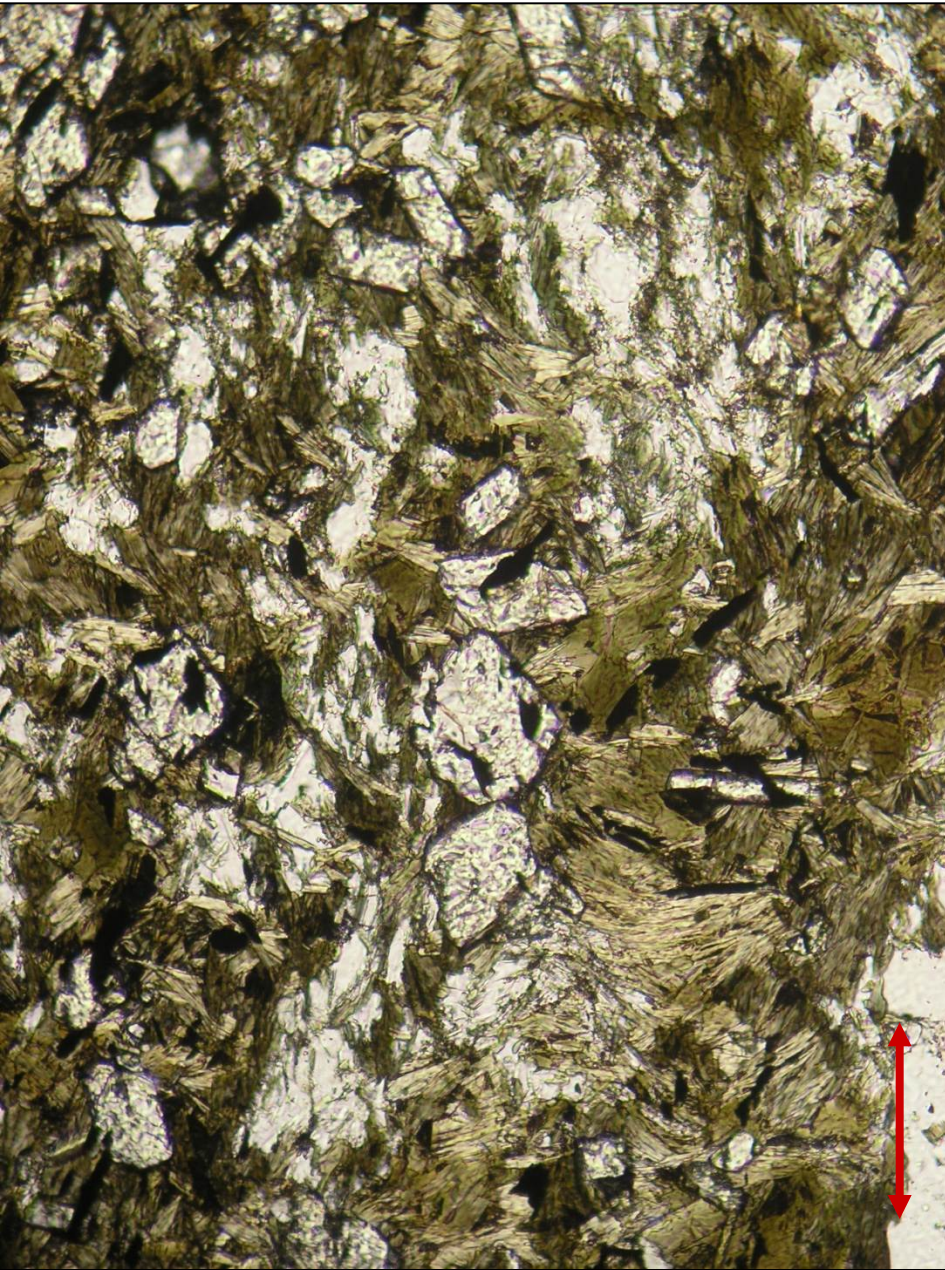
Epidote in epidote-chlorite granofels with amphibole and magnetite from Vernířovice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.2 mm. Photo: JiZi.



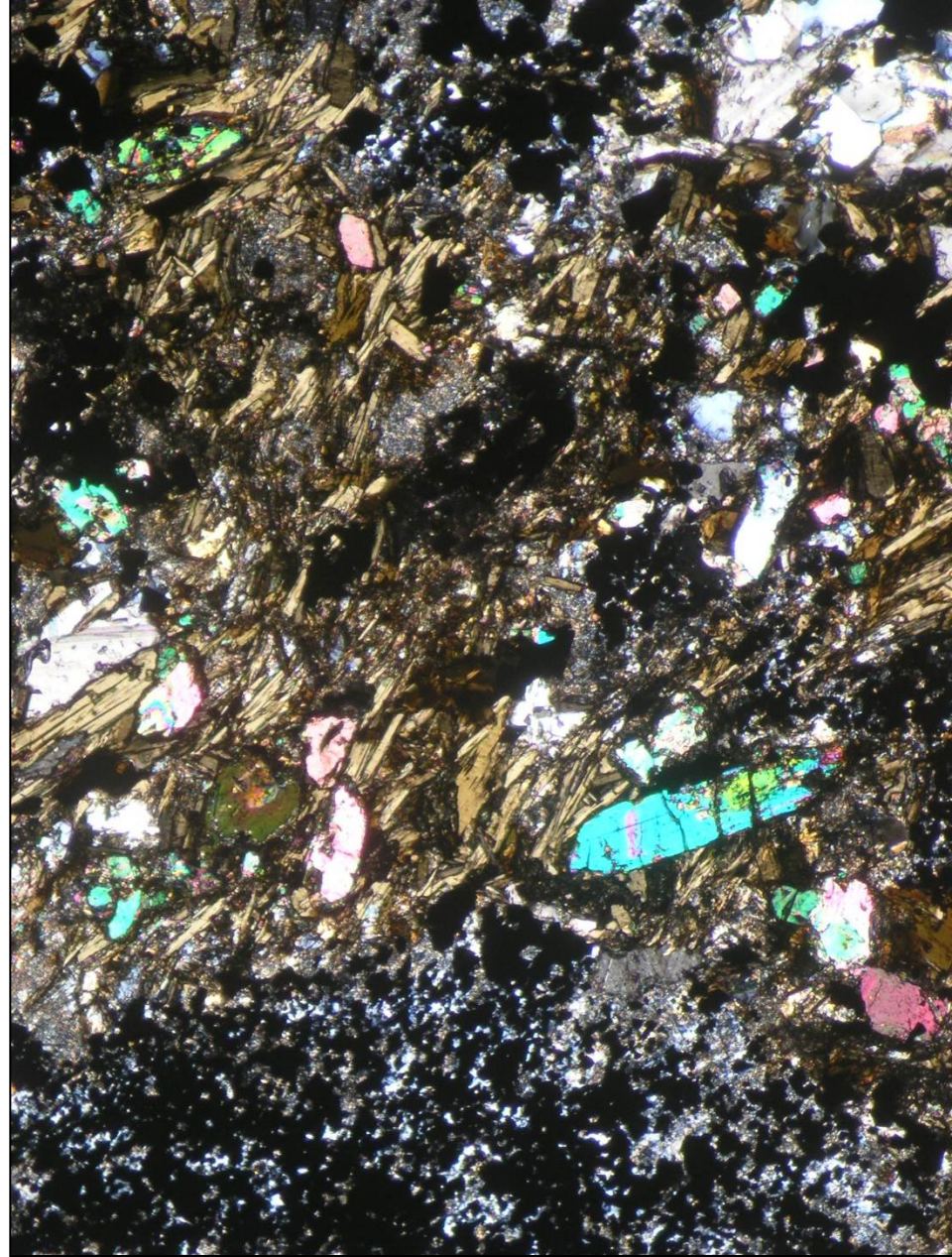
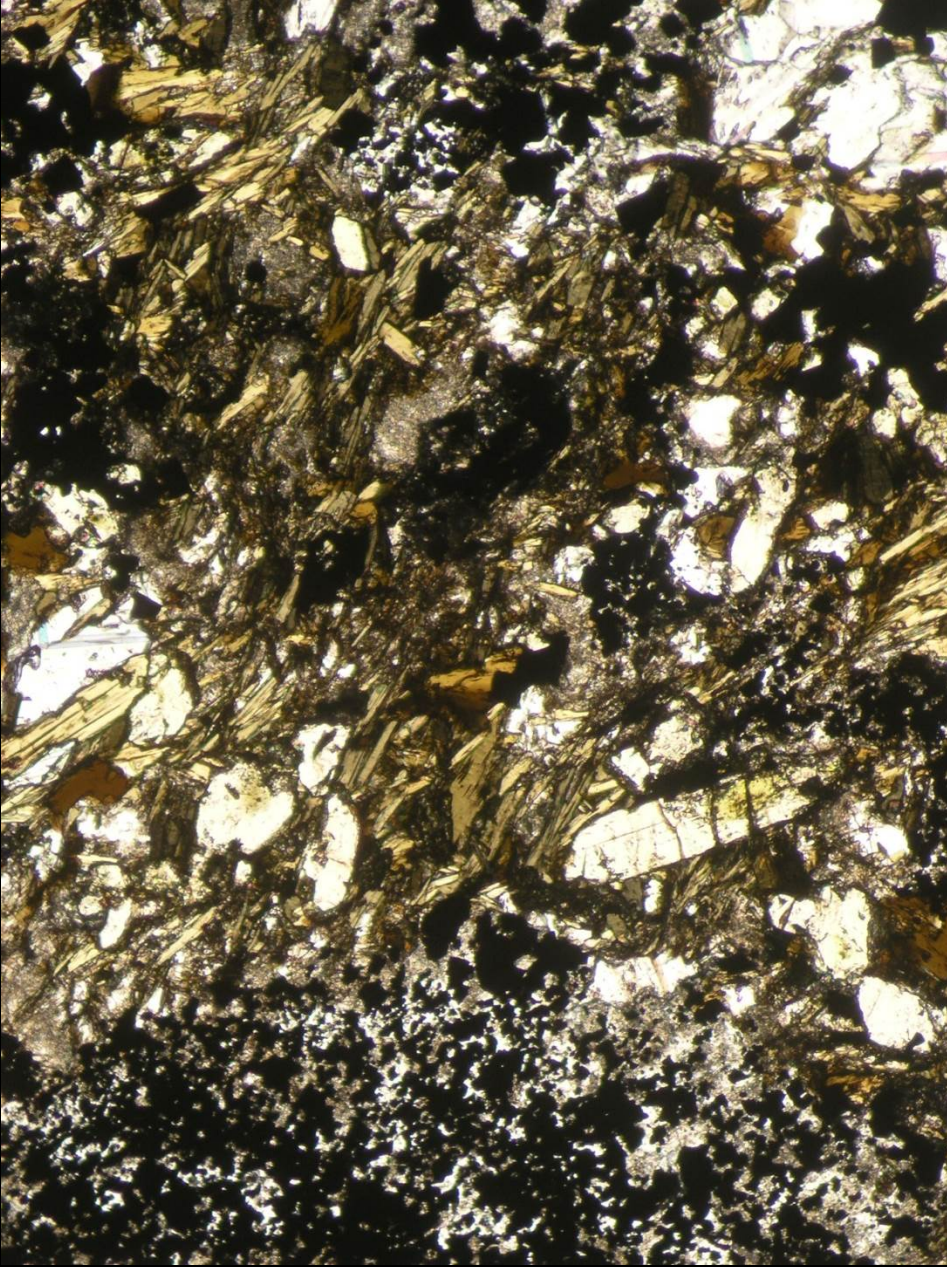
Epidote in epidote-chlorite schist from Dolní Údolí, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.9 mm. Photo: JiZi.



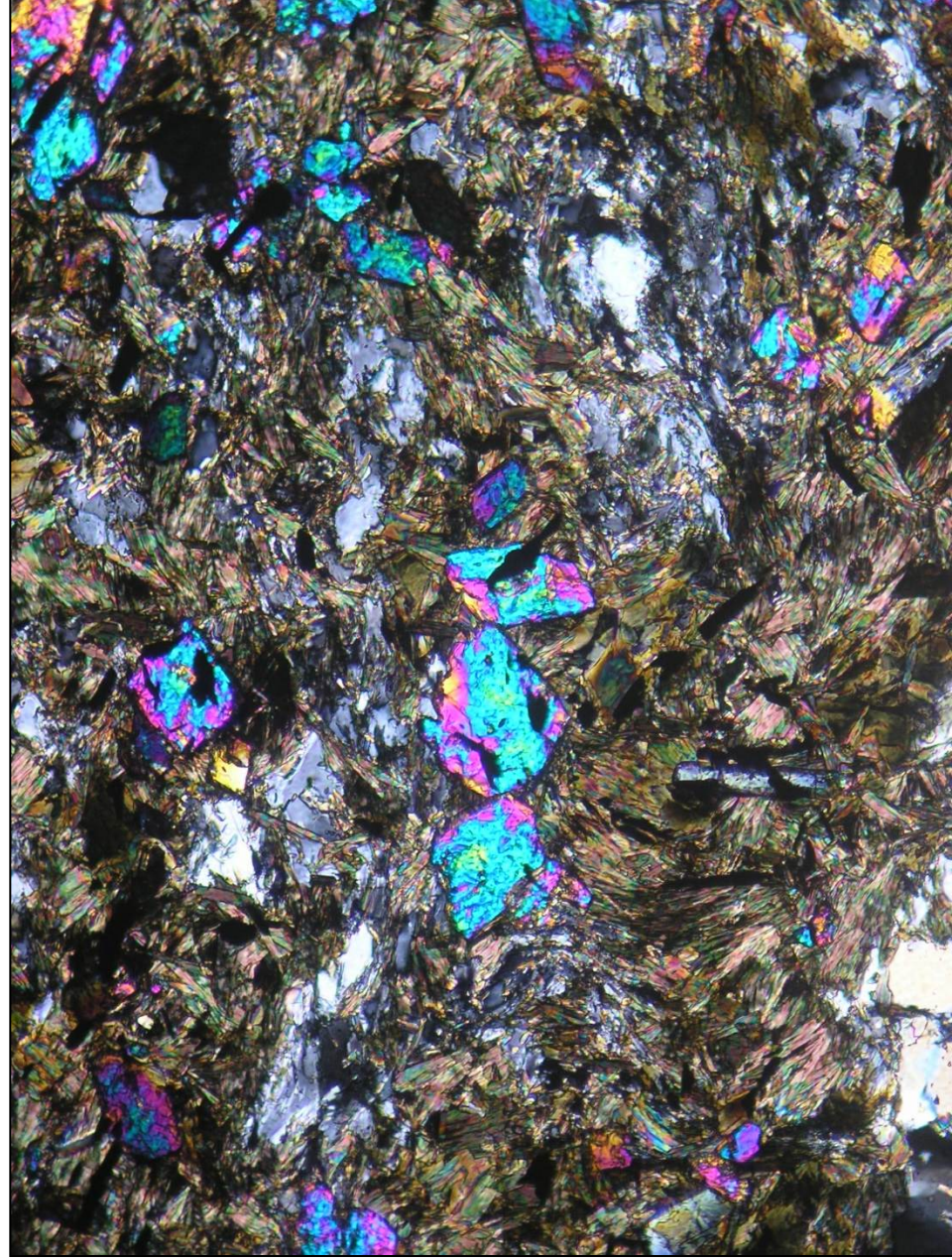
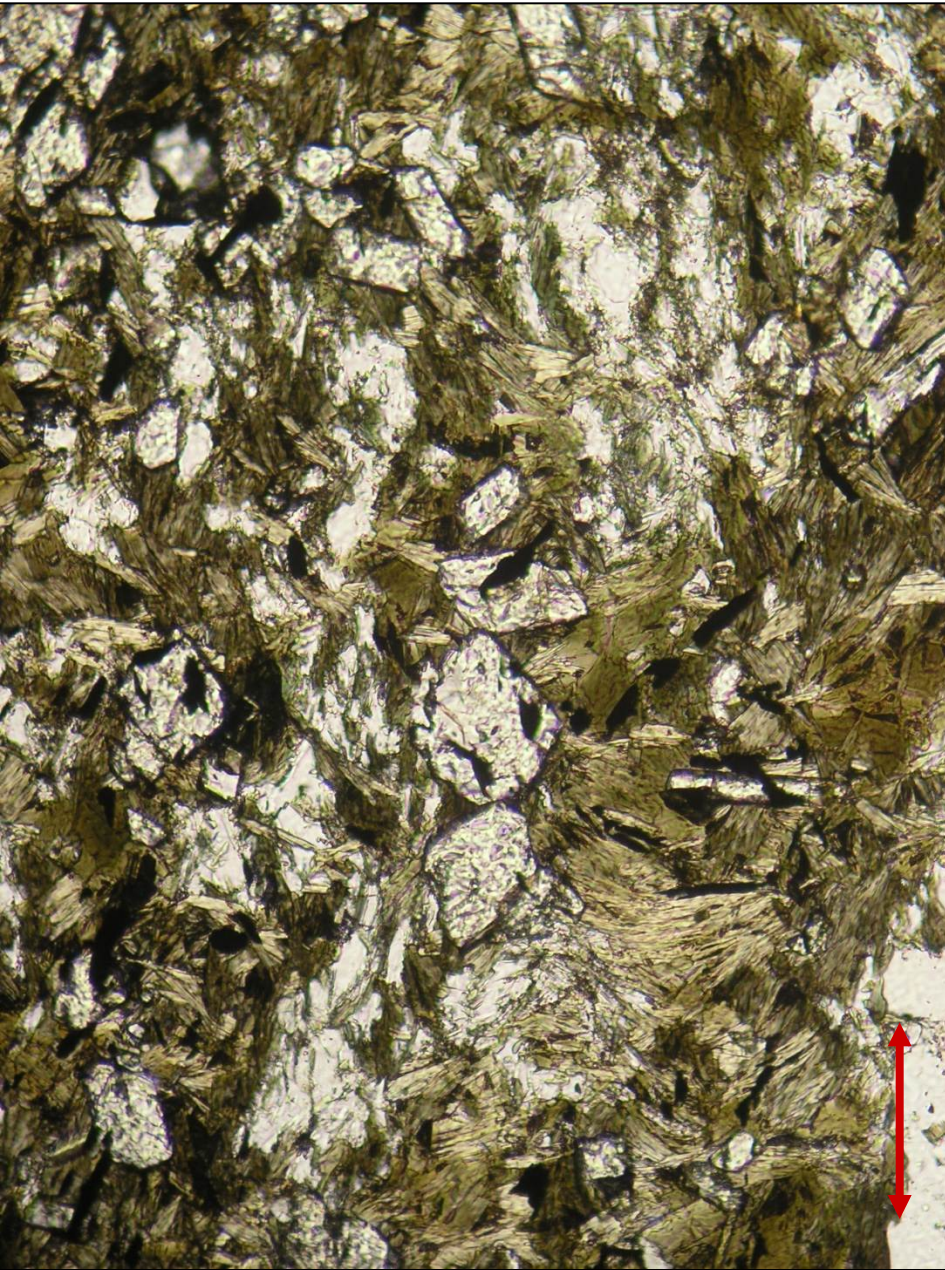
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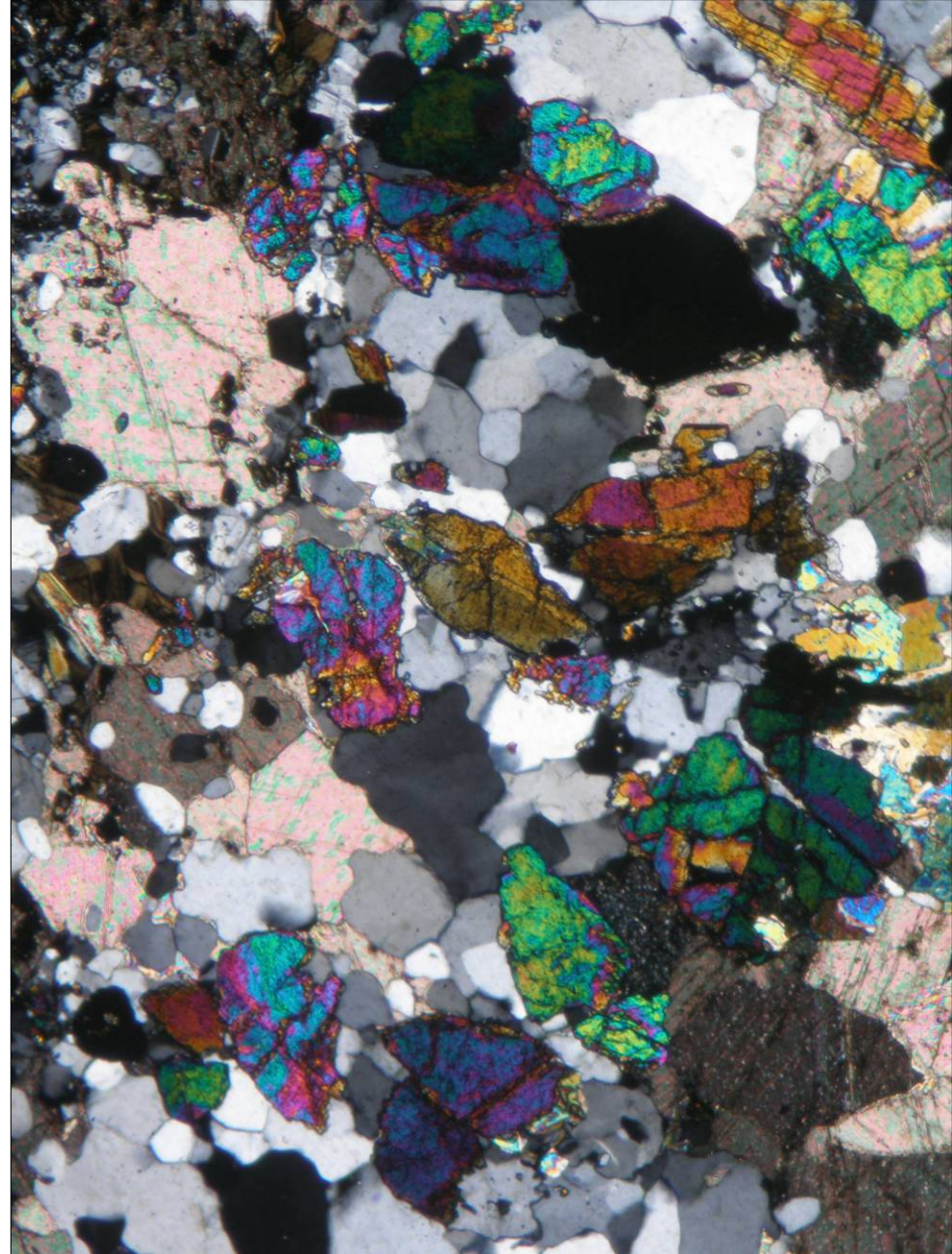
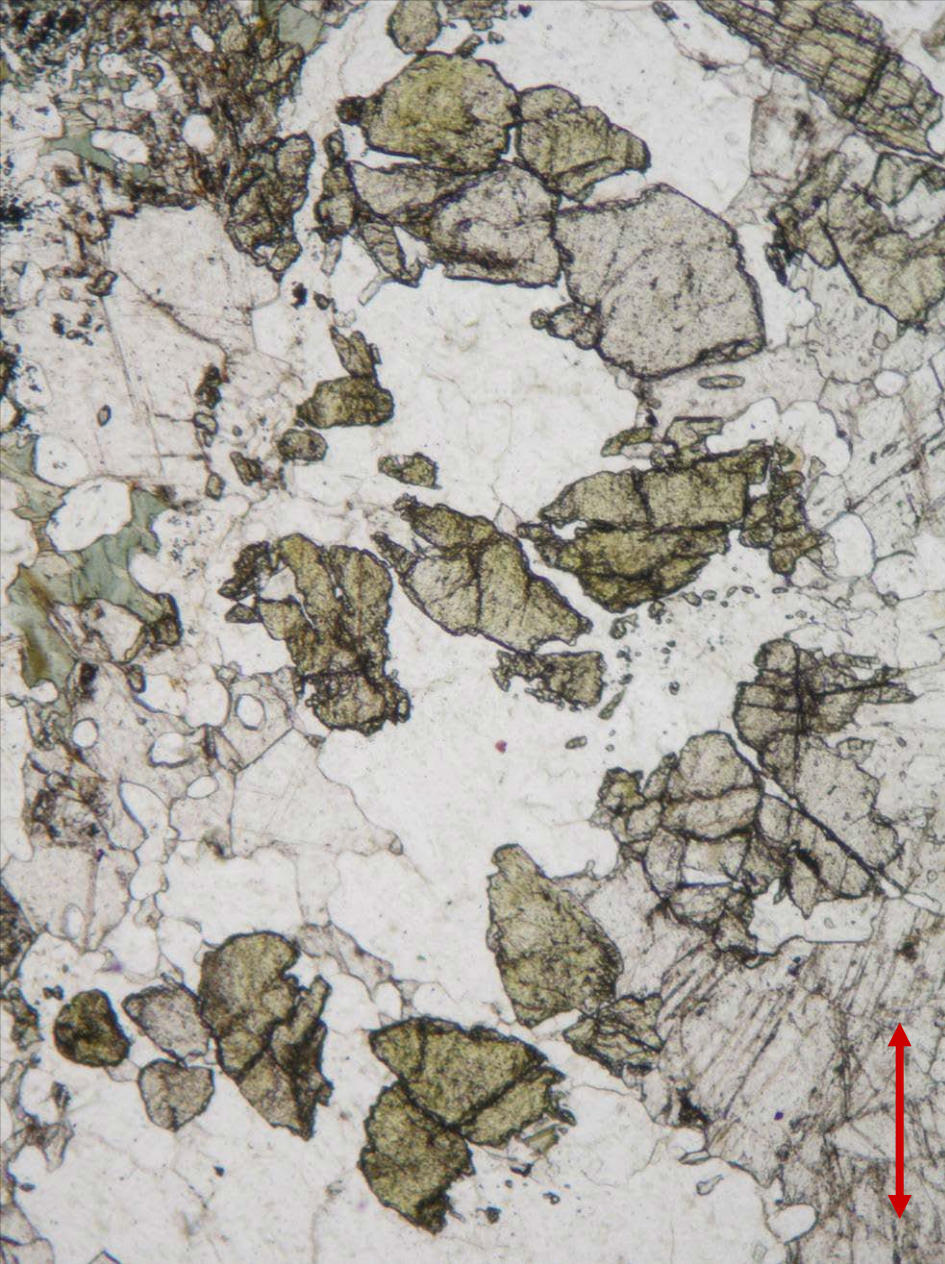
Epidote in epidote-chlorite schist from Dolní Údolí, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.9 mm. Photo: JiZi.



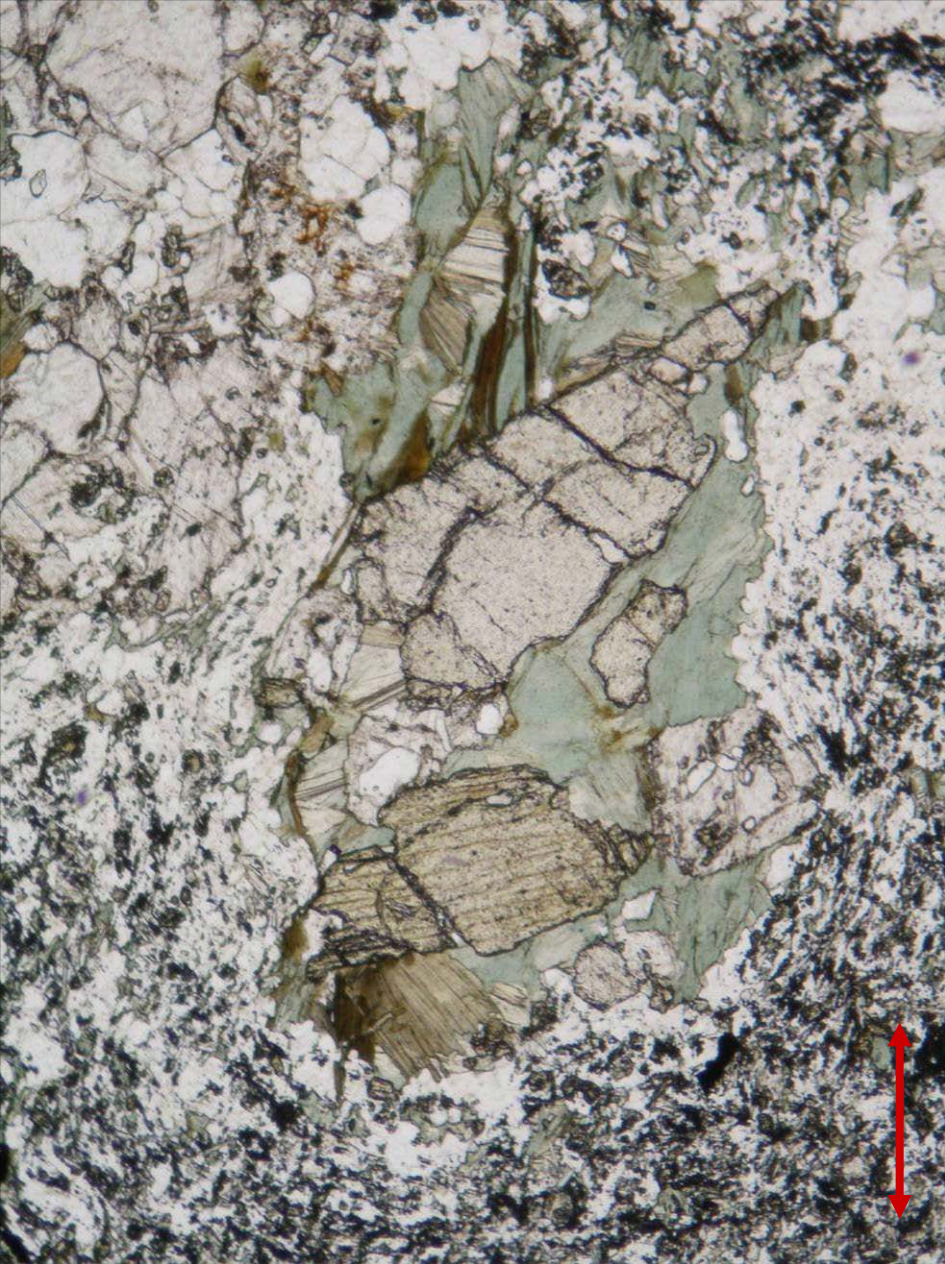
Epidote in epidote-chlorite schist with magnetite from Rejvíz, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.4 mm. Photo: JiZi.



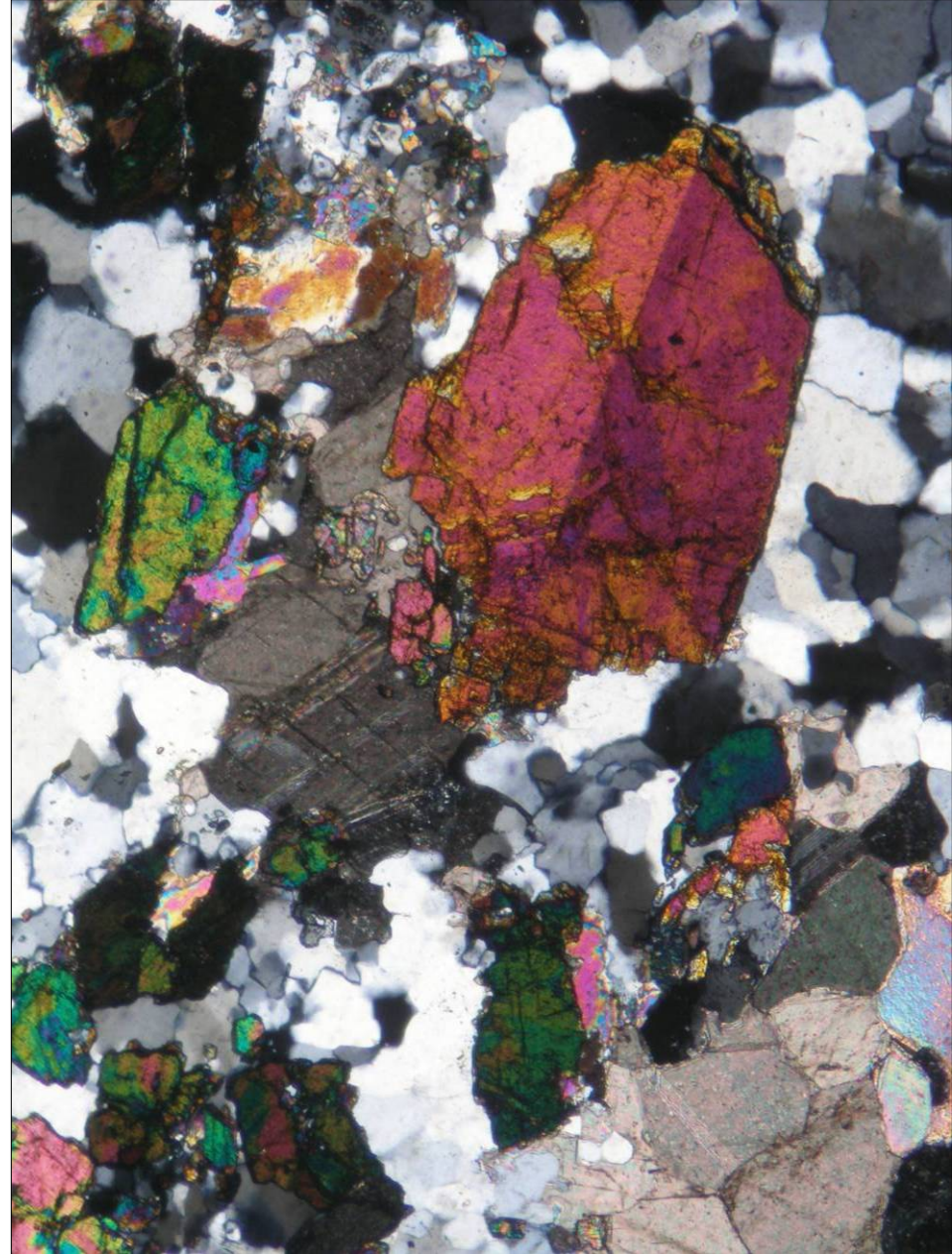
Epidote in epidote-chlorite schist from Dolní Údolí, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 0.9 mm. Photo: JiZi.



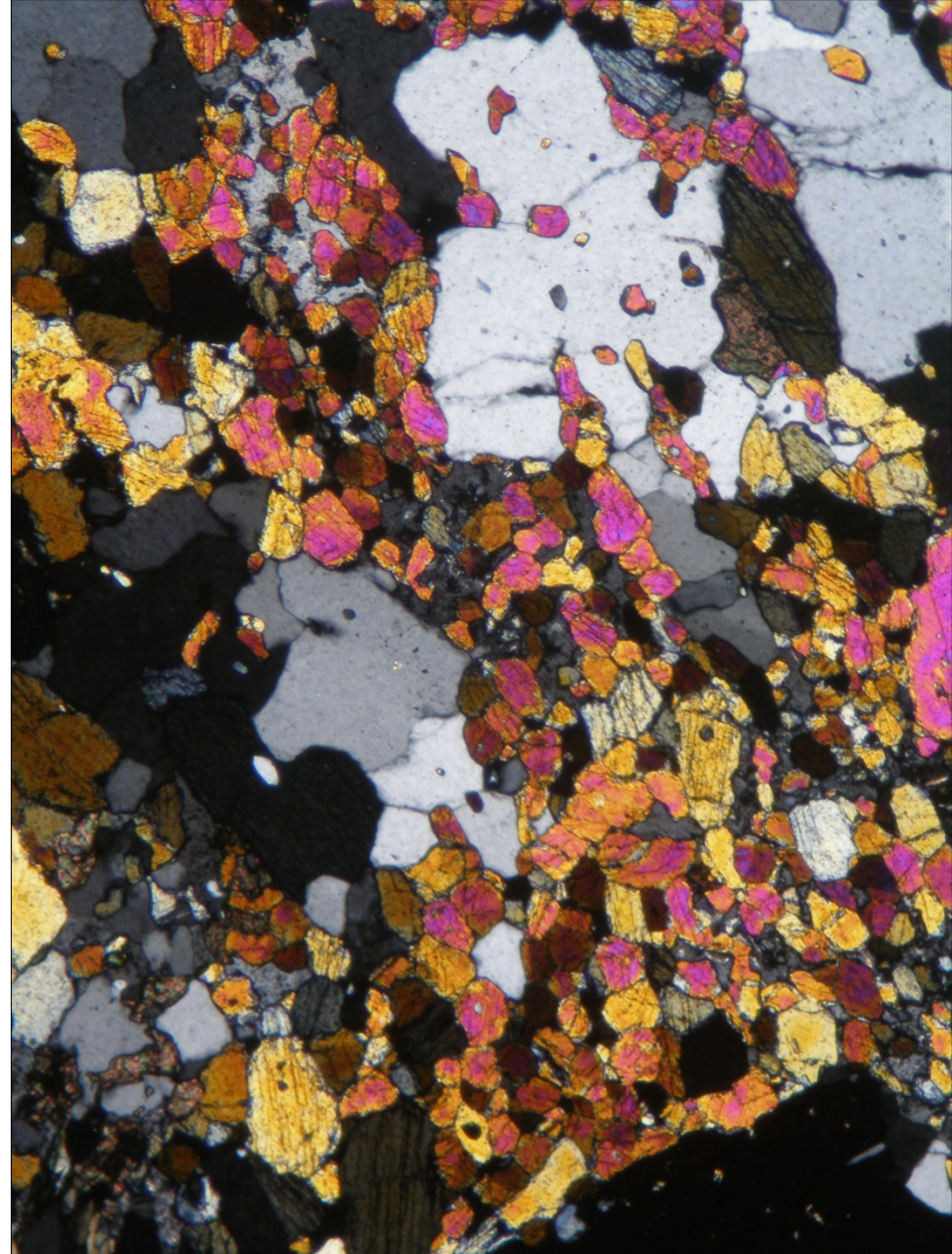
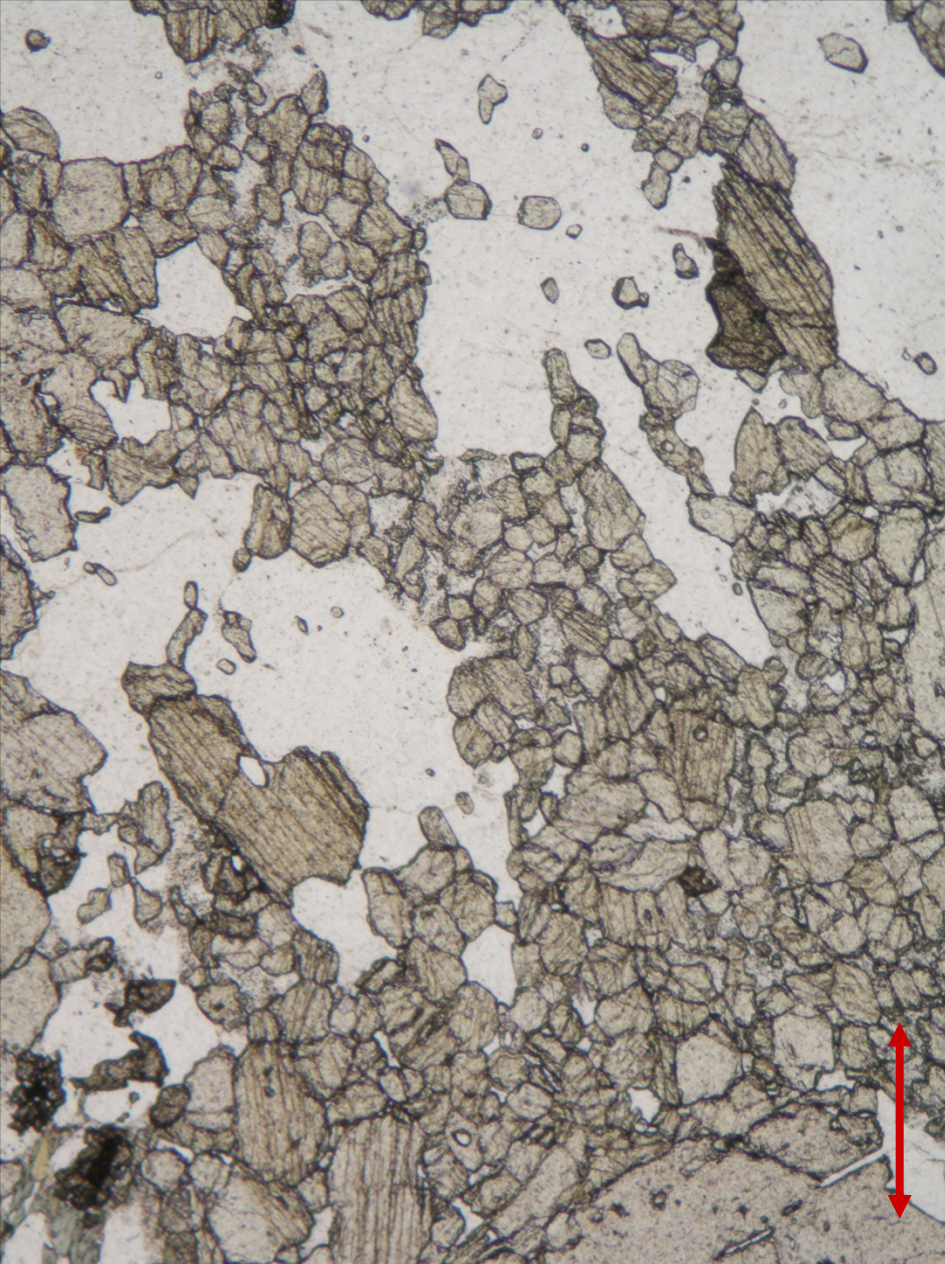
Epidote in greenschist from Drakov, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.8 mm. Photo: JiZi.



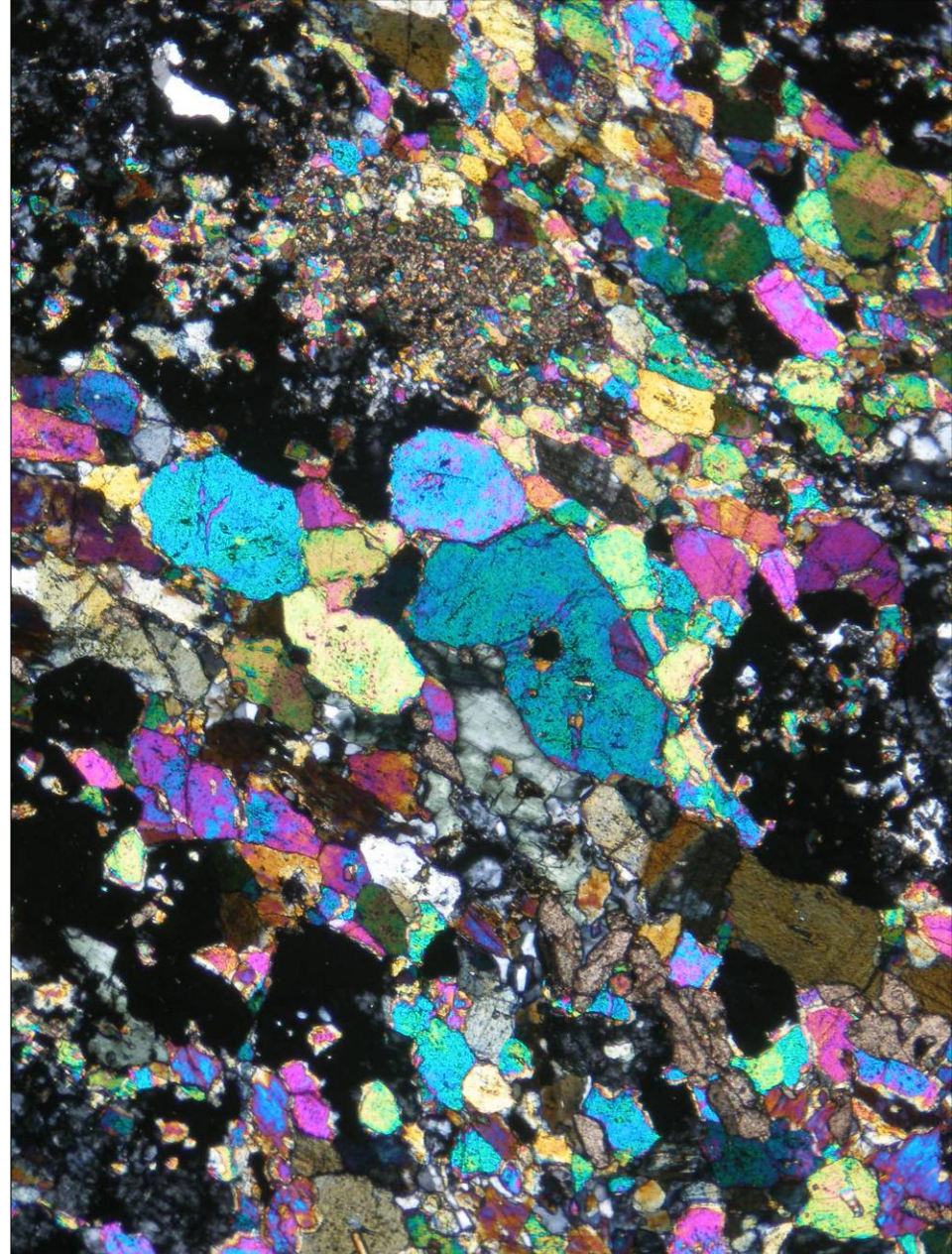
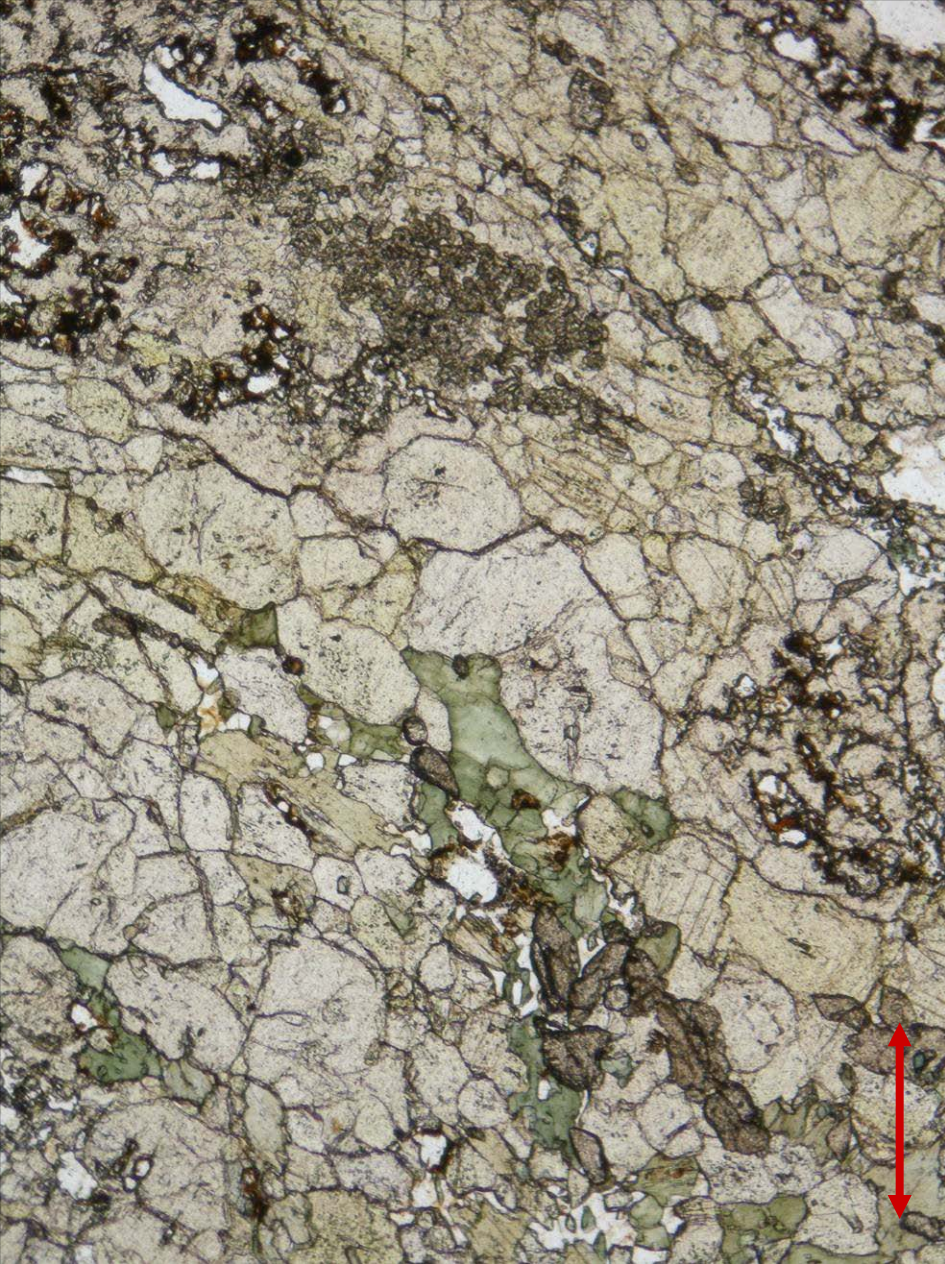
Epidote and chlorite in greenschist from Drakov, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.8 mm. Photo: JiZi.



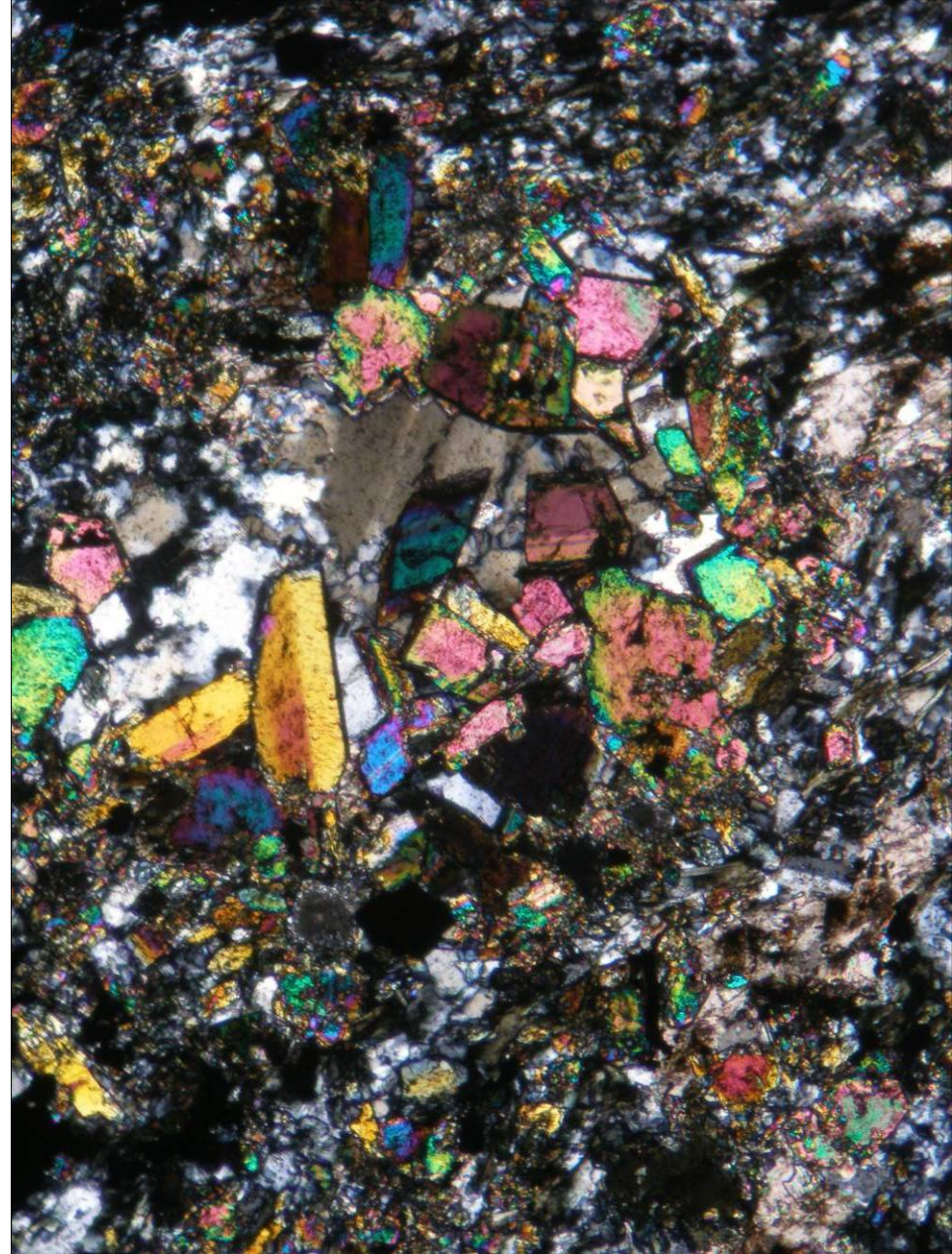
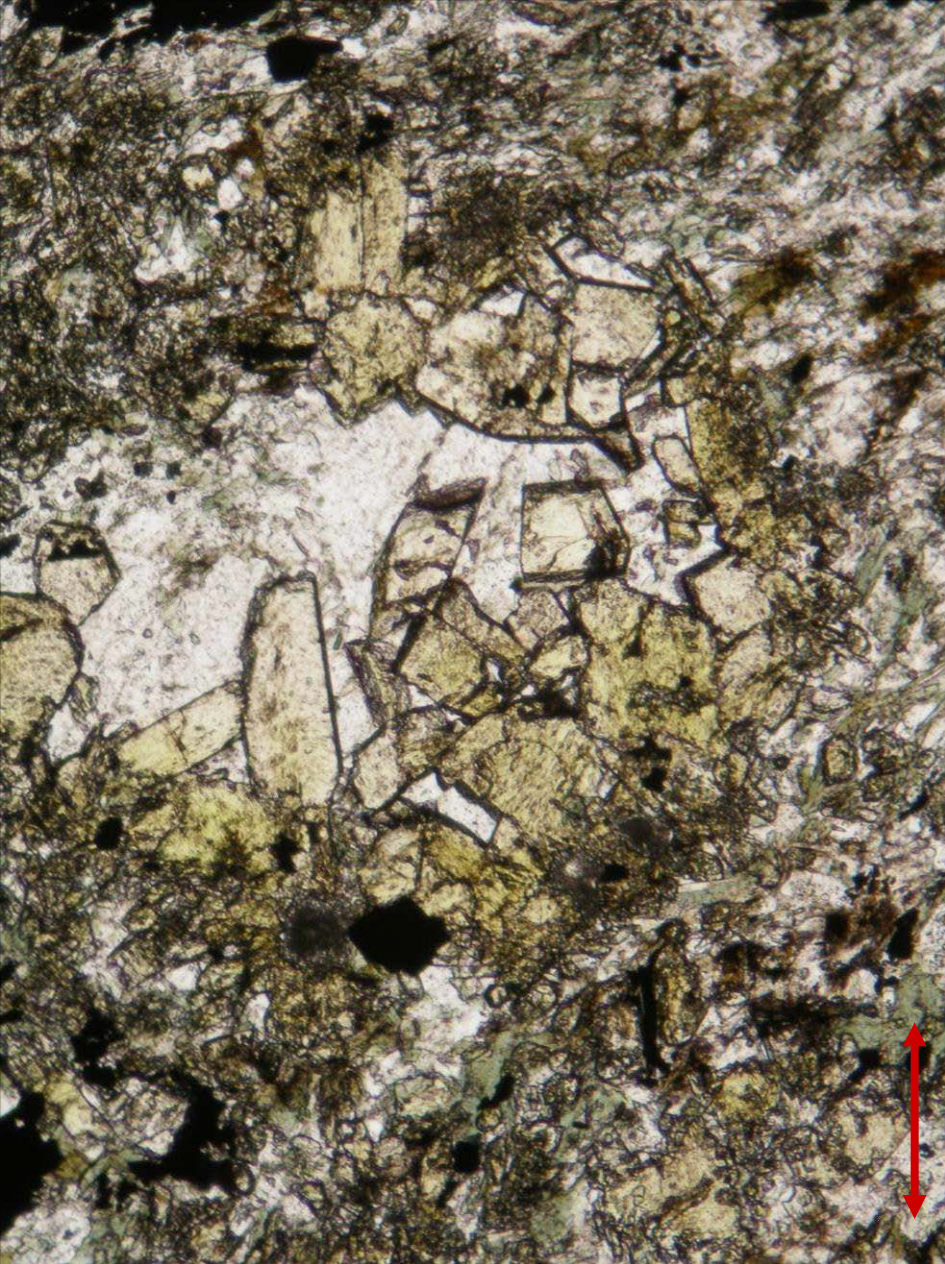
Epidote in a quartz-calcite band in greenschist from Drakov, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.8 mm. Photo: JiZi.



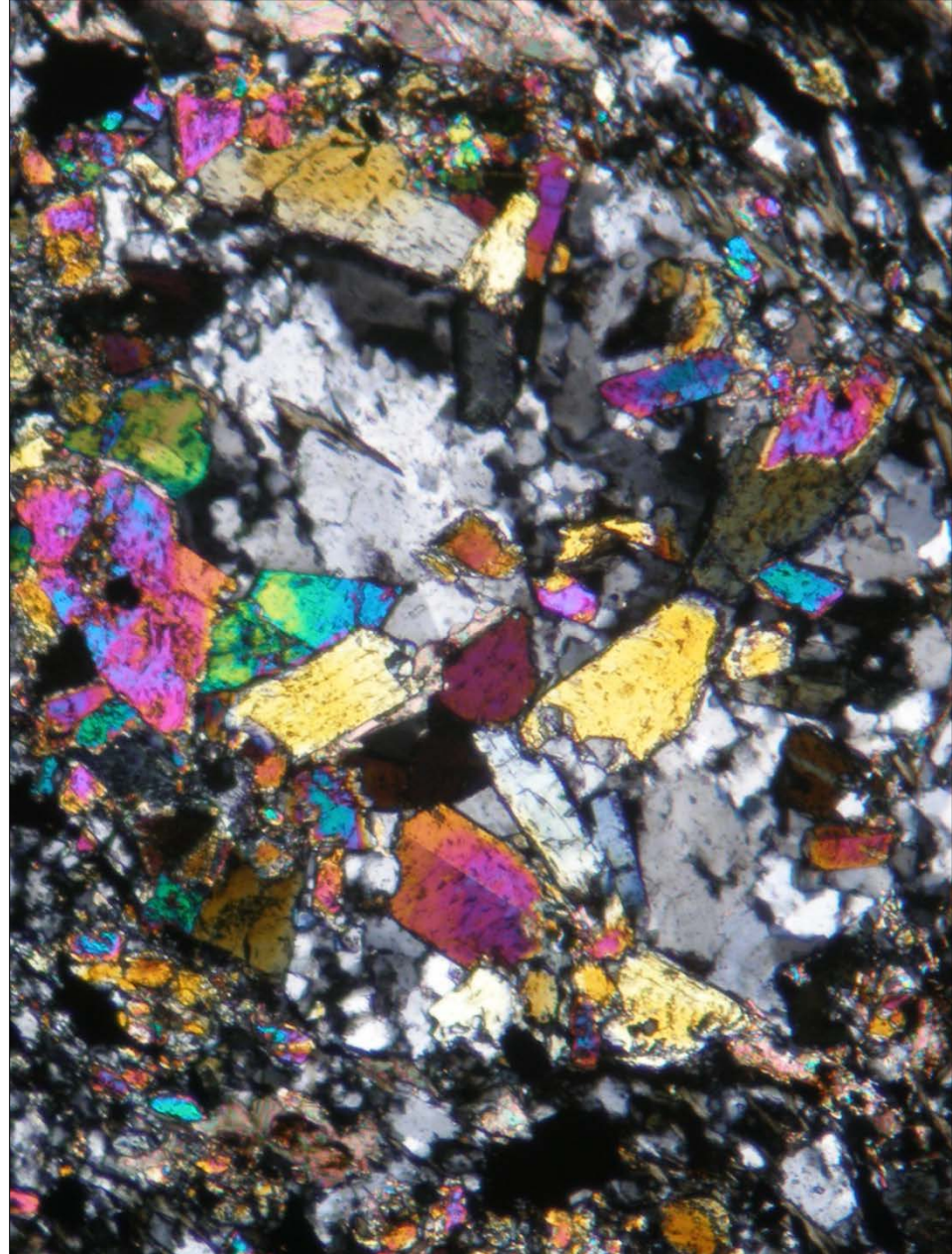
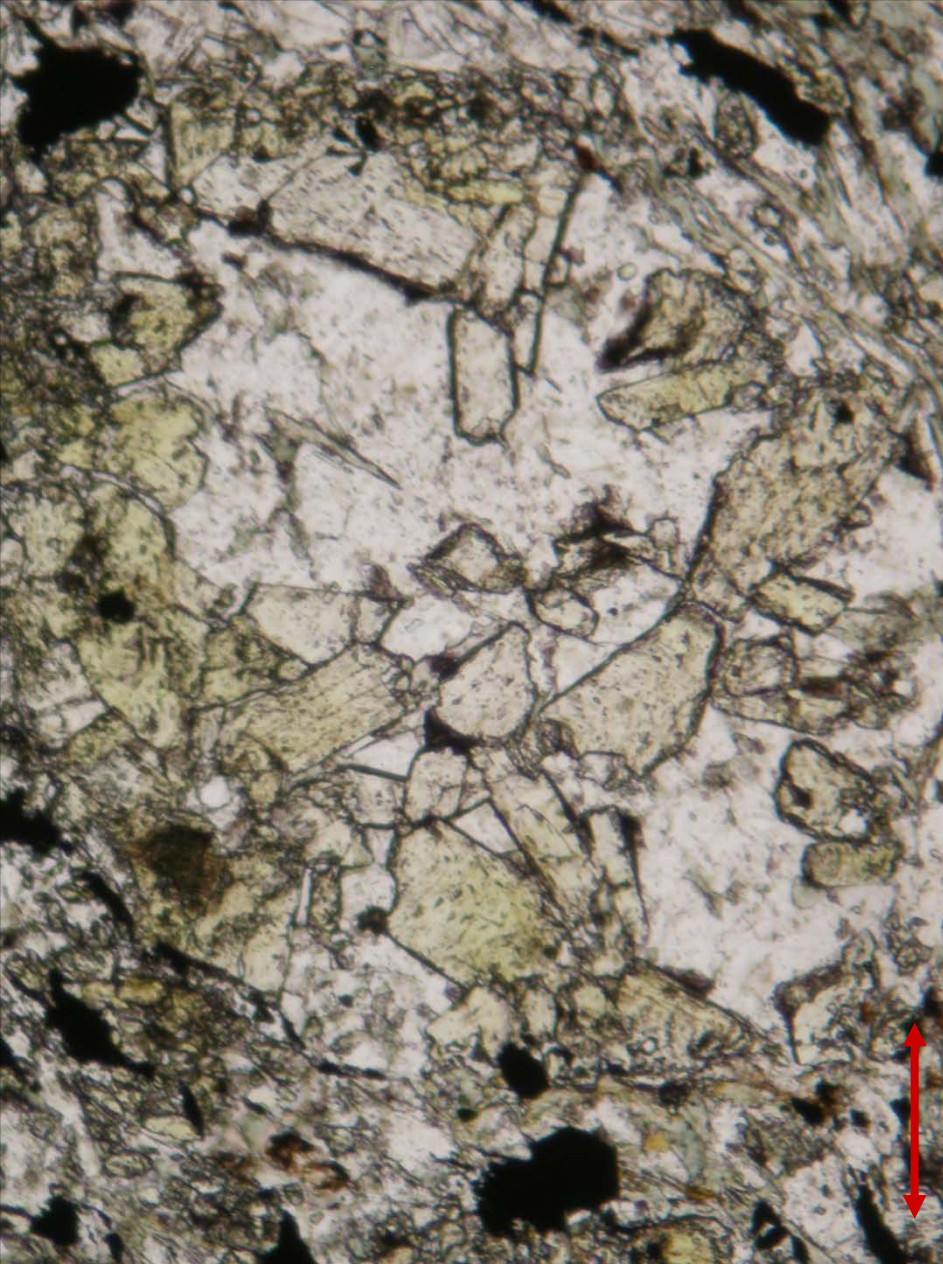
Epidote in metamanganolite from Vernířovice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.7 mm. Photo: JiZi.



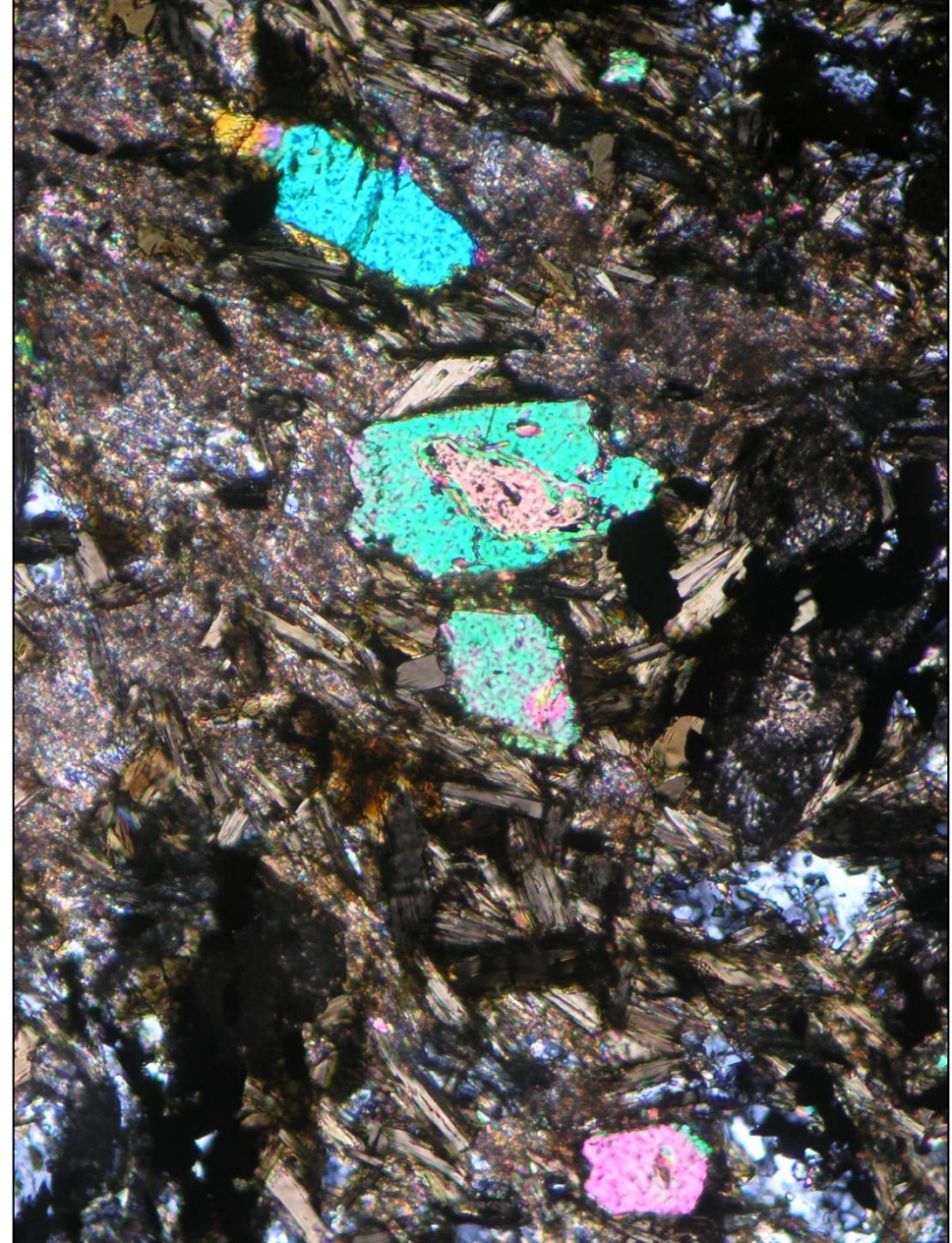
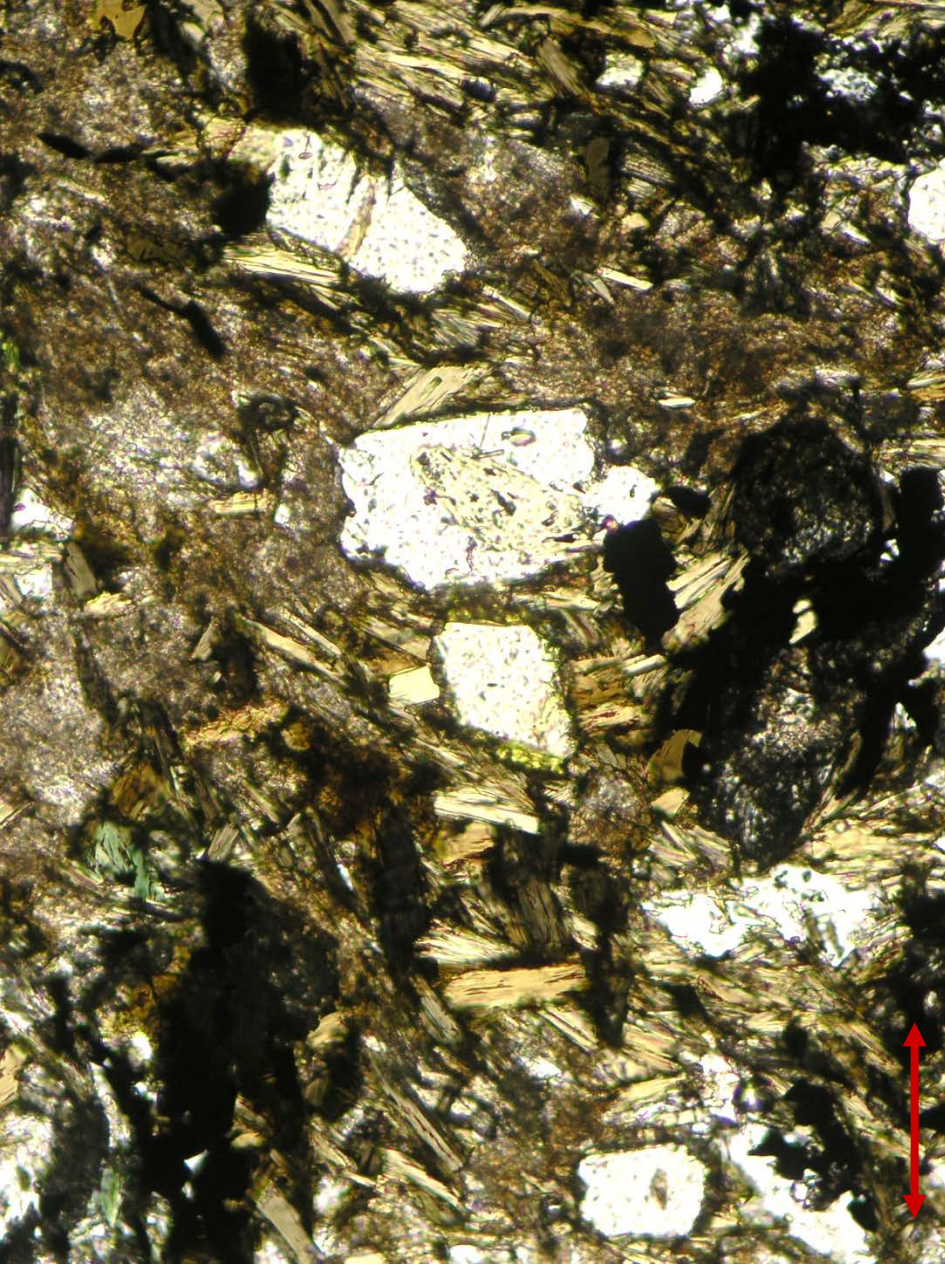
Epidote with garnet and hornblende in metamanganolite from Vernířovice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.8 mm. Photo: JiZi.



Epidote in greenschist from Rejhotice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.7 mm. Photo: JiZi.



Epidote in greenschist from Rejhotice, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.0 mm. Photo: JiZi.



Epidote in epidote-chlorite schist from Rejvíz, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.0 mm. Photo: JiZi.