

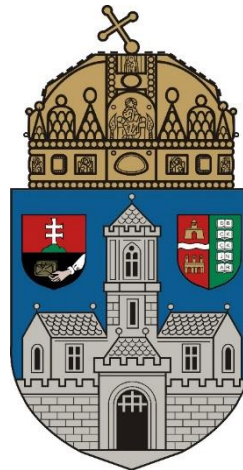
Effect of annealing and solution treatment on microstructure and mechanical properties of Ti-6Al-4V manufactured by selective laser melting

PhD Student: Hassanen Jaber

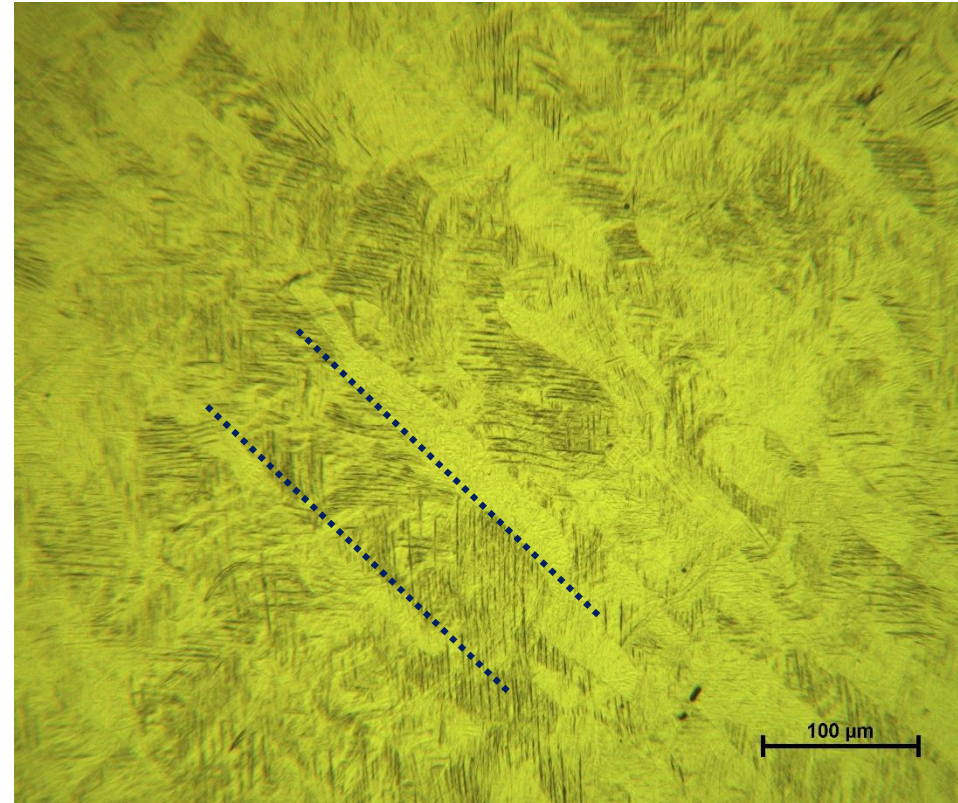
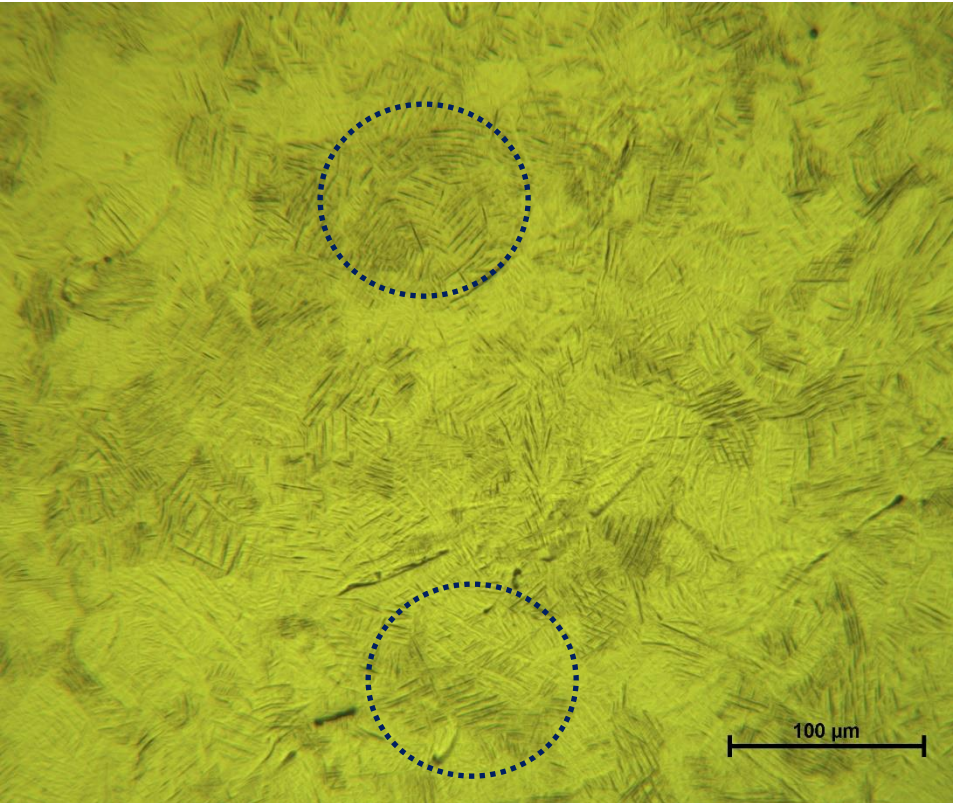
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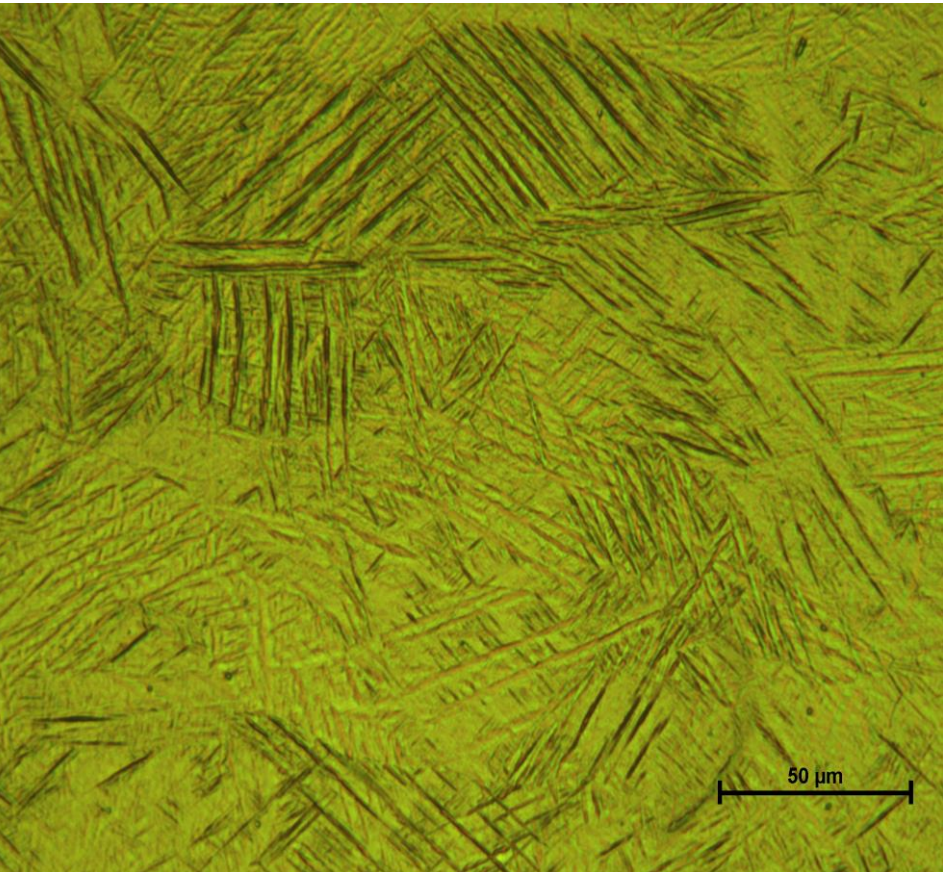


Morphologies of as-fabricated Ti6Al4V

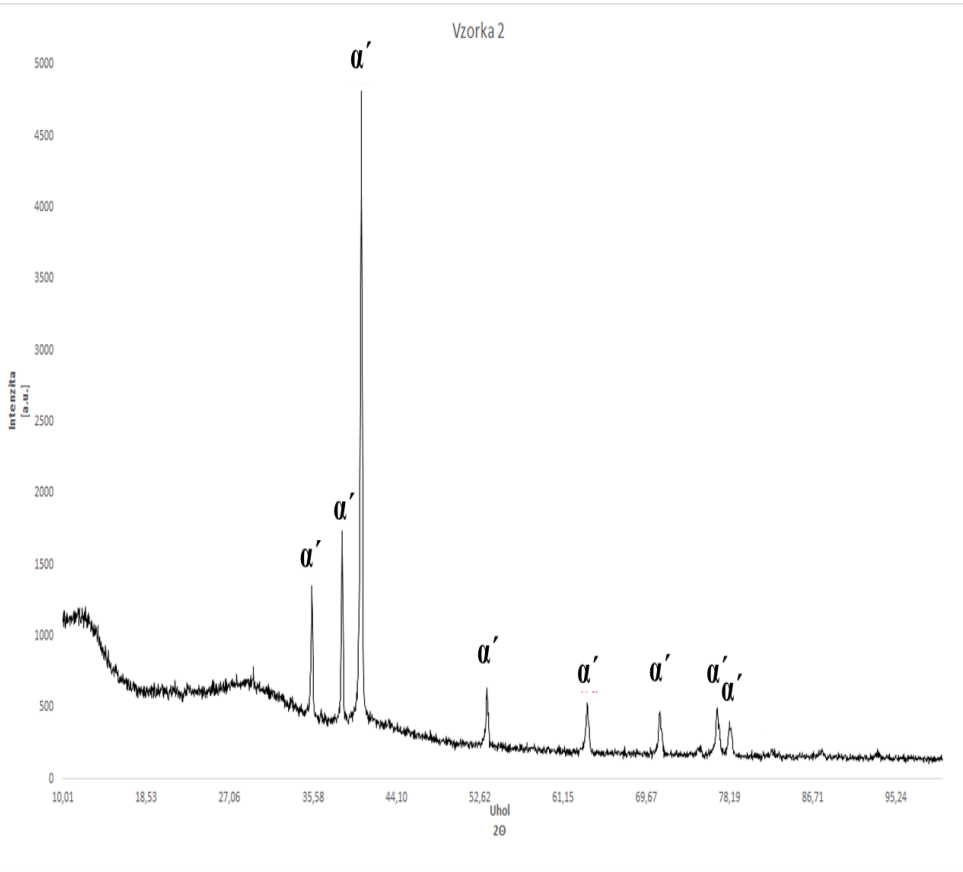


Microstructure of as-fabricated Ti6Al4V

OM

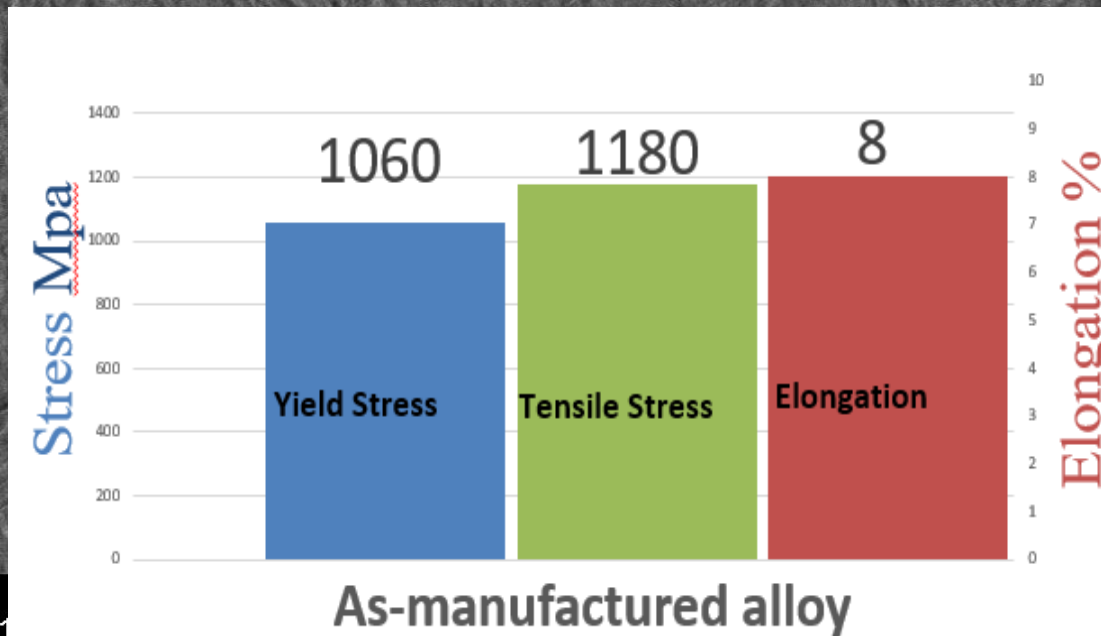


XRD

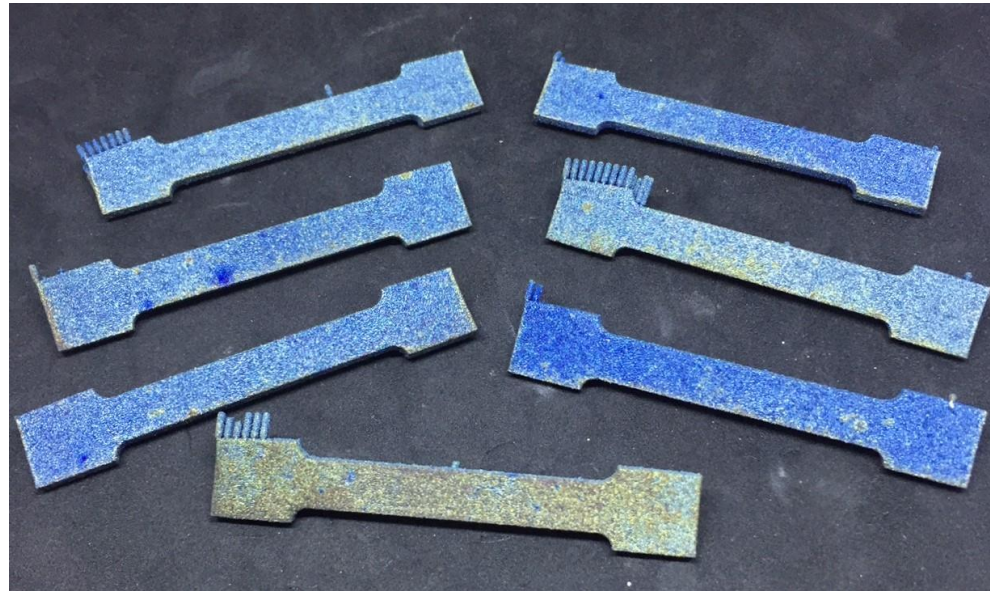


Problems and The goal of this study

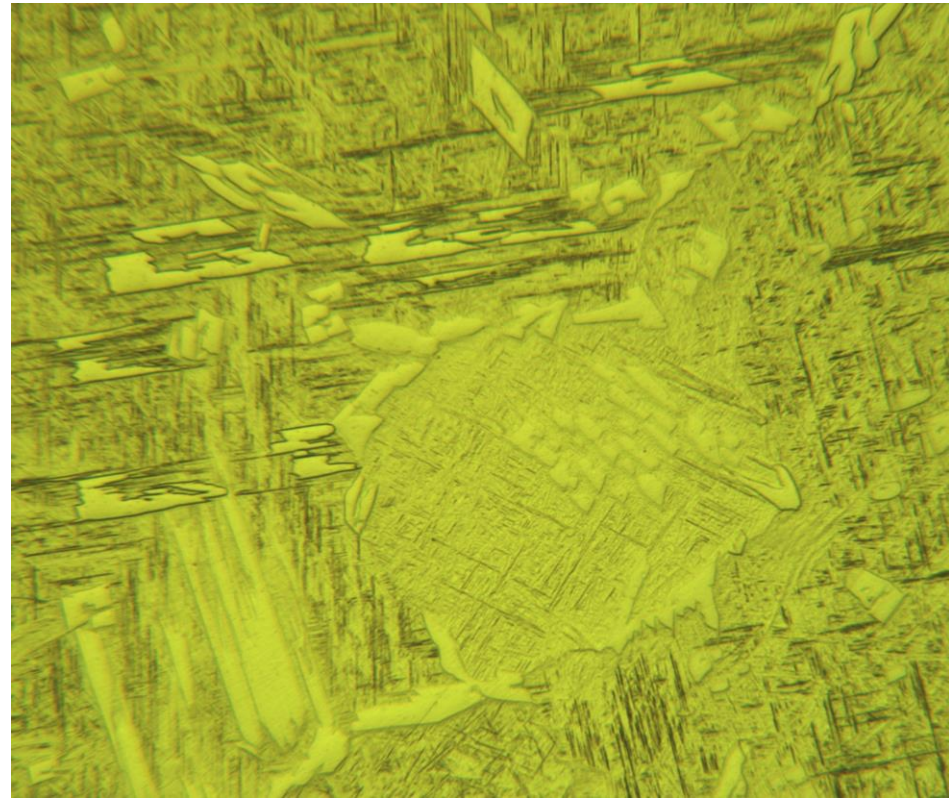
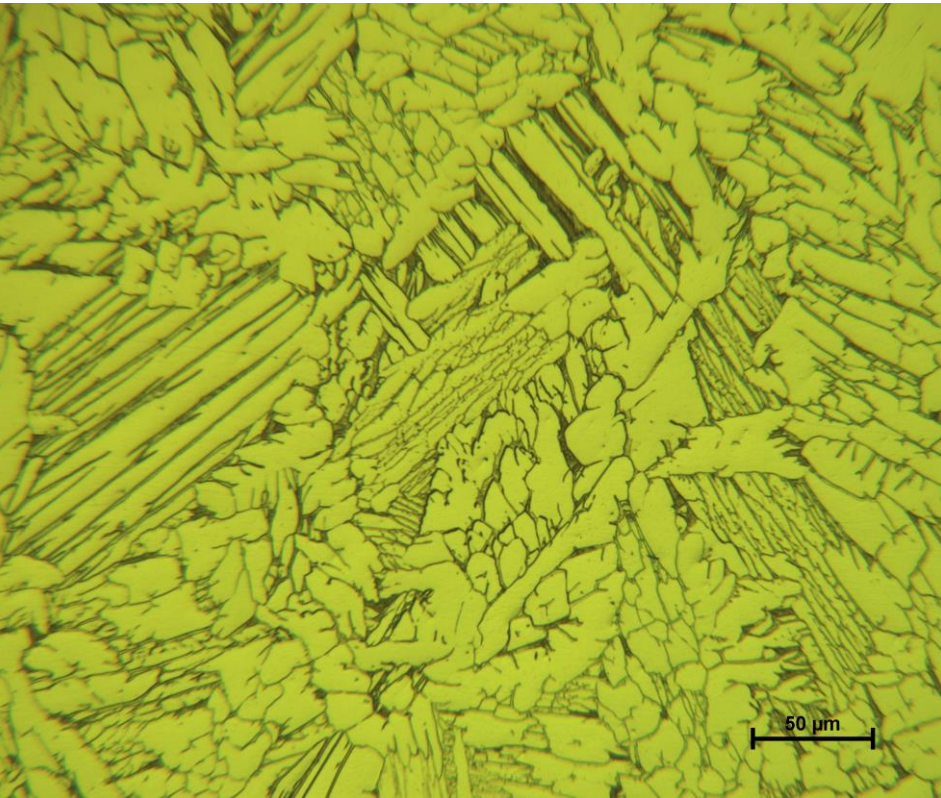
According to ASTM F13-12a and ASTM F2924-14 the microstructure of implant or SLM part requires a minimum elongation of 10% and an alpha (α)-beta (β) dual phase.



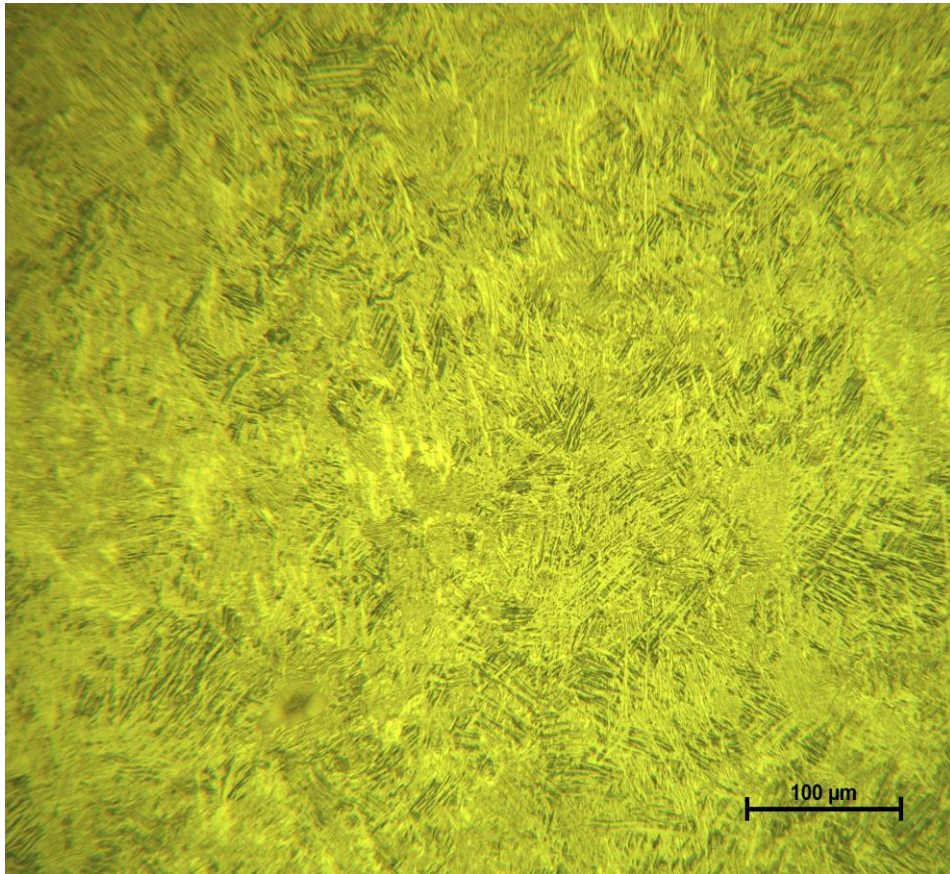
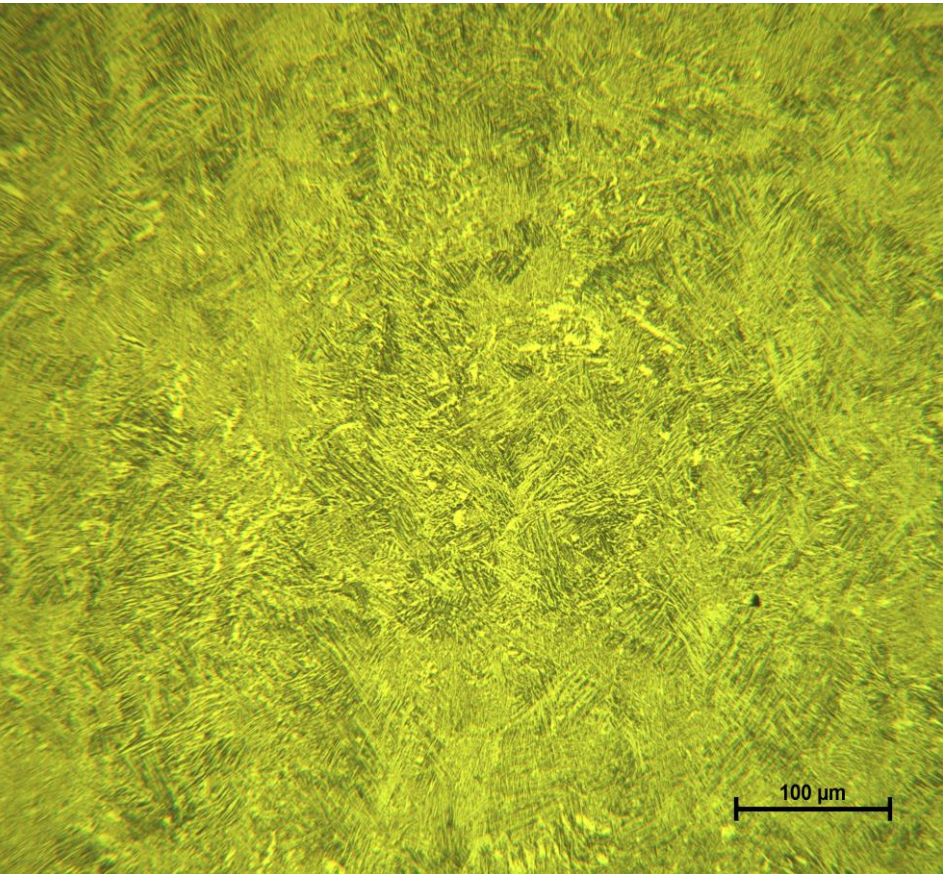
Samples



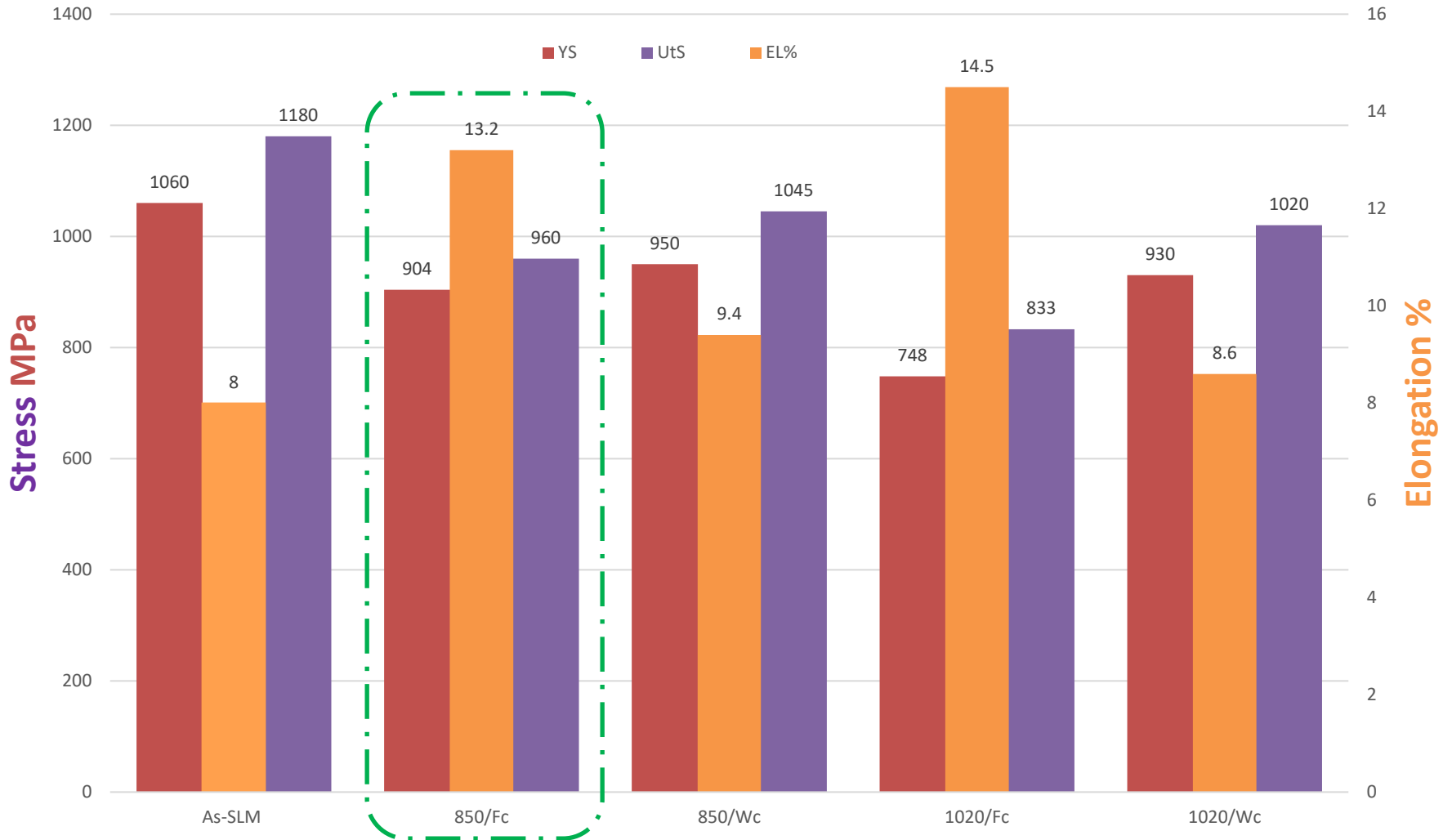
Results: Microstructure



Results: Microstructure



Results: Mechanical Properties





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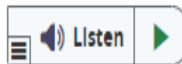
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Investigating the impact of a selective laser melting process on Ti6Al4V alloy hybrid powders with spherical and irregular shapes

Hassanen Jaber , Tunde Kovacs & Kónya János

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Publications

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- 2) Investigating the impact of a selective laser melting process on Ti6Al4V alloy hybrid powders with spherical and irregular shapes
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- 3) Preparation and Synthesis of Hydroxyapatite Bio-Ceramic from Bovine bone by Thermal Heat Treatment
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Thank you very much for your attention

I wish you a Healthy & Peaceful 2021!