

2024

LaserEMobility Workshop

 **LASER MOBILITY**
www.aitem.org/laseremobility-workshop

DAY 1

July 17th, 2024

Registration desk opens at 8:00

9:00 9:30	Welcome speech	Room TERRA
9:30 10:30	Industrial session Laser as Integrated Digital Tools for E-Mobility	Room TERRA
10:30 11:10	Coffee Break & Poster Session	Room TERRA
11:10 12:45	Industrial session Laser as Integrated Digital Tools for E-Mobility	Room TERRA
12:45 14:00	Lunch	Room TERRA
14:00 15:30	Industrial session Laser as Integrated Digital Tools for E-Mobility	Room TERRA
15:30 16:20	Coffee Break & Poster Session	Room TERRA
16:20 17:20	Academic session Temporal and Spatial Beam Shaping Laser-Based Efficient Manufacturing	Room TERRA Room JUPITER
From 18:00	Dinner & Guided Lab Tour	IWB Labs

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DAY 2

July 18th, 2024

Registration desk opens at 8:00

8:30 9:00	Welcome speech	Room TERRA
9:00 10:20	Industrial session Lasers for the Electrification in Automotive	Room TERRA
10:20 11:00	Coffee Break & Poster Session	Room TERRA
11:00 12:30	Industrial session Quality Assurance for the Use of Lasers	Room TERRA
12:30 13:40	Lunch	Room TERRA
14:20 15:00	Industrial session Lasers for the Electrification in Automotive	Room TERRA
15:00 14:00	Coffee Break & Poster Session	Room TERRA
15:40 17:00	Academic session Process Diagnostics, Monitoring, and Control Process Fundamentals and Modeling	Room TERRA Room JUPITER
17:00 17:10	Closure	Room TERRA

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DAY 1

July 17th, 2024

Science Congress Center
Walther-von-Dyck Str. 10
85748 Garching near Munich
Germany

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Registration desk opens at 8:00

9:00 | Welcome speech | Prof. Michael Zäh

Room TERRA

Industrial – Laser as Integrated Digital Tools for E-Mobility

Room TERRA

9:30 | Daniel Lück

IPG

IPG AMB & LDD Technology in
46XX Mass Production

9:50 | Gwenn Pallier

Cailabs

Transform E-Mobility Challenging
Laser Processes into Forgiving
Ones with Beam-Shaping

10:10 | Thomas Hofmeister

Coherent

A Novel Battery Cell Foil-to-Tab
Laser Welding Process

10:30 | Coffee Break & Poster Session

Room TERRA

Industrial – Laser as Integrated Digital Tools for E-Mobility

Room TERRA

11:10 | Matthias Beranek

Trumpf

Highly Integrated Lasersystems for
E-Mobility Production

11:30 | Lukas Mayr

MAXphotonics

Flexible Beam Shaping for
Enhanced Electrical Contacting of
Cylindrical Cell Batteries

11:50 | Andrea Braglia

nLight

High-Performance Laser Welding for
E-Mobility Enabled by Laser Spatial
and Temporal Control and
System-Integrated Process Monitoring

12:10 | Christian Dini

Luxinar

How CO2 Lasers Contribute to
Battery Manufacturing and Help to
Reduce Carbon Footprints

12:45 | Lunch

Room TERRA

Industrial – Laser as Integrated Digital Tools for E-Mobility

Room TERRA

14:00 | Stefano Zarini

Optoprim

Examples of Tailored Solutions in Laser Welding:
High-Power Blue Laser Application in Copper Welding,
Benefit of Single Mode Laser in Aluminum Remote Welding,
IR Beam Shaping Applied to Martensitic Stainless Steel

14:20 | Richard Hendel, Johannes Schäfer

Laserline

Laser Systems for E-Mobility
Production

14:40 | Richard Steinbrecht

Lessmüller

Optical Coherence Tomography
(OCT) in Combination with Actual
Welding Tasks

15:00 | Robert Bernhard

Civan

Dynamic Beam Laser Welding for
E-Mobility Applications

15:40 | Coffee Break & Poster Session

Room TERRA

Academic – Temporal and Spatial Beam Shaping

Room TERRA

16:20 | Erica Liverani

University of Bologna

The Effect of Beam Shaping on Cut
Quality of Li-Ion Electrodes Using
a Single Mode Continuous Fiber
Laser

16:40 | Francesco Galbusera

Politecnico di Milano

Spatial and Temporal Beam
Shaping for the Reduction of
Hot-Cracking Susceptibility of
6XXX Alloys During Laser Welding

17:00 | Sharhid Jabar

University of Warwick

Challenges and Opportunities in
Laser Beam Shaping for Advanced
Laser Welding in E-Mobility
Manufacturing and Beyond

17:20 | Atharv Agarwal

LUT University

Effect of Beam Shaping and Laser
Beam Oscillation on the
Weldability of Al to Cu Joints for
EV Battery Pack Applications

Academic – Laser-Based Efficient Manufacturing

Room JUPITER

16:20 | Christian Hagenlocher

University of Stuttgart

Exceeding the Limits of Laser-Based
Additive and Subtractive Manufacturing
of E-Mobility Components by
Combining Cw and Ultrafast Lasers

16:40 | Max Biegler

Fraunhofer IPK

Joining Process Life Cycle
Assessment of an Automotive
Battery Case

17:00 | Hans-Georg von Ribbeck

F&K DELVOTEC Bondtechnik GmbH

Interconnect Solutions for the
Production of State-of-the-Art
Battery Modules

17:20 | Murat Reis

Bursa Uludağ University

Impact of Torch-Nozzle Angle on
Shielding Gas Flow in Manual
Laser Welding for E-Mobility
Applications

18:00 | Dinner & Guided Lab Tour

IWB Labs

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OPTOPRIM

PRECITEC

PRECITEC

Prima Additive

RAYLASE

S&B

SCANLAB

Sonplas

TRUMPF

In collaboration with

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PhotonicsViews

OPTICS • PHOTONICS • LASER TECHNOLOGY

DAY 2
July 18th, 2024

Science Congress Center
Walther-von-Dyck Str. 10
85748 Garching near Munich
Germany

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Registration desk opens at 8:00

8:30 | Welcome speech | Prof. Ali Gökhan Demir

Room TERRA

Industrial – Lasers for the Electrification in Automotive

Room TERRA

9:00 | Georgij Safronov
BMW
Service-Oriented AI Platforms for
Process Monitoring in the Case of
Laser Beam Welding

9:20 | Karsten Schätzle
Beckhoff
Advantages of PC-based Control
Technology in Battery Production

9:40 | Giulio Borzoni
IMA Automation
Laser Hairpin Stripping: Comparison
of Different CO₂ Lasers and
Mechanical Milling

10:00 | Jan Bernd Habedank
Raylase
Always in Focus! OCT-Based
Position Detection and Automatic
Focus Adjustment for the
Contacting of Battery Cells

10:20 | Coffee Break & Poster Session

Room TERRA

Industrial – Quality Assurance for the Use of Lasers

Room TERRA

11:00 | Luca Schmerbeck
Sonplas
Innovative Laser Processes for
Advanced Battery and Power
Electronics Manufacturing

11:20 | Maximilian Schmöller
S&B Automotive
Modular Laser Cell Kit for Enhanced
E-Mobility Manufacturing: Integrating
High-Performance Control Technology
with AI-Driven Precision

11:40 | Michele Serri
Manz
Manz Approach in Advanced Laser
Technology and Systems in
E-Mobility

12:00 | Erica Librera
Prima Additive
Hard Coated Disks for E7
Regulations Performed by Laser
Cladding in Automotive Mass
Production

12:30 | Lunch

Room TERRA

Industrial – Lasers for the Electrification in Automotive

Room TERRA

13:40 | Nicolas Meunier
MKS Instruments
Measurement Challenges of Green
or Blue Lasers

14:00 | Florian Hermann
Precitec
Increasing your OEE by Advanced
Sensors

14:20 | Benjamin Bopp
Blackbird
Synchronization of Welding Tools,
Camera Systems and Linear Stages
for Mass Production of Battery
Packs

15:00 | Coffee Break & Poster Session

Academic – Process Diagnostics, Monitoring, and Control

Room TERRA

15:40 | Pawel Garkusha
Technical University of Munich
Optimizing Ultrashort-Pulsed Laser
Structuring Applications: A
Photodiode-Based Approach to
Process Monitoring

16:00 | Dario Basile
Politecnico di Torino
Integrating Spectral and Acoustic
Signals for In-Process Diagnosis of
Weld Defects During Remote Laser
Welding of 1050 Aluminium Busbars

16:20 | Markus Hofele
Aalen University
Defect Formation at Laser Welding
of Batterie Cells Due to
Electrolyte Contamination

16:40 | Isaac Kuma Yeboah
Pentecost University
A New Modeling Method of
Thermal Error Based on LSTM and
Imbalanced Data Based on
Transfer Learning

Academic – Process Fundamentals and Modeling

Room JUPITER

15:40 | Klaus Schricker
Technical University Ilmenau
Description of Keyhole and Melt Pool Behavior
in Laser Beam Welding of Aluminum-Copper
Joints Using High-Speed Synchrotron X-ray
Imaging and Multi-Physics Simulation

16:00 | Dominic Bartels
University of Erlangen–Nuremberg
Beam Shaping + Green – Living the
Dream?

16:20 | Carlo Alberto Biffi
National Research Council of Italy ICMATE
Use of Blue Laser in Dissimilar
Welding Cu/Al for E-Mobility
Sector

16:40 | Caterina Angeloni
University of Bologna
Computational and Experimental
Study of Copper Current Collector
Laser Cutting

17:00 | Closure | Prof. Ali Gökhan Demir

Room TERRA

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