

SEPTEMBER 19–20, 2023

# LKH<sub>2</sub> LASER COLLOQUIUM HYDROGEN

## Welcome

With the energy transition and the global challenges of climate change, the use of renewable energy sources is becoming increasingly important. In this context, the supply and conversion of hydrogen in fuel cells and electrolyzers is in the focus of future-oriented research and development. Highly efficient laser processes for the entire process chain are already available. Due to the flexibility and the high degree of automation the share of laser technology in production will continue to increase.

## The topics

The LKH<sub>2</sub> – Laser Colloquium Hydrogen 2023 will highlight with speakers from industry, science and research on the following topics:

- Continuous production of metallic bipolar plates
- Compound plates
- Industrial production of metallic bipolar plates
- Process control
- Functionalising and coating of surfaces

## Lab tours

The lab tours on September 19, 2023, offer a comprehensive insight into our application-oriented research and development. Learn more about the latest trends in the field of laser processes for the efficient production of energy storage devices and metallic bipolar plates.

**We are looking forward to welcoming you!**

## Fraunhofer Institute for Laser Technology ILT

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Fraunhofer Institute for Laser  
Technology ILT

## Program

LKH<sub>2</sub>  
Laser Colloquium Hydrogen  
September 19–20, 2023

[www.ilt.fraunhofer.de/lkh2](http://www.ilt.fraunhofer.de/lkh2)



## PROGRAM

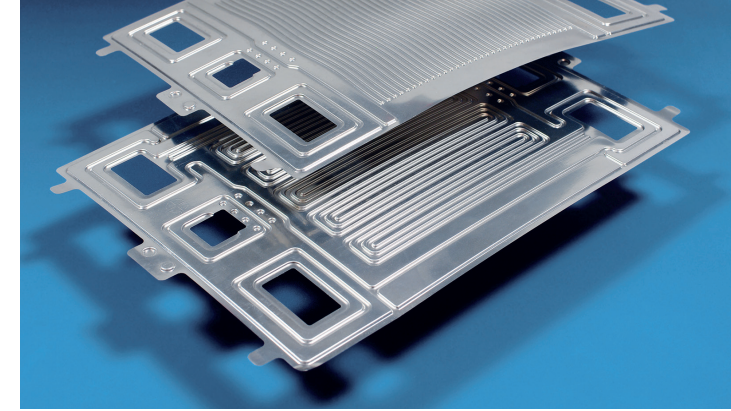
### TUESDAY, SEPTEMBER 19, 2023

- 8:00**    **Check-in**
- 9:00**    **Welcome at RCDPP**  
Dr. Alexander Olowinsky, Fraunhofer ILT, Aachen (D)
- 10:15**    **Marketplace – Hydrogen lab ICDPP**  
DPP – Forschungscampus Digital Photonic Production, Aachen (D)
- 10:45**    **Water instead of exhaust gases – The potential of lasers in hydrogen technology**  
Prof. Arnold Gillner, Fraunhofer ILT, Aachen (D)
- 11:15**    **New compact scanner optics for fast simultaneous laser welding of fuel cells and e-solutions**  
Dr. Axel Luft, Scansonic MI GmbH, Berlin (D)
- 11:45**    **Advanced techniques in laser high speed cutting**  
Stoyan Stoyanov, Fraunhofer ILT, Aachen (D)
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- 12:15**    **Lunch break**
- 13:45**    **Efficient fuel cell production: Improved laserbased strategies for welding bipolar plates**  
Elie Haddad, Fraunhofer ILT, Aachen (D)
- 14:15**    **Comparison of potential forming processes for production of bipolar plates in fuel cells**  
Oliver Flamm, Mubea, Aachen (D)
- 14:45**    **High accuracy beam deflection for laser micro welds in on-the-fly bipolar plate applications**  
Thibault Bautze-Scherff, Blackbird Robotersysteme GmbH, Garching (D)
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- 15:15**    **Coffee break**
- 15:45**    **Novel approaches for upscaling USP processes in hydrogen technology**  
Tobias Keller, Fraunhofer ILT, Aachen (D)
- 16:15**    **Automation of process monitoring – typical obstacles for robust quality assurance**  
Christoph Franz, 4D Photonics GmbH, Isernhagen (D)
- 16:45**    **TBD**  
TBD
- 17:15**    **Marketplace – Hydrogen lab ICDPP**  
DPP – Forschungscampus Digital Photonic Production Aachen (D)
- 18:15**    **Networking** (End 22.00)

### WEDNESDAY, SEPTEMBER 20, 2023

- 8:30**    **Check-in**
- 9:00**    **Lab tours**  
Fraunhofer ILT and Fraunhofer IPT, Aachen (D)
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- 11:00**    **Coffee break**
- 11:30**    **Laser applications for thin film processing in fuel cells**  
Samuel Fink, Fraunhofer ILT, Aachen (D)
- 12:00**    **Laser welding of metallic bipolar plates for PEM fuel cells in the conflicting field between product requirements and process stability**  
Marcel Gretzki, ZBT – Zentrum für BrennstoffzellenTechnik GmbH, Duisburg (D)
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- 12:30**    **Lunch break**
- 14:00**    **Full flexible 2D-on-the-fly system for bipolar plate manufacturing – a project summary**  
Eric Punzel, BBW Lasertechnik GmbH, Prutting (D)
- 14:30**    **When things are getting faster – Requirements and possible solutions for system and sensor technology**  
Dr. Markus Kogel-Hollacher, Precitec Optronik GmbH, Neu-Isenburg (D)
- 15:00**    **Laser technology applications and solutions for hydrogen technology from LASER.region.AACHEN**  
**How a local partnership offers versatile solutions**  
Edwin Büchter, Clean-Lasersysteme GmbH, Herzogenrath (D)
- 15:30**    **Outlook**  
Dr. Alexander Olowinsky, Fraunhofer ILT, Aachen (D)
- 16:00**    **End of Colloquium**

*Program subject to minor changes.*



#### Venue

RCDPP – Research Center for Digital Photonic Production, Campus-Boulevard 73, 52074 Aachen.

#### Event language

The presentations will be held in English, the moderation will lead through the event in English. Please note: the presentations and the moderation will not be simultaneously translated from English to German.

#### Participation fee

- LKH<sub>2</sub> 2023 (September 19–20, 2023) – 795 €
- Networking Event (September 19, 2023) – 80 € (plus 19 % VAT)

The participation fee includes the conference documents, lunch or a snack and coffee breaks on both days of the colloquium.

#### Participation conditions

You can find the full terms and conditions of participation at: [www.ilt.fraunhofer.de/lkh2](http://www.ilt.fraunhofer.de/lkh2)

#### Registration

Please use the registration form on the internet at: [www.ilt.fraunhofer.de/lkh2](http://www.ilt.fraunhofer.de/lkh2)