

ILAS 2020 - WEDNESDAY 20th MAY

WELDING - 1

Temporal pulse shaping, dominant parameter in reducing welding defects during high power fiber laser welding

Naeem, Mohammed *Prima Power Laserdyne*

Recent progress in advanced welding with high power multi kilowatt fibre lasers

Thompson, Mark *IPG Photonics*

Laser keyhole girth weld start/stop termination regimes on varying composition of low carbon alloy steels

Lai, Wai-Jun *Cranfield University*

Laser Welding in Inner Diameter (ID) of tubes having a diameter less than 145mm port

Sabarikanth, R. *Optilase*

MICRO JOINING & FABRICATION

Encapsulation of ultra-thin flexible glass with picosecond laser microwelding for OLEDs application

Morawska, Paulina *Heriot-Watt University*

Stress Induced Birefringence of Glass-to-Metal Ultrashort Pulse Welded Components

Hann, Samuel *Heriot-Watt University*

Ultrafast laser bonding of dissimilar materials ready for industrial uptake

Karnakis, Dimitris *Oxford Lasers*

Laser direct writing of high quality cross-shaped terahertz mesh filter

Le, Hoang *University of Birmingham*

CUTTING

Advances in cutting with high power multi kilowatt fibre lasers, up to 20kW

Wilford, Stan *IPG Photonics*

Optimizing the CO2 laser cutting behavior of polycarbonate

Janik, Julia *Synrad*

Water-Jet Guided Laser Machining of Ceramic Matrix Composites

Marimuthu, Sundar *MTC*

Water Jet-guided laser ablation using a combined dual laser source

Soulier, Gilles *Synova*

PLENARY 1 - Tatsuki Furumoto, Kanazawa University

PLENARY 2 - Silke Pflueger

ADDITIVE POWDER BED FUSION

3D printing of hybrid metal/polymer objects through an integrated multiple material additive manufacturing process

Chueh, Yuan-Hui *University of Manchester*

Effect of different shield environment on laser powder bed fusion

Bidare, Prveen *University of Birmingham*

Preparing laser powder bed fusion spatter particles for re-use via pulsed electron beam irradiation

Hizli, Huseyin *University of Nottingham*

Laser powder bed fusion additive manufacturing of functionally graded multiple metallic material components

Wei, Chao *University of Manchester*

On the use of laser-material interaction parameters to drive design and control of thin-wall architectures made of AlSi10Mg alloy by laser powder-bed-fusion (L-PBF)

Zavala, Miguel *TWI*

The effects of Hot Isostatic Pressing on surface integrity, microstructure and strength of hybrid MIM/PBF stainless steel components

Mehmeti, Aldi *University of Birmingham*

ADDITIVE 2 - DED

New approaches in additive manufacturing – Next level system technology and layer height control using OCT sensor

Kogel-Hollacher, Markus *Precitec*

Process Optimisation of Laser Direct Energy Deposition for Large Scale Aerospace Components

Elkington, Helen *TWI*

Laser Power and Surface Thickness Analysis of Distortion Within Directed Energy Deposited In-718 Flanges

Cullen, Stephen *University of Huddersfield*

Production of super-hard cutting teeth on linear edge saw blades using Laser

Directed Energy Deposition

Kong, Choon Yen *C4 Carbides*

ADDITIVE 3 - ADVANCED ADDITIVE WELDING

NEWAM – the next generation laser directed energy deposition process?

Williams, Stewart *Cranfield University*

Control of Microstructure using the Laser Power Mode in Direct Laser Deposition of Ni-Superalloys

Alhuzaim, Abdullah *University of Birmingham*

Investigation on the feasibility of laser wire deposition for dissimilar joining applications

Li, Bowei *TWI*

Extreme High-speed Laser Application (EHLA); a step change in high speed coating technology

Barras, Josh *TWI*

SURFACE ENGINEERING TEXTURING

Bio-compatibility enhancement of a Zr-based bulk metallic glass using nanosecond laser surface texturing

Brousseau, Emmanuel *Cardiff University*

Bio-Inspired Non wetting surfaces by ultrafast laser processing

Brajer, Jan *HiLase*

Durability of lubricant-impregnated surfaces: the effects of laser textured surfaces on lubricant retention under vibrations

Goddam, Anvesh *University of Birmingham*

Ultrashort-pulse processing with tailored laser vector fields

Allegre, Olivier *University of Manchester*

Potential of fast large-area interference micro/nanostructuring at HiLASE

Hauschwitz, Petr *HiLase*

SURFACE ENGINEERING

Laser ablation surface engineering for particle accelerators

Malyshev, Oleg *STFC*

Modelling ultrafast laser structuring/texturing of free form surfaces

Michalek, Aleksandra *University of Birmingham*

Nanosecond laser texturing of anti-wetting surfaces on SS316L:

effect of the scanning pattern and storing conditions

Gora, Wojciech *Heriot-Watt University*

Impact of laser texturing parameters and processing environment in the anti-wetting

transition of nanosecond laser generated textures in stainless steel

Godoy Vilar, Juan *MTC*

Using Machine Learning for Prediction and Optimisation in Laser Machining

McDonnell, Michael *University of Southampton*

SURFACE ENGINEERING

Functionalised polycrystalline boron nitride materials through laser surface engineering

Pacella, Manuela *Loughborough University*

A study of the tactile friction behaviour between laser-textured metallic surfaces and counterpart polyurethane materials at low sliding velocities

Butler-Smith, Paul *MTC*

Development of advanced laser processes for multiscale surface modification of functional electrodes in Liquid Chromatography-Mass Spectrometer instrumentation

Ghosal, Anupam *University of Manchester*

Ultrafast laser processing of semiconductor materials

Murphy, Tara *NKT Photonics*

Hydrophobic agent adsorption dynamics of laser textured superhydrophobic metallic surfaces

Macdonald, James *University of Cambridge*

ILAS 2020 - THURSDAY 21st MAY

CUTTING & DRILLING

Millisecond Fibre Laser Drilling of High Aspect Ratio Holes
Dunleavy, Justin MTC

CO2 laser drilling of woods for chemical preservative treatment
Nath, Subhasisa Coventry University

Cutting and Drilling keynote - TBA

SYSTEMS & AUTOMATION

LaserTau - Large area laser processing of Aerospace Structures using the Tau Robot Platform
Di Luch, Anibal TWI

Experimental investigation of accuracy, repeatability and reproducibility of multi-axis laser processing systems
Karkantonis, Themistoklis University of Birmingham

Systems and Automation

Jones, Tony Cyan-Tec

Fiber Lasers with Programmable Beam Shaping Enable Significant Process Improvements

Morris, Tim nLight

Industrial environment validation of Modulase, a re-configurable system for laser welding, cladding and cutting

de Bono, Paola TWI

SURFACE ENGINEERING

Surface Engineering Keynote

Liu, Zhu University of Manchester

Wear Properties in Simulated Body Fluid, Residual Stress and Microhardness Evaluation of Ti-6Al-7Nb Alloy Treated by Laser Shock Peening

Shen, Xiaojun Coventry University

Strength of weld-joints treated by laser shock peening

Shukla, Pratik Coventry University

Surface engineering of polycrystalline diamond materials

Ghosh, Priyanka Loughborough University

Fully reflective one by nine beam splitter for high throughput surface decoating

Pallier, Gwenn Cailabs

WELDING 2

Advanced manufacturing techniques for laser welding of automotive structural aluminium alloys

Demirorer, Mete Cranfield University

Comparative Evaluation of Laser Oscillation Welding applied on different functional alloys

Oyelola, Olusola SPI Lasers

Remote laser welding of car doors with optical seam tracking

Muller, Alexander II-VI

Kilowatt Blue Laser Sources for processing solutions in eMobility

Eltze, Andre Laserline GmbH

Blue Lasers Poised to Enhance Automobile Fabrication

Gleeson, Richard Nuburu

Multi-functional representation of a novel NiTi-based compression-induced-twisting structure manufactured by selective laser melting

Ma, Chenglong Cardiff University

SOURCES & BEAM DELIVERY

Tunable GHz and MHz femtosecond burst for various material processing

Gertus, Titas Light Conversion UAB

Fully reflective annular laser beam shaping for 1.03µm ultra-high throughput laser beam welding

Pallier, Gwenn Cailabs

State of the art femtosecond laser technology for the industry enabling advanced processing and higher throughput

Wolters, Xavier Amplitude Systems

Industrial Femtosecond Lasers for High Precision Micro-Machining

Fulford, Ben Luxinar

Tailored femtosecond laser beam focused by using microscope objective lenses

Li, Zhaoqing University of Manchester

ABLATION MICROMACHINING

Ultrafast Laser Ablation – Overview of Processing Characteristics

Hodgson, Norman Coherent Inc

High-Power Picosecond Laser Machining of Hard Ceramics

Marimuthu, Sundar MTC

Laser selective sintering and patterning of laser printed silver inks for flexible electronics

Arnaldo, Daniel Oxford Lasers

Laser-induced forward transfer of Ni and Ti metal films for shape memory alloy design

Siwicki, Bartlomiej Heriot-Watt University

In Depth Laser Engraving

Aminidis, Alexander ACSYS

Plenary 3 Bill O'Neill, University of Cambridge

Plenary 4 Dirk Petring, Fraunhofer ILT