Industrial application and commercial perspective by interferometric inline metrology for the control of laser processes Dr.-Ing. Markus Kogel-Hollacher, Precitec Optronik GmbH, Neu-Isenburg

11:45 **MNT-MMP**

MicroMasterPrinter – process, applications and prospects Dipl. Masch. Ing. ETH Aadriaan Spierings, inspire AG, St. Gallen, Switzerland

Development of direct metal printing device for fabrication of 3D-microstructures Dipl.-Ing. Nils Lass, Albert-Ludwigs-University, Freiburg, Institute of Microsystems Technology, Freiburg

System integration for micro master printer Dr. Ingo Ederer, voxeljet Technology GmbH, Friedberg

12:30 **Lunch**

13:30 **MNT-BIOREEL**

Process for roll to roll printing of proteins Dr. Thomas Velten, Fraunhofer-Institute for Biomedical Engineering, St. Ingbert

Production equipment for roll to roll printing of proteins Dr. Gerald Jenke, Saueressig GmbH & Co. KG, Vreden

Potential biological applications of printed micro structures and first experimental results Dr. Erwin Gorjup, Fraunhofer-Institute for Biomedical Engineering, St. Ingbert

14:15 **Final discussion**

14:30 **Guided lab tours to ILT and IPT**

MANUNET-LASERDAPT: Laser robot system with integrated camera and scanning devices

MANUNET-ALPINE: Machine tool for laser polishing and laser polished parts

MNT-SCALAB: Desktop Station for high precision assembly of micro optics

MNT-scan4surf: High precision inline metrology for laser surface structuring systems

16:00 **End**

Organisation

Partner countries
Austria, Belgium, Czech Republic, Switzerland, Spain

Language
Lectures in German or English, slides in English

Organizers
Federal Ministry of Education and Research (BMBF), Bonn

In cooperation with

Fraunhofer Institute for Laser Technology, ILT, Aachen
SPECTARIS – German Hightech Industry Association, Berlin

Contact for event

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Costs

There will be a registration fee of 140 Euro.

Registration

Please use the attached form until **11th January 2013** for registration. The number of participants is limited. Registrations are processed in the received order.

Direction to event

www.ilt.fraunhofer.de/en/contact.html

Funding

The german partners of the research and development projects are funded by the German Federal Ministry of Education and Research (BMBF) within the Framework Concept "Research for Tomorrow's Production" and managed by the Project Management Agency Karlsruhe (PTKA).

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For more information about the event and the funded projects see: www.produktionsforschung.de

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SEVENTH FRAMEWORK PROGRAMME

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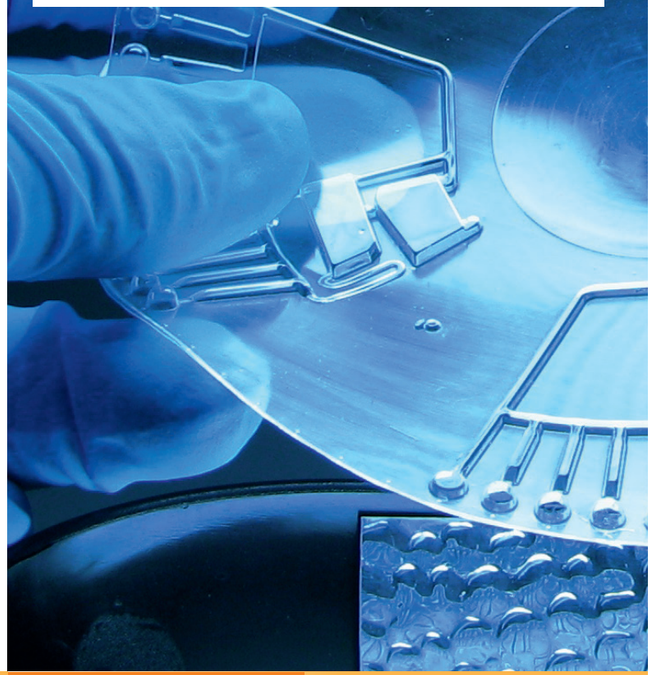
IDEAS INNOVATION PROSPERITY The Hightech-Strategy for Germany

ERA-NET Cluster Event

„Research for Tomorrow`s Production"
22nd to 23rd January 2013
Fraunhofer Institute for Laser Technology, Aachen, Germany



HIGH-TECH STRATEGY

Invitation

The increasing international demand to integrate design and manufacturing of innovative products plays an essential role for future production research. For this reason, ERA-NET networks have been established to coordinate the research activities of relevant European regions and countries.
In MANUNET there are joint investigations for solutions to pressing challenges in the development of production systems, which adapt automatically to changes in business and production objectives and to new market requirements and technologies. Special focus points are flexible, fast adaptable devices and machinery.
In MNT-ERA.NET the performance and efficiency of production systems to manufacture innovative micro and nano components of complex mechatronic products are improved for example in mechanical engineering, optics, energy, and in medical technology.
Through participation in ERA-NET the companies obtain access to know-how of European partners. Specific requirements for the development of international markets for the research results can be gained. This is in accordance with the high-tech strategy of the Federal German Government to strengthen the international position of German industry in research and development.

Event

The results of transnational projects in MANUNET and MNT-ERA.NET will be presented. The partners of the collaborative projects, launched in spring of 2010 will demonstrate in short talks and in an exhibition the results of their research contributions. Future possibilities for crossborder collaborative research will be discussed. The use of the latest technologies in manufacturing plays an important role.
The public event is dedicated to experts and managers of product development and production in research institutions and industry.

Program

Theme: Research for Tomorrow's Production
Innovation in manufacturing by transnational networking in ERA-NET

Registration: at 12:00

22nd January 2013

13:00 **Welcome**
Prof. Dr. Reinhart Poprawe, Fraunhofer Institute for Laser Technology, ILT, Aachen

Research for Tomorrow's Production
Federal Ministry of Education and Research (BMBF), Bonn

Innovation in manufacturing for future markets
Dr. Markus Safaricz, SPECTARIS – German Hightech Industry Association

Adaptive manufacturing

Chair: Dr.-Ing. Alexander Olowinsky, Fraunhofer Institute for Laser Technology, ILT, Aachen

13:30 **MANUNET-AMADEUS**

A robotic multipurpose solution for intralogistics Dipl.-Ing. Lorenz Halt, Fraunhofer Institute for Manufacturing Engineering and Automation, Stuttgart

Integration of the robot arm in an automated guided vehicle Dieter Faude, Faude Automatisierungstechnik GmbH, Gärtringen

Automated guided vehicle with a robotic manipulator and integration in manufacturing execution system Dipl.-Ing. (FH) Wolfgang Reinert, advanced clean production Information Technology AG, Stuttgart

14:45 **MANUNET-LASERDAPT**

Flexible production for varying parts and lot sizes Dipl.-Ing. Paul Heinen, Fraunhofer Institute for Laser Technology, Aachen

Aspects of image processing in combination with laser scanners Herbert Schulz, Schulz Systemtechnik GmbH, Obersöchering

Use of Laserdapt manufacturing technology at RJ Lasertechnik Dipl.-Ing. Ralf Risters, RJ Lasertechnik GmbH, Übach-Palenberg

15:30 **Exhibition and coffee break**

16:00 **MANUNET-ALPINE**

Laser polishing in tool and mould making
Dr. Edgar Willenborg, Fraunhofer Institute for Laser Technology, Aachen

Machine tool for laser polishing
Thomas Arnold, Karl H. Arnold Maschinenfabrik GmbH & Co. KG, Ravensburg

NC-functions for 8-axes simultaneous processing with mechanical and optical axes
Dr. Oliver Steffens, Steffens und Fohn NC-Systemtechnik GbR, Herzogenrath

16:45 **MANUNET-QuaMiNet**

Design of micro injection molding processes, data acquisition and characterisation
Dr.-Ing. Philipp Imgrund, Fraunhofer Institute for Manufacturing Technology and Advanced Materials, Bremen

Mathematical models and software tools
Dr. Patrick Bangert, algorithmica technologies GmbH, Bremen

Test results and evaluation of moulded parts
Dipl.-Ing. Björn Dormann, Kloeckner Desma Schuhmaschinen GmbH, Achim

17:30 **Exhibition and coffee break**

18:00 to 20:00 **Get-together**

23rd January 2013

Efficient production equipment

Chair: Dr.-Ing. Christian Wenzel, Fraunhofer Institute for Production Technology, IPT, Aachen

09:00 **MNT-SCALAB**

Modular gripping and handling components for micro assembly Prof. Dr. Matthias Haag, SCHUNK GmbH & Co. KG, Lauffen am Neckar

Multi-agent approaches for highly modular control system architectures
Dipl.-Ing. Christian Schlette, Institute of Man-Machine Interaction, Aachen

Developments for the automated assembly of laser systems Dipl.-Ing. Dipl.-Wirt. Ing. Nicolas Pyschny, Fraunhofer Institute for Production Technology, Aachen

09:45 **MNT-METASOLAR**

Ultra-short pulse laser ablation for efficient solar cell manufacturing Prof. Dr. Heinz Huber, University of Applied Sciences, Munich

Combined print and laser process machine for patterning of flexible substrates Dipl.-Ing. (FH) Peter Lenk, LS Laser Systems Gesellschaft mbH, Munich

Design, manufacturing and integration of flexible photovoltaic modules
Andreas Zimmermann, Sunplugged GmbH, Wildermieming, Austria

10:30 **Exhibition and coffee break**

11:00 **MNT-scan4surf**

Inline process metrology system for the control of laser surface structuring processes
M. Sc. Guilherme Mallmann, Fraunhofer Institute for Production Technology, Aachen

Verification and testing of measuring system
Dipl.-Ing. Stefan Hofmann, Werkzeugbau Siegfried Hofmann GmbH, Lichtenfels