

ANDALUSITE

Chemical formula: $\text{Al}_2[\text{O}|\text{SiO}_4]$

Crystal system: orthorhombic

Color in thin section: colorless, less commonly pink with weak pleochroism:

X = pink

Y = Z = colorless

Form: prismatic crystals with a nearly square cross section; a variety called chiastolite forms columnar crystals with dark accumulations of carbonaceous pigment that form a cross along the diagonals of the prism.

Cleavage: good on {110}, poor on {100},

Indices of refraction: $n_\alpha = 1.629 - 1.640$ $n_\beta = 1.633 - 1.644$ $n_\gamma = 1.638 - 1.650$

Birefringence: 0.009 – 0.013

Optic sign: biaxial negative

Sign of elongation: negative

Alteration: may be altered to fine-grained muscovite (sericite) or chlorite

Occurrence: mica schists, hornfels, less often granite and granitic pegmatites

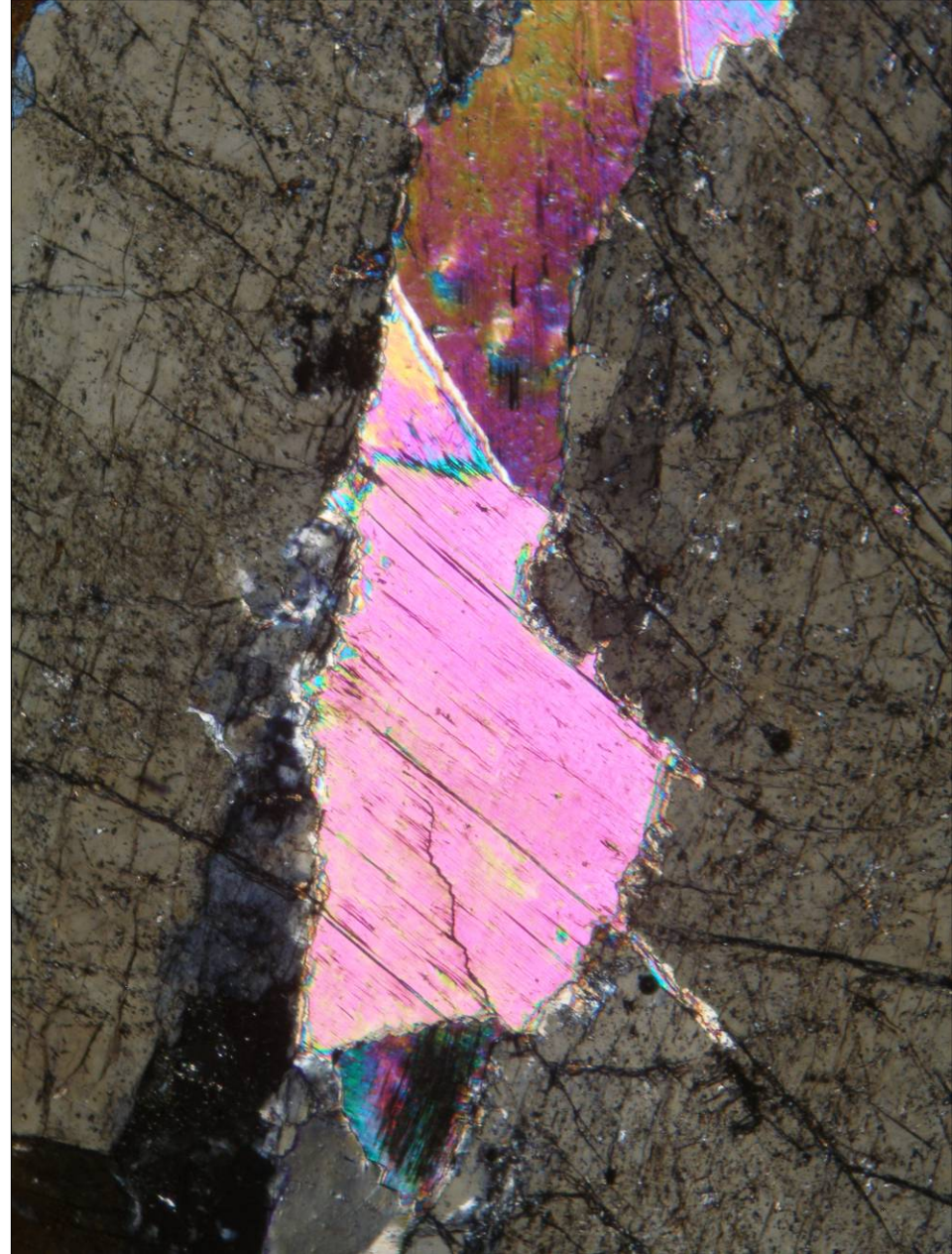
Similar minerals in thin sections: apatite (uniaxial, lower birefringence), kyanite (higher birefringence, inclined extinction)



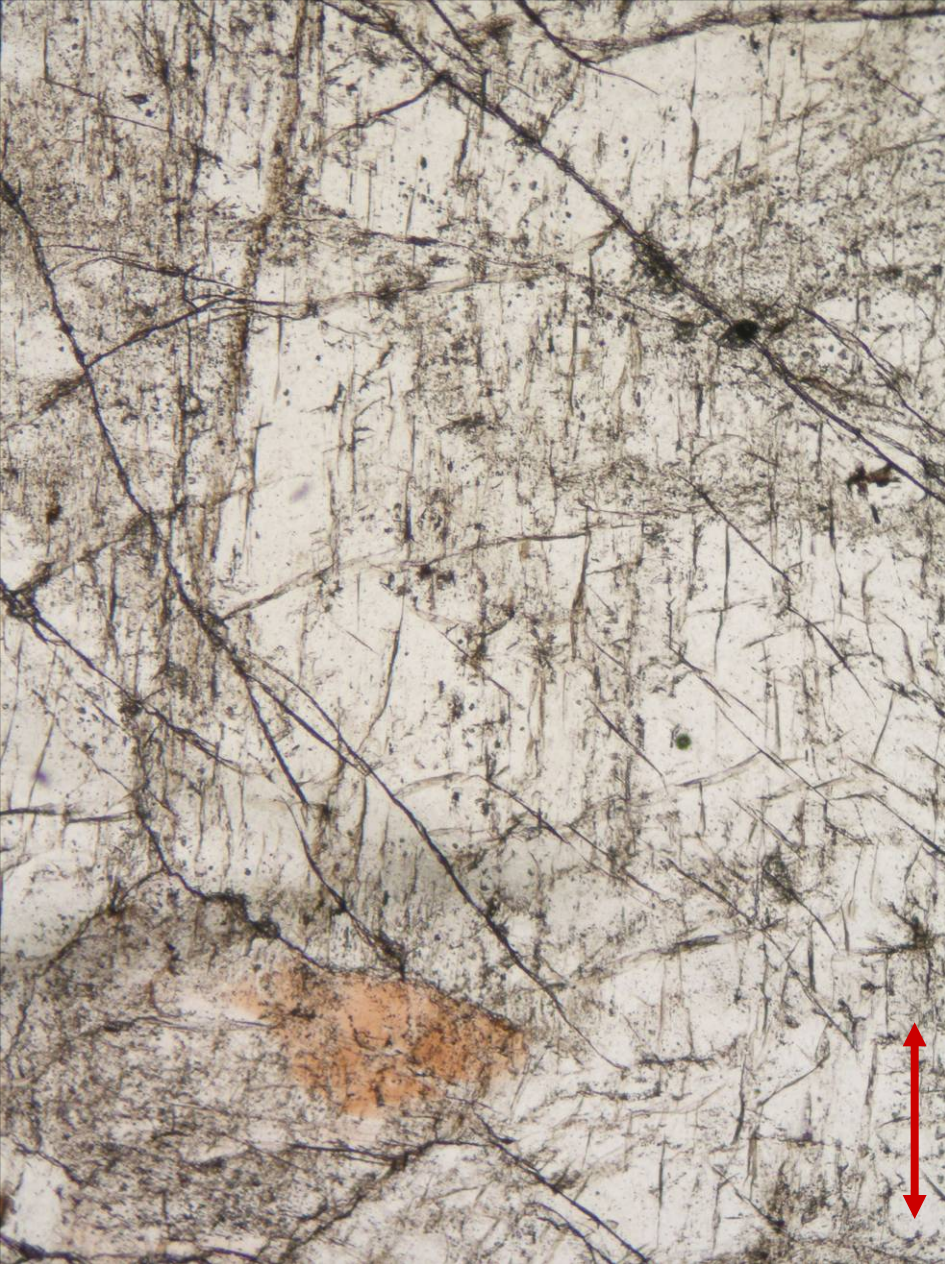
Pleochroism of andalusite in pegmatite from Dolní Bory, the Czech Republic; PPL. Width of fields of view is ca. 2.2 mm. Photo: JiZi.



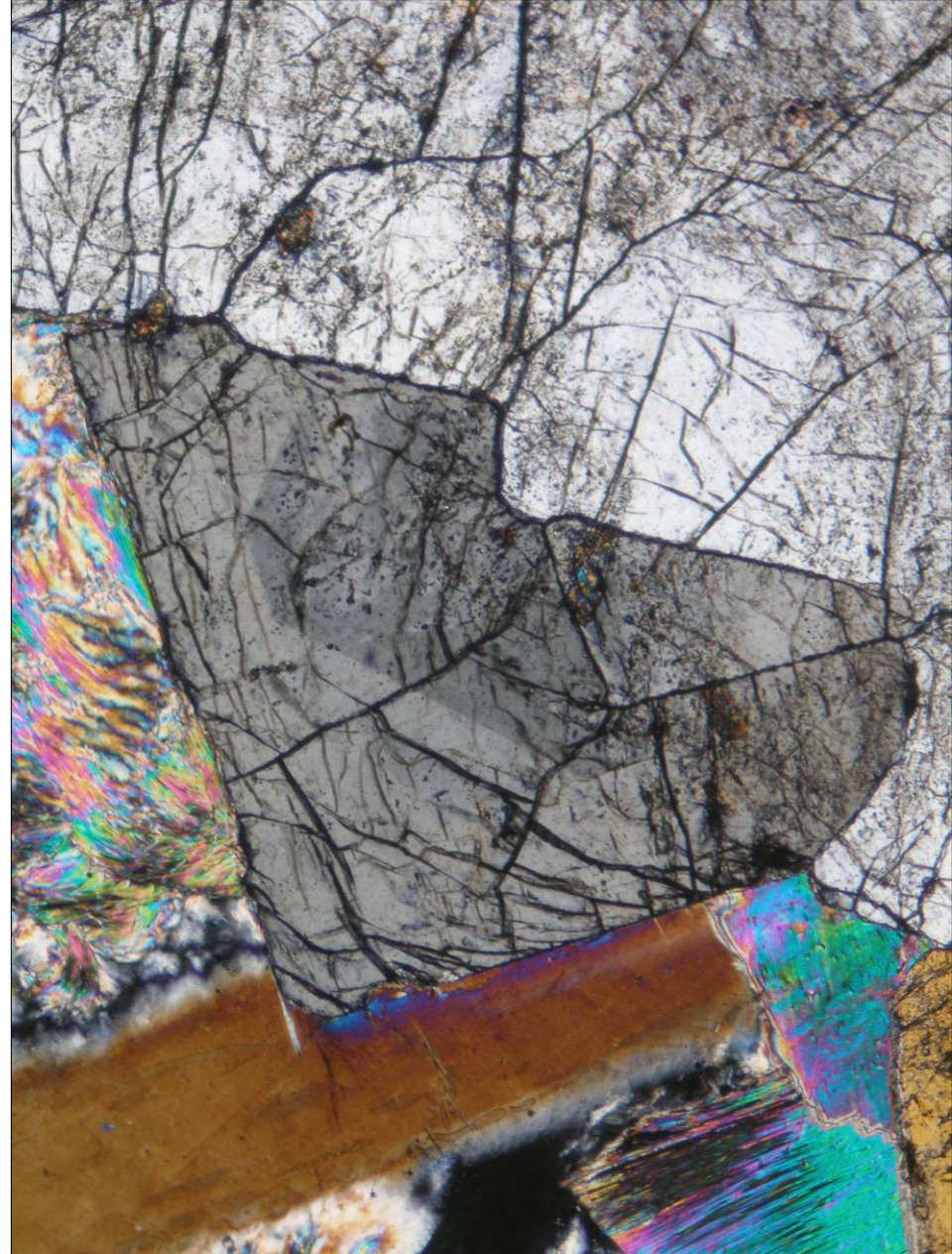
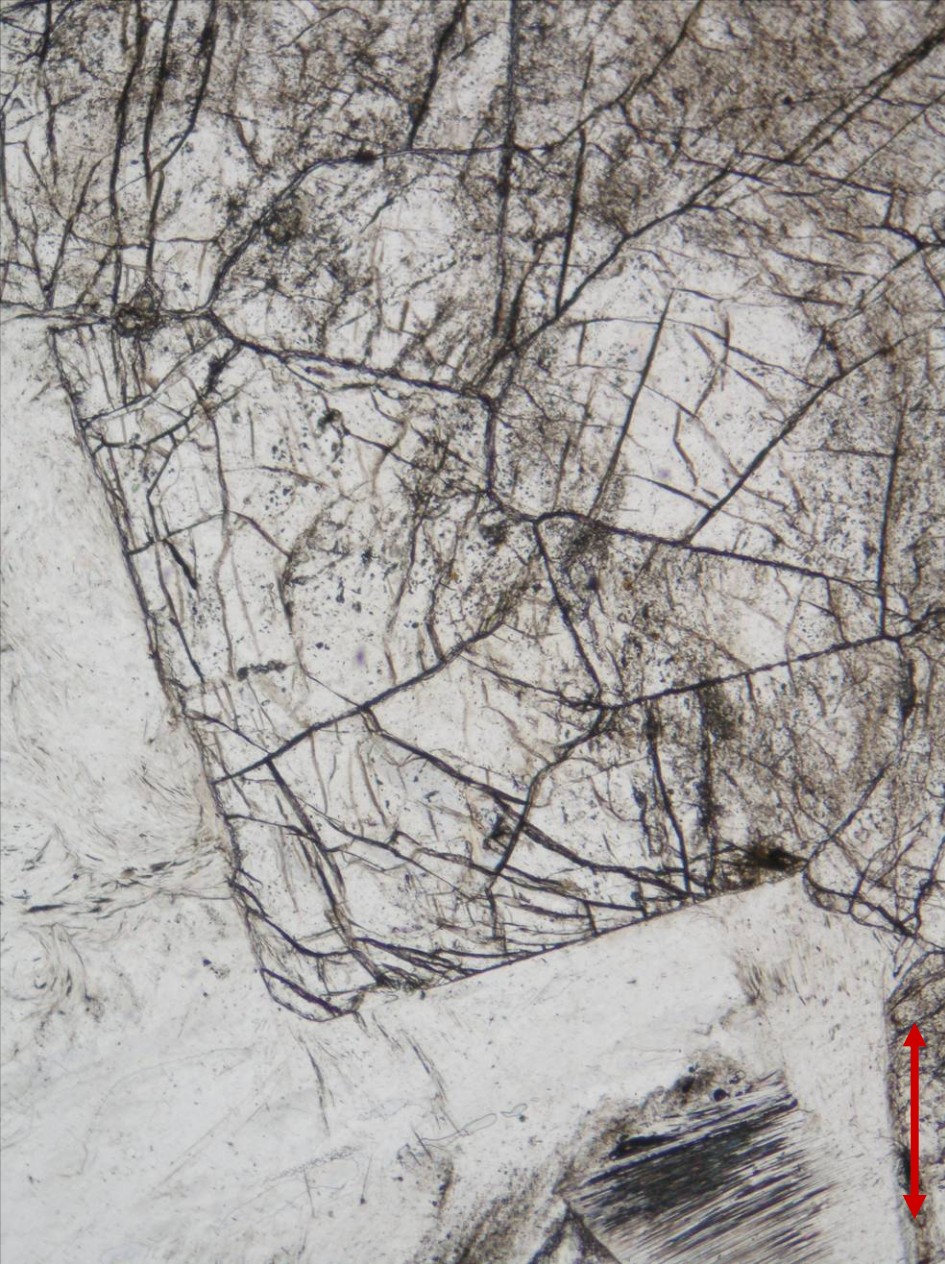
Andalusite in pegmatite from Dolní Bory, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.2 mm. Photo: JiZi.



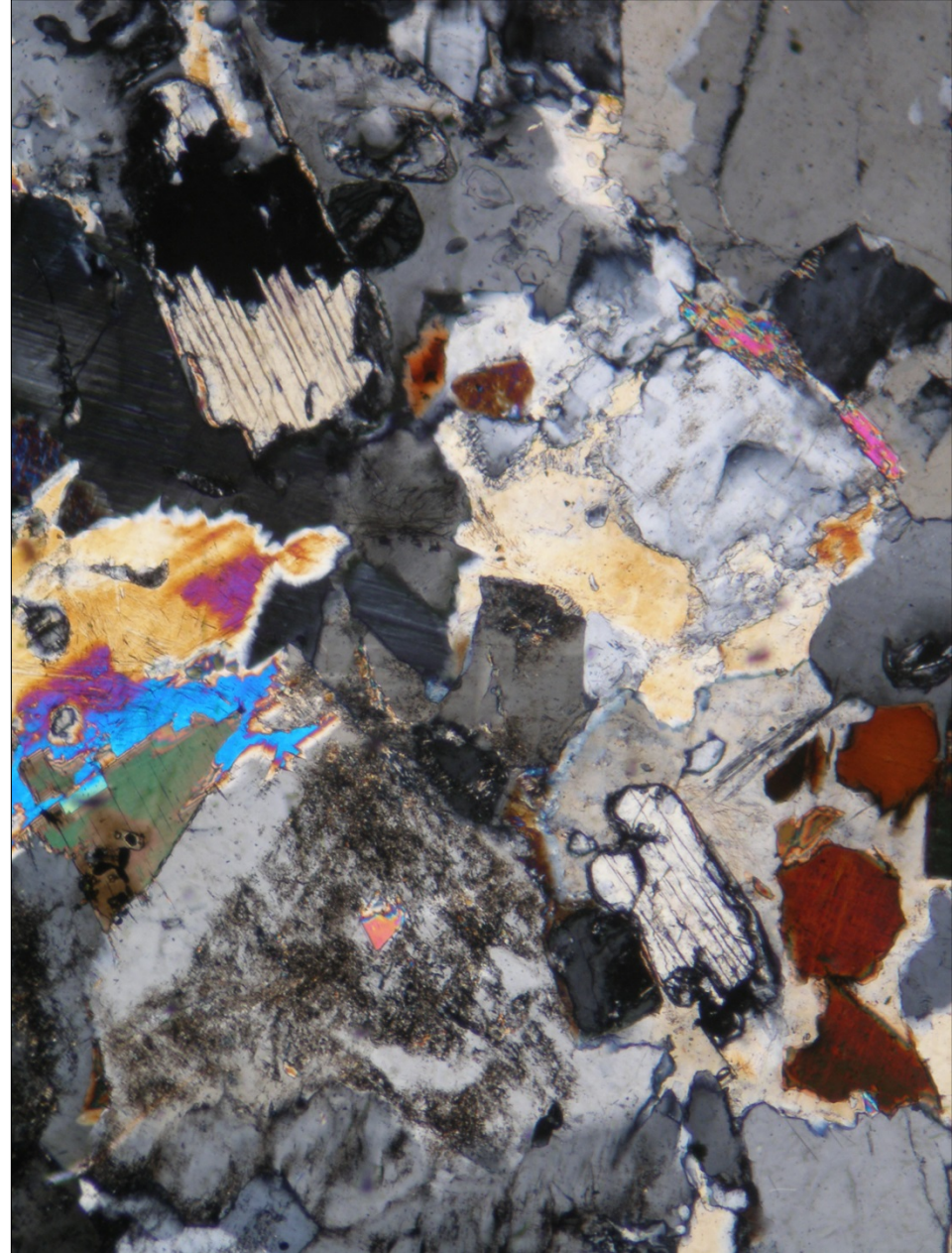
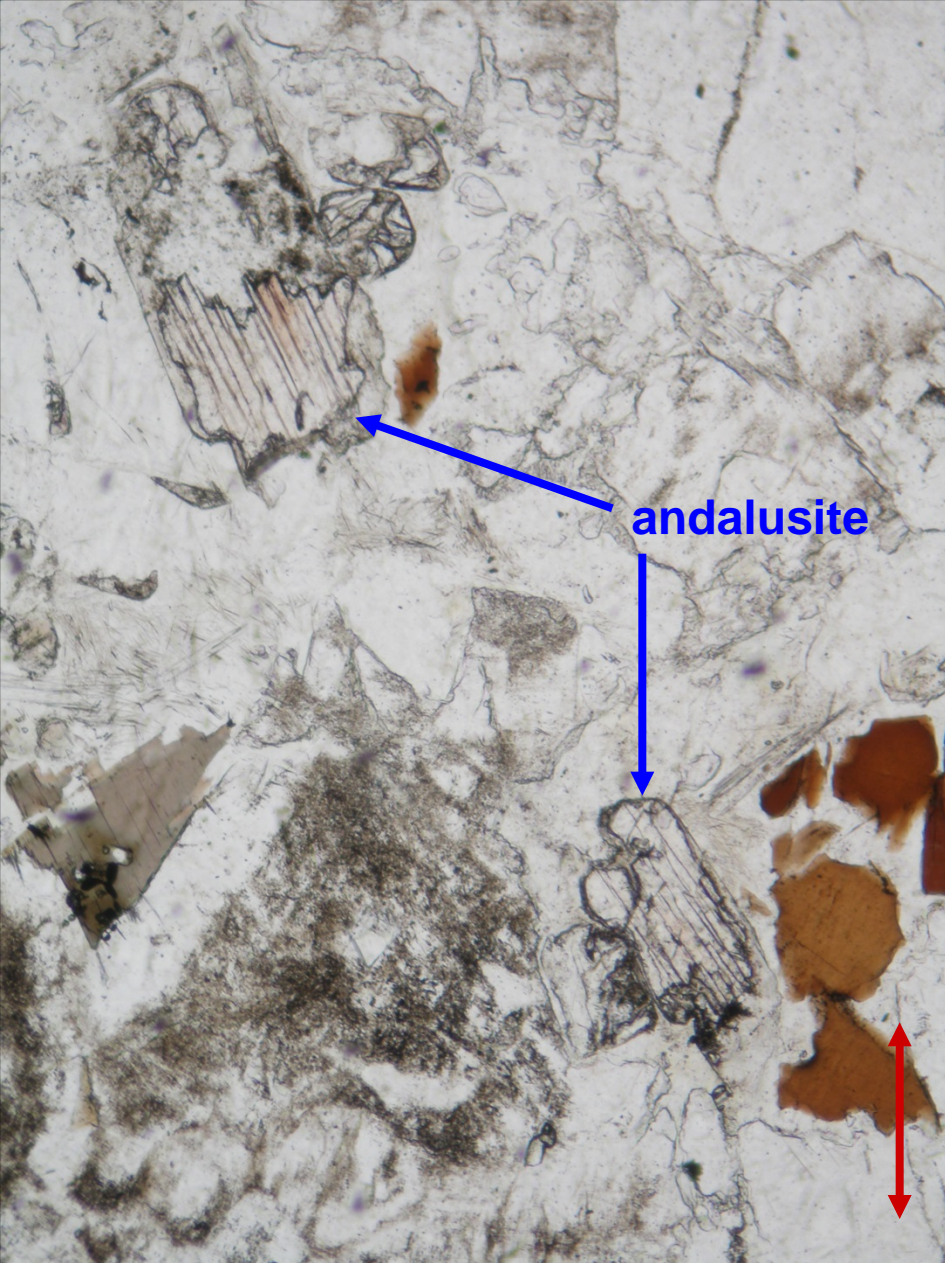
Andalusite and muscovite in pegmatite from Dolní Bory, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.2 mm. Photo: JiZi.



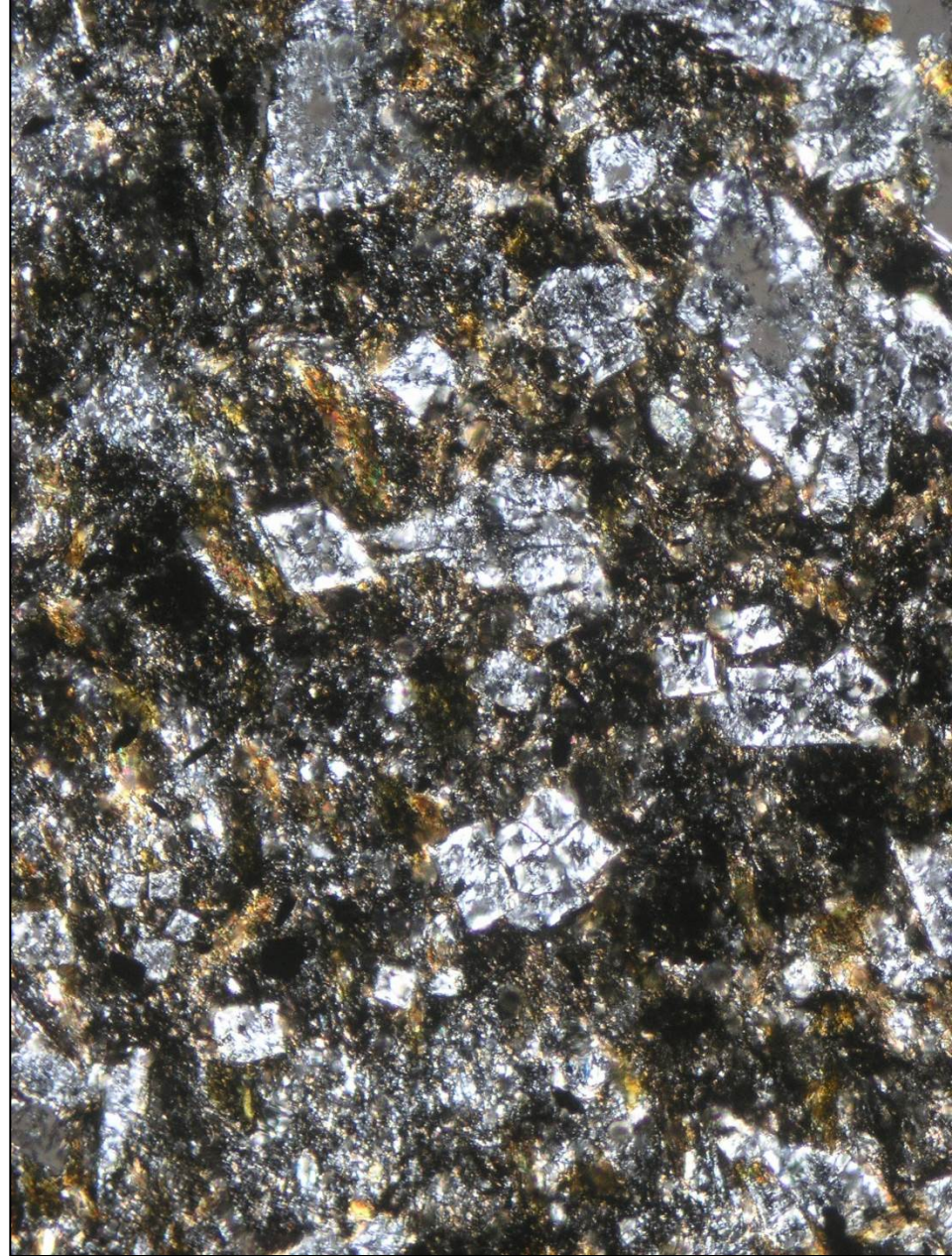
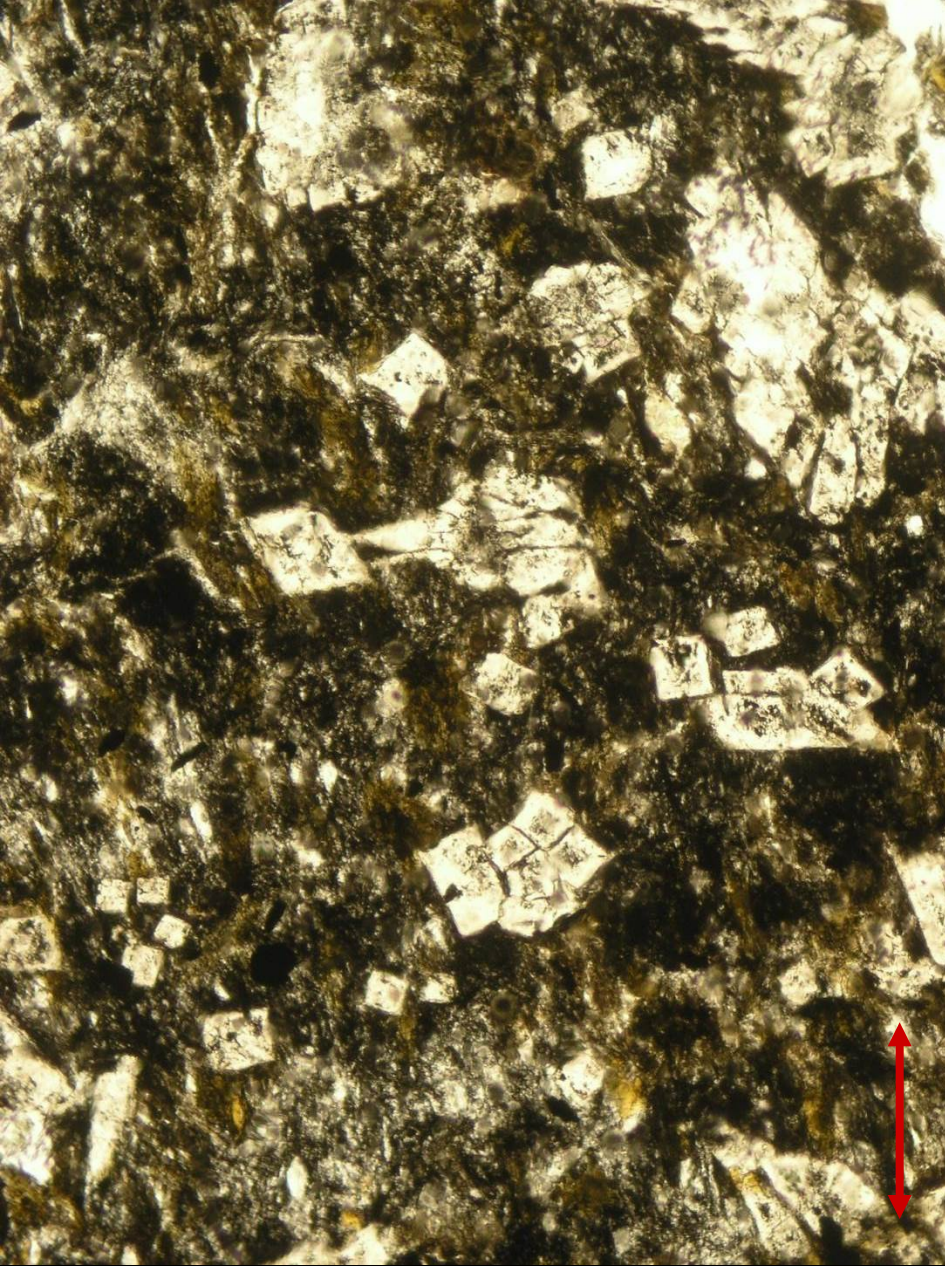
Andalusite in pegmatite from Dolní Bory, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.2 mm. Photo: JiZi.



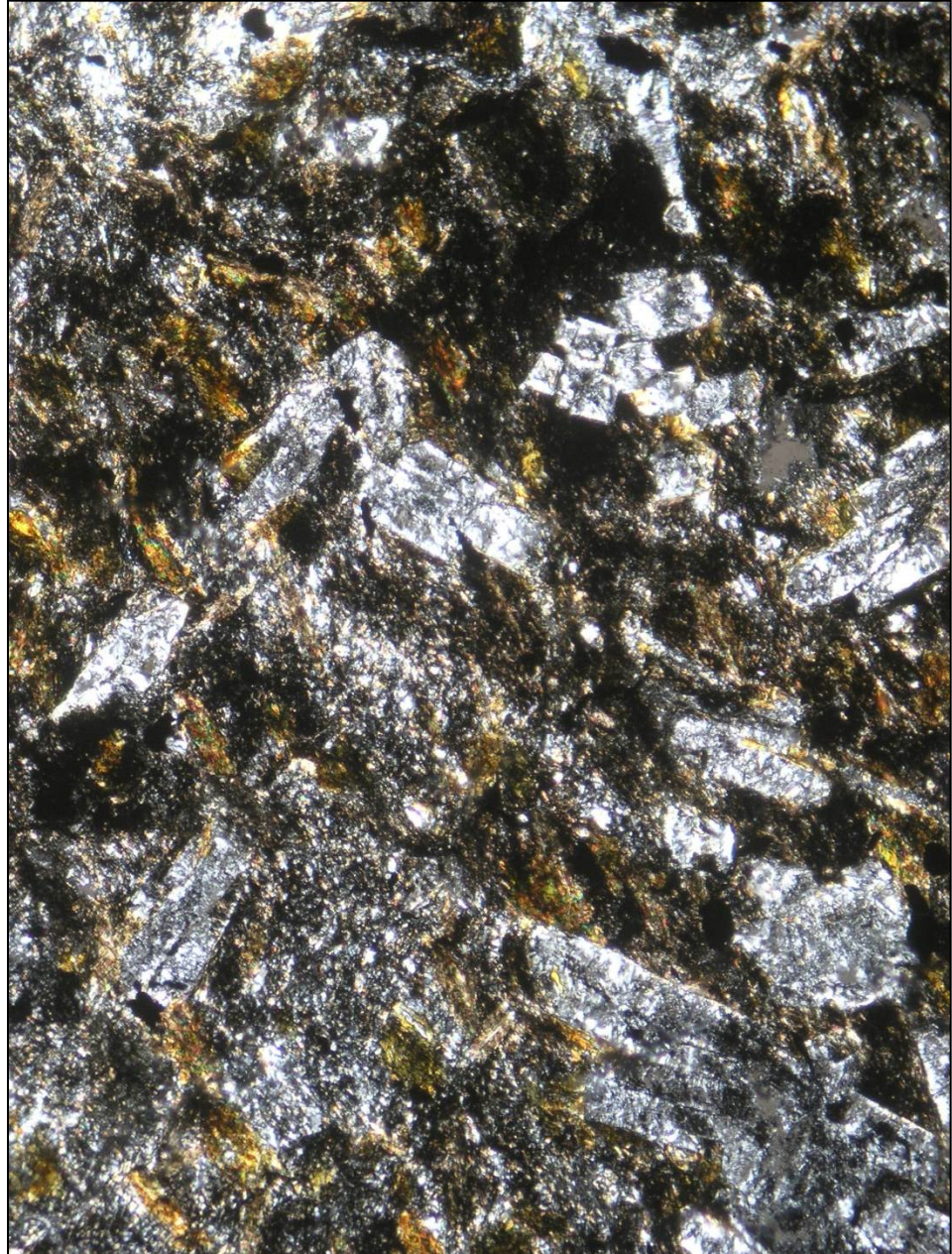
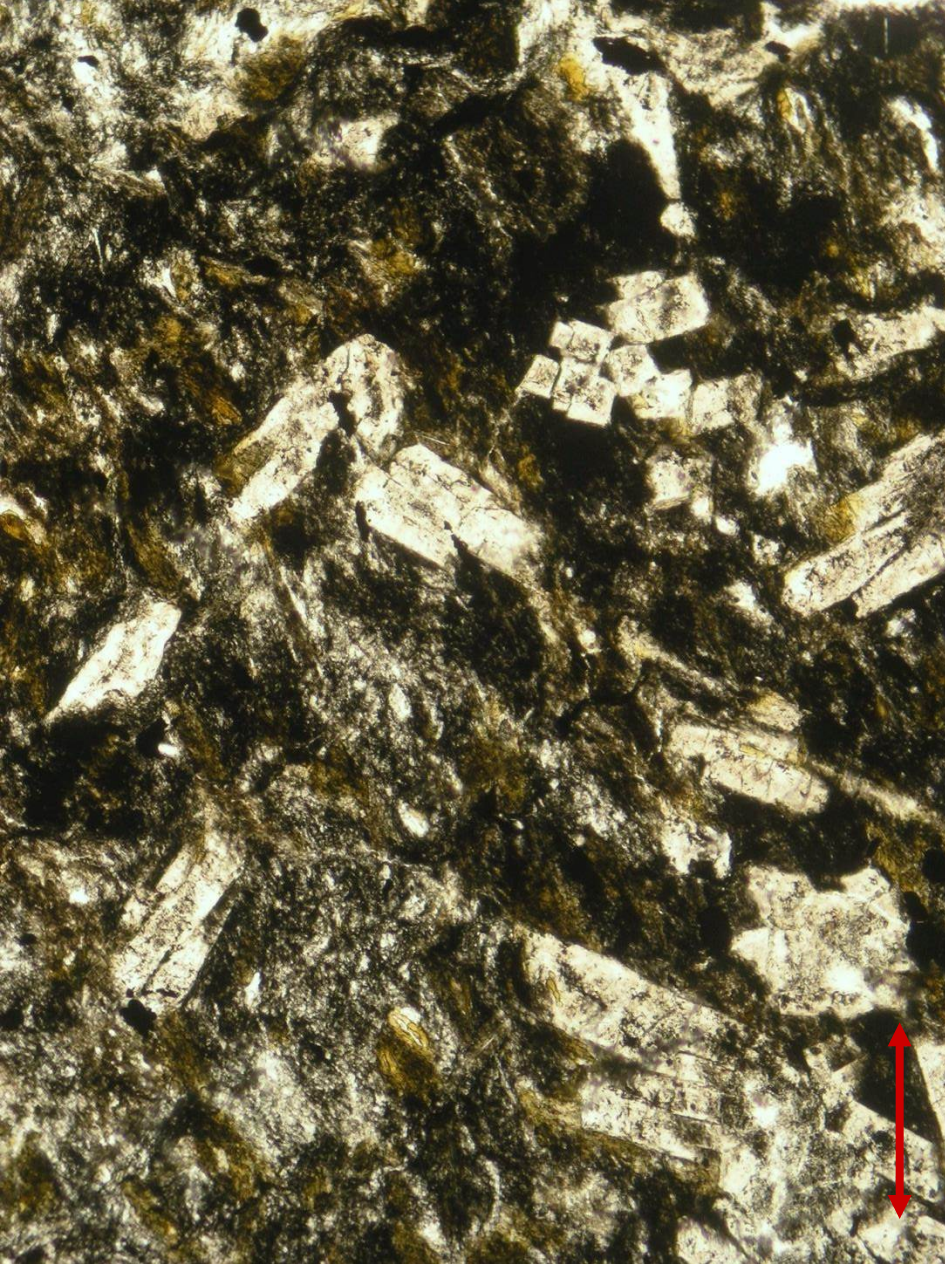
Zoned andalusite with muscovite in pegmatite from Dolní Bory, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.0 mm. Photo: JiZi.



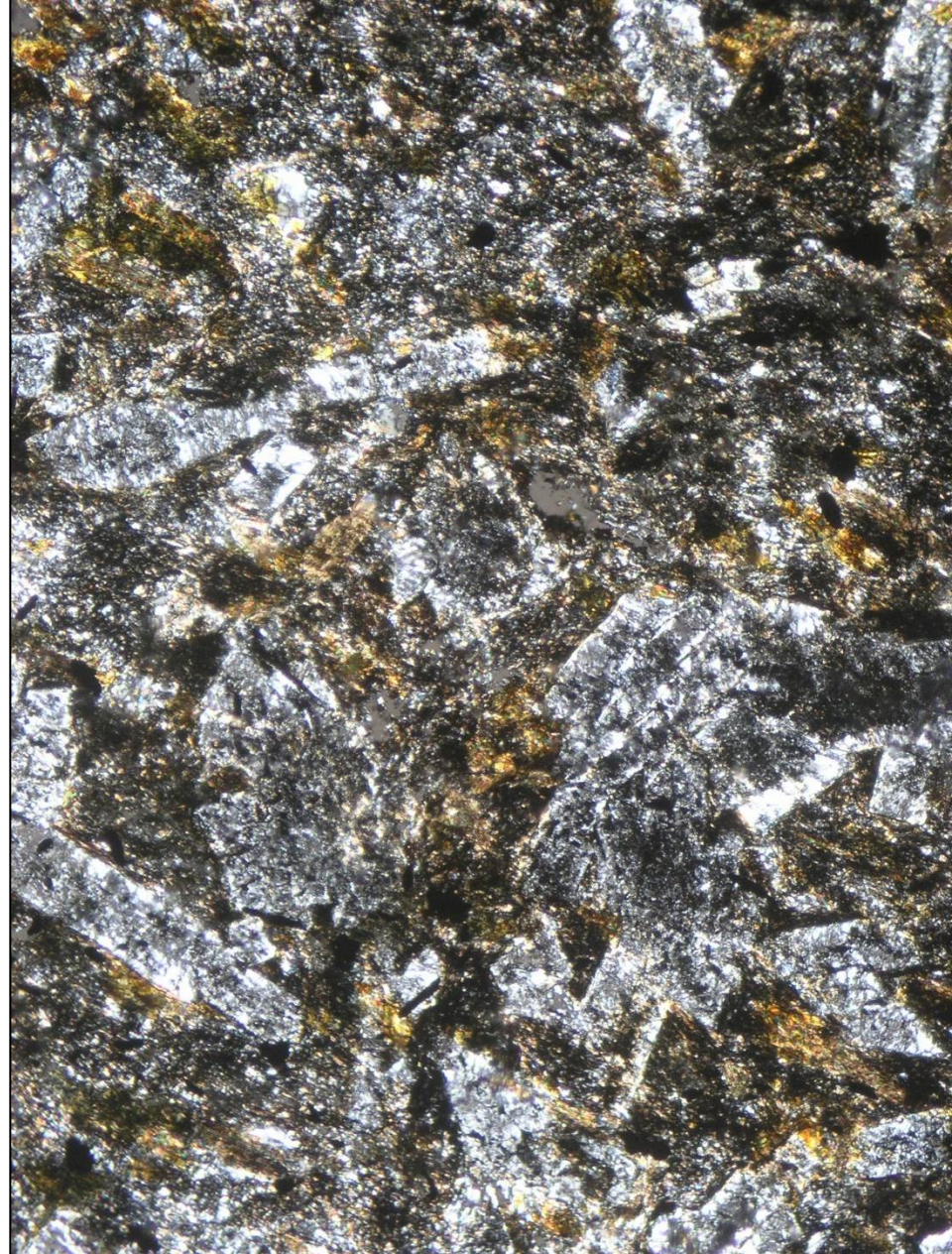
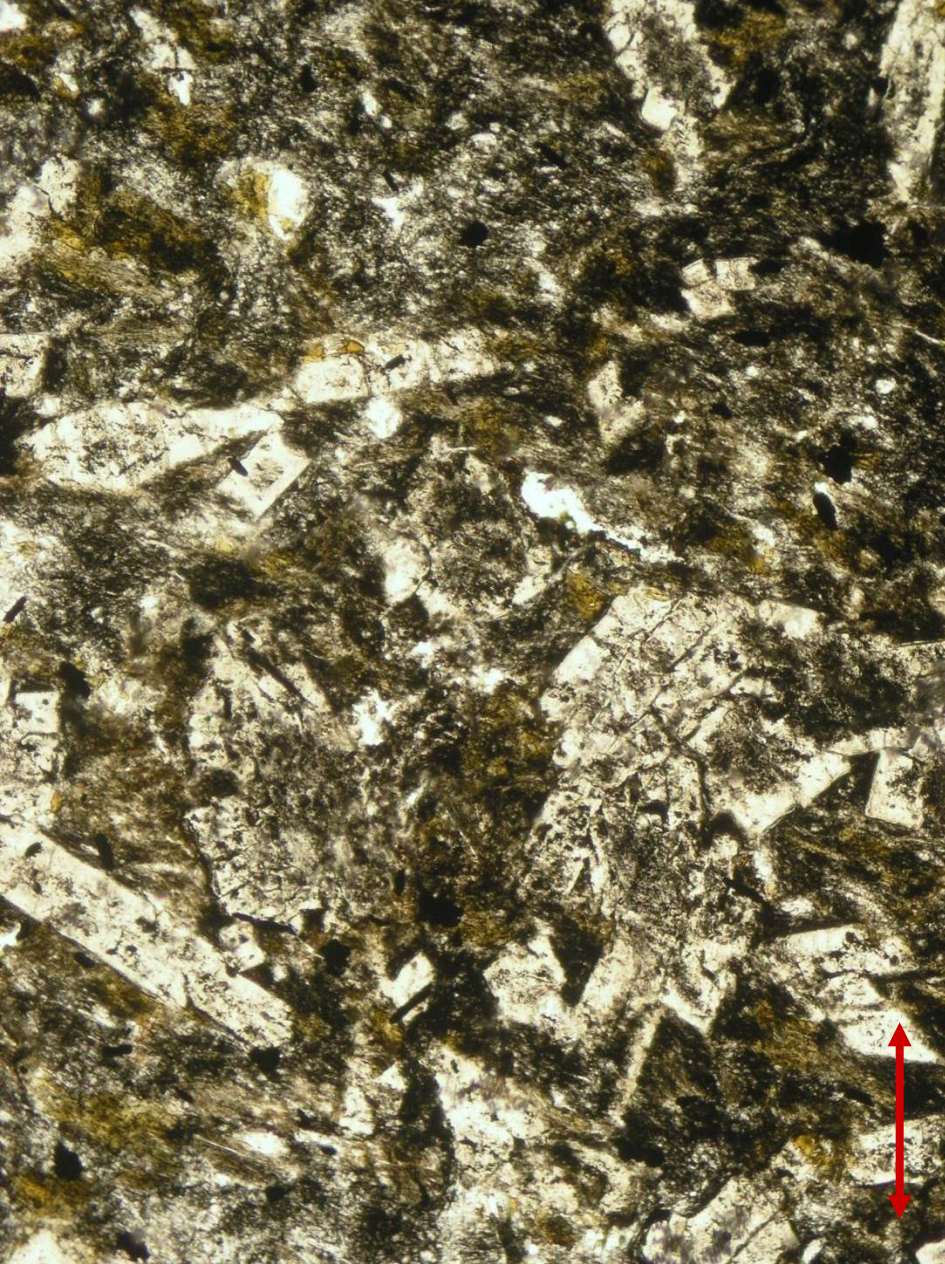
Andalusite in granite from Mrákotín, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 1.6 mm. Photo: JiZi.



Andalusite (chiastolite) in chiastolite hornfels from Vysoký Chlumeč, the Czech Republic; PPL (left) and XPL (right). Width of fields of view is ca. 2.4 mm. Photo: JiZi.



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