

SUMMER SCHOOL

ADDITIVE MANUFACTURING: FROM POWDER TO FINAL PARTS WITH A SMOOTH SURFACE



29.6.-5.7.2025

**UL, Faculty of Mechanical Engineering
Aškerčeva cesta 6, 1000 Ljubljana, Slovenia**



SEAMAC

STRENGTHENING THE EXCELLENCE OF ADDITIVE
MANUFACTURING CAPABILITIES



**Funded by
the European Union**



**UNIVERSITY
OF LJUBLJANA**

FS

**Faculty of
Mechanical Engineering**



TECHNION

Israel Institute of Technology



TUBAF

**Die Bergakademie
Freiberg**

Participants will be provided with a comprehensive introduction to additive manufacturing (AM), focusing on processes like Direct Energy Deposition with Laser Beam (DED-LB) and Powder Bed Fusion with Laser Beam (PBF-LB). Participants will learn about multi-material processing, design considerations, defects in metal AM, post-processing techniques and plasma electrolytic polishing (PeP). The program combines theoretical lectures with hands-on experiences, including lab demonstrations, visits to companies, and practical exercises on 3D model preparation and 3D printing, surface quality assessment and PeP of complex parts.



- Get together
- Introduction to Summer school
- Social event - dinner



- General introduction to: AM, laser light, DED-LB wire and PBF-LB
- Visit of DED-LB lab and DED-LB wire demonstration
- Digital part preparation for PBF-LB process
- Safety issues in AM
- Participants prepare their own 3D model for PBF-LB printing – part 1 of 2



- Introduction to DED-LB powder and demonstration
- State of the art in powder bed and DED technology
- Participants prepare their own 3D model for PBF-LB printing part 2 of 2
- Design optimization for AM
- Visit of PBF-LB lab and build job preparation
- Defects in metal additive manufacturing
- Start of parts overnight printing



- Post processing of metal AM parts, support removal, surface finish
- Introduction to PeP safety issues
- Understanding PeP – mechanisms and parameters, electrolyte solutions
- PeP of complex parts and process monitoring of PeP
- Invited lecture of Advisory board member
- PeP basics and electrolyte preparation
- Introduction to characterisation of 3D printed parts



- Visits of companies
- Demonstration of polishing and process monitoring
- Characterization of printed parts
- Polishing of printed parts



- Polishing of printed parts
- Characterization of printed parts
- Presentation of results acquired by participants and critical evaluation
- option to join an evening event



- Application of PBF-LB: wrap-up
- Application of PeP: wrap-up
- Finish up & certificates ceremony



- The lectures and workshops
- Lunch, coffe breaks, refreshments
- Industrial tours



- Travel
- Accomodation

REGISTER NOW!



www.seamac.si