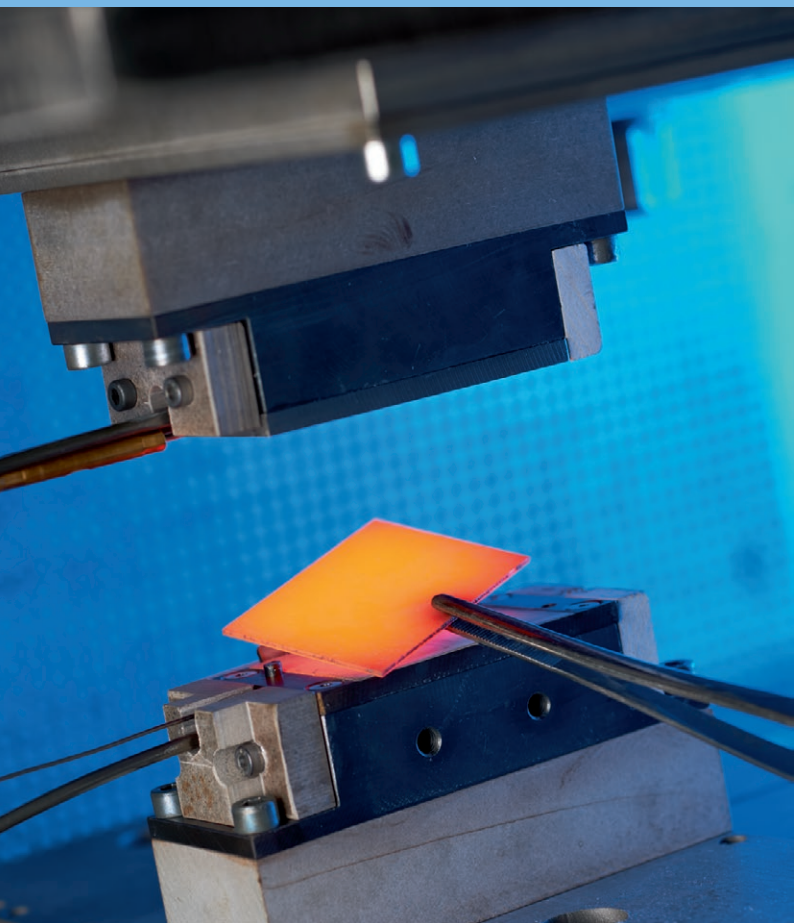
Fraunhofer

FRAUNHOFER EXHIBITORS

HANNOVER EXHIBITION CENTER, HALL 11, BOOTH A25
OKTOBER 23 – 26, 2018

EUROBLECH 2018



Fraunhofer Institute for Laser Technology ILT
www.ilt.fraunhofer.de

Fraunhofer Institute for Physical Measurement Techniques IPM
www.ipm.fraunhofer.de

Fraunhofer Institute for Production Technology IPT
www.ipt.fraunhofer.de

Fraunhofer Institute for Material and Beam Technology IWS
www.iws.fraunhofer.de

Fraunhofer Institute for Machine Tools and Forming Technology IWU
www.iwu.fraunhofer.de

Fraunhofer Institute for Nondestructive Testing IZFP
www.izfp.fraunhofer.de

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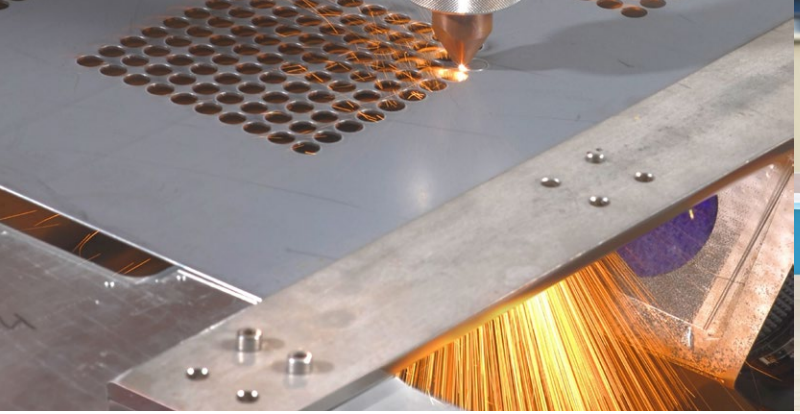


Fraunhofer Institute for Laser Technology ILT

Combi-processing: cutting – welding – additive

– Agile manufacturing of sheet metal assemblies with one laser head for separating, joining and additive processes
– Hybride production using conventional processes and additive manufacturing

Laser heat treatment

– Free-form optics with chair intensity distribution for local conditioning of high-strength steels at high feed rates

Laser beam high-speed cutting

– Flexible cutting of shaped blanks from coil in large-volume production
– Laser beam high-speed cutting of a new generation of coil material

Laser beam welding

– Laser beam welding of ultra-high strength steels
– Bumper beam and stay for applications in vehicle construction

Laser processing of FRP and FRP-Metal-Hybridmaterial

– Scanner-based laser cutting and laser-assisted joining of a car roof bow made of CFRP, GFRP and metal

Fraunhofer Institute for Physical Measurement Techniques IPM

Inline coating thickness measurement and element analysis

ANALIZEsingle

– Measuring nanometer thin layers
– Coatings and component surfaces: detecting element composition and distribution
– Unique system for inline measurement of Ti- / Zr based coil coating corrosion protection and adhesion promoters

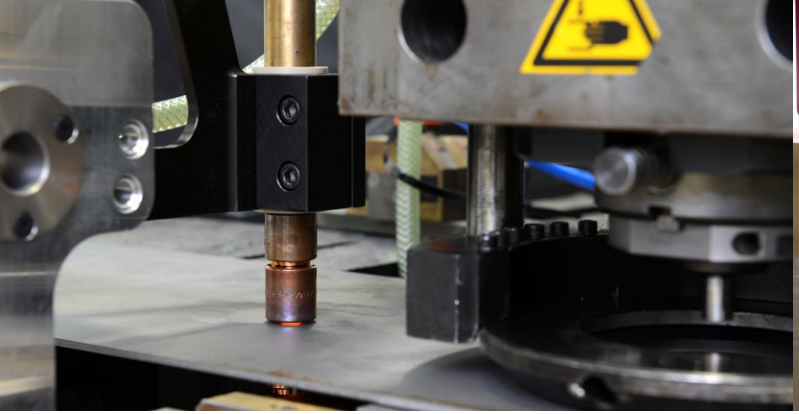
ANALIZEmulti

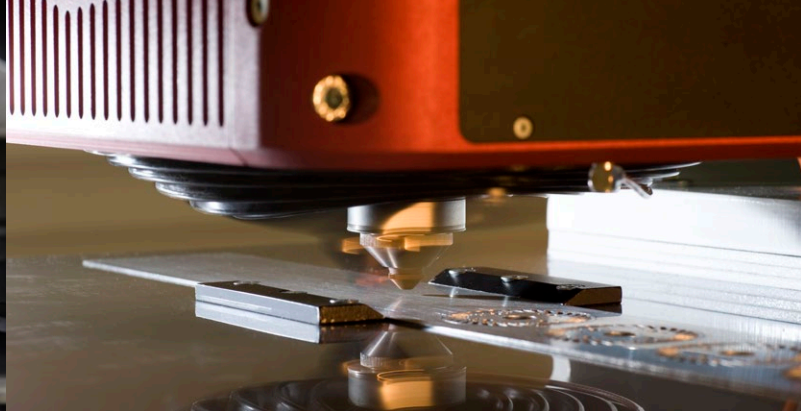
– Measuring thickness and analyzing element composition of complex layer sequences ranging from 500 nm to 50 µm
– Depth-resolved analysis of the element distribution

Imaging oil film measurement and purity control

F-Scanner

– First system for 100 percent inline quality control of metal sheets or complex 3D stamp parts at belt speeds of several meters per second
– Monitoring thickness and homogeneity of oil films with 400.000 data points / s
– Purity control of surfaces with detection limits of approx. 0,01 g/m^2





Fraunhofer Institute for Production Technology IPT

Laser- and thermal-assisted sheet metal working

– Technology portfolio: Selection of the appropriate heating technology for your application
– Module development: Customer-specific modules for laser and thermal-assisted sheet metal working
– Processes: Development and optimization of your production processes on our press line

Our technologies

– Laser-assisted sheet metal working with the hy-PRESS system
– Laser-assisted hole flanging with compact heating module
– Thermal-assisted sheet metal working with electrical resistance heating or induction heating

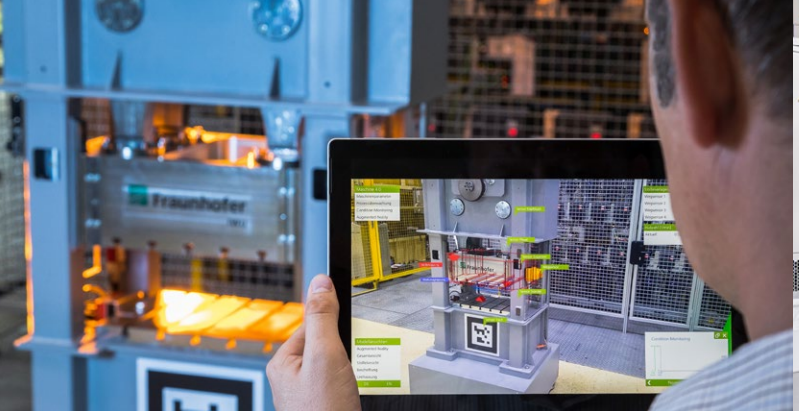
Fraunhofer Institute for Material and Beam Technology IWS

Laser ablation and cutting

– Process comparison for highly dynamic cutting
– New approaches for high dynamic beam shaping in laser cutting
– Through thick and thin with the laser – high quality when cutting thick sheet metals

Joining technologies

– Lightweight concepts for more efficient manufacturing at a lower cost
– Joining of modern functional materials and mixed joints – with and without laser
– "removeld® optics" for laser welding of various sheet thicknesses and critical materials



Fraunhofer Institute for Machine Tools and Forming Technology IWU

Forming 4.0
– Zero-defect production
– 100% availability

Comprehensive process transparency – Fusion of real und virtual process data
– Inline material tester
– Acquisition of process data
– Machine properties in real time
– Inline quality assurance Xeidana®

Automotive production batch size 1: economic sheet metal processing for unique specimens
– Reduction of the tool cost by incremental sheet metal forming
– Minimum sheet thickness
– Low processing time/lead time in tool making
– Excellent quality of filigree laser welds
– Reduction of cost for investment and production by omitting machine tool systems

Fraunhofer Institute for Nondestructive Testing IZFP

Intelligent robot-assisted NDT inspection
– Fast and easy integration into production processes
– Automated operation of intelligent NDT sensor systems
– Robot-assisted inspection using the example of a press-hardened component inspected by 3MA* and EMAT**
– Couplant-free ultrasound inspection for defect detection (EMAT)
– Quantitative material characterization based on micro-magnetic inspection technologies (3MA)
– Inspection in a matter of seconds
– Determination and evaluation of multiple relevant quality characteristics
– Contact-free inspection of sheets and plates
– The combined sensor-assisted inspection system provides both, the monitoring of mechanical properties and of defects for the early detection of cracks and neckings
– Resource-effective, reduced costs

* Micromagnetic multi-parameter, microstructure and stress analysis
** Electromagnetic acoustic transducer