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

Preliminary program by 17 February 2023

Organized by POLITECNICO MILANO 1863

2023 LaserEMobility Workshop

DAY 1 — 13 March 2023

Carassa Dadda Hall
Politecnico di Milano, Building B28
Via Lambruschini 4, 20156 Milan, Italy

9:00	Welcome speeches			
9:30 – 10:30	Industrial presentations	10:30	Coffee break	Advanced beam control and system design for e-mobility
11:10 – 12:30	Industrial presentations	12:30	Lunch	Advanced beam control and system design for e-mobility
14:00 – 15:40	Industrial presentations	15:40	Coffee break	Advanced beam control and system design for e-mobility
parallel sessions				
16:20 – 17:20	Academic presentations	18:00	Aperitivo at the lab – Department of Mechanical Engineering	Carassa Dadda Hall | Advanced joining solutions
16:20 – 17:20	Academic presentations	18:00	Aperitivo at the lab – Department of Mechanical Engineering	Room BL28.1.3 | Sustainability and design

DAY 2 — 14 March 2023

Carassa Dadda Hall

9:00	Welcome speeches			
9:10 – 10:50	Industrial presentations	10:50	Coffee break	Advanced beam control and system design for e-mobility
11:30 – 12:30	Round Table	12:30	Lunch	
parallel sessions				
14:00 – 15:20	Academic presentations	15:20	Coffee break	Carassa Dadda Hall | Process monitoring and data analysis
14:00 – 15:20	Academic presentations	15:20	Coffee break	Room BL28.1.3 | Novel and functional materials
16:00 – 17:20	Industrial presentations			Advanced beam control and system design for e-mobility

Sponsors by 17 February 2023

BLM GROUP, cailabs, Civan Lasers, COHERENT, ELEN, IPG PHOTONICS, LUMENTUM, LUXINAR, mks Ophir, OPTOPRIM, PRECITEC, PRIMES, RAYLASE, TRUMPF

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9:00 | Welcome speeches

Industrial – Advanced beam control and system design for e-mobility

9:30 | Thomas Hofmeister

Coherent

Laser Process Optimization and Monitoring for EV Production

9:50 | Matthias Beranek

Trumpf

Laser Technology Landscape for E-mobility Manufacturing

10:10 | Stefano Cattaneo

IPG Photonics

Integrated Solution for Battery Modules Production

10:30 | Coffee break

Industrial – Advanced beam control and system design for e-mobility

11:10 | Christian Dini

Civan

Dynamic Beam Lasers Offer New Parameters for E-mobility Joining Challenges

11:30 | Stefano Zarini

Optoprim

From Process Design Requirements to the Product: A Flexible, Modular Scanning System to Design Remote Laser Applications

11:50 | Jan Habedank

Raylase

Battery and Fuel Cell Production – the Eldorado for High-End Scanning Solutions

12:10 | Antonio Raspa

Luxinar

Tailored Laser Solutions for E-mobility

12:30 | Lunch

Industrial – Advanced beam control and system design for e-mobility

14:00 | Markus Kogel-Hollacher

Precitec

Laser Welding for Electric Vehicles – Sensors With Sophisticated Data Models Enable Higher Manufacturing Quality

14:20 | Leonardo Daniele Scintilla

Fontana Group

Body in White Evolution in Luxury & Sports Cars Sector: Trends in Shapes and Laser Technology Applications

14:40 | Luca Schmerbeck

Sonplas

Quality Improvements and Sustainability in Li-Ion Battery Cell Production Content

15:00 | Andrea Gariano

Pomini

Laser Surface Texturing of Rolls With Pomini Digital Texturing™ for High Quality Sheet Metal in Support of Automotive

15:20 | Giulian o Ellena

Podium Tech

Maximizing Performance, Manufacturability and Quality in Laser-Welded Battery Connections

15:40 | Coffee break

parallel sessions

Carassa Dadda Hall | Academic – Advanced joining solutions

16:20 | Joerg Volpp

Luleå University of Technology

Laser Beam Welding of Chassis Elements of Electric Vehicles

16:40 | Murat Reis

Bursa Uludağ University

Investigation of the Effect of Angular Positioning Errors in E-mobility Micro Laser Spot Welding Applications

17:00 | Danijela Rostohar

Coventry University

Quasi-Continuous Wave Pulsed Laser Welding for Electric Vehicle Battery Joining

17:20 | Lukas Mayr

Technical University of Munich

Investigation on the Welding of Dissimilar Materials in Terms of Nanosecond Laser Pulses

Room BL28.1.3 | Academic – Sustainability and design

16:20 | Max Biegler

Fraunhofer IPK

Concept Development for an All-Steel EV Battery Enclosure Enabled by Joining Technology

16:40 | Avelino Zapata

Technical University of Munich

Toward the Rapid Manufacturing of Lightweight Parts by Laser Directed Energy Deposition

17:00 | Caterina Angeloni

University of Bologna

Laser welding in e-mobility: process characterization and monitoring

17:20 | Carlo Biffi

CNR ICMATE Unit of Lecco

CuCrZr Alloy Manufactured by LPBF Process: Correlation Among Microstructure, Mechanical and Thermal Properties

18:00 | Aperitivo at the lab – Department of Mechanical Engineering

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9:00 | Welcome speeches

Industrial – Advanced beam control and system design for e-mobility

9:10 | Felix Roeckel
Manz
Laser-Based Manufacturing in E-mobility

9:30 | Davide Chesi
IMA Automation Atop
Improving Energy Storage Solutions by Means of Laser Based Manufacturing Processes: High Performance Batteries and Fuel Cells

9:50 | Eric Punzel
BBW
Challenges of Al-Cu-Joints for E-mobility Applications

10:10 | Daniele Colombo
BLM
Robotic Laser Welding and Beam Shaping in Service of E-mobility Applications

10:30 | Valentin Schmid
Grob
Challenges of Laser Material Processing in the Production of E-drives – Artificial Intelligence for Process-Safe Laser-Based Contacting of Hairpin Stators

10:50 | Coffee break

11:30 | Round Table

12:30 | Lunch

parallel sessions

Carassa Dadda Hall | Academic – Process monitoring and data analysis

14:00 | Leonardo Caprio
Politecnico di Milano
High Performance Battery Pack Production via Tempo-Spatial Beam Shaping and Inline Monitoring in Laser Welding

14:20 | Florian Kaufmann
Bayerisches Laserzentrum
Towards an Understanding of the Challenges in Laser Beam Welding of Copper – Observation of the Laser-Matter Interaction Zone in Laser Beam Welding of Copper and Steel Using in Situ Synchrotron X-Ray Imaging

14:40 | Eyitayo Olatunde Olakanmi
Botswana International University of Science & Technology
Machine Learning (ML) Driven Optimisation of Laser Materials Processing (LMP) Technologies for E-mobility: Challenges and Opportunities for Attaining Zero-Material Waste and Zero-Defect

15:00 | Pasquale Franciosa
University of Warwick
Utilising Laser Beam Shaping to Improve Weld Quality in High-Volume Manufacturing for E-mobility: Current Applications and Future Perspectives

Room BL28.1.3 | Academic – Novel and functional materials

14:00 | Max-Jonathan Kleefoot
Aalen University
Microstructural Adaptation of Electrodes for Li-Ion Batteries by Laser Processing - Effects of Structuring on Performance and Process Understanding

14:20 | Lucas Hille
Technical University of Munich
Picosecond Laser Structuring of Graphite Anodes: Ablation Characteristics and Process Scaling

14:40 | Ahmad Zafari
University of Twente
Toward Next Generation 3D Printed Porous Materials for Energy Technologies

15:00 | Craig Milroy
University of Texas
Electrochemical Characterization of Additively Manufactured Zinc for Rechargable Batteries

15:20 | Coffee break

Industrial – Advanced beam control and system design for e-mobility

16:00 | Ruben Hartwig
Primes
Maximizing Cost Efficiency and Production Uptime in Electric Vehicle Production Through Laser Beam Diagnostics

16:20 | Gwenn Pallier
Cailabs
Copper Laser Welding From 3 m/min to 35 m/min at 8 kW Thanks to Beam Shaping With Multi-Plane Light Conversion

16:40 | A. Kapxhiu, D. Buttaci
Marposs
Robotised Welding of Battery Module and Pack Frame and Connections

17:00 | Philippe Leopold
Lumentum
Industrial Laser Processing of EV Battery Electrodes

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