

Lunch-to-lunch-Workshop:
»Beam Shaping – New solutions for laser material processing«
March 15–16, 2023 | Fraunhofer IWS

Program*

Day 1, Wednesday, March 15, 2023

12:00–13:00	Opening & Lunch
	Technical Solutions Part I
13:00–13:30	Introduction to laser beam shaping: new trends and developments <i>Andrés Lasagni Fraunhofer IWS / TU Dresden</i>
13:30–14:00	Single mirror overfinds inflation <i>Marc van Biesen Newson MV</i>
14:00–14:20	Zwobbel® - acceleration for laser processes: Application of focus oscillation for speed and quality improvements <i>Claudia Reinlein ROBUST AO GmbH</i>
14:20–15:00	Coffee break
	Processes
15:00–15:30	Enhanced process understanding for laser welding of aluminum and copper alloys with dynamic beam modulation. A recipe for high quality welds <i>Stephan Börner Fraunhofer IWS</i>
15:30–16:00	Laser cutting with dynamic beam shaping - concept, realizations and results. Speedup and kerf shaping <i>Madlen Borkmann Fraunhofer IWS</i>
16:00–16:30	Laser hardening of complex 3D geometries with dynamic beam shaping and real- time thermal field control. Expanded range of laser-hardenable components and new approaches to system integration <i>Marko Seifert Fraunhofer IWS</i>
16:30–17:00	Variable track dimensions using adaptable laser power distribution in dynamic laser cladding. ScanClad - increased productivity and efficiency by laser beam shaping <i>Holger Hillig Fraunhofer IWS</i>
17:00–19:00	Time for hotel check-in
19:00–22:00	Dinner & lab tour at Fraunhofer IWS

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Day 2, Thursday, March 16, 2023

08:30–09:00	Welcome with coffee
	Technical Solutions Part II
09:00–09:30	Scaling of industrial processes: Requirements, optical concepts and technical solutions for multibeam process implementations <i>Thilo Bartels Pulsar Photonics</i>
09:30–10:00	Dynamic Beam Laser - New laser parameters for demanding welding applications. Avoidance of welding defects (humping, cracking, porosity), higher welding speeds as well as welding of sensitive materials due to Dynamic Beam Shaping <i>Christian Dini Civan Lasers</i>
10:00–10:30	Productivity leaps through beam shaping in additive manufacturing <i>Michael Jan Galba EOS GmbH Electro Optical Systems</i>
10:30–11:00	Coffee break
11:00–11:30	New beam shaping concepts for high-rate processing with ultra-short pulsed lasers of high output power. Increased productivity in high precision machining <i>Volker Franke / Christoph Zwahr Fraunhofer IWS</i>
	Sensors for quality assurance/process characterization
11:30–12:00	Time-resolved microtomography for materials science: Unveiling structural evolution in dynamic processes. What X-rays can tell you about the quality and defects of advanced manufacturing processes to optimise processing conditions <i>Christian Schlepütz Paul Scherrer Institut (PSI)</i>
12:00–12:30	Possibilities to control galvanometer scanner for dynamic beam shaping. – all in one control <i>Jan Hauptmann / Peter Rauscher Fraunhofer IWS</i>
12:30–13:00	Process shaping by beam shaping - Challenges and strategies in laser material processing. Improving Quality and efficiency of welding processes <i>Christian Hagenlocher IFSW Stuttgart</i>
13:00–14:00	Lunch and farewell

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