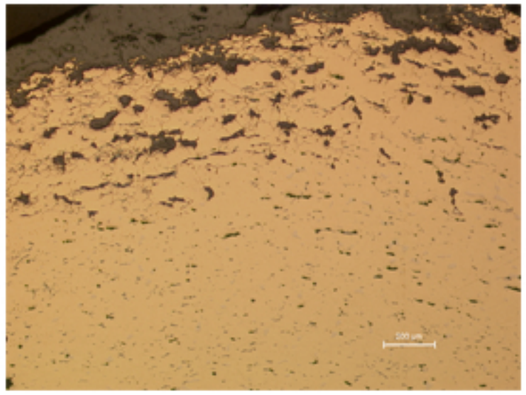
A38 - MIRROR



A38.1

Identification

Sample: A38
Card reference: C53
Origin: Etruria
Location: Musée du Louvre n. 1815

Description

Bronze with a high tin content (about 20%), uniformly corroded. Such mirrors are made from a cast bronze matrix thinned towards the center by hammering and subsequent annealing. Two components can be observed: the Sn-rich phase (eutectoid) is dispersed in matrix consisting in alpha (Cu-rich) phase. Presence of silver in corrosion products.

Figure captions

A38.1
General view showing uniform corrosion with some intergranular corrosion.

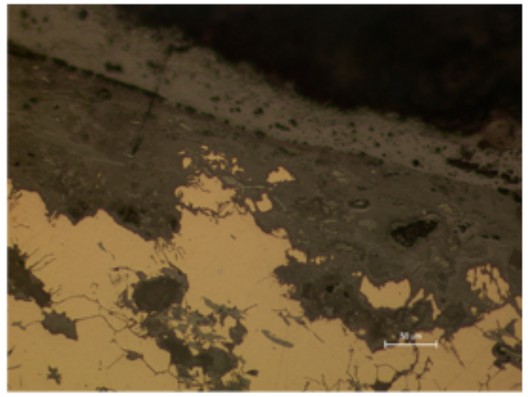
A38.2
Surface detail showing a line corresponding to the original surface (epidermis). Inclusions rich in S and Fe (grey) are deformed due to hammering parallel to the surface.

A38.3
Detail showing the presence of a layer of metallic copper at the surface, and small spheres of metallic copper located within corrosion products, which were probably redeposited by an electrolytic process.

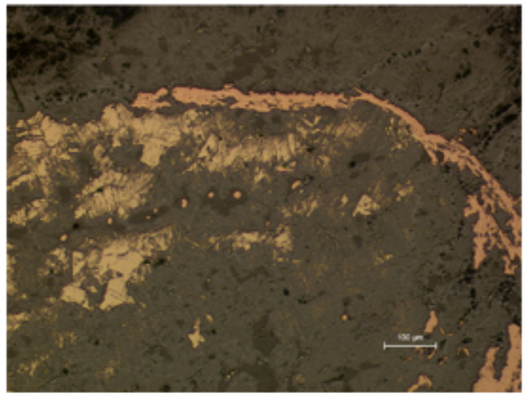
A38.4
Detail of corrosion following the grain boundaries and progressing towards the center of the grains: the remaining metallic core of a grain is visible on the right; the former grain structure can still be recognized within the corrosion products; traces of silver (white) can also be seen.

A38.5
Central area showing the α+δ eutectoid (light grey) and many deformed sulfide inclusions (grey, elongated) dispersed in the Cu-rich α matrix (etchant: aqueous $FeCl_3$).

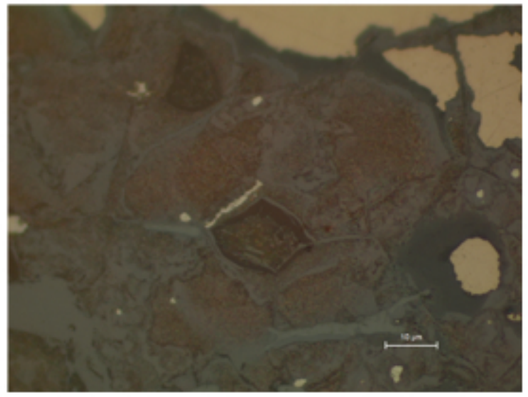
A38.6
Detail near the surface: corrosion developing along grain boundaries and slip lines, sulfide inclusions (grey) and absence of eutectoid in this region (etchant: aqueous $FeCl_3$).



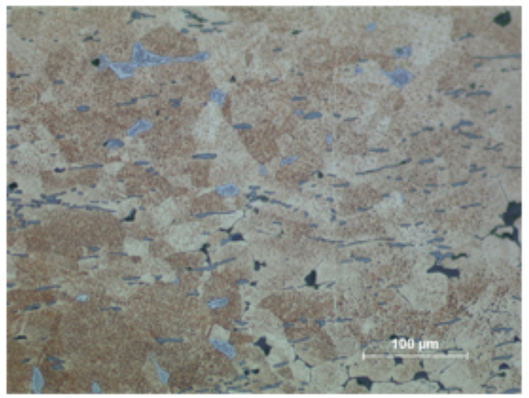
A38.2



A38.3



A38.4



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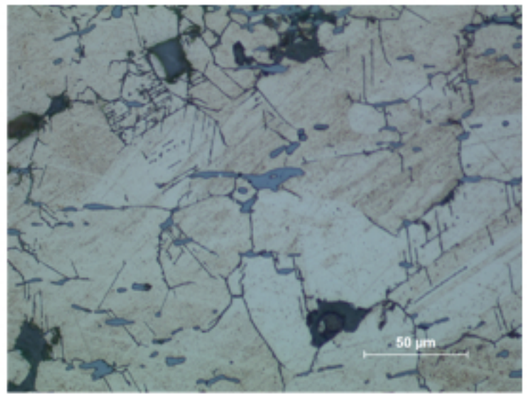

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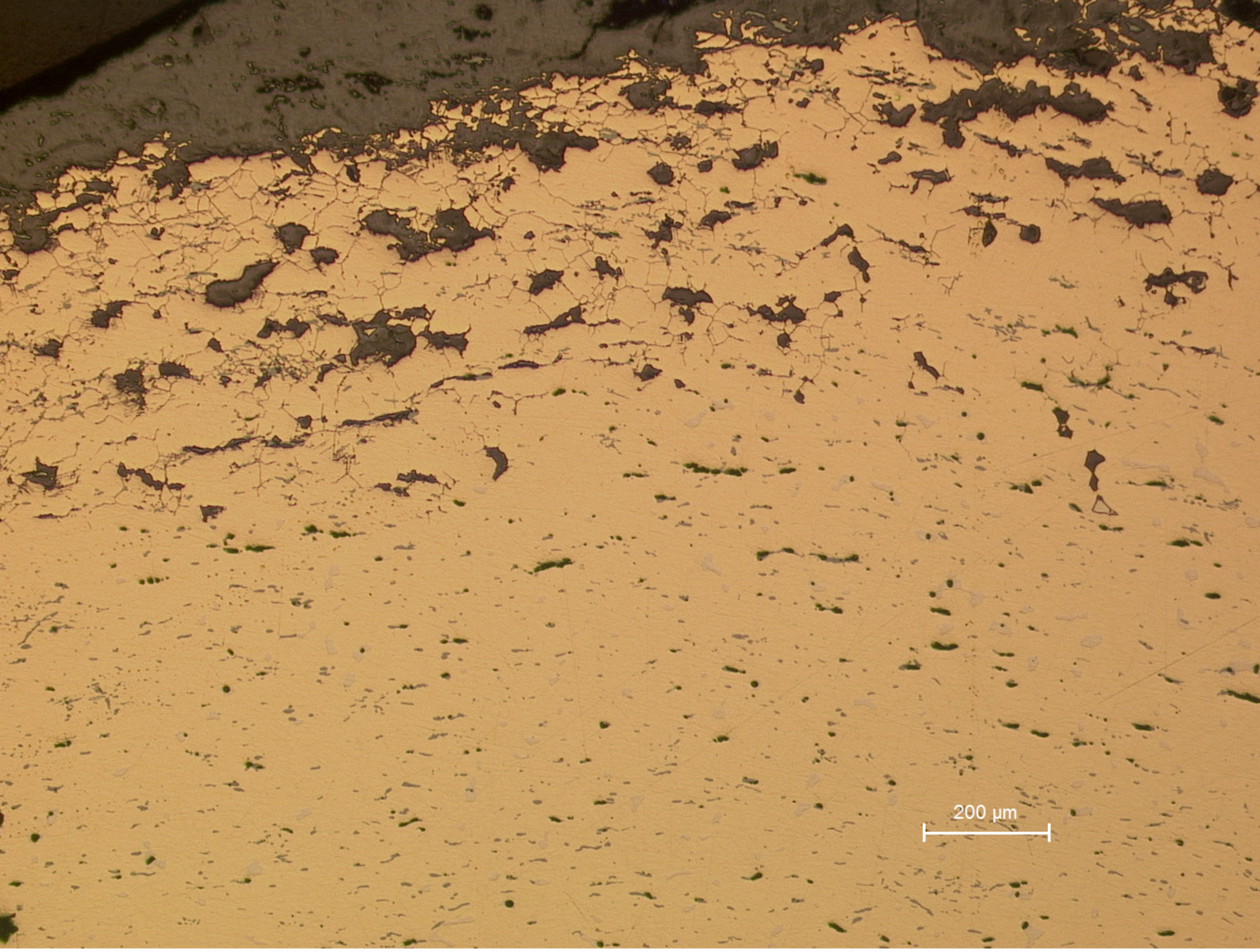

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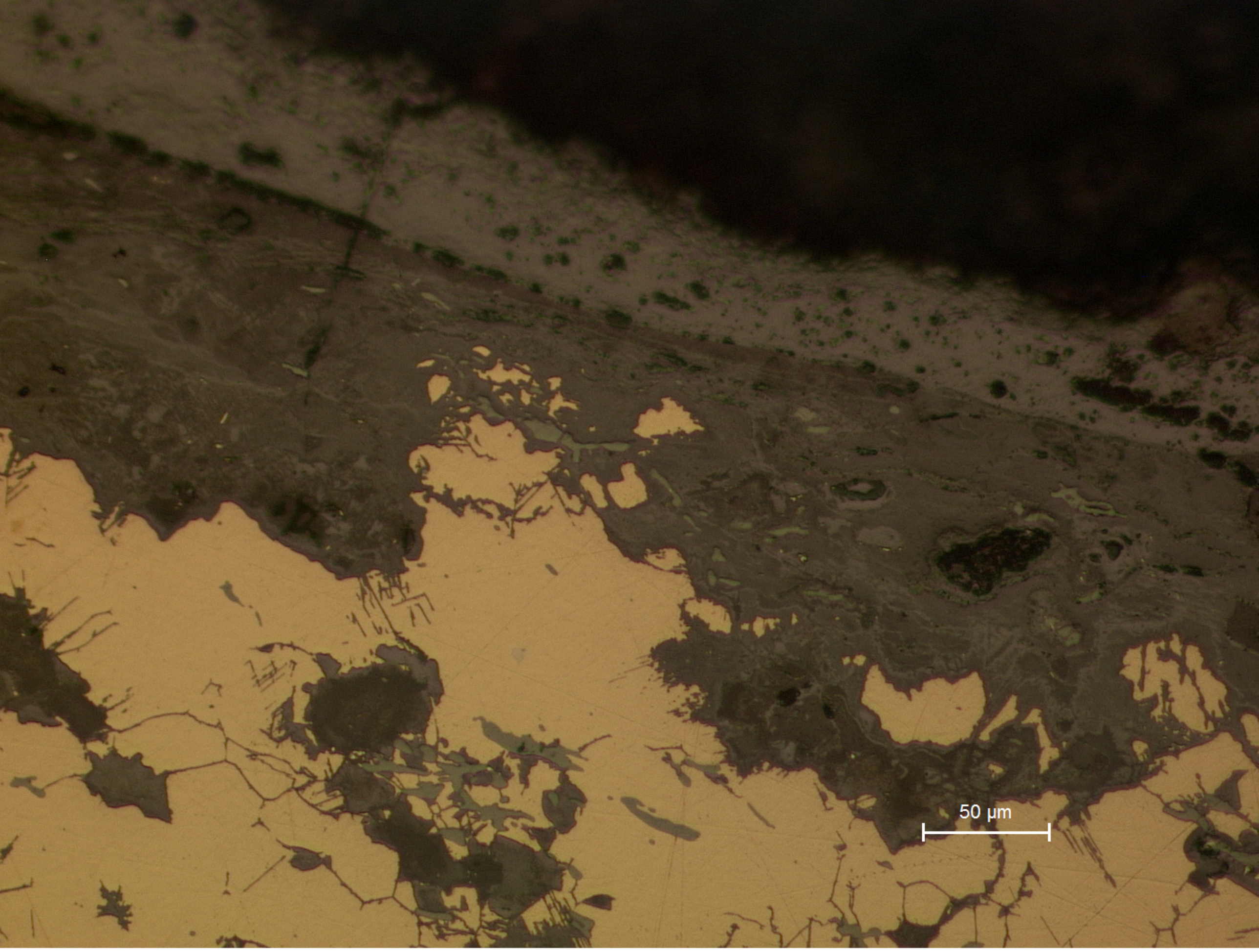

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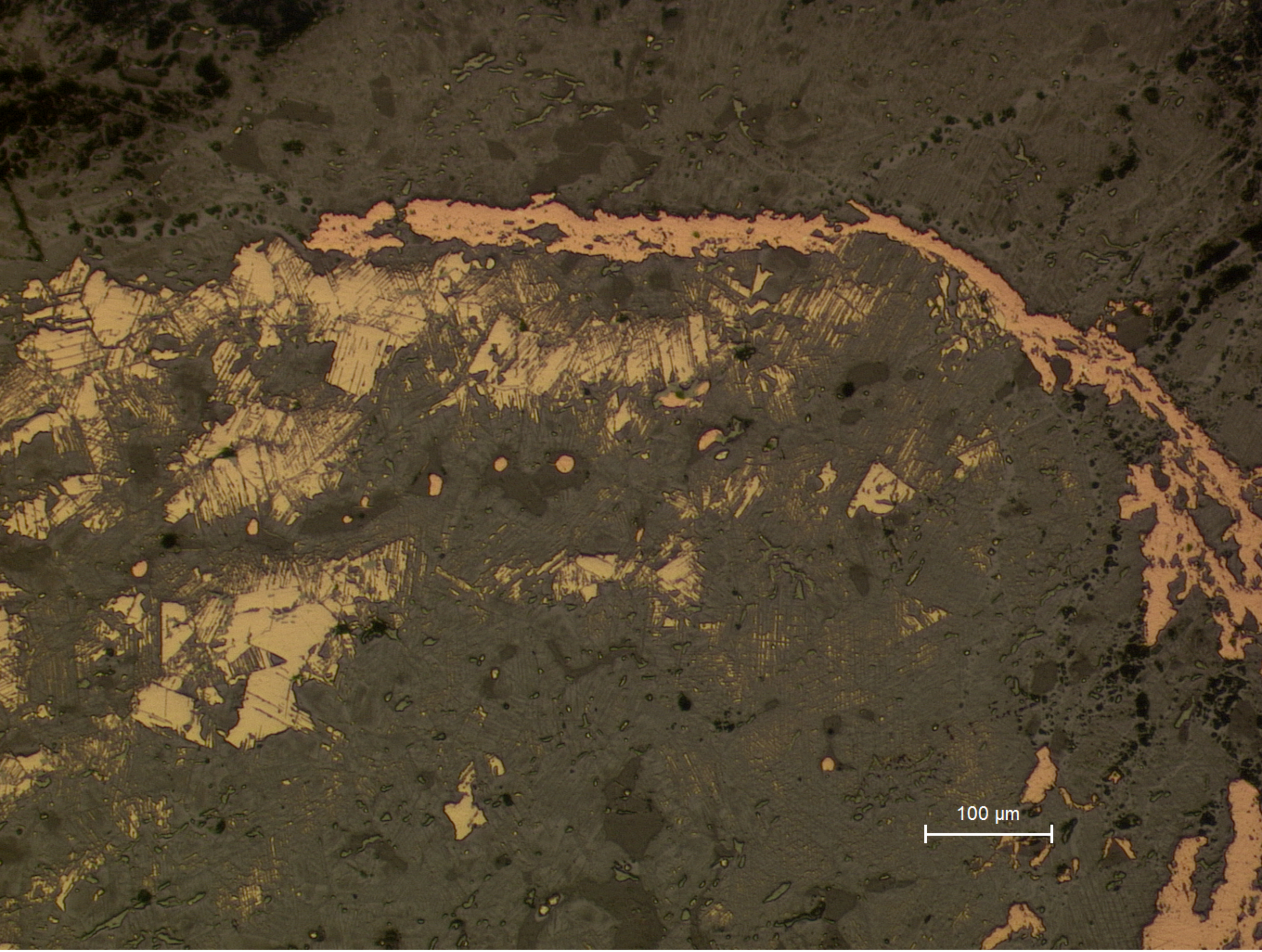

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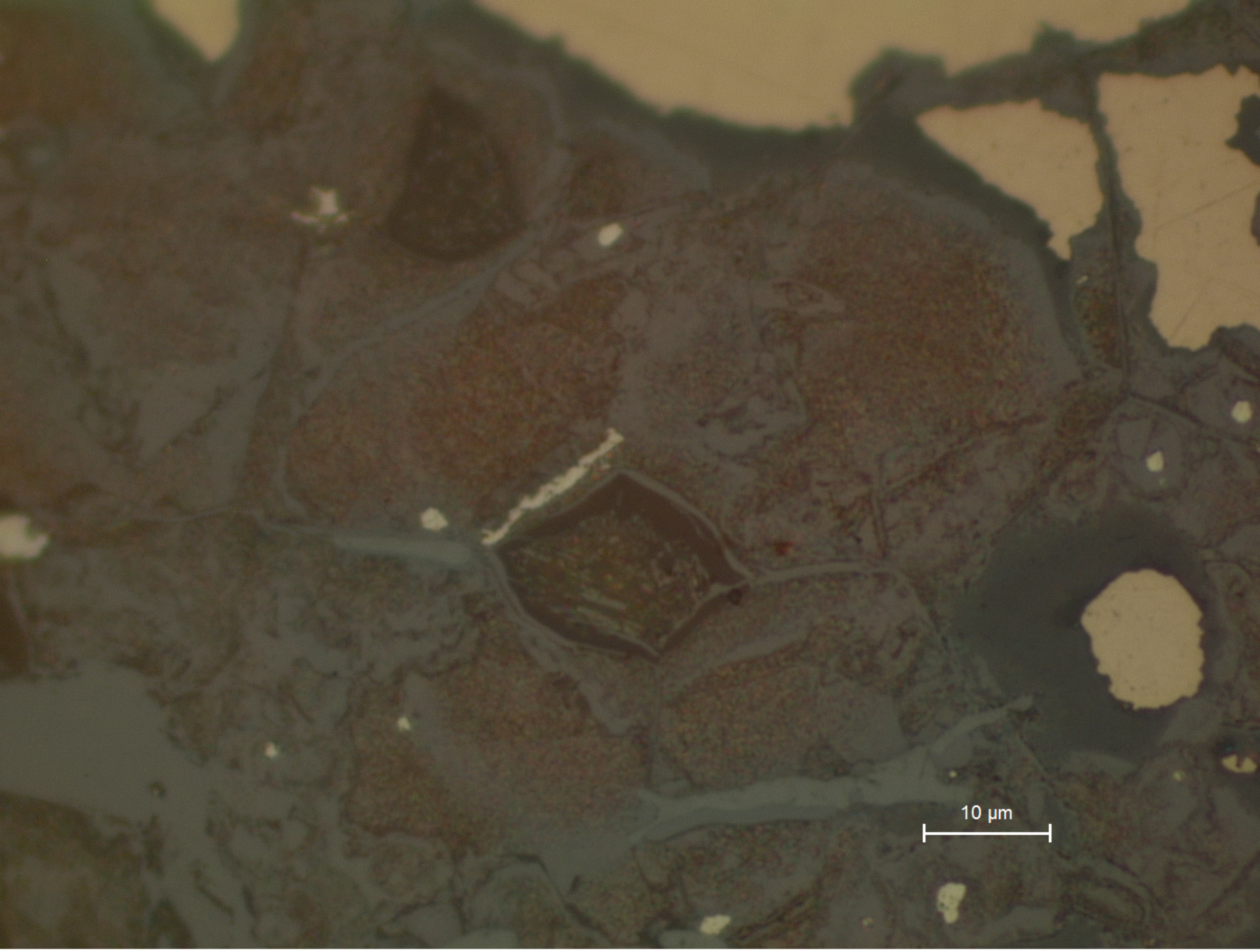

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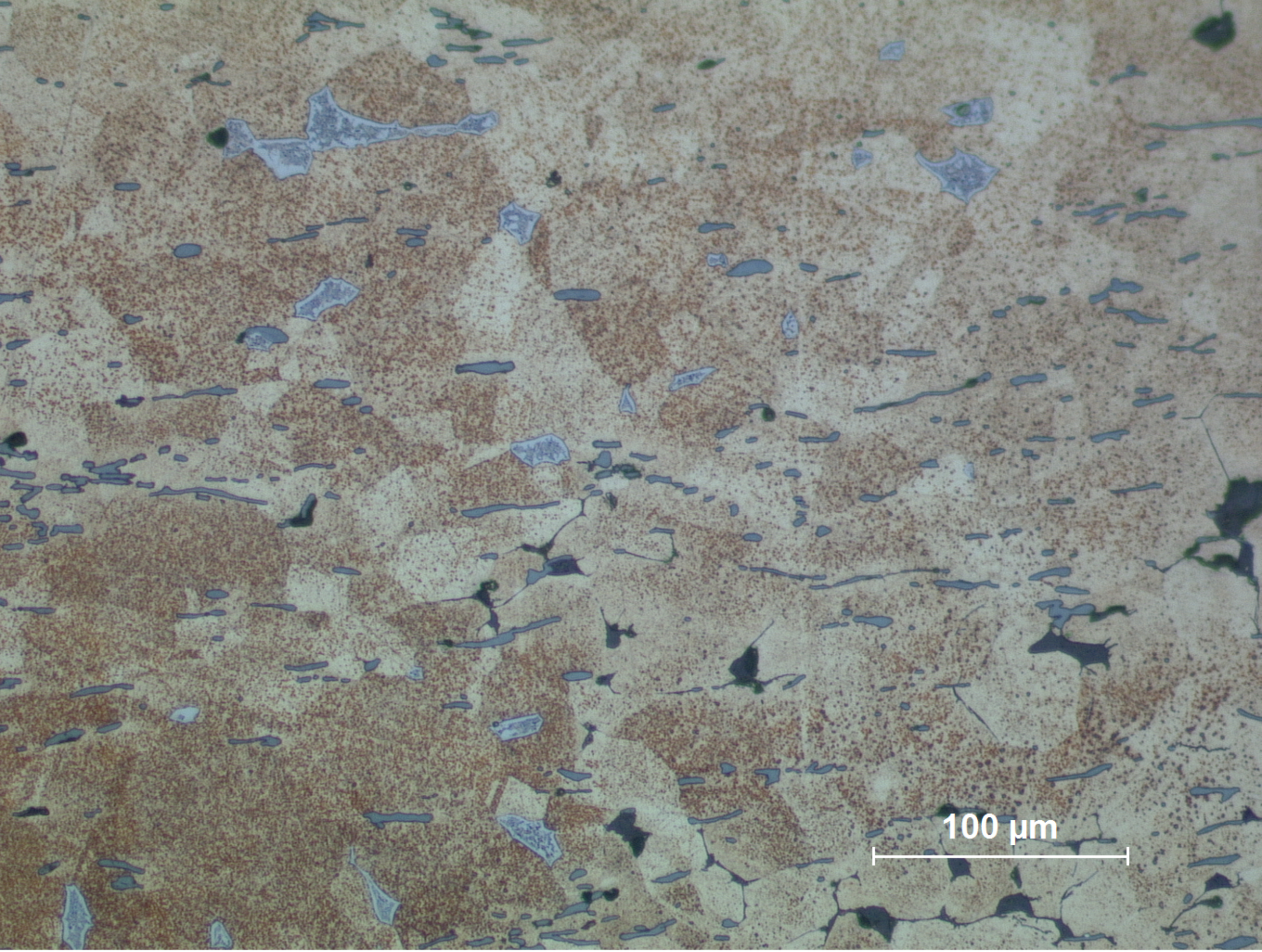

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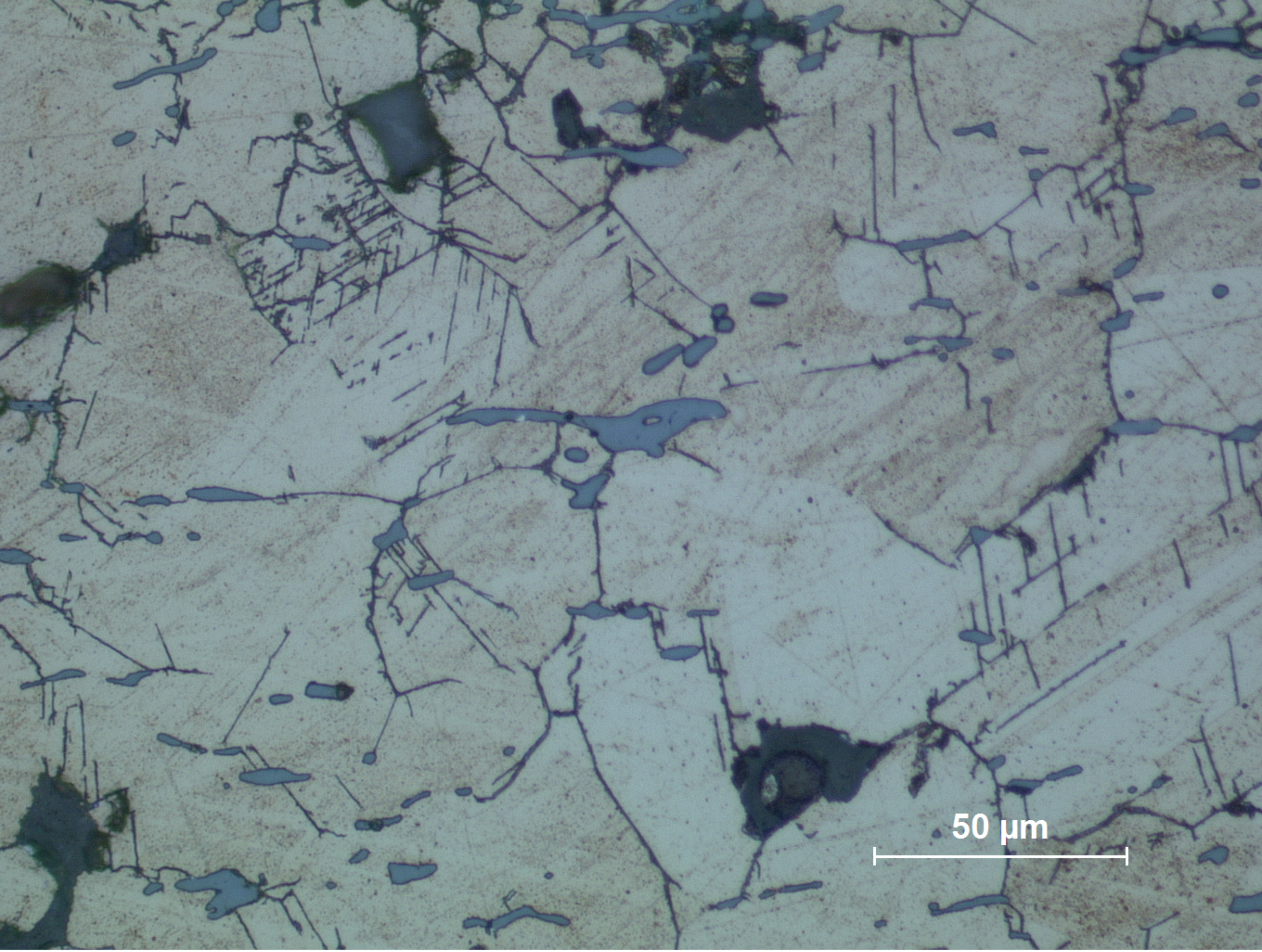

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