# Summer School Program

## Monday 25

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 – 12:45</td>
<td>Registration</td>
</tr>
<tr>
<td>12:45 – 13:00</td>
<td>Opening, Prof. A. Lasagni, Prof. Beyer (Fraunhofer IWS Director)</td>
</tr>
<tr>
<td>13:00 – 14:30</td>
<td>Dr. Jens Standfuß, “Advances on Laser welding”, Fraunhofer Institute for Material and Beam Technology IWS, Germany</td>
</tr>
<tr>
<td>14:30 – 14:50</td>
<td>Break</td>
</tr>
<tr>
<td>14:50 – 16:20</td>
<td>Dr. Steffen Bonß, “Recent advances on laser based surface hardening technologies”, Fraunhofer Institute for Material and Beam Technology, Germany</td>
</tr>
</tbody>
</table>

## Tuesday 26

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 – 10:30</td>
<td>Dr. Frank Brückner, “Fabrication of 3D parts using Rapid Prototyping methods“, Fraunhofer Institute for Material and Beam Technology IWS, Germany</td>
</tr>
<tr>
<td>10:30 – 10:50</td>
<td>Break</td>
</tr>
<tr>
<td>10:50 – 12:20</td>
<td>Patrick Herwig, “High speed 2D laser cutting and new applications”, Fraunhofer Institute for Material and Beam Technology IWS, Germany</td>
</tr>
<tr>
<td>12:20 – 13:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30 – 14:45</td>
<td>Participant Presentations I: “Laser Welding, Cutting and Hardening”</td>
</tr>
<tr>
<td>13:30</td>
<td>Libor Dvořák and Vit Kirschner, “Laser hardening”, VÚTS, a.s., Czech Republic</td>
</tr>
<tr>
<td>13:45</td>
<td>Patrick Schmitz, “Laser cutting of electrode foils”, Institut für Werkzeugmaschinen und Betriebswissenschaften, Technische Universität München, Germany</td>
</tr>
<tr>
<td>14:00</td>
<td>Andreas Ganser, “Method to determine the reflection of laser radiation during laser welding”, Institut für Werkzeugmaschinen und Betriebswissenschaften, Technische Universität München, Germany</td>
</tr>
</tbody>
</table>
14:15  Annalisa Volpe, “Femtosecond fibre laser welding of PMMA”, Università degli Studi di Bari, Italy
14:30  Madlen Borkmann, “Simulation of gas dynamics in laser material processing”, Fraunhofer IWS, Germany
14:45 – 15:15  Break

15:15 – 16:15  Participant Presentations II, Laser Structuring I
15:15  Tina Hoffmann, “Laser structuring of ceramics for microfluidic applications”, Hochschule Mittweida, Germany
15:30  Moises Ortega Delgado, “Laser Material Micromachining with scanners, Variabilization of the ablation width using MEMS mirrors”, Fraunhofer IWS, Germany
15:45  Christopher Taudt, “Cross-linking characterization of polymers in semiconductor production using laser-based white-light interferometry”, Westsächsische Hochschule Zwickau, Germany
16:00  Jana Berger, “Laser Interference Patterning of transparent conducting oxides”, Fraunhofer Institute for Material and Beam Technology, Germany
16:15  Sandra Höhm, Dynamics of femtosecond laser-induced periodic surface structures, Max-Born-Institut für Nichtlineare Optik und Kurzzeitoptik, Berlin, Germany

Wednesday 27

09:00 – 10:30  Dr. Keming Du, “Industrial applications and developments of pulsed solid state lasers”, Edgewave GmbH, Germany
10:30 – 10:50  Break
10:50 – 12:20  Dr. Felix Dreisow, “Recent developments and applications of ultrashort pulse-lasers”, Institut für Angewandte Physik Jena, Germany
12:20 – 13:30  Lunch
13:30 – 14:00  Sponsor Invited lecture
Dr. Wolfgang Pierer, Margitta Teschauer, “Laser Technologies for the industries @ LASERline Teschauer GmbH - Laser Direct Part Marking for identification & single part traceability”, LASERline Teschauer GmbH, Germany

14:00 – 14:45  Participant Presentations: “Fibre Lasers”
14:00  Timothy Quincey, Christof Schöberl, “Measuring focus geometries of multikilowatt single-mode lasers”, Primes GmbH, Germany
14:15  Yu Liu, “Design and development of high power fiber laser architectures and components for industrial applications”, Politecnico di Torino, Italy
14:30  Tobias Baselt, “Nanosecond fiber amplifier with adjustable repetition rate for use in all-fiber supercontinuum light sources”, Westsächsische Hochschule Zwickau, Germany
14:45 – 15:15  Break
15:15 – 16:15  **Participant Presentations III, Laser processing**

15:15  Aleksander Iwaniak, “The Influence of Laser Treatment on the Structure and Properties of the Surfaces of Selected Coatings Deposited by Thermal Spraying”, Silesian University of Technology Institute of Materials Science, Poland

15:30  Florian Senn, “Laser based fabrication of bio-mimetic dental restorations”, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

15:45  Marta Botana Galvin, “Adhesive behaviour of CFRP panels manufactured by RTM, woven and unidirectional tape after UV laser processing superficial activation” University of Cádiz, Spain

16:00  Nuno Ferreira, “Magnetite fibres grown in vacuum by Laser floating zone method”, Aveiro University, Portugal

**Thursday 28**

09:00 – 10:30  Dr. Udo Klotzbach, “Laser microstructuring using ps and fs lasers”, Fraunhofer Institute for Material and Beam Technology IWS, Germany

10:30 – 10:50  Break

10:50 – 12:20  Prof. Andrés Lasagni, “Laser interference patterning, past, present and future for large area surface functionalization”, Fraunhofer Institute for Material and Beam Technology IWS, Germany

12:20 – 13:30  **Lunch**

13:30 – 15:00  **Participant Presentations IV, Laser Structuring II**

13:30  Mohamed Cherif, “Nanosecond laser interaction with silver exchanged glasses”, Université d'Orléans, France

13:45  Martin Stärk, “Thin Film Structuring by Direct Laser Interference Lithography”, University of Konstanz, Germany

14:00  Sebastian Eckhardt, “Light management in metallic thin film electrodes by laser-assisted surface functionalization”, Fraunhofer Institute for Material and Beam Technology, Germany

14:15  Cornelius Demuth, “Thermal simulation of pulsed direct laser interference patterning of metallic substrates using the smoothed particle hydrodynamics approach”, Technische Universität Bergakademie Freiberg, Germany

14:30  Valentin Lang, “Use of laser microstructuring processes in the fabrication of microfluidic devices”, Fraunhofer Institute for Material and Beam Technology, Germany, Germany

14:45 – 16:15  **Lab tour at IWS**

16:15  Delivery of Summer School certificates

19:00 – 22:00  **Evening Event**
Friday 29

Only for selected participants according to registration date
09:00 – 10:00  Laser safety, Prof. A. Lasagni
10:00 – 12:00  Laboratory (2 Modules)
12:00 – 13:00  **Lunch**
13:00 – 15:00  Laboratory (2 Modules)
15:00 – 15:15  Closing Remarks, Delivery of Summer School certificates