SEPTEMBER 10–11, 2024

LKH_2
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 electrolysers 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_2 – Laser Colloquium Hydrogen 2024 will highlight with speakers from industry, science and research on the following topics:

- Continuous production of metallic bipolar plates
- Fuel cell production in the German research landscape
- Industrial production of metallic bipolar plates
- Process monitoring
- Functionalising and coating of surfaces

Lab tours

The lab tours on September 10, 2024, 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!

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Fraunhofer ILT

Fraunhofer Institute for Laser Technology ILT

Program

LKH_2
Laser Colloquium Hydrogen
September 10–11, 2024

www.ilt.fraunhofer.de/lkh2

PROGRAM
TUESDAY, SEPTEMBER 10, 2024

8:00 **Check-in**

9:00 **Welcome at Fraunhofer ILT**
Dr. Alexander Olowinsky, Fraunhofer ILT, Aachen (D)

9:15 **Guided lab tour**
Fraunhofer ILT, Aachen (D)

10:45 **Hydrogen as an enabler for decarbonization – feasible ways to a sustainable hydrogen economy**
Dr. Dina Barbian, eco2050 Institut für Nachhaltigkeit – Institute for Sustainability GmbH, Nürnberg (D)

11:15 **Laser heat treatment for hydrogen technology**
Dr. Simon Britten, Laserline GmbH, Mülheim-Kärlich (D)

11:45 **Applied techniques and defect detection in high speed laser welding of 316L stainless steel foils**
Elie Haddad, Fraunhofer ILT, Aachen (D)

12:15 **Lunch break**

13:45 **Recent developments with USP processing for the hydrogen economy**
Matthias Trenn, Fraunhofer ILT, Aachen (D)

14:15 **Production of metallic bipolar plates: The challenges of scaling-up**
Dr. Benjamin Hertweck,
Hugo Kern und Liebers GmbH & Co. KG, Schramberg (D)

14:45 **Innovation culture – stamping, fundamentally rethought for bipolar plate manufacturing**
Stefan Kaiser, ANDRITZ Kaiser GmbH, Bretten (D)

15:15 **Coffee break**

15:45 **Cross-scale development for low-temperature electrolysis**
Dr. Martin Müller, Forschungszentrum Jülich, Jülich (D)

16:15 **Laser thin film processing for scalable and sustainable fuel cell production**
Julius Funke, Fraunhofer ILT, Aachen (D)

16:45 **Laser Induced Nanofoams (LINF) as efficient catalyst carriers for the dehydrogenation of liquiud organic hydrogen carriers and as electrocatalysts**
Prof. Eike Hübner, Fraunhofer HHI, Berlin (D)

17:15 **Marketplace – hydrogen lab ICDPP**
(End 22:00) **with demonstrations, expert talks and snacks**
DPP – Forschungscampus Digital Photonic Production, Aachen (D)

WEDNESDAY, SEPTEMBER 11, 2024

8:30 **Check-in**

9:00 **Hygate: a German-Australien hydrogen innovation and technology incubator. Investigation of laser applications in electrolyser manufacturing**
Robert McConville, Port Kembla, Australien (AUS)

9:30 **Joining technology for the new hydrogen economy**
Dr. Michael Rhode, Bundesanstalt für Materialforschung und -prüfung, Berlin (D)

10:00 **Prospects and technical possibilities for the laser-based production of thermoplastic hydrogen components**
Christoph Wortmann, Fraunhofer ILT, Aachen (D)

10:30 **Coffee break**

11:00 **How Tunable Diode Laser Absorption Technology (TDLAS) and AI based analyzer system management help to produce high quality green hydrogen with high throughput?**
David Janssens, Siemens AG, Karlsruhe (D)

11:30 **EHLA as a key technology in the energy transition: focus on hydrogen applications**
- Eduard Weisser, Fraunhofer ILT, Aachen (D)
- Dr. Yingwei Wu, Fraunhofer ILT, Aachen (D)

12:00 **Lunch break**

13:30 **Hydrogen technology at Schaeffler – cutting edge manufacturing enabled by laser**
Dr. Steffen Berger, Schaeffler AG, Herzogenaurach (D)

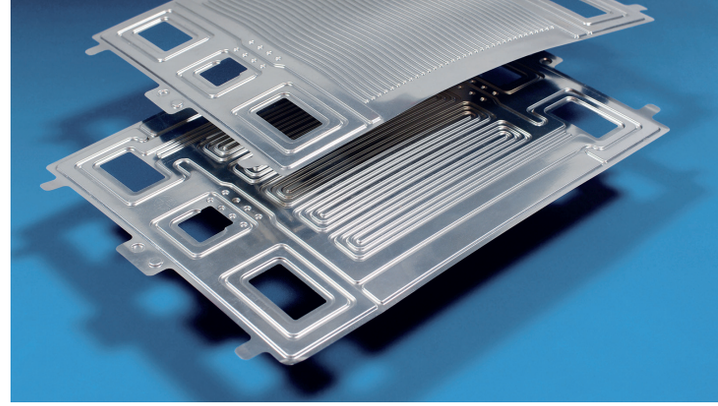
14:00 **Cutting bipolar plates with USP laser radiation: potentials and challenges**
Stoyan Stoyanov, Fraunhofer ILT, Aachen (D)

14:30 **Sensoring and quality monitoring for a better weld**
Richard Steinbrecht,
Lessmüller Lasertechnik GmbH, Munich (D)

15:00 **Outlook**
Dr. Alexander Olowinsky, Fraunhofer ILT, Aachen (D)

16:00 **End of Colloquium**

The organizer reserves the right to change the program.



Venue
Fraunhofer Institute for Laser Technology ILT,
Steinbachstraße 15, 52074 Aachen, Germany

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$_2$ 2024 (September 10–11, 2024) – 795 €
- Networking Event (September 10, 2024) – 60 € (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

Registration
Please use the registration form on the internet at:
www.ilt.fraunhofer.de/lkh2