

October 13–14, 2026

AI in Photonics

Industry meets Science

Tuesday, October 13, 2026

Introduction – Foundations, tools, application steps (German)

Chair: Dr. Wenko Süptitz, SPECTARIS, Berlin (D)

Room: 1100.1/1100.2

- 1:00 p.m. Welcome**
Dr. Wenko Süptitz, SPECTARIS, Berlin (D)
- 1:05 p.m. KI trifft Photonik: Vom Potenzial zum industriellen Mehrwert**
Prof. Carlo Holly, Fraunhofer ILT and RWTH Aachen University – Chair for Technology of Optical Systems, Aachen (D)
- 1:35 p.m. Intelligent laser processing: Autonomous experimentation in photonics**
Dr. Nicolas Dalloz, Oraclase GmbH, Saarbrücken (D)
- 2:05 p.m. Neuronale Netze in der Photonik – Methoden, Anwendungen, Perspektiven**
Vincent Ley, RWTH Aachen – Lehrstuhl für Technologie Optischer Systeme, Aachen (D)
- 2:35 p.m. Inverse Optimierung: Gradientenbasierte Methoden in der Photonik**
Dominik Onyszkiewicz, RWTH Aachen – Lehrstuhl für Technologie Optischer Systeme, Aachen (D)
- 3:05 p.m. Coffee Break**
- 3:30 p.m. Skalierung der industriellen Bildverarbeitung in der Produktion: Von der Wertbestimmung bis zum Systemdesign**
Jonas Werheid, Werkzeugmaschinenlabor WZL der RWTH Aachen, Aachen (D)
- 4:00 p.m. Modellgestützte KI in der Photonik: Über virtuelle Trainingsdaten und Surrogate Modelle**
Sebastian Wasser, Fraunhofer ILT, Aachen (D)
- 4:30 p.m. Lernende Regelung für Maschinen: Reinforcement, Imitation und Bayes'sches Auto-Tuning**
Prof. Sebastian Trimpe, RWTH Center for Artificial Intelligence, Aachen (D)
- 5:00 p.m. Expert panel – Sharing perspectives**
- 5:30 p.m. End of lectures day 1**
- 7:00 p.m. – Meet & Connect with dinner**
- 10:00 p.m.** at Fireplace, Theaterstraße 17, 52062 Aachen

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Deep Dive – Current developments, best practices, technological trends (English)

Chair: Prof. Carlo Holly, Fraunhofer ILT und RWTH Aachen University – Chair for Technology of Optical Systems, Aachen (D)

Room: 1100.1/1100.2

- 10:00 a.m. From ray tracing to reward shaping: Applying reinforcement learning to real-world lens design**
Dr. Christoph Menke, Carl Zeiss AG, Oberkochen (D)
- 10:30 a.m. Bringing AI agents to photonic simulation workflows**
Dr. Afroditi Petropoulou, Synopsys Inc., Athen (GR)
- 11:00 a.m. From optical specifications to manufacturable designs: Benchmarking an Agentic AI for optical engineering**
Thibaut Atché, etendue SAS, Paris (F)
- 11:30 a.m. Enabling Technologies for an AI-based polishing process**
Roland Mandler, Mandler Engineering, Heuchelheim (D)

- 12:00 p.m. Lunch break**

- 1:00 p.m. AI is more than sensor data processing: Multi-layer knowledge management for remote laser welding**
Thibault Bautze-Scherff, IQLase GmbH, Garching (D)
- 1:30 p.m. AI-based prediction of process parameters for highest seam quality in industrial laser joining**
Michael Ungers, Scansonic MI GmbH, Berlin (D) & Julius Neuß, Fraunhofer ILT, Aachen (D)
- 2:00 p.m. Machine learning for closed-loop ultrafast laser process control**
Eric Mottay, h-nu, Bordeaux (F)

- 2:30 p.m. Coffee break**

- 3:00 p.m. AI without the blackbox: From part detection to quality control in laser manufacturing**
Matthias Beranek, TRUMPF Laser SE, Schemmberg (D)
- 3:30 p.m. Agentic AI as leverage for industrial machine learning**
Dr. Simon Görtzen, aiXbrain GmbH, Aachen (D)
- 4:00 p.m. Industrial AI across the value chain: From data to decisions**
Kai Ohlig, Siemens AG, Cologne (D)

- 4:30 p.m. Expert panel – Exploring opportunities and challenges**

- 5:00 p.m. End of the event**