

Status of laser polishing of Cu substrates

Arturs Medvids

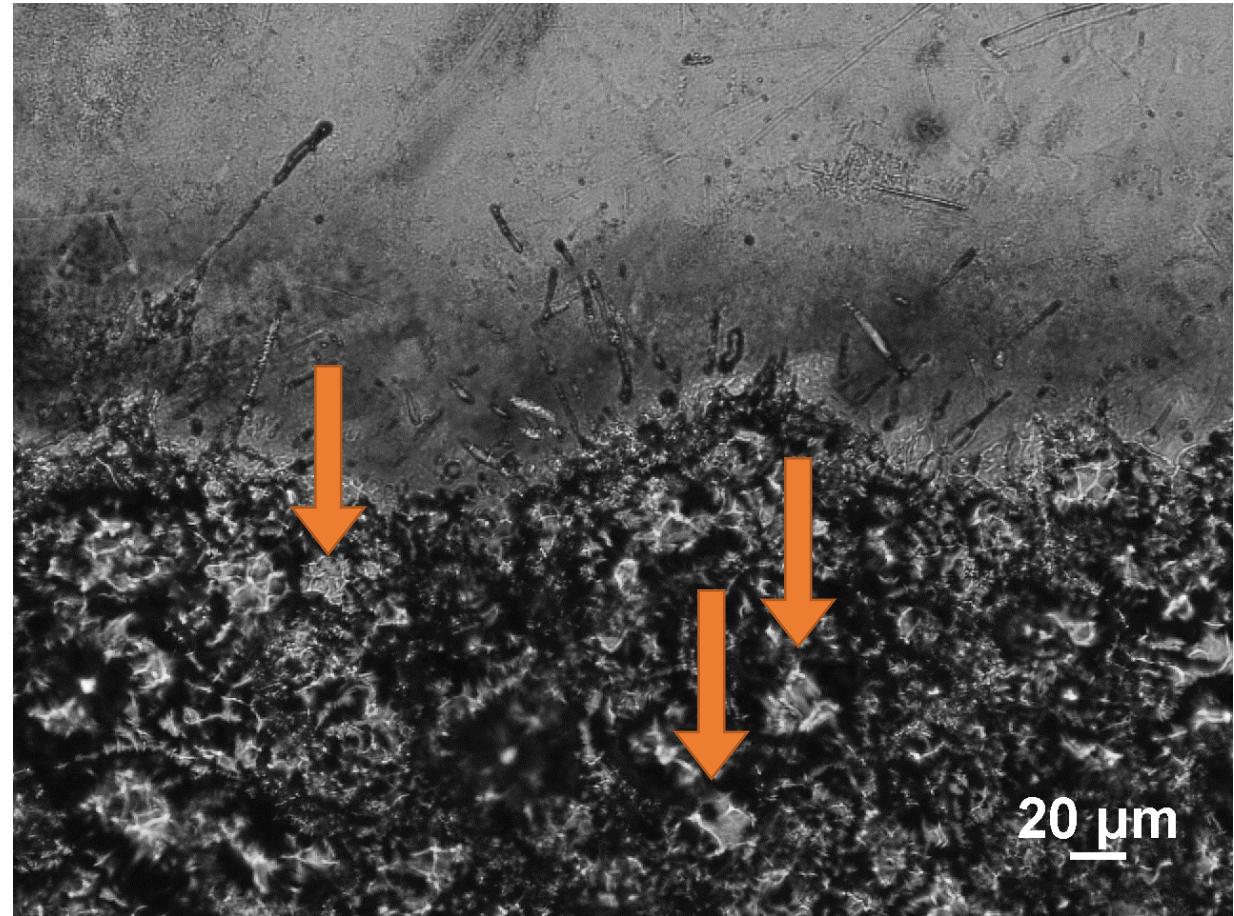
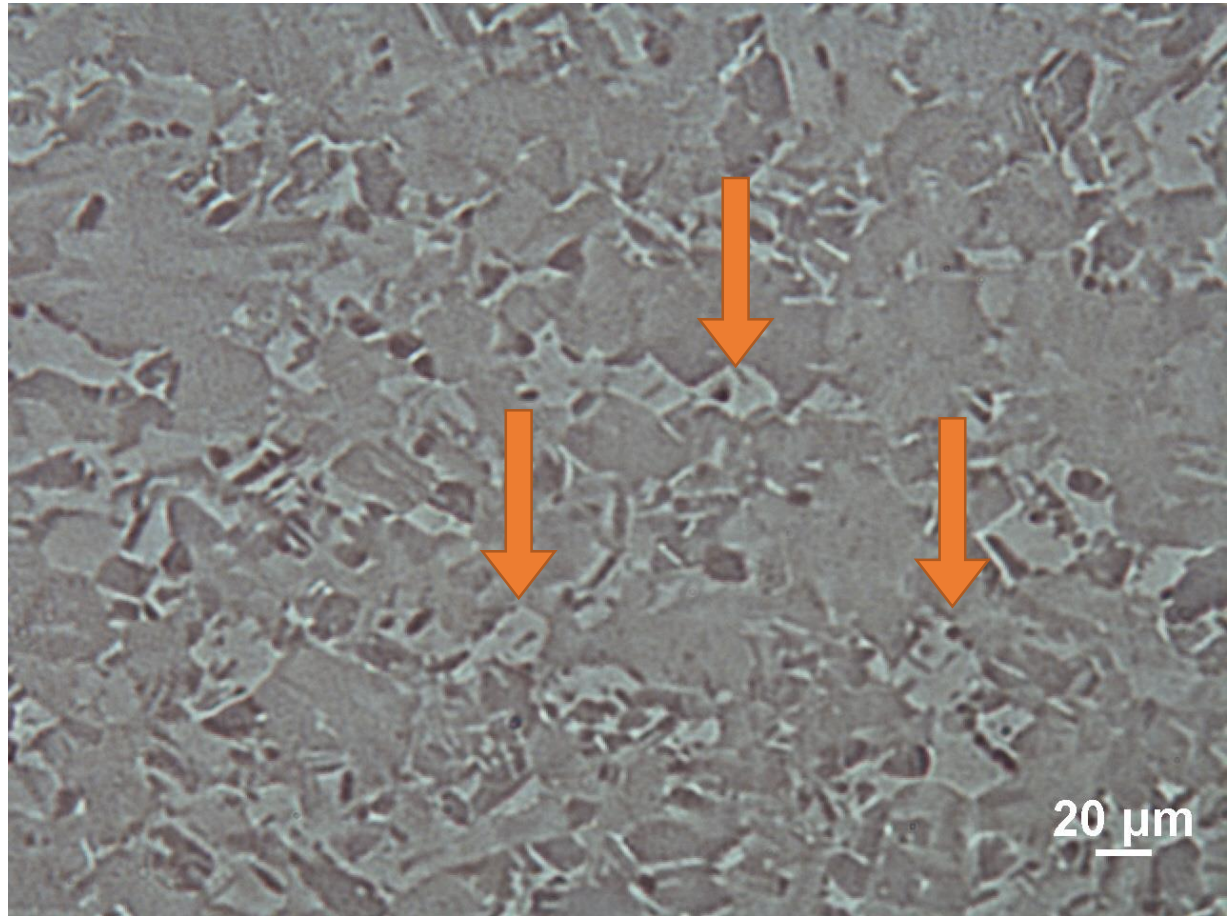
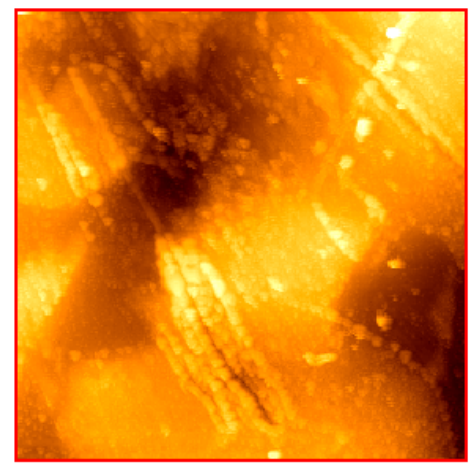
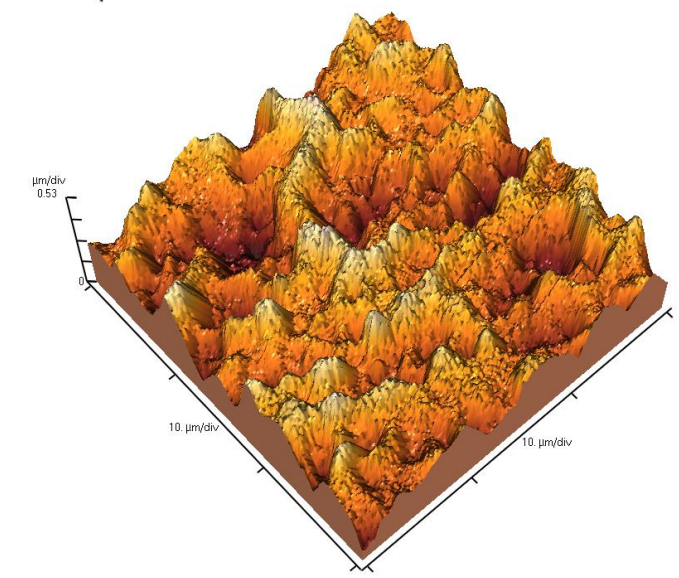
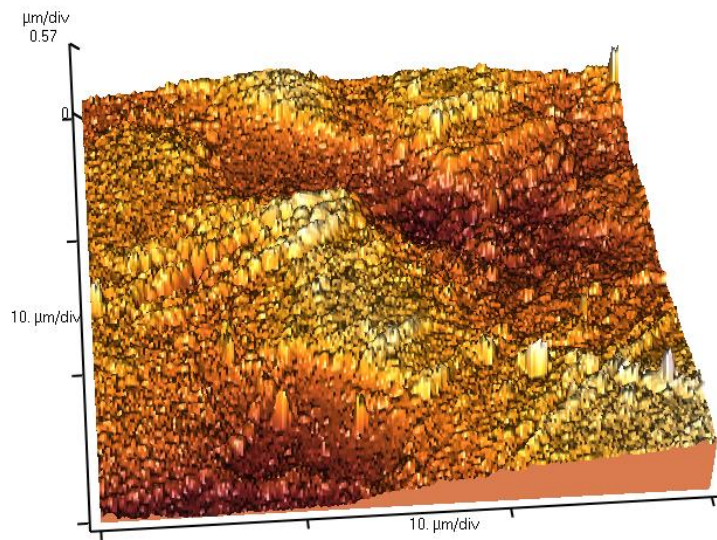


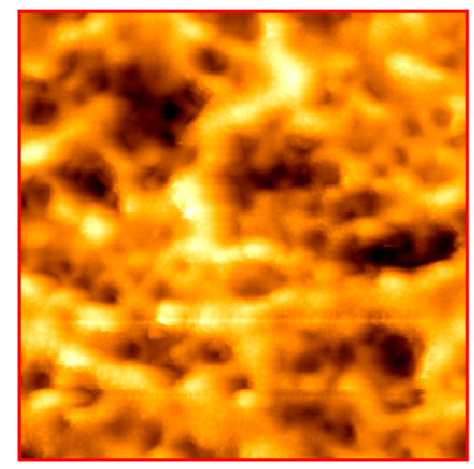
Fig.1. Optical microscope images of C18 sample

a) Non-irradiated

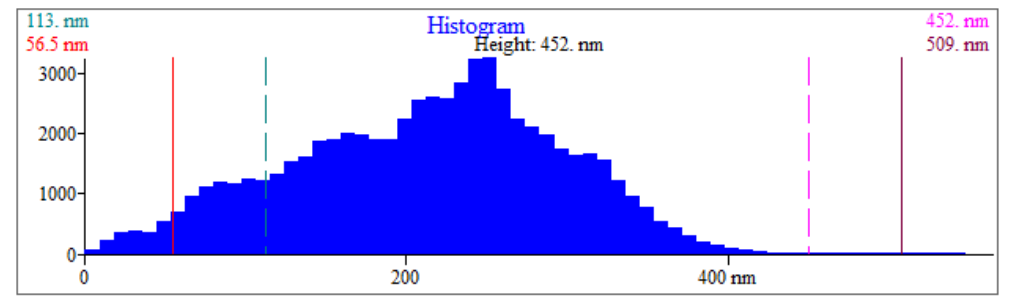
b) Irradiated by nanosecond Nd:YAG laser radiation



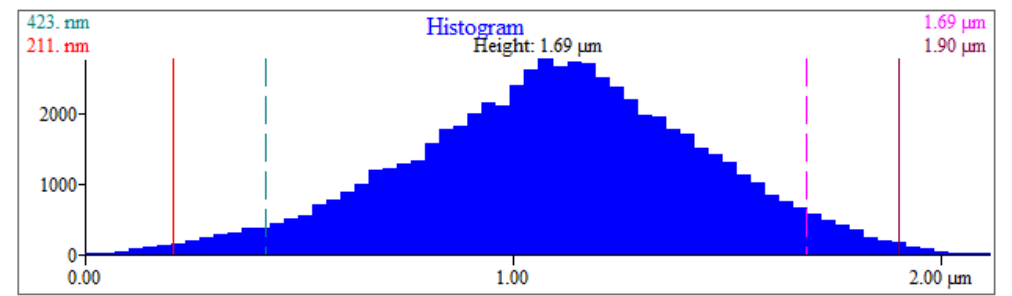
(230,29) x: 27.0 μm y: 3.398 μm z: 0.1176 μm



(219,1) x: 25.7 μm y: 0.1172 μm z: 0.7790 μm



	Rp-v	Rms Rough (Rq)	Ave Rough (Ra)	Mean Ht	Median Ht	Bearing Ratio	B _F
Region 1	565.0 nm	82.61 nm	67.65 nm	212.0 nm	220.0 nm	@20.0% 284.04 nm	@80.0%



	Rp-v	Rms Rough (Rq)	Ave Rough (Ra)	Mean Ht	Median Ht	Bearing Ratio	B _F
Region 1	2.114 μm	342.9 nm	272.0 nm	1.096 μm	1.106 μm	@20.0% 1.39 μm	@80.0%

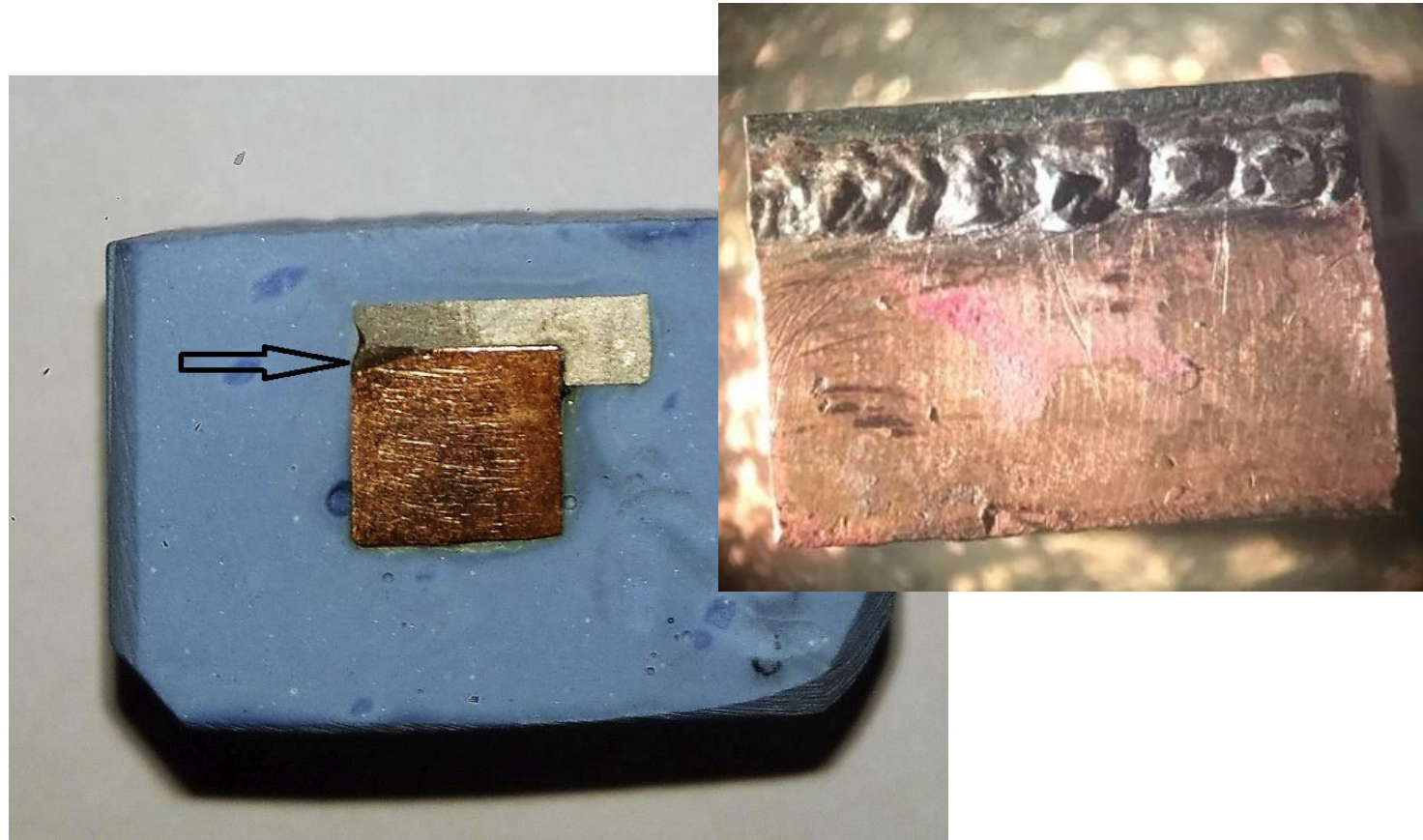
Fig.1. AFM images of C18 sample

- a) Non-irradiated
- b) Irradiated by nanosecond Nd:YAG laser radiation

References

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1. Shine the laser at high power on the welding seam in the direction of the arrow and try to clean it and possibly re-melt it, maybe reduce the oxygenation of the interface. Compare the result optically with the welding seam before laser treatment.
2. Improvement the surface roughness of the copper sample by a laser treatment.



Before irradiation



After irradiation by Nd:YAG