

PROGRAM OVERVIEW

Wednesday
NOVEMBER 29, 2023

Open Lab @Fraunhofer IWS

Thursday
NOVEMBER 30, 2023

Laser Symposium	ISAM
OPENING PLENARY Emerging Technologies	
Exhibitor Pitches	
Advanced Laser Sources	Design and Simulation
Laser Welding	Trends in AM
Laser Cutting	Materials
POSTER SESSION	
Process Monitoring and Control	Future Technologies and Processing
NETWORKING SESSION	

Friday
DECEMBER 1, 2023

Laser Symposium	ISAM
JOINT PLENARY New Frontiers in Material Processing	
Exhibitor Pitches	
Beam Shaping	Digitalization
Micro Processing	Surface Treatment in AM
Cladding and Thermal Coating	Business Cases and Industrialization
CLOSING PLENARY	



Program

Laser Symposium & Int. Symposium Additive Manufacturing

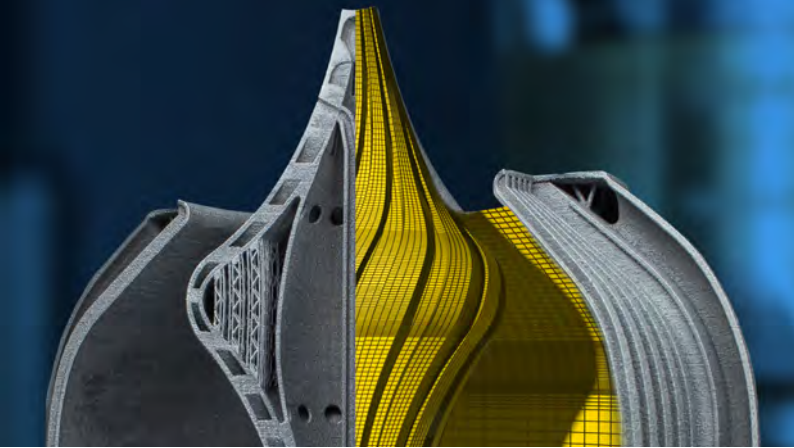
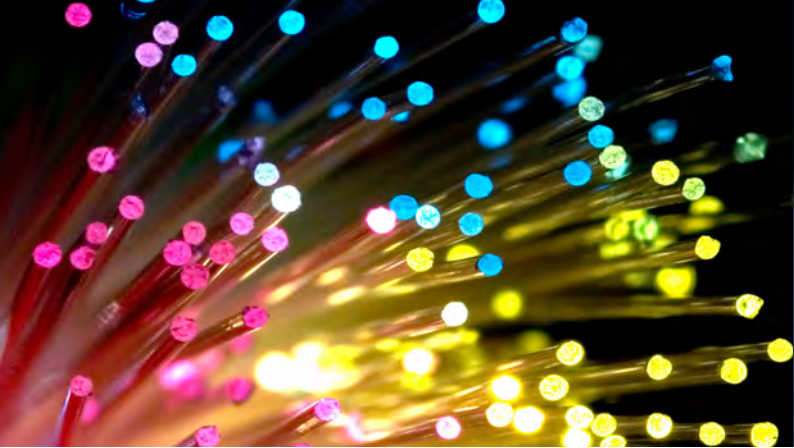
November 29–December 1, 2023

Dresden & Online



www.lasersymposium.de





SPONSORS



EXHIBITORS



JOIN US IN 2023

This year the Laser Symposium and the International Symposium on Additive Manufacturing are joining forces once again to bring together the world's leading laser experts and additive manufacturing professionals. With a focus on the latest developments and challenges in these fields, the conference offers a unique platform for scientific and technical exchange, as well as industrial networking.

Whether you prefer to attend in person or virtually, the conference offers the perfect setting for gaining new insights and exciting discussions. Join us for the Laser Symposium and ISAM 2023 and connect with colleagues and experts alike.



Prof. Dr. C. Leyens

*General Chair Laser Symposium
Director Fraunhofer IWS and
Chair of Materials Engineering,
TU Dresden*



Prof. Dr. F. Brückner

*General Chair ISAM
Technology Field Manager Additive
Manufacturing and Surface
Technology, Fraunhofer IWS*

as of June 2023

WEDNESDAY | NOVEMBER 29, 2023

OPEN LAB

@FRAUNHOFER IWS



18:00 – 22:00

Address

Fraunhofer IWS
Winterbergstraße 28
01277 Dresden,
Germany

www.fraunhofer.iws.de

On the eve of the conference, Fraunhofer IWS opens its doors to demonstrate recent research activities in the field of laser materials processing and additive manufacturing. Take advantage of an individual tour through our laboratories and experience live demonstrations, latest system technology as well as insights into process control, simulation and material testing. Meet and talk with our experts as well as other conference attendees in a relaxed atmosphere.

THURSDAY | NOVEMBER 30, 2023

CONFERENCE

DEUTSCHES HYGIENE-MUSEUM DRESDEN

OPENING PLENARY: Emerging Technologies

- 09:00** Welcome and Opening
Christoph Leyens, Frank Brückner | Fraunhofer IWS
- 09:15** **Plenary Talk 1:** Laser as a Secondary Source
Hagen Zimer | TRUMPF SE + Co. KG
- 09:45** **Plenary Talk 2:** The ESA Advanced Manufacturing Initiative as Innovation Driver for the European Space Community
Thomas Rohr | European Space Agency (ESA)
- 10:15** Exhibitor Pitches
- Laserline GmbH
 - asphericon GmbH
 - LASERVISION GmbH & Co.KG
 - Edmund Optics GmbH
- In exciting 5-minute presentations, exhibitors will provide insights into their portfolio and latest achievements.
- 10:35** **Coffee Break & Exhibition**

THURSDAY | NOVEMBER 30, 2023
LASER SYMPOSIUM

THURSDAY | NOVEMBER 30, 2023
ISAM

LASER 1 | Advanced Laser Sources

ISAM 1 | Design and Simulation

11:10 Superior Gas Lasers for Advanced Material Applications
Stephan Falke | Coherent

11:10 Digitalized DED Process Preparation
Oihane Murua | University of the Basque Country (UPV/EHU), Sebastian Hartmann | Siemens AG, Digital Industries

11:30 Development Trends for Fiber Lasers
Jens Limpert | Friedrich-Schiller-Universität Jena, Fraunhofer IOF

11:30 Simulation Driven Optimization of Processing Window for Laser Direct Energy Deposition Process
Andrey Molotnikov | RMIT University

11:50 High Power Ultra-Short-Pulsed Lasers
Eric Mottay | Amplitude Laser

11:50 Metal Binder Jetting of Dentures: Green Part Extraction and Sinter Simulation of Filigree Parts
Moritz Greifzu | Fraunhofer IWS

12:10 Lunch Break & Exhibition

12:10 Lunch Break & Exhibition

LASER 2 | Welding

ISAM 2 | Trends in AM

13:20 Thermoplastic Composites in Aerospace – An Insight into Development of the Largest Full Thermoplastic Aircraft Structure in the World
Alexei Vichniakov | Airbus Operations GmbH

13:20 How Additive Manufacturing is Helping the Energy Transition
Sebastian Piegert | Siemens Energy

13:40 Laser Welding of Copper – Opportunities, Challenges and Fascinating Insights
Andreas Heider | Bosch GmbH

13:40 Additive Manufacturing Nature Inspired Functional Elements
Anton Du Plessis | Object Research Systems (ORS) Inc.

14:00 Ultra-short Pulsed Laser Welding: Glasses, Crystals and Metals
Duncan P. Hand | Heriot Watt University

14:00 Pushing the Limits in Large Scales AM Parts
Mirko Riede | Fraunhofer IWS

14:20 Coffee Break & Exhibition

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THURSDAY | NOVEMBER 30, 2023
LASER SYMPOSIUM

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ISAM

LASER 3 | Laser Cutting

ISAM 3 | Materials

14:50 Under Water Laser Cutting
Patrick Herwig | Fraunhofer IWS

14:50 Development of Novel Alloys for Harsh Environments
Suited for Additive Manufacturing
Kosuke Kuwabara | Proterial

15:10 Advantages and Challenges of Sheet Metal Cutting
with Increased Laser Power and Mixed Gas
Andreas Lüdi | Bystronic

15:10 Materials Developments for Metal Additive
Manufacturing
Hyoyun Jung | Korea Institut of Industrial
Technology

15:30 Continious Cutting of Airbag Fabric with
Superposed Axes Systems
Jens Hußlein | HELD SYSTEMS GmbH

15:30 Laser Beam Powder Bed Fusion of Novel Biomedical
Titanium/Niobium/Tantalum Alloys
Markus Weinmann | TANIOBIS GmbH

15:50 **Poster Session**

15:50 **Poster Session**

LASER 4 | Process Monitoring and Control

ISAM 4 | Future Technologies and Processing

17:00 Spatial and Time-resolved Temperature Measurement
and Control in Laser Material Processing
Marko Seifert | Fraunhofer IWS

17:00 Additive Manufacturing Challenges and
Opportunities in Oil and Gas Offshore
Gabriel Silva | Technip-FMC

17:20 Are you Measuring the Right Stuff?
Roy Orbon | Van Halteren Technologies Boxel BV

17:20 Metal Additive Manufacturing for Particle Accelerators:
Current Applications and Potential Development
Maurizio Vedani | Politecnico di Milano

17:40 A Thermographic Inspection of Welds Using
Surrounding Laser Excitation
Lukáš Muzika | University of West Bohemia

17:40 "Hybrid Parts in Mass Production" or how Additive
Manufacturing Technology is Influencing our
Production Lines
Klaus Eimann | Procter & Gamble

18:30 **Networking Session**

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THURSDAY | NOVEMBER 30, 2023

NETWORKING SESSION

DEUTSCHES HYGIENE-MUSEUM
DRESDEN



18:30 – 22:30

Dinner Speech

Laser Processing: An
Evident Idea? And
what's next?

Joost Duflou
KU Leuven

The Deutsches Hygiene-Museum Dresden provides a unique fusion of historical heritage and modern design. It combines science, society, art, history and vision in a fascinating way, creating a worthy setting for stimulating interaction.

For the networking session, we will use the impressive architectural centerpiece of the museum building, the reception hall. During the course of the evening, we will offer a tour of the museum's permanent exhibition "The Human Experience" for all those interested. We thus hope to create – in addition to the technical presentations – an inspiring atmosphere for the evening's communicative exchange.

FRIDAY | DECEMBER 1, 2023

CONFERENCE

DEUTSCHES HYGIENE-MUSEUM
DRESDEN

JOINT PLENARY:

New Frontiers in Material
Processing

09:00 Welcome Note
Christoph Leyens, Frank Brückner |
Fraunhofer IWS

09:05 **Plenary Talk 3:** Laser Goes Hydrogen
Christoph Leyens | Fraunhofer IWS

09:35 **Plenary Talk 4:** Laser Goes Battery
Klaus Löffler | Precitec GmbH

10:05 Exhibitor Pitches

- Coaxworks GmbH
- DIVE imaging systems GmbH
- ALOtec Dresden GmbH

In exciting 5-minute presentations, exhibitors will provide insights into their portfolio and latest achievements.

10:25 **Coffee Break & Exhibition**

FRIDAY | DECEMBER 1, 2023
LASER SYMPOSIUM

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ISAM

LASER 5 | Beam Shaping

ISAM 5 | Digitalization

11:00 Fast Beam Shaping through Coherent Beam Combining
Assaf Nissenbaum | Civan Lasers

11:00 Industrial Systems and Digital Solutions
Johan Vallhagen | GKN Aerospace

11:20 Freeform Beam Shaping for Laser Material Processing
Natalia Trela-McDonald | PowerPhotonic Ltd UK

11:20 The Digital Flow of Information Drives the Industrialization of Additive Manufacturing towards Series Production
Tobias Todzy | Farsoon Europe GmbH

11:40 Laser Beam Shaping and Melt Pool Thermal Flow
Isabelle Choquet | University West, Sweden

11:40 Ensure Perfection: Using Digital Tools for Flawless Additive Manufacturing
Benedikt Brandau | JENOPTIK Optical Systems GmbH

12:00 Lunch Break & Exhibition

12:00 Lunch Break & Exhibition

LASER 6 | Micro Processing

ISAM 6 | Surface Treatment in AM

13:00 Inspired by Nature, Powered by Laser: Advancements in Functional Surface Engineering Using Laser-based Biomimicry
Tim Kunze | Fusion Bionic GmbH

13:00 Tbd
L'Oréal (requested)

13:20 Flexible Production of Organic Photovoltaic Modules with Laser Systems – Productive Usage and Opportunities
Irma Slowik | Heliatek GmbH

13:20 Additive Manufactured Ni-based Alloys: Surface Finish, Oxidation Behaviour and its Protection through Aluminide Coatings
Fernando Pedraza Diaz | Université de La Rochelle

13:40 Tackling Microprocessing Challenges with Beam Shaping
Gwenn Pallier | CAILABS

13:40 Surface Modification in Additively Manufactured Dental Parts
Lukas Stepien | Fraunhofer IWS, Ute Botzenhart | Poznan University of Medical Science

14:00 Short Break

14:00 Short Break

LASER 7 | Cladding and Thermal Coating

ISAM 7 | Business Cases and Industrialization

14:10 External and Internal Laser Cladding of Tin Bronze for Sliding Bearings
Hannes Freisse | Kugler Bimetal SA

14:10 DED Additive Manufacturing of CuCrZ on Okuma Hybrid Machine
Juan Pedro Riva | VENG

14:30 Holistic Approach of a Surface Functionalized Cast Iron Brake Disc
René Bischoff | C4 Laser Technology GmbH

14:30 Additive Manufacturing – Increasing Complexity to Gain Benefits in Aerospace Propulsion Systems
Dan Roth-Fagaraseanu | Rolls-Royce Deutschland Ltd & Co KG

14:50 Latest Developments in Cladding and Additive Manufacturing with Diode Lasers
Sörn Ocylok | Laserline GmbH

14:50 Application of Additive Manufacturing in Future Spacecraft
Michael Aldorf | Airbus Defense and Space GmbH

15:10 Coffee Break & Exhibition

15:10 Coffee Break & Exhibition

CLOSING PLENARY

15:40 **Plenary Talk:** Laser-driven Inertial Confinement Fusion – Technology and Potential
Constantin Häfner | Fraunhofer ILT

16:10 **Best Poster Award**
Closing Remarks
Christoph Leyens, Frank Brückner | Fraunhofer IWS

16:30 End of Conference



PARTICIPATION



Besides on-site participation, the Laser Symposium & ISAM 2023 also offers the possibility to attend the conference online.

CONFERENCE FEES

Regular ticket	790 €
Reduced ticket (Students PhD students Alumni)	350 €
Online ticket	250 €
Networking Session	60 € (+ 19 % VAT)

The on-site ticket (regular/reduced) includes the participation in the open lab, lunch and coffee breaks as well as the conference proceedings.

The online ticket includes the participation in the plenary and technical sessions on November 30 and December 1 via a virtual conference platform.

Please register via the conference website. The registration will open in August.



EXHIBITION & SPONSORING

Along with the technical symposia, the joint conference is offering an industrial exhibition. Do not miss to present your latest products and services and get in touch with your customers. As a sponsor you take advantage of increasing customer awareness in a target audience.

Exhibition package Basic/Premium:	1.500 € / 2.000 €
Sponsoring package:	2.000 €

POSTER SESSION

The Laser Symposium & ISAM 2023 will provide a dedicated poster session where presenters and attendees can interact and discuss in a relaxed environment. The posters will be displayed in a poster area on site as well as at the online conference platform. The best contributions will be honored with the **Best Poster Award**.

Especially young scientists are encouraged to contribute to the conference with a poster related to laser and/or AM applications. **Poster Abstracts** can be submitted until **September 18, 2023**.

Please visit the conference website for more detailed information.



www.lasersymposium.de

ORGANIZATION



CONFERENCE VENUE

Welcome to Dresden, the perfect location for our international conference. Renowned for its technological expertise, the city offers state-of-the-art facilities and a vibrant research community. Indulge in Dresden's unique attractions, including the stunning Frauenkirche and majestic Zwinger Palace. Starting end of November, experience the magic of the Advent season with enchanting Christmas markets.

Our venue, the Deutsches Hygiene-Museum Dresden, combines rich history with modern architecture and encourages innovative thinking. Thanks to its convenient location, participants can explore cultural treasures while enjoying a smooth conference.

CONFERENCE LANGUAGE

English (no simultaneous translation)

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Conference website



www.lasersymposium.de

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01069 Dresden,
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www.dhmd.de