AKL'26 – PROGRAM

DAY 1 – TECHNOLOGY BUSINESS DAY

WEDNESDAY APRIL 22, 2026

Photonic and Laser Markets – Market Data and Insights

Chair: Axel Bauer
Room: Europa

10:00 a.m. Global and European laser sources market: Key dynamics and trends
Dr. Thierry Robin, TEMATYS, Paris (F)

10:30 a.m. Shaping the future: The German laser market and emerging technologies
Dr. Stefan Ruppik, Coherent Hamburg, Hamburg (D)

11:00 a.m. Status quo and prospects of the US laser market
Dr. Henrikki Pantsar, TRUMPF Inc., Farmington (USA)

11:30 a.m. Status quo and prospects of the Chinese laser market
Dr. Bo Gu, BOS Photonics, Boston (USA)

12:00 p.m. – 2:00 p.m. | Lunch – Visit of the accompanying exhibition

	Automotive **Chair: Dr. Alexander Olowinsky** **Room: Brüssel**	Aerospace **Chair: Dr. Thomas Schopphoven** **Room: K1**	Energy **Chair: Dr. Tim Lantzsch** **Room: K4 + K5**	Microelectronics **Chair: Dr. Christian Vedder** **Room: K7 – K9**	Quantum Technology **Chair: Dr. B. Jungbluth + Dr. F. Elsen** **Room: Room: K2**	Medical Technology **Chair: Dr. Achim Lenenbach** **Room: K3**
2:00 p.m.	Solutions needed in the automotive value chain – A wide range of applications for laser systems **Edwin Büchter**	Minimally invasive Laser Material Deposition and functionalization for the repair of aeroengine components **Dr. Bernd Müller**	Energize motion – Driving Schaeffler's manufacturing excellence through laser technology **Dr. Steffen Berger**	Laser material processing in consumer electronics – Demands targeted at laser manufacturers **Dr. Stefan Janssen**	Quantum Internet: From concept to application **Prof. Stephanie Wehner**	Photonics as a driver of innovative medical devices **Dr. Wenko Süptitz**
2:30 p.m.	Quality assurance in remote laser welding for automotive body in white **Richard Steinbrecht**	An overview of potential applications in the aerospace industry of high-intensity pulsed lasers as manufacturing technology **Dr. Domenico Furfari**	Laser cladding as a key technology for Gen 2 wind turbine bearings **Dr. Angelika Kiefel**	Enabling the advanced packaging industry with HVM solutions for next-generation glass core substrates **Dr. Christian Buchner**	Interconnected quantum computers – Challenges and perspectives for their development **Dr. Juris Ulmanis**	Laser Melting in implant manufacturing – Pathways to patient-specific solutions at KLS Martin **Frank Reinauer**
3:00 p.m.	Multimaterial LPBF: Increasing efficiency in automotive production – Injection molding and beyond **Carsten Merklein + Florian Doerrfuss**	EHLA as a repair technology for high-strength steel landing gear components in aviation **Harald Betsch + Kim Kallies**	Status and outlook of laser-based manufacturing processes in the solar industry **Niels Krauch**	Status quo and perspectives of laser use in the application of MicroLED displays **Dr. Oliver Haupt**	Quantum computing with neutral atoms at planqc **Dr. Sebastian Blatt**	Robotic laser surgery for precision medicine: From navigation to autonomous workflows **Prof. Christian Blume**

3:30 p.m. – 4:30 p.m. | Coffee Break – Visit of the accompanying exhibition

4:30 p.m.	Industrialization of brake disc coating by high-speed laser cladding **Markus Harke**	Laser Riblets – Shark skin for greener aviation **Dr. Tobias Dyck**	Laser technology for automated state-of-the-art manufacturing using the example of hot water tank production **Florian Weil**	Laser processing of high precision components for DUV and EUV lithography **Dr. Ralf Hammer**	Quantum emitters in silicon nanophotonics **Dr. Andreas Gritsch**	Innovative light therapies – Driving innovation in minimally invasive laser therapies with advanced laser and fiber technologies **Dr. Markus Röhner**
5:00 p.m.	Next generation battery production and challenges for laser technology **Dr. Andreas Russ**	Next-generation jet engine materials: Processing challenges and solutions **Dr. Bernold Richerzhagen**	Contribution of laser technology to decarbonization – Additive Manufacturing at Everllence SE **Simon Vervoort**	Laser-based solutions for semiconductor device manufacturing **Benjamin Bernard**	Scalable quantum computer based on semiconductor spin-qubits **Prof. Hendrik Bluhm**	

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DAY 2 – TECHNOLOGY CONFERENCE

THURSDAY APRIL 23, 2026

Gerd Herziger Session – New Perspectives for Lasers in Science and Industry

Chair: Dr. Jochen Stollenwerk
Room: Europa

8:30 a.m. Opening speech – Scaling photons, scaling impact: High average power, high pulse energy, and intelligent control
Dr. Jochen Stollenwerk, Fraunhofer ILT, Aachen (D)

8:50 a.m. The next challenges for high intensity lasers in science and industry
Damien Buet, Amplitude Laser Group, Pessac (F)

9:10 a.m. From building blocks to breakthroughs: How innovation is reframing the landscape of laser technology
Trevor Ness, IPG Photonics Corporation, Marlborough (USA)

9:30 a.m. Harnessing photons: Engineering light from science to industry
Dr. Christopher Dorman, Coherent Corp., Glasgow (UK)

9:50 a.m. Challenging times for laser technology and future perspectives
Dr. Hagen Zimer, TRUMPF Lasertechnik SE, Ditzingen (D)

10:10 a.m. – 10:40 a.m. | Coffee Break – Visit of the accompanying exhibition

10:40 a.m. Laser power unleashed: Driving fusion energy and industrial ecosystems
Prof. Constantin Häfner, Fraunhofer-Gesellschaft e.V., Munich (D)

11:00 a.m. Panel Discussion – High Power and High Energy Lasers – Quo Vadis?
With the speakers of the Gerd Herziger Session

12:00 p.m. – 2:00 p.m. | Lunch – Visit of the accompanying exhibition

Session 1 – Additive Manufacturing Laser Powder Bed Fusion

Chair: Dr. Tim Lantzsch | Room: K4 + K5

2:00 p.m. Towards profitable LPBF 3D-Printing of large industrial tooling
Dr. Harald Lemke

2:30 p.m. Additive Manufacturing: The technology powering the next generation of space companies
Dr. Jacob Rindler

3:00 p.m. Modern approaches to enhanced control over the LPBF process
Daniel Mahlmann

Session 2 – Cutting Laser Cutting

Chair: Dr. Frank Schneider | Room: Brüssel

Adaptive laser beam shaping to minimize burr formation in laser cutting: Simulation and experimental validation
Stoyan Stoyanov

Laser notching for battery production: Precision at increasing speeds and new materials
Mathias Bühler

Advantages of ultra-high-power laser cutting over plasma cutting
Fahrettin Uçar

Session 3 – Laser Beam Sources I Solid State and Fiber Lasers

Chair: Dr. Patrick Baer | Room: K1

From innovation to production: Industrial applications of ultra-high power lasers
Dr. Alexander Killi

Next generation of industrial grade high-power CW fiber laser with > 100 kW
Andrey Gorskiy

100+ kW dynamic beam lasers: System architecture, coherent beam combining and its applications
Dr. Robert Bernhard

Session 4 – Laser Beam Sources II

High Energy Sources for Fusion and Secondary Sources

Chair: Hans-Dieter Hoffmann | Room: K2

High-energy (10 J) and high average power (1 kW) laser pulses for secondary source applications
Dr. Bernd Metzger

Requirements and current status of high energy lasers for inertial fusion
Prof. Markus Roth

Status of 100 J class lasers and outlook on further energy scaling
Dr. Paul Mason

3:30 p.m. – 4:00 p.m. | Coffee Break – Visit of the accompanying exhibition

4:00 p.m. **Laser Technology Live – with Presentations in our Application Labs | Shuttle Transfer available between Eurogress / Fraunhofer ILT / Eurogress**

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DAY 3 – TECHNOLOGY CONFERENCE

FRIDAY APRIL 24, 2026

	Session 5 – Surface Technology Laser Material Deposition Chair: Dr. Thomas Schopphoven | Room: K4 + K5	Session 6a – Optical Systems Beam Shaping and Guiding Chair: Dr. Martin Traub | Room: K2	Session 7 – Laser Beam Sources III Ultrashort Pulse Lasers Chair: Dr. Peter Rußbüldt | Room: K1	Session 8 – AI in Photonics Process Monitoring Chair: Peter Abels | Room: Brüssel
8:30 a.m.	Noise elimination coating for automotive wheel hubs using EHLA **Adam Dmytryszyn**	Beam shaping for continuous industrial operation – Fixed and variable magnification up to 85 kW **Dr. David Blazquez-Sanchez**	Development of high-power IR to UV femtosecond laser systems **Dr. Martin Gorjan**	The use of AI in welding **Jon Tatman**
9:00 a.m.	Speed meets strength: EHLA coatings for next-generation hydraulic components **Yann Besner + Philippe Laplante**	Scaling up fiber-coupled femtosecond lasers at high power thanks to robust passive stabilization based on MPLC technology **Gwenn Pallier**	Power/energy scaling and parameter enhancement of ultrashort pulse lasers for industrial applications **Dr. Keming Du**	AI-based quality and parameter prediction for industrial laser brazing **Dr. Michael Ungers**
9:30 a.m.	Simultaneous finishing in the EHLA process – Fundamentals, challenges, and potentials **Viktor Glushych**	3D beam shaping made easy – A new era of industrial laser processing **Dr. David Dung**	Flexible pulse management for applications: Challenges in ultrafast laser development **Dr. Andrejus Michailovas**	"Self-supervised learning" – The fast track to applying robust artificial intelligence in photonics **Julius Neuß**
	10:00 a.m. – 11:00 a.m. | Coffee Break – Visit of the accompanying exhibition			
	Microstructuring Chair: Dr. Dennis Haasler | Room: K4 + K5	**Session 6b Joining – Joining of Metals** Chair: Dr. André Häusler | Room: K2	**Lasers with tailored Wavelengths** Chair: Dr. Michael Strotkamp | Room: K1	**Process Control and Optimization** Chair: Dr. Annika Bonhoff | Room: Brüssel
11:00 a.m.	Productivity-boost by high power laser and optical stamping **Sönke Vogel**	Battery system development – Current challenges and solutions **Dr. Michael Stapelbroek**	Diode-pumped Alexandrit lasers: A novel technology for narrow-bandwidth tunable lasers in the IR and UV **Dr. Alexander Munk**	Data-driven process maps for laser welding: Accelerating development and predicting weld quality **Dr. Andreas Heider**
11:30 a.m.	Surface structuring in a service company **Jochem Peeters**	Laser micro welding of metals for medical device manufacturing **Dr. Martin Reimann**	High-performance monochromatic lasers in the visible [...] **Dr. Konstantin Holzner**	Multimodal deep learning for real-time laser cutting monitoring and control **Roland Bader**
12:00 p.m.	Laser drilling of PCBs – Process and challenges **Dr. Stefan Rung**	Making the invisible visible – Real-time analysis and technological developments in laser joining **Jan Brüggenjürgen**	Nanosecond DUV laser alternative for micromaterial processing **Dr. Toby Strite**	Autonomous process optimization in ultrashort pulse ablation **Moritz Kröger**
	12:30 p.m. – 2:30 p.m. | Lunch – Visit of the accompanying exhibition			
	Thin Film Processing a. Laser-based Optics Manufacturing Chair: Dr. Samuel Fink | Room: K4 + K5	**Joining of Plastics and Transparent Materials** Chair: Dr. Maximilian Brosda-Flockenhaus | Room: K2	**Diode Lasers** Chair: Dr. Sarah Klein | Room: K1	**Design and Modeling of Laser Processes and Optics** Chair: Prof. Carlo Holly | Room: Brüssel
2:30 p.m.	Recent developments in laser-based optics manufacturing **Dr. Edgar Willenborg**	Professional inline thermographic monitoring in laser plastic [...] **Thomas Sontheimer**	Direct diode laser solutions for drying applications **Dr. Florian Lenhardt**	Machine learning for predictive control in USP processing **Eric Mottay**
3:00 p.m.	Selective laser etching on ultra-precision turning machines for optical fabrication **Dr. Karsten Braun**	Even under pressure: Stress-free ultrashort pulse welding of glass and metal **Dr. Jens Ulrich Thomas**	Megawatt class laser diode pump systems for inertial fusion **Dr. Ulrich Witte**	AI for reliable and productive laser manufacturing technology – The perspective of a laser equipment manufacturer **Martin Stambke**
3:30 p.m.	Laser linebeam technology for large scale thin-film processing **Dr. Sebastian Geburt**	Development and evaluation of laser-based cleaning for the reuse of stainless steel in plastic-metal hybrid joints **Christoph Wortmann**	New developments for improved efficiency and output power from laser diodes **Dr. Martin Behringer**	AI for optical design – Industrial user prospective **Sergii Denega**
	3:30 p.m. – 4:00 p.m. | Coffee Break – Visit of the accompanying exhibition			
4:00 p.m.	**Final Lecture – Looking ahead: AI-driven Innovation in Photonics** **Prof. Carlo Holly | Room: Brüssel**			

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