

# **2017 IEEE High Power Diode Lasers and Systems Conference (HPD 2017)**

**Coventry, United Kingdom  
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# Programme

**Wednesday 11<sup>th</sup> October 2017**

9:00            *Registration opens*  
 10:00           *PHOTONEX EUROPE Exhibition opens*  
 12:30           *Arrival tea and coffee*  
 12:55           *Introduction to meeting*

## **SESSION 1    SOURCES AND SYSTEMS FOR LASER ADDITIVE MANUFACTURING OF METALS**

(Joint Session with Conference on Metal Power-based Additive Manufacturing)

13:00	<b>KEYNOTE ADDRESS: High-power diode laser sources for materials processing.</b> Klaus Kleine, <i>Coherent Inc. (USA)</i>	<b>3</b>
13:40	<b>Beam sources for metal additive manufacturing – status quo and requirements.</b> Christian Hinke, <i>Research Campus, Digital Photonic Production (Germany)</i>	<b>5</b>
14:00	<b>Alternative beam sources and machine concepts for laser powder bed fusion.</b> Florian Eibl, <i>Fraunhofer-Institut für Lasertechnik (Germany)</i>	<b>7</b>
14:20 - 15:00 <i>Refreshment break in the exhibition hall</i>		
15:00	<b>Low SMILE vertically stacked laser bars enable kW modular line lasers.</b> Chung-en Zah, <i>Focuslight Technologies Inc. (China)</i>	<b>9</b>
15:20	<b>Monolithically wavelength-stabilized high power diode lasers.</b> Paul Crump, <i>Ferdinand-Braun-Institute (Germany)</i>	<b>11</b>
15:40	<b>Poster introductions (2 minutes per poster)</b>	
	<b>Coherent beam combining of high-power tapered amplifiers.</b> Philipp Albrodt, <i>Institut d'Optique Graduate School, CNRS, Université Paris-Saclay (France)</i>	<b>15</b>
	<b>Increasing output power of pulsed eye-safe wavelength range laser diodes by strong doping of the n-optical confinement layer.</b> Eugene Avrutin, <i>University of York (UK)</i>	<b>17</b>
	<b>The first kilowatt average power 100J-level DPSSL.</b> Mariastefania De Vido, <i>STFC (UK)</i>	<b>19</b>
	<b>Impact of unintentional external feedback on the performance of high-power tapered lasers</b> Mohamad Anas Helal, <i>University of Nottingham (UK)</i>	<b>21</b>
	<b>Modelling external spectral feedback with external cavity laser simulation tool.</b> Mohamad Anas Helal, <i>University of Nottingham (UK)</i>	<b>23</b>
	<b>Beam quality degradation processes in tapered lasers and DBR tapered lasers</b> Mohamad Anas Helal, <i>University of Nottingham (UK)</i>	<b>25</b>
	<b>Integrated phase-locked laser diodes at 1.55µm.</b> Lianping Hou, <i>University of Glasgow (UK)</i>	<b>27</b>
	<b>High power yellow green light source based on laser diode pumped YAG:Ce transparent ceramic.</b> Kang Li, <i>University of South Wales (UK)</i>	<b>29</b>
	<b>Manipulation of phase-amplitude coupling in a delay-coupled semiconductor lasers system for the high power technology.</b> Pramod Kumar, <i>University of Exeter (UK)</i>	<b>31</b>
	<b>Electro-optical efficiency and slow axis far-field improvement of high power laser diode bars using epitaxy structure optimization.</b> Stewart McDougall, <i>TRUMPF Photonics, Inc. (USA)</i>	<b>33</b>



	<b>Analytical model for diode-to-fiber coupling and beam propagation in weakly guiding fibers.</b>	<b>35</b>
	Anton Neumann, <i>Fraunhofer-Institut für Lasertechnik (Germany)</i>	
16:10	<b>Poster session</b>	
17:05	<i>Networking</i>	
	<i>Conference Dinner</i>	
 <b>Thursday 12<sup>th</sup> October 2017</b>		
09:00	<i>Arrival tea and coffee</i>	
09:35	<i>Welcome back</i>	
 <b>SESSION 2 NEW TECHNOLOGIES – EXTENDING THE SPECTRUM AND IMPROVING COHERENCE</b>		
09:40	<b>KEYNOTE ADDRESS: High-power GaN diode lasers and their applications.</b>	<b>43</b>
	Masao Kawaguchi, <i>Panasonic Corp (Japan)</i>	
10:20	<b>High power diode lasers converted to the visible.</b>	<b>45</b>
	Ole Bjarlin Jensen, <i>DTU Fotonik (Denmark)</i>	
10:40 - 11:20 <i>Refreshment break in the exhibition hall</i>		
11:20	<b>Recent advances in high power blue laser diodes.</b>	<b>47</b>
	Muhammad Ali, <i>Osram Opto Semiconductors (Germany)</i>	
11:40	<b>Coherent combining architectures for highbrightness laser diodes.</b>	<b>49</b>
	Gaëlle Lucas-Leclin, <i>CNRS Institut d’Optique (France)</i>	
12:00 - 13:30 <i>Lunchtime break and visit to exhibition</i>		
 <b>SESSION 3 WORKING IN THE REAL WORLD - LASER RELIABILITY AND PERFORMANCE</b>		
13:30	<b>Root cause investigation of back-irradiance induced failure of high power diode lasers.</b>	<b>53</b>
	Paul Leisher, <i>Lawrence Livermore National Laboratory (USA)</i>	
13:50	<b>Comparison of catastrophic optical damage events in GaAs- and GaN- based diode lasers.</b>	<b>55</b>
	Jens Tømm, <i>Max-Born-Institute, Berlin (Germany)</i>	
14:10	<b>Materials issues of the catastrophic degradation of high power laser diodes.</b>	<b>57</b>
	Juan Jimenez Lopez, <i>Doctoral School University of Valladolid (Spain)</i>	
14:30	<b>Thermal management characterization of microassembled high power distributed-feedback broad area lasers emitting at 975nm.</b>	<b>59</b>
	Yannick Deshayes, <i>Université Bordeaux (France)</i>	
14:50	<b>10.5 W central lobe output power obtained with an efficient 1030 nm DBR tapered diode laser.</b>	<b>61</b>
	André Müller, <i>Ferdinand-Braun-Institute (Germany)</i>	
15:10	<b>Concluding comments</b>	
15:15	<i>Last visit to the Exhibition (Exhibition and event closes at 16:00)</i>	