

# ILAS 2017 Programme- Wednesday 22<sup>nd</sup> March

09:00	ILAS 2017 WELCOME: Ric Allott: (AILU President)		
09:15	Plenary 1 Paul Hilton (TWI): <i>Combining a focused laser beam with a high pressure gas jet: 50 years of laser cutting</i>		
09:45	Plenary 2 Bill Shiner (IPG Photonics, USA): <i>The impact of fibre lasers on material processing</i>		
10:15	REFRESHMENTS & EXHIBITION		
10:45	<b>Additive Manufacturing 1 Powder Bed</b> Session Chair: Simon Lawes	<b>Macro Metal Cutting</b> Session Chair: John Powell	<b>Surface Engineering</b> Session Chair: Jonathan Lawrence
	<b>Iain Todd</b> (University of Sheffield) <i>Manipulating microstructure through process control in laser-based Additive Manufacturing</i>	<b>Gaetano Lo Guzzo</b> (Yamazaki Mazak, Italy) <i>Direct Diode Laser - The future of metal cutting</i>	<b>Christian Greiner</b> (Karlsruhe Institute of Technology, Germany) <i>Laser surface texturing: bio-inspired scale-like surfaces and their tribological properties</i>
11:15	<b>Ravi Aswathanarayananaswamy</b> (Renishaw) <i>Additive Manufacturing of nickel super alloys</i>	<b>Hasanain Atiyah</b> (University of Nottingham) <i>Analysis of the energy reflected off the cut zone during fibre laser cutting</i>	<b>Tahseen Jwad</b> (University of Birmingham) <i>Laser-induced single spot oxidation/colourising of titanium &amp; its applications</i>
11:30	<b>Andrew Moore</b> (Heriot Watt University) <i>High-speed imaging of the powder-bed and shield gas during metal PBF Additive Manufacture</i>	<b>Andrew Richert</b> (Bystronic) <i>The fall of CO<sub>2</sub> and the rise of fibre laser cutting machines</i>	<b>Subhasisa Nath</b> (Coventry University) <i>Effect of laser shock peening (LSP) on the microstructure, residual stress state and hardness of a nickel based superalloy</i>
11:45	<b>Christian Foehl</b> (TRUMPF GmbH, Germany) <i>Additive Manufacturing with laser: technologies, applications, possibilities and limitations</i>	<b>Ali Khan</b> (TWI) <i>Underwater laser cutting for decommissioning purposes</i>	<b>Andre Eltze</b> (Laserline GmbH, Germany) <i>New cladding applications</i>
12:00	<b>Ge Zhao</b> (University of Nottingham) <i>An investigation of the addition of salt to slm feedstocks to enable the rapid creation of stochastic cellular structures</i>	<b>Christian Keller</b> (SPI Lasers) <i>Improving bright metal cutting with high power fibre lasers by examination of back-reflected light</i>	<b>Olivier Allegre</b> (University of Manchester) <i>Generation &amp; control of laser induced periodic surface structures for industrial applications</i>
12:15	LUNCH & EXHIBITION		
13:45	<b>Additive Manufacturing 2: Wire &amp; Powder</b> Session Chair: Emma Ashcroft	<b>Ultra-Short Pulse Applications</b> Session Chair: Malcolm Gower	<b>Drilling</b> Session Chair: Martin Sharp
	<b>Paul Goodwin</b> (TWI) <i>Laser metal deposition in a commercial environment</i>	<b>Ulf Quentin</b> (TRUMPF GmbH, Germany) <i>Industrial ultrafast lasers as versatile tools from glass processing to marking</i>	<b>Mark Barry</b> (Prima Power Laserdyne, USA) <i>Are fibre lasers industry-ready for aerospace processing?- Advances in 3D lasers &amp; systems increase productivity in laser material processing for manufacturing</i>

14:15	<b>Eamonn Fearon</b> (Advanced Laser Technology) <i>The effects of 40KHz ultrasonic vibration on gas delivered powders for side feed cladding</i>	<b>Riccardo Geremia</b> (Oxford Lasers) <i>Ultrafast laser applications development in EU project TiSaTD: ultrafast high-average power Ti:sapphire thin-disk oscillators &amp; amplifiers</i>	<b>Connor Jones</b> (University of Nottingham) <i>High speed filming techniques applied to investigation of rearwards melt ejection in laser drilling</i>
14:30	<b>Piotr Lubaszka</b> (Nuclear AMRC) <i>Laser cladding of vertical surfaces</i>	<b>Jean-Michel Romano</b> (University of Birmingham) <i>Laser-textured masters for high throughput replication of hydrophobic surfaces</i>	<b>Vahid Nasrollahi</b> (University of Birmingham) <i>A new laser drilling method for producing high aspect ratio micro through holes</i>
14:45	<b>Michelangelo Mortello</b> (Cranfield University) <i>Wire-laser Additive Manufacturing for near net shaped components: Investigation on the process dynamics and control</i>	<b>Rémi Meyer</b> (FEMTO-ST, France) <i>Ultrafast Bessel beams &amp; novel beam shapes for transparent material stealth dicing</i>	<b>Sundar Marimuthu</b> (Manufacturing Technology Centre) <i>Quasi-CW fibre laser trepanning drilling of aerospace alloys</i>
15:00	<b>REFRESHMENTS &amp; EXHIBITION</b>		
15:30	<b>Marking &amp; Ablation</b> Session Chair: Adrian Norton	<b>Ultra-Short Pulse Applications 2</b> Session Chair: Malcolm Gower	<b>Safety Systems</b> Session Chair: Mike Barrett
	<b>Christian Hahn</b> (InnoLas Photonics, Germany) <i>Nano- to femtoseconds, UV to 2µm. Innovative laser sources for cutting-edge industrial laser applications</i>	<b>Julie Guer</b> (Amplitude Systemes, France) <i>Ultrafast laser technology &amp; their industrial applications</i>	<b>Mike Barrett</b> (MJB Laser Services) <i>Laser safety for industrial systems</i>
15:45		<b>Martynus Barkauskas</b> (Light Conversion, Lithuania) <i>Micro-machining with high-frequency bursts of ultra-short pulse lasers</i>	
16:00	<b>Antonio Garcia Giron</b> (University of Birmingham) <i>Fabrication of super-hydrophobic metallic surfaces by direct laser patterning</i>	<b>Jonathan Lawrence</b> (Coventry University) <i>Picosecond laser surface engineering of stainless steel</i>	<b>Tim Melton</b> (Firetrace) <i>Fire suppression systems for the protection of automated laser machinery</i>
16:15	<b>Krystian Wlodarczyk</b> (Heriot-Watt University) <i>Anti-counterfeiting security markings for metal goods</i>	<b>Abubaker Hamad</b> (University of Manchester) <i>Picosecond laser generation Ag-TiO2 nanoparticles and their characteristics</i>	<b>David Lawton</b> (Lasernet) <i>How active laser guarding systems work to protect personnel &amp; the advantages of cost effective, failsafe, modularised active laser guarding in small &amp; large installations</i>
16:30	<b>Paul Smith</b> (ACSYS Lasertechnik) <i>On the use of ultra-short pulse lasers for engraving – a comparison study</i>	<b>Jiangning Li</b> (University of Liverpool) <i>Material processing at imaging plane using a dynamic ultrafast shaped laser beam</i>	<b>Adam Brierley</b> (Brinell Vision) <i>Dealing with the laser pointer menace</i>
16:45	<b>Adam Rosowski</b> (SPI Lasers) <i>Raised marking &amp; vin marking on steel using pulsed fibre lasers</i>		<b>John Horsey</b> (BOFA) <i>Reducing maintenance costs and production down-time by using fume extraction to improve laser lens, machinery and product hygiene</i>
17:00-18:00	<i>Poster session with wine reception</i> <b>Room: Hawthorne 2</b> All Invited		
18:00-18:30	The AILU/CIM-Laser Update on National Strategy for Laser-based Manufacturing <b>Room: Hawthorne 2</b> All Invited		

# ILAS 2017 Programme- Thursday 23<sup>rd</sup> March

09:00	<p>Plenary 3  <b>Koji Sugioka</b>, RIKEN Centre for Advanced Photonics, Japan: <i>Hybrid subtractive and additive femtosecond laser 3D micro machining</i></p>		
09:30	<p>Plenary 4  <b>Peter Herman</b>, University of Toronto, Canada: <i>The magic of nonlinear ultrafast laser processing in transparent media</i></p>		
10:00	REFRESHMENTS & EXHIBITION		
10:30	<b>Macro Welding 1</b> Session Chair: Jon Blackman	<b>Precision Micro-Fabrication</b> Session Chair: Duncan Hand	<b>Cleaning</b> Session Chair: Stan Wilford
	<b>Markus Kogel-Hollacher</b> (Precitec, Germany) <i>Tools for laser welding – take a closer look into successful solutions</i>	<b>Michael Schmidt</b> (Friedrich-Alexander University Erlangen-Nürnberg, Germany) <i>USP lasers in precision micro-fabrication</i>	<b>Edwin Büchter</b> (CleanLASER, Germany) <i>Cleaning with Laserlight – Sustainable surface cleaning and modification for a wide range of applications</i>
11:00	<b>Stephan Collmer</b> (TRUMPF GmbH, Germany) <i>Remote laser welding of aluminium</i>	<b>Frank Gaebler</b> (Coherent, Germany) <i>Improving and quantifying the process window with femtosecond lasers</i>	<b>David Gillen</b> (Blueacre Technology, Ireland) <i>Surface cleaning with nanosecond lasers from 1W to 500W</i>
11:15	<b>Chris Allen</b> (TWI) <i>Comparison of laser and electron beam welding for safety-critical space applications</i>	<b>Riccardo Geremia</b> (Oxford Lasers) <i>Customisable ultrafast laser patterning of organic thin film transistor backplanes for flexible electronics</i>	<b>Ioannis Metsios</b> (Powerlase Photonics) <i>Wide area removal of surface coating, current capabilities of high average power rate q-switch lasers</i>
11:30	<b>Sonia Meco</b> (Cranfield University) <i>Practical application of the power factor model for keyhole laser welding</i>	<b>Emmanuel Brousseau</b> (Cardiff University) <i>Nanosecond laser ablation of a Zr-based bulk metallic glass</i>	<b>Leo Sexton</b> (Laser Age, Ireland) <i>Laser Cleaning – an Industrial perspective</i>
11:45	<b>Volker Brandl</b> (PRIMES, Germany) <i>Recent improvements in industrial laser beam diagnostics</i>	<b>Amiel Lopes</b> (Heriot-Watt University) <i>Micromachining of glass materials using picosecond pulses</i>	<b>Yang Jin</b> (Advanced Laser Technology) <i>Laser cleaning for removal of coatings, paints and contaminants</i>
12:00	LUNCH & EXHIBITION		
13:30	<b>Macro Welding 2</b> Session Chair: Stewart Williams	<b>Sources &amp; Beam Delivery</b> Session Chair: Paul McCartney	<b>Additive Manufacturing 3</b> Session Chair: Paul Goodwin
	<b>Neil Irvine</b> (University of Manchester) <i>Future nuclear welding developments: the potential and challenges for lasers</i>	<b>Dieter Hoffmann</b> (Fraunhofer ILT) <i>Extending the parameter range of high power ultrafast lasers</i>	<b>Chris Heason</b> (Rolls Royce) <i>Laser Deposition for aero-engine repair applications</i>
13:45	<b>Tony Pramanik</b> (TWI) <i>Multi-positional laser welding of stainless steel, nickel based alloy and titanium alloy</i>	<b>Callum Smith</b> (Southampton University) <i>Radially-polarised beam amplification in an Yb:YAG thin slab</i>	<b>Aprilia</b> (Nanyang Tech University, Singapore) <i>State-of-the-art review on remanufacturing of damaged parts using directed energy deposition technology</i>

14:00	<b>Wojciech Suder</b> (Cranfield University) <i>Laser-laser hybrid welding for joining of challenging materials</i>	<b>Richard Carter</b> (Heriot-Watt University) <i>Flexible fibre optic beam delivery of ultrashort laser pulses</i>	<b>Carl Hauser</b> (TWI) <i>Industrial component repair by Laser Metal Deposition</i>
14:15	<b>Tapio Vaisto</b> (University of Manchester) <i>Laser narrow gap welding of thick section dissimilar metals of 40 mm thickness</i>	<b>Stephen Keen</b> (SPI Lasers) <i>Using laser-based pierce detection analysis to improve cutting performance</i>	<b>James Kell</b> (Rolls Royce) <i>Keyhole Surgery for Gas Turbines</i>
14:30	REFRESHMENTS & EXHIBITION		
	<b>Micro Welding</b> Session Chair: Stuart McCulloch	<b>Surface Engineering Research</b> Session Chair: Pratik Shukla	<b>Additive Manufacturing 4</b> Session Chair: Emma Ashcroft
15:15	<b>Malcolm Gower</b> (Imperial College London) <i>Thermosonic micro-welding with laser-generated ultrasound</i>	<b>Walter Perrie</b> (University of Liverpool) <i>Ultrashort pulse ablation of thin film Aluminium on flexible PET</i>	<b>Thierry Souillart</b> (BeAM, France) <i>From R&amp;D to Innovation: Ecosystem approach to accelerated development and applied additive manufacturing</i>
15:45	<b>Adam Rosowski</b> (SPI Lasers) <i>Dissimilar metals joining using nanosecond pulsed fibre lasers</i>	<b>David Waugh</b> (Coventry University) <i>Laser surface treatments and their effects on adhesion and biomimetic apatite coating formation</i>	<b>Verónica Panadeiro-Castro</b> (AIMEN, Spain) <i>MWIR imaging for high speed control for LMD processing</i>
16:00	<b>Choon Y Kong</b> (TWI) <i>High speed laser welding of aluminium and copper dissimilar metal joint for electrical connections</i>	<b>Fatema Rajab</b> (University of Manchester) <i>Understanding and control of nanosecond and picosecond laser surface texturing in water and air</i>	<b>Jing Liu</b> (University of Liverpool) <i>Blown powder laser cladding for isotropic material properties</i>
16:15	<b>Julio Coroado</b> (Cranfield University) <i>Study of laser metal interaction for pulsed nanosecond fibre laser</i>	<b>Pratik Shukla</b> (Coventry University) <i>Laser Shock Peening of Orthopedic Ti-6Al-7Nb: An alteration of hardness, microstructure and residual stress</i>	<b>Laurent Michaux</b> (University of Cambridge) <i>Deposition of a WC-17Co coating using laser assisted cold spray</i>
16:30	<b>Neil Main</b> (Micrometric) <i>Weldability of 316 stainless steel</i>	<b>Wojciech Gora</b> (Heriot Watt University) <i>Laser based finishing as a method of improving surface properties of additively manufactured parts</i>	<b>Goncalo Pardal</b> (Cranfield University) <i>Laser stabilization of GMAW additive manufacturing of Ti-6Al-4V components</i>
16:45	Symposium Ends		