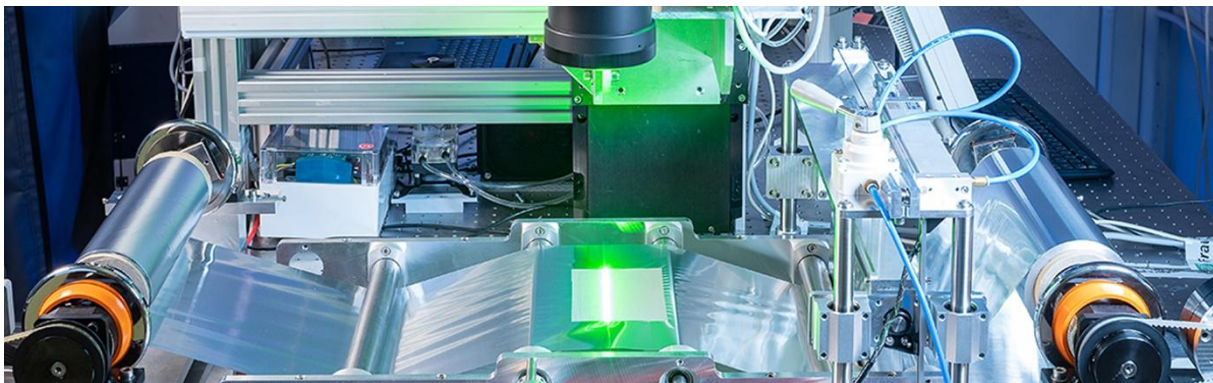


15th International Summer School on
Trends and new developments in
Laser Technology

24 – 28 August 2026

Dresden University of Technology, Fraunhofer IWS, Dresden, Germany



Program Preview – Final version to be released after registration is closed

Monday, 24th August

12:00 – 13:00 **Registration**

13:00 – 13:15 **Opening**, Prof. Andrés F. Lasagni, Dresden University of Technology, Fraunhofer Institute for Material and Beam Technology IWS, Germany.

13:15 – 14:30 Prof. Andrés F. Lasagni, “Introduction to Laser Processing: The Laser Beam, a Tool for Multiple Applications”, Dresden University of Technology, Fraunhofer Institute for Material and Beam Technology IWS, Germany.

14:30 – 14:50 **Break**

14:50 – 16:20 Prof. Frank Brückner, “Fabrication of 3D parts using Additive Manufacturing”, Fraunhofer Institute for Material and Beam Technology IWS, Germany.

16:20 – 16:40 **Break**

- 16:40 – 17:55 **Participant presentations – Laser Welding/Joining**
- 16:40 – 16:55 Baldur Oskar Döring, "Laser Welding of Aged Sheet Metal Materials for Upcycling: Investigation of Similar and Dissimilar Joints", Dresden University of Technology, Germany.
- 16:55 – 17:10 Zoltan Papp, "Copper Welding Using a High-Brightness Blue Laser and a Blue-IR Hybrid Laser", University of Szeged, Hungary.
- 17:10 – 17:25 Jonas Wehner, "Direct Fusion Welding of Sapphire by Ultrashort Laser Pulses", Ruhr University Bochum, Germany.
- 17:25 – 17:40 Koshika Pandey, "Laser-Assisted Joining of SiC/SiC Composite", Polytechnic University of Turin, Italy.
- 17:40 – 17:55 Henry Glasse, "Ultrashort Pulsed Laser Welding of Infrared Optical Materials", Heriot-Watt University, United Kingdom.

Tuesday, 25th August

- 09:00 – 10:30 Marko Seifert, "Recent advances on laser-based surface hardening technologies", Fraunhofer Institute for Material and Beam Technology IWS, Germany.
- 10:30 – 10:50 **Break**
- 10:50 – 12:20 Dr. Axel Jahn, "Advances on laser-based joining technologies", Fraunhofer Institute for Material and Beam Technology IWS, Germany.
- 12:20 – 13:30 **Lunch**
- 13:30 – 14:00 Dr. Stephan Milles, "Focused Impact: Why Patents are the Lenses of Scientific Innovation", Rentsch Partner AG Zürich, Switzerland.
- 14:00 – 15:00 **Participant Presentations – Laser-Induced material/surface modification**
- 14:00 – 14:15 Edmund Sprūdžs, "Laser-Engineered Titanium Surfaces: Linking Surface State to Early Biological Response", Riga Technical University, Latvia.
- 14:15 – 14:30 Anna Krobotová, "Synergistic Effects of LST and TiN PVD Coating on the Surface Properties of Tool Steel", Technical University of Liberec, Czech Republic.
- 14:30 – 14:45 Tony Richter, "Monitoring and Characterization of the dynamic spreading behaviour of liquid metal on laser structured surfaces ", Dresden University of Technology, Germany.

- 14:45 – 15:00 Vanessa Groß, "Tailored Wettability of Liquid Metal on Stainless Steel Using Direct Laser Writing", Dresden University of Technology, Germany.
- 15:00 – 15:20 **Break**
- 15:20 – 16:05 **Participant presentations – Process monitoring and characterization**
- 15:20 – 15:35 Emiliia Saprykina, "Infrared Monitoring of Laser Cleaning Processes", University of West Bohemia, Czech Republic.
- 15:35 – 15:50 Moritz Kallenbach, "Online Monitoring of Laser Cleaning Processes Using Photospectrometry", Dresden University of Technology, Germany.
- 15:50 – 16:05 Sukayna Fakher, "Using In-Situ Digital Image Correlation for Investigation of Deformation and Strain in Thin Walls Printed with Directed Energy Deposition", Free University of Brussels, Belgium.
- 16:05 – 16:25 **Break**
- 16:25 – 17:10 **Participant presentations – Micro and nano Processing/ Structuring I**
- 16:25 – 16:40 Jan Kieser, "Effect of Initial Surface Roughness on Ablation Threshold, Incubation Coefficient, and Structure Depth in ns-Pulsed Direct Laser Interference Patterning of Dual-Phase Steel", Dresden University of Technology, Germany.
- 16:40 – 16:55 Francisco Udo Marins Almeida, "Pulse Duration Effect on Ablation Efficiency in Direct Laser Interference Patterning", Dresden University of Technology, Germany.
- 16:55 – 17:10 Imane Bouzroud, "Karren-inspired periodic nanostructures through ultrafast laser irradiation of randomly assembled carbon nanotubes", University of Lorraine, France.
- 19:00 – 22:00 **Summer School Dinner (Feldschlösschen Stammhaus)**
- 19:30 **Dinner Speech:** "The future of laser processing", Prof. Andrés F. Lasagni, Dresden University of Technology, Fraunhofer Institute for Material and Beam Technology IWS, Germany.

Wednesday, 26th August

- 09:00 – 10:30 Dr. Madlen Borkmann, "Laser-based cutting technologies", Fraunhofer Institute for Material and Beam Technology IWS, Germany.
- 10:30 – 10:50 **Break**

- 10:50 – 12:20 Prof. Andrés F. Lasagni, “Introduction and applications of Laser interference patterning”, Dresden University of Technology, Fraunhofer Institute for Material and Beam Technology IWS, Germany.
- 12:20 – 13:20 **Lunch**
- 13:20 – 14:50 Dr. Joerg Schille, “High-throughput machining using high-average power ultrashort pulse lasers and high-speed polygon scanner”, University of Applied Science Mittweida, Germany.
- 14:50 – 15:10 **Break**
- 15:10 – 15:55 **Sponsors Presentations**
- 15:10 – 15:25 Dr. -Ing Kris Rudolph, “Seeing the Invisible: Principles and Trends in Laser Beam Diagnostics”, Primes GmbH, Germany.
- 15:25 – 15:40 M. Sc. Mathias Müller, “Polygon mirror scanners for high-speed laser processing”, MOEWE Optical Solutions GmbH, Germany.
- 15:40 – 15:55 Dr. Bogdan Voisiat, “xDLIP: Biomimetic surfaces using novel laser functionalization technique”, SurFunction GmbH, Germany.
- 15:55 – 16:15 **Break**
- 16:15 – 17:00 **Participant presentations – Micro and nano Processing/ Structuring II**
- 16:15 – 16:30 Ali Aktas, “Laser Work Roll Texturing Systems: Challenges and Opportunities of PDT™”, University of Pavia, Italy.
- 16:30 – 16:45 Arnas Vyšniauskas, “Precise Control and Optimization of IOL Polymer Fabrication Using Femtosecond Pulses”, Center for Physical Sciences and Technology, Lithuania.
- 16:45 – 17:00 Simon Luke Schenk, “Processing of a Metastable Austenitic Alloy using DED-LB/M/Powder”, Ruhr University Bochum, Germany.
- 17:00 – 17:20 **Break**
- 17:20 – 18:05 **Participant presentations – Process Monitoring, Beam Control and Data Analysis**
- 17:20 – 17:35 Savash Fikretov, “Experimental and Computational Development of a Concatenated Spatial Light Modulator Platform for Ultrafast Laser Processing”, Heriot-Watt University, United Kingdom.
- 17:35 – 17:50 Maliha Hussain, “Investigation of Temperature and Thermal Processes in GHz and MHz Burst Laser Ablation by Fast Infrared Radiometry”, University of West Bohemia, Czech Republic.

17:50 – 18:05 Cedric Ackle, "AI-Supported Analysis of High-Speed Monitoring Data in Laser Welding", University of Applied Sciences and Arts Northwestern Switzerland, Switzerland.

Thursday, 27th August

09:00 – 10:30 Dr. Felix Dreisow, "Recent developments and applications of ultrashort pulse-lasers", Schott Technical Glass Solutions GmbH, Jena, Germany.

10:30 – 10:50 **Break**

10:50 – 12:20 Dr. Achim Mahrle, "Theoretical approaches towards process design and analysis with application examples from laser material processing", Fraunhofer Institute for Material and Beam Technology IWS, Germany.

12:20 – 13:10 **Lunch**

13:10 – 14:10 Dr. Marcos Soldera, "Laser-induced Forward Transfer (LIFT)", Dresden University of Technology, Germany.

14:10 – 15:10 Dr. Robert Baumann, "Laser Safety", Dresden University of Technology, Fraunhofer Institute for Material and Beam Technology IWS, Germany.

15:10 – 15:30 **Break**

15:30 – 16:30 **Participant presentations – Micro and nano Processing/ Structuring III**

15:30 – 15:45 Semjon Mooraj, "Laser Surface Texturing Of Soda-Lime Glass With Respect To Tin and Atmospheric Side ", Fraunhofer Institute for Material and Beam Technology IWS, Germany.

15:45 – 16:00 Arthur Lopes Dal Mago, "Process Development for Diffractive Optical Element Fabrication by Burst-Mode Ultrashort Pulse Direct Laser Ablation of Fused Silica", Federal University of Santa Catarina, Brazil.

16:00 – 16:15 Gabriel Rogério da Silva, "Selective Laser Etching (SLE) for Microfabrication in Fused Silica: A Parametric Laser Study", Federal University of Santa Catarina, Brazil.

16:15 – 16:30 Houda Houban, "Processing of a steel-to-copper multimaterial through build-plate preheating and ultrasonic-assisted laser-based directed energy deposition", Free University of Brussels, Belgium.

Lab tour at IWS

17:40 – 18:00 Delivery of Summer School certificates.

Friday, 28th August

09:00 – 09:15 Organization of the lab groups
09:15 – 10:15 Laboratory 1 – Marko Seifert – Laser Hardening.
10:15 – 11:15 Laboratory 2 – Dr. Madlen Borkmann – Laser cutting.
11:15 – 12:15 Laboratory 3 – Tobias Steege – Laser structuring.
12:15 – 13:15 Prof. Andrés F. Lasagni, “Closing Remarks”.