



MM205 PROJECT

COLOR METALLOGRAPHY

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USING KALLING'S REAGENT

The best microstructure was observed by using this etchant.

I used the Kalling's reagent having the composition:

2g CuCl_2

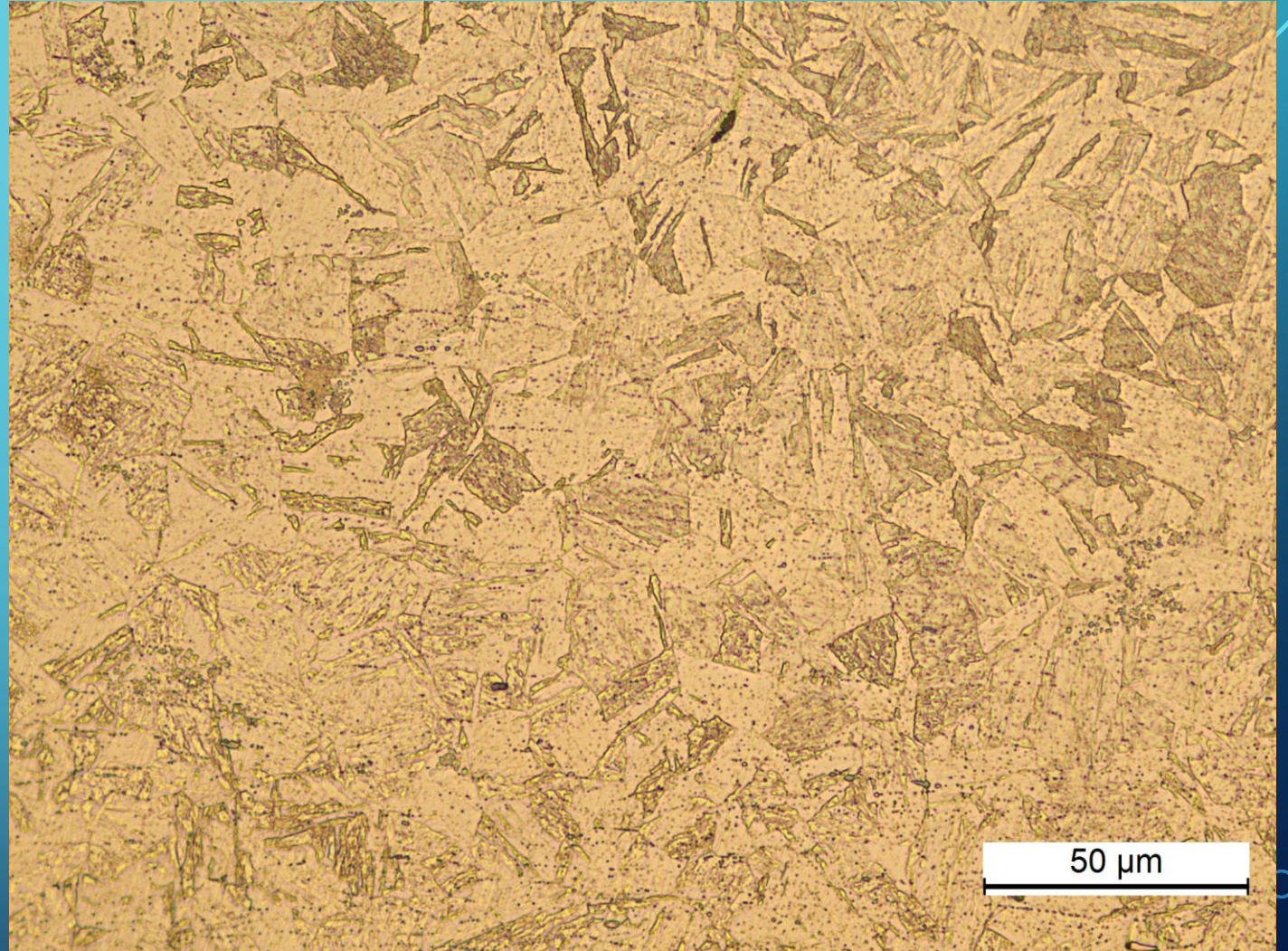
25ml Ethanol

25ml HCl

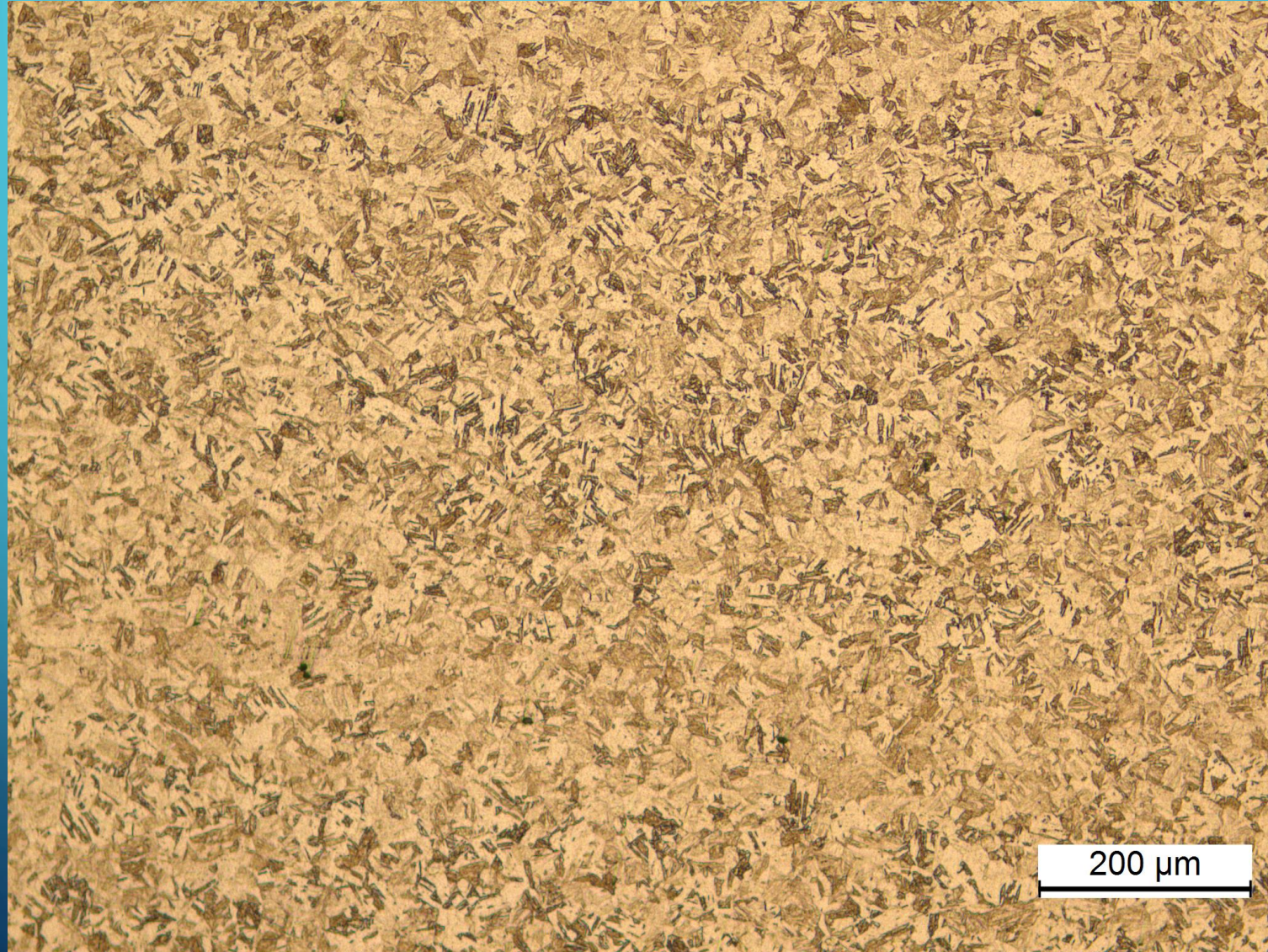
Etching time- 45 seconds

(didn't get any results for lesser time, like 10-20 seconds, tried that also)

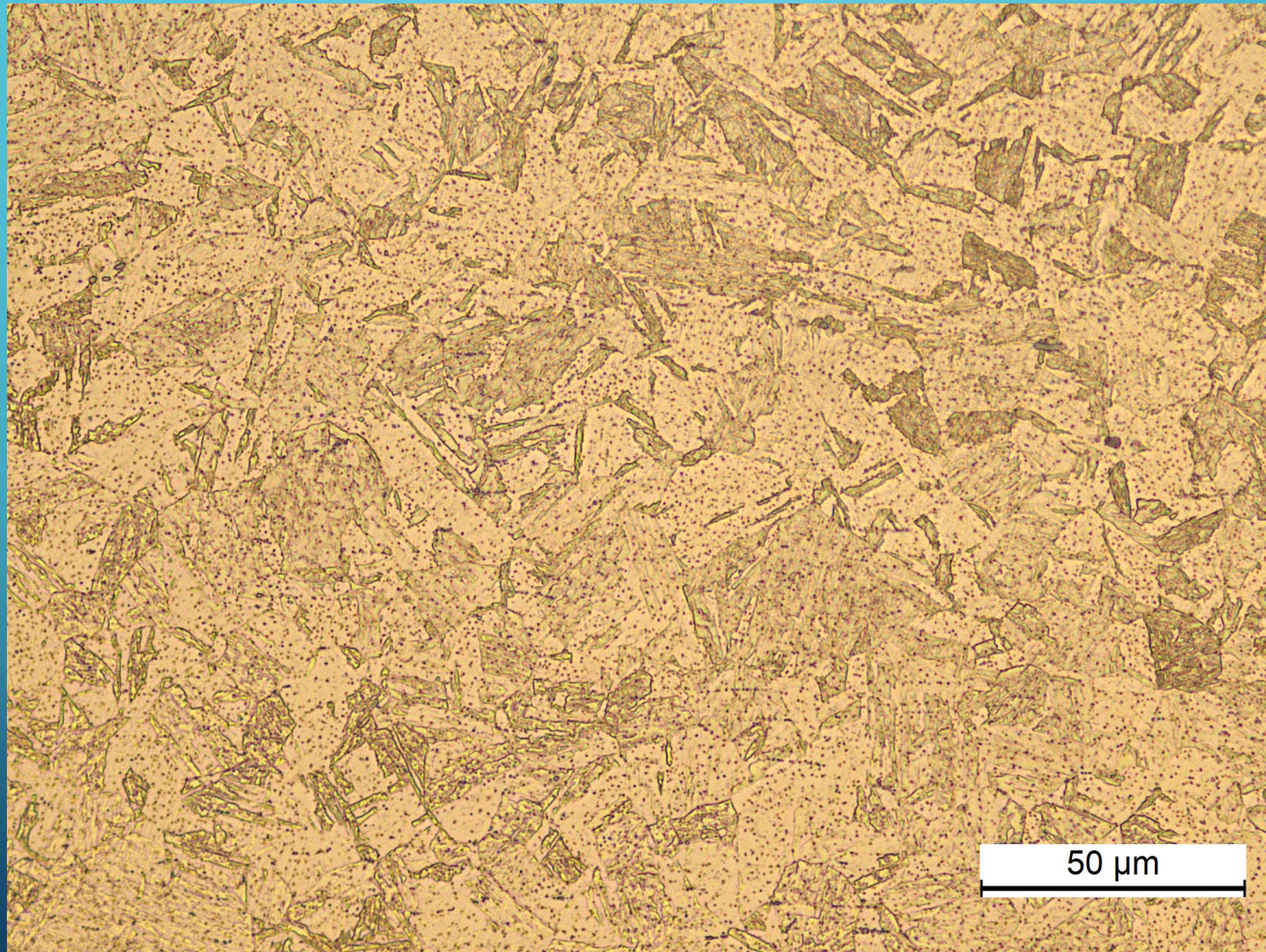
Picture shown here is at 50x(objective)



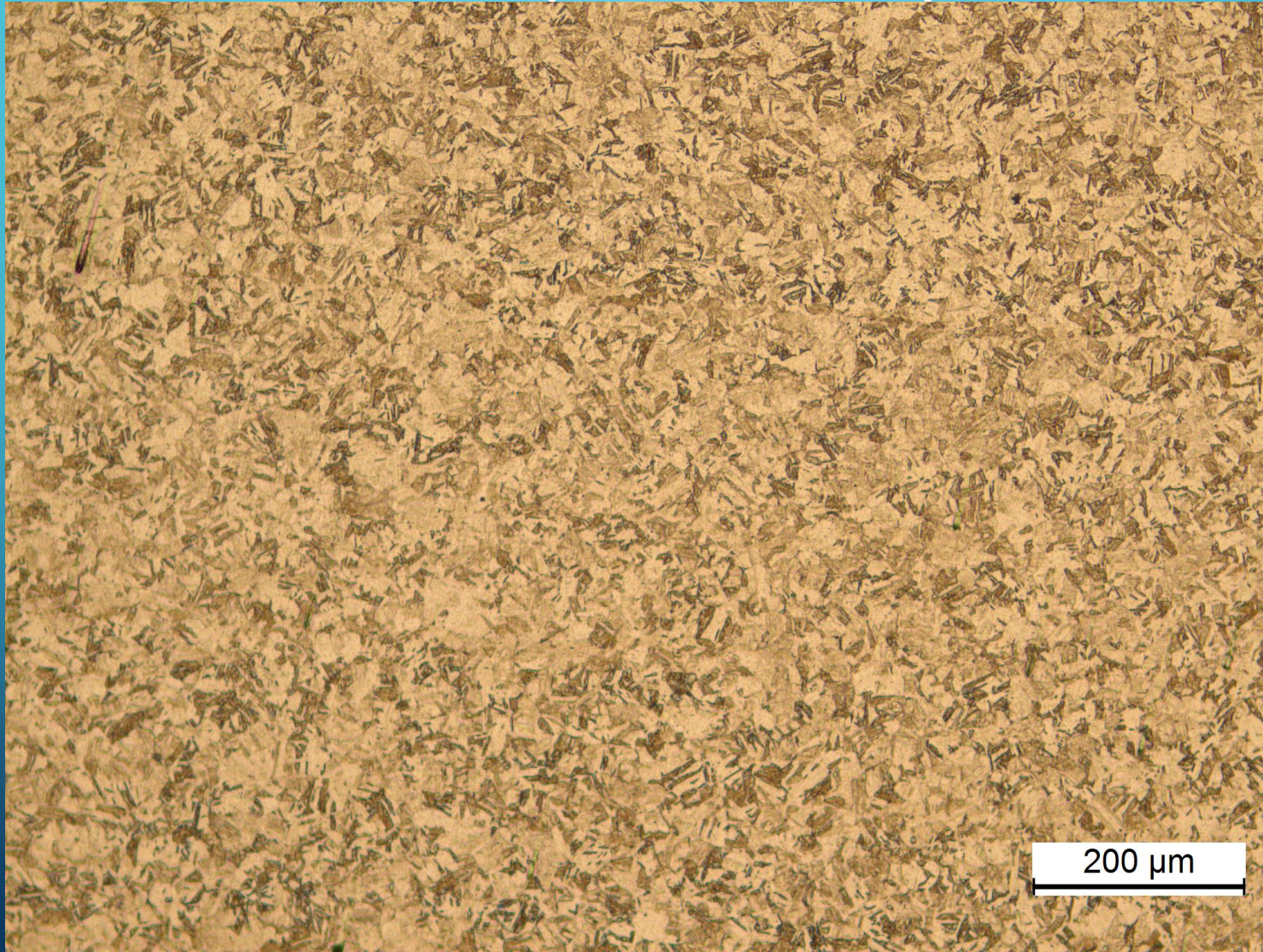
10X (OBJECTIVE)



50X (OBJECTIVE)



10X (OBJECTIVE)



USING BERAHA'S REAGENT

I used the Beraha's reagent having the composition:

0.5g $K_2S_2O_5$ (Potassium metabisulfite)

25ml Ethanol

25ml HCl

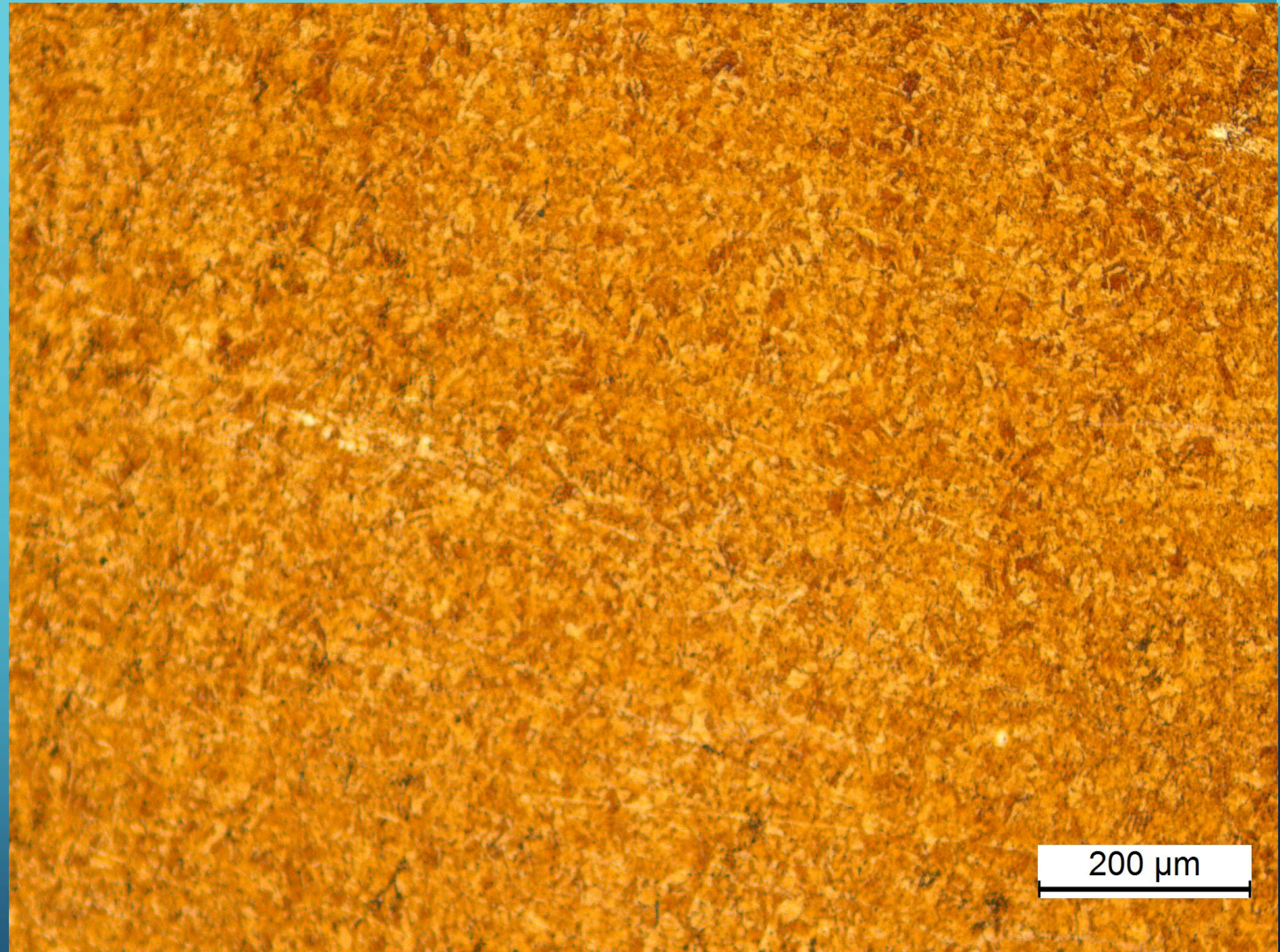
Etching time- 15 seconds

(For Etching time more than 20 seconds, it was overetched.

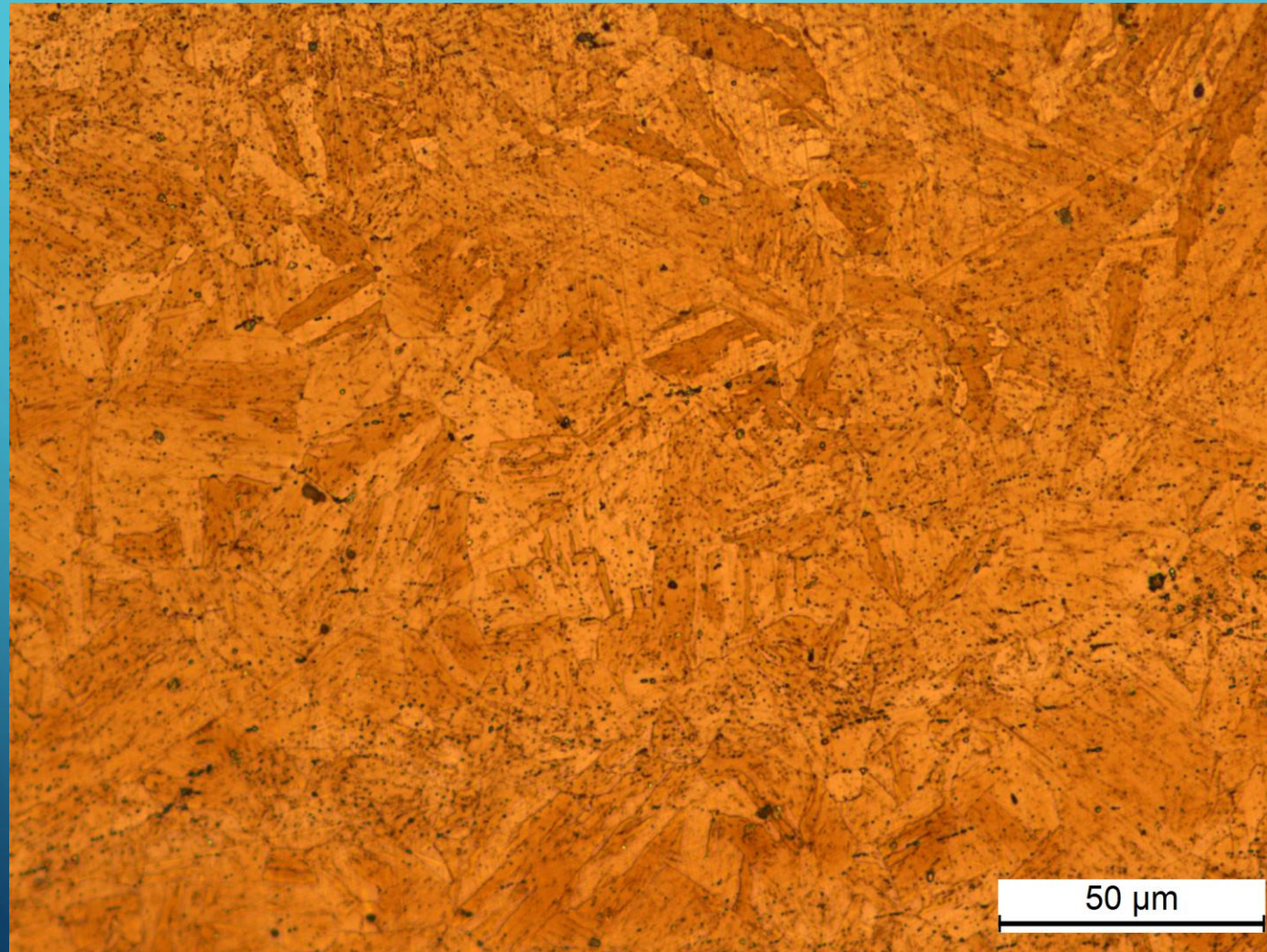
And for less than 10 seconds, it was barely etched)

Img here is at 10x(objective)

Magnification.



50X(OBJECTIVE) MAGNIFICATION
ETCHING TIME- 21 SECONDS





THANKYOU

DR. AVALA LAVA KUMAR

VENKATESH SIR

DEEPAK SIR

FOR GUIDANCE AND ASSISTANCE