

SEPTEMBER 28–29, 2021

## CONFERENCE AI FOR LASER TECHNOLOGY

Both production environments – continuously transformed within the Fourth Industrial Revolution – and cyber-physical systems will enable the industry to analyze these processes more easily, reliably and synergistically in the future. To accomplish this, artificial intelligence (AI) processes will play a key role in allowing us to draw unambiguous conclusions from the data acquired, e.g. for analyzing the condition of optical production tools and for detecting errors in running processes. AI unlocks further potential – it uses data to optimize processes and to analyze causes and effects in the event that processes deviate from the norms.

The following topics will be highlighted by speakers from industry and research at the AI for Laser Technology Conference 2021:

### The topics

- Industry 4.0 and Big Data in manufacturing practice
- AI-based quality assurance in laser beam welding
- Digital tools and AI for optical technologies
- Process optimisation in laser-based additive manufacturing
- Optical sensor technology for monitoring laser cutting processes

### Virtual Lab tour

The virtual lab tours offer exciting insight into our application-oriented research and development. Learn more about the latest trends in artificial intelligence and get ideas for promising future activities.

We look forward to your participation!

*Program subject to minor changes.*

Further information and online registration:  
[www.ilt.fraunhofer.de/aila](http://www.ilt.fraunhofer.de/aila)

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PROGRAM  
TUESDAY, SEPTEMBER 28, 2021

12.30	Login Microsoft Teams
13.00	Opening Peter Abels, Fraunhofer ILT, Aachen (D)
13.15	Deep Learning in Industrial Production with Laser Welding Joachim Schwarz, Precitec Vision GmbH & Co. KG, Neu-Isenburg (D)
13.45	WeldWarrior – Making the Most of Big Data for an Efficient Production Dr. Geert Verhaeghe, Faurecia Autositze GmbH, Stadthagen (D)
14.15	Short break
14.30	Quality Monitoring through Artificial Intelligence – Root Cause Analysis and Early Detection of Rejects Oliver Bracht, eoda GmbH, Kassel (D)
15.00	Machine Learning for Learning Machines Dr. Martin Peterek, IconPro GmbH, Aachen (D)
15.30	Coffee break
16.15	Optical Sensors Development for the Water-Jet-Guided Laser Technology Falk Braunnüller, SYNOVA S.A., Schweiz (CH)
16.45	Bayesian Optimization for Inverse Problems in Laser Materials Processing under the Presence of Noise Ulrich Halm, RWTH Aachen University, Aachen (D)
17.15	End

WEDNESDAY, SEPTEMBER 29, 2021

12.30	Login Microsoft Teams
13.00	Welcome Peter Abels, Fraunhofer ILT, Aachen (D)
13.15	Improving build Quality in Laser Powder Bed Fusion using HDR Imaging and model-based Reinforcement Learning Christian Knaak, Fraunhofer ILT, Aachen (D)
13.45	Leverage dark Data with the Help of AI Matthias Kühnel, II-VI Incorporated, Kleinmachnow (D)
14.15	Short break
14.30	Benefit from Revolution: Industry 4.0 in Welding Technology Jan Pitzer, Carl Cloos Schweißtechnik GmbH, Haiger (D)
15.00	Virtual Lab Tour
15.30	Coffee break
16.15	Digital Solutions and AI in Optical Technologies Prof. Carlo Holly, RWTH Aachen University, Aachen (D)
16.45	Outlook Peter Abels, Fraunhofer ILT, Aachen (D)
17.00	End

Program subject to minor changes.



Venue

Virtually via MS Teams.

Conference language

The Conference language is English

Participation fee – AI for Laser Technology Conference

(September 28–29, 2021)

The participation fee is € 499 and includes the conference documents.

Conditions of participation

You can find the full conditions of participation at:

[www.ilt.fraunhofer.de/aila](http://www.ilt.fraunhofer.de/aila)

Further information and online registration

[www.ilt.fraunhofer.de/aila](http://www.ilt.fraunhofer.de/aila)

Registration

Please use the registration form on the Internet at:

[www.ilt.fraunhofer.de/aila](http://www.ilt.fraunhofer.de/aila)

Deadline for registration is August 30, 2021!