


NAFTA TRAINING CENTER FOR HOT STAMPING TECHNOLOGY

– 4th PHS Suppliers Forum –

www.hotforming-academy.com




Doing the Real Thing



Laboratory Internship



Exclusive Know-how



Most Modern Learning Facilities

TAKE THE OPPORTUNITY OF BEING TRAINED BY THE
ONES WHO HAVE TRAINED THE MARKET LEADERS
IN HOT STAMPING TECHNOLOGY

Presented by:

GRUNDIG AKADEMIE
Academy of Economics and Technology

Scientific Management:

Dipl.-Ing. Frank Schieck,
Division Director Sheet Metal Forming
Fraunhofer Institute for Machine Tools and Forming Technology, IWU

GRUNDIG|AKADEMIE

The GRUNDIG AKADEMIE was founded by Max Grundig more than 38 years ago. He was one of Germany's most successful entrepreneurs and set the akademie up as a non-profit organization.

Since then GRUNDIG AKADEMIE has been a reliable training partner for many companies, organizations and individuals.

The academy offers a broad range of professional education, from technical vocational schools to open enrolment courses in management, IT and engineering and long term vocational training with certified diplomas.

During the past 10 years, press hardening has become a fully established and recognized technology in both science and industry for the production of ultra-high-strength structural components. Specifically within the automotive industry. Apart from the obvious and valuable improvement in car performance, such as safety and lightweight design, the production process is also one focus of trends in technology development in the field of press hardening.

Owing to the additional process parameter of temperature, the energy and resource efficiency of such processes is one of the most important challenges. These include alternative process steps and process chains as well as zero defect manufacturing by intelligent process control. Alongside the high energy effort required for heating up the blanks to austenitization temperature; the production floor space requirement is also comparably high, particularly for heating devices. Due to the growing product variety in automobile production, combined with shorter product life cycles, the flexibility of production processes becomes more and more significant, which is also true for press hardening. This includes production organization as well as flexibility of production devices.

However, it has become clearly understood and obvious during these years of appliance in industrial scale, that press hardening is an inevitably knowledge-driven technology. Without an accurate and clear understanding of the governing thermo-mechanical mechanisms, paired with systems and tool engineering, it is perhaps possible to move along to the “low-end” of technology but impossible to reach the “high-end”. The acquisition of substantial knowledge, therefore, constitutes the main “key” to be successful in the aforementioned sense.

The GRUNDIG AKADEMIE PHS-Trainings, each focusing on a particular aspect of technology, provides comprehensive access to valuable and extensive knowledge on hot sheet metal forming.

Dipl.-Ing. Frank Schieck



Dipl.-Ing. Frank Schieck

Following on from the highly successful international trainings and seminars on HOT STAMPING TECHNOLOGY during the last five years, the upcoming NAFTA Compact Training represents what the GRUNDIG AKADEMIE has proven and continues to provide in the press-hardening world:

HIGH QUALITY TRAININGS SPECIFICALLY DEDICATED TO PHS TECHNOLOGY.

Clearly, the leading players in industrial press hardening technology rely on the high standard of the GRUNDIG AKADEMIE's training program to qualify their engineering staff.

Therefore, we would like to invite you to participate in this two-day event (Thursday to Friday) and encourage you to take the opportunity to taking home facts and information

- Practical experience of current Tier1 projects
- Strategic insights into global Tier1 suppliers
- Innovative strategies for material- and tool-manufacturers
- Important impulses for future facility planning
- Valuable contacts with representatives of the world's leading OEM-suppliers network

KEY PLAYERS

- Luke Reini / Matt Enloe (General Motors Company, Global Vehicle Engineering, Detroit, MI, USA)
- Frank Schieck (Fraunhofer Institute IWU, Chemnitz, Germany)
- Manuel Lopez (Gestamp BIW, Sant Esteve Sesrovires, Spain)
- Robert Vollmer (Technical University Graz, Institute for Tools & Forming, Graz, Austria)
- Gerhard Schöfl (Ebner Industrieofenbau GmbH, Leonding, Austria)
- Karl Radlmayr (voestalpine Metal Forming GmbH, Krems, Austria)
- Joseph Price (Böhler Edelstahl GmbH & Co. KG, Kapfenberg, Austria)
- Christian Conrad (Fraunhofer Institute IZFP, Saarbruecken, Germany)
- Eric Kam (AutoForm Engineering USA, Inc., Troy, MI, USA)
- Michael Fritz (Trumpf Laser- und Systemtechnik GmbH, Ditzingen, Germany)
- Paul Thom (Schuler Inc., Canton, MI, USA)
- Johannes Bührle (Zwick Roell Materials Testing Machines, Ulm, Germany)
- Shrikant P. Bhat (ArcelorMittal Global R&D, East Chicago, USA)

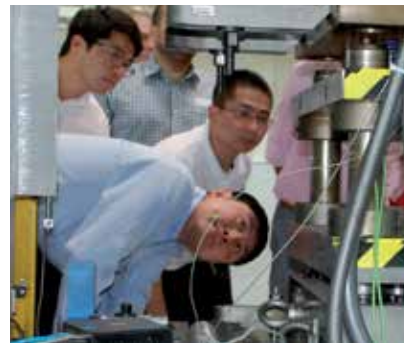
THURSDAY, September 22nd | 10:30 a.m. – 07:00 p.m.

Bringing together the total picture on

- Press Hardening Methods in Automotive Application
- Materials and Coatings
- Heating Technology
- Tool and Plant Technology
- Quality Control
- Process Simulation
- Process Monitoring
- Follow-up Operations (Laser-Cutting and Joining Methods)

With technology inputs from the leading players and guided as a “common thread” from Dipl.-Ing. Frank Schieck (Fraunhofer Institute for Machine Tools and Forming Technology, IWU). Being in control of the complexity of PHS technology requires a comprehensive understanding of what needs to be included accurately in sense of materials performance, process technology and part design. In a series of short presentations, representatives from leading players in Industrial Hot Stamping describe and illustrate key aspects and state-of-the-art procedures. The entire thematic completion will be brought together by the knowledge and commentaries of internationally renowned experts.

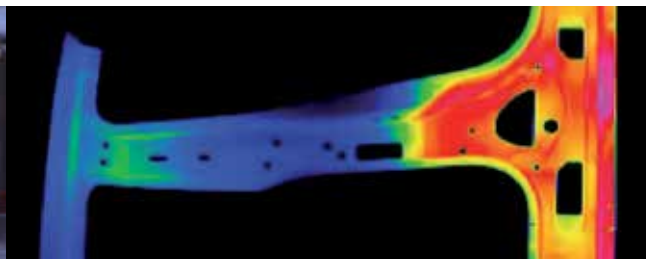
FRIDAY, September 23rd | 08:55 a.m. – 03:45 p.m.



Within the selected topical units, specialized skills are given to provide insight and understanding in process monitoring strategies, in simulations based on process design and design optimization, dies and tools and in post-processing technology.

Additionally, the participants will have an understanding of the interactions within each individual technical content in the 5 units.

- Unit CT-1: Simulation (AutoForm)
- Unit CT-2: Tooling (Schuler Inc.)
- Unit CT-3a: Process Monitoring (Fraunhofer IWU, T&F)
- Unit CT-3b: Product Quality Control (Fraunhofer IZFP, Zwick)
- Unit CT-4: Laser Application (Trumpf Inc.)
The participants will circle through the 5 interactive units in small training groups.



General Introduction	
10:30 a.m.	Welcome Christian Kovacs (GRUNDIG AKADEMIE, Nuremberg, Germany)

Module 1 Press Hardening Steel (PHS) in Automotive Application	
10:35 a.m.	General Introduction – Press Hardening vs. Cold Forming Frank Schieck (Fraunhofer IWU, Chemnitz, Germany)
10:50 a.m.	Process and Alloy Influences on PHS Impact Performance Matt Enloe (General Motors Company, Global Vehicle Engineering, Detroit, USA)
11:20 a.m.	Update on New Zinc Coated Material for Hot Stamping Manuel Lopez (Gestamp BIW, Sant Esteve Sesrovires, Spain)
11:45 p.m.	Current Developments of Tooling Technology in Hot Stamping Robert Vollmer (T&F, Graz, Austria)

12:15 p.m.	Business Lunch
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Module 2 Tool Steel, Tailored Blanks and Coatings	
01:30 p.m.	Importance of Tooling for Overall Process Chain Frank Schieck (Fraunhofer IWU, Chemnitz, Germany)
01:40 p.m.	The Hot Forming Toolbox of voestalpine Karl Radlmayr (voestalpine Metal Forming GmbH, Krems, Austria)
02:05 p.m.	Latest Developments of Tool Steels for Hot Stamping Joseph Price (Böhler-Uddeholm Corporation, Elgin, USA)
02:30 p.m.	Steel Grades and Coatings for Hot Stamping Shrikant P. Bhat (ArcelorMittal Global R&D, East Chicago, USA)

02:55 p.m.	Short Break
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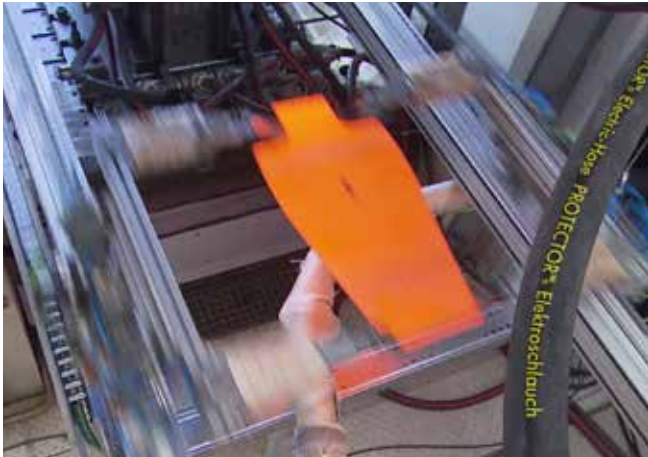
Module 3 Tool and Plant Technology	
03:25 p.m.	History of Press Hardening – from Niche Product to Large Scale Production Frank Schieck (Fraunhofer IWU, Chemnitz, Germany)
03:35 p.m.	From First Draft to Serial Production: Increase ROI with Turnkey Hot Stamping Solutions Paul Thom (Schuler Inc., Canton, USA)
04:00 p.m.	Production Experiences with Tailored Tempering Solutions in PH-Furnaces Gerhard Schöfl (Ebner Industrieofenbau GmbH, Leonding, Austria)
04:20 p.m.	Reliable Materials Testing in Support of Efficient Hot Forming Processes Johannes Bührlé (Zwick Roell Materials Testing Machines, Ulm, Germany)
04:40 p.m.	Testing of PHS CarBodyParts – Process Integrated, Reliable and in a Matter of Seconds! Christian Conrad (Fraunhofer IZFP, Saarbruecken, Germany)
05:00 p.m.	Outlook Laser Machines – Developments in Laser Technology for even higher Productivity Michael Fritz (Trumpf Laser- und Systemtechnik GmbH, Ditzingen, Germany)

Module 4 Trends and Challenges in PHS	
05:20 p.m.	Energy- and Resource Efficient Press Hardening – Where the Journey is heading to Frank Schieck (Fraunhofer IWU, Chemnitz, Germany)
05:40 p.m.	Open Forum, Final Remarks & Lessons Learned Frank Schieck (Fraunhofer IWU, Chemnitz, Germany)

05:50 p.m.	Networking Reception
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07:00 p.m.	End of Day 1
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On the second day we will split the conference into four groups for the circle trainings. By doing so you will have the opportunity to put your know-how into practice by participating at the exclusive hands-on trainings. Two key players in the press hardening technology will host the trainings at their plants. The two training locations are only 10 minutes away from each other.

Please save the following addresses for the circle training:

Schuler Inc., 7779 Market, Canton, MI 48187

Trumpf Inc., 47711 Clipper St, Plymouth, MI 48170

GROUP „RED“	
08:55 a.m.	„How it Works“ – Short Introduction on Contents and Organization Paul Thom (Schuler Inc. Canton, MI, USA)
Unit 1: 09:00 a.m.	Hands-On Experience; Process Inputs for Press-Hardening Engineering and Simulation Eric Kam (AutoForm Engineering USA, Inc., Troy, MI, USA)
Unit 2: 10:30 a.m.	Hands-On Press Hardening Tools Engineering Paul Thom (Schuler Inc. Canton, MI, USA)
12:00 a.m.	Business Lunch at Schuler Inc.
01:00 p.m.	Drive to Trumpf Inc., 47711 Clipper St, Plymouth, MI 48170, USA
Location:	Trumpf Inc.
Unit 3a: 01:30 p.m.	Process Monitoring Robert Vollmer (T&F, Graz, Austria)
Unit 3b:	Product Quality Control Christian Conrad and Johannes Bührle (Fraunhofer Institute IZFP, Saarbruecken, Germany and Zwick Roell, Ulm, Germany)
Unit 4: 03:00 p.m.	Profound Understanding of the State of the Art Laser Cutting Process and its Key Components Michael Fritz (Trumpf Laser- und Systemtechnik GmbH, Ditzingen, Germany)
04:30 p.m.	End of Day 2

GROUP „GREEN“	
08:55 a.m.	„How it Works“ – Short Introduction on Contents and Organization Christian Kovacs (GRUNDIG AKADEMIE, Nuremberg, Germany)
Unit 2: 09:00 a.m.	Hands-On Press Hardening Tools Engineering Paul Thom (Schuler Inc. Canton, MI, USA)
Unit 1: 10:30 a.m.	Hands-On Experience; Process Inputs for Press-Hardening Engineering and Simulation Eric Kam (AutoForm Engineering USA, Inc., Troy, MI, USA)
12:00 a.m.	Business Lunch at Schuler Inc.
01:00 p.m.	Drive to Trumpf Inc., 47711 Clipper St, Plymouth, MI 48170, USA
Location:	Trumpf Inc.
Unit 4: 01:30 p.m.	Profound Understanding of the State of the Art Laser Cutting Process and its Key Components Michael Fritz (Trumpf Laser- und Systemtechnik GmbH, Ditzingen, Germany)
Unit 3a: 03:00 p.m.	Process Monitoring Robert Vollmer (T&F, Graz, Austria)
Unit 3b:	Product Quality Control Christian Conrad and Johannes Bührle (Fraunhofer Institute IZFP, Saarbruecken, Germany and Zwick Roell, Ulm, Germany)
04:30 p.m.	End of Day 2

In five different units at these two training locations, you will gain an understanding of the crucial PHS-processes. The color of your name badges, you will receive on the first day of the event, tells you where and in which unit you start the training day.

After the business lunch we will switch locations. The participants from training location Schuler will move to training location Trumpf and reciprocal.

It is important to keep your name badges after the first event day.

At the end of the second training day we invite you to a Come-Together at Schuler Inc..

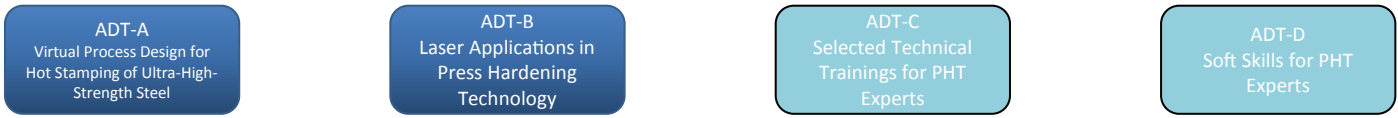


GROUP „BLUE“	
08:55 a.m.	„How it Works“ – Short Introduction on Contents and Organization Michael Fritz (Trumpf Laser- und Systemtechnik GmbH, Ditzingen, Germany)
Unit 3a: 09:00 a.m.	Process Monitoring Robert Vollmer (T&F, Graz, Austria)
Unit 3b:	Product Quality Control Christian Conrad and Johannes Bührle (Fraunhofer Institute IZFP, Saarbruecken, Germany and Zwick Roell, Ulm, Germany)
Unit 4: 10:30 a.m.	Profound Understanding of the State of the Art Laser Cutting Process and its Key Components Michael Fritz (Trumpf Laser- und Systemtechnik GmbH, Ditzingen, Germany)
12:00 a.m.	Business Lunch at Trumpf Inc.
01:00 p.m.	Drive to Schuler Inc., 7145 Commerce Blvd., Canton, MI 48187, USA
Location:	Schuler Inc.
Unit 1: 01:30 p.m.	Hands-On Experience; Process Inputs for Press-Hardening Engineering and Simulation Eric Kam (AutoForm Engineering USA, Inc., Troy, MI, USA)
Unit 2: 03:00 p.m.	Hands-On Press Hardening Tools Engineering Paul Thom (Schuler Inc. Canton, MI, USA)
04:30 p.m.	End of Day 2

GROUP „ORANGE“	
08:55 a.m.	„How it Works“ – Short Introduction on Contents and Organization Frank Christlein (GRUNDIG AKADEMIE, Nuremberg, Germany)
Unit 4: 09:00 a.m.	Profound Understanding of the State of the Art Laser Cutting Process and its Key Components Michael Fritz (Trumpf Laser- und Systemtechnik GmbH, Ditzingen, Germany)
Unit 3a: 10:30 a.m.	Process Monitoring Robert Vollmer (T&F, Graz, Austria)
Unit 3b:	Product Quality Control Christian Conrad and Johannes Bührle (Fraunhofer Institute IZFP, Saarbruecken, Germany and Zwick Roell, Ulm, Germany)
12:00 a.m.	Business Lunch at Trumpf Inc.
01:00 p.m.	Drive to Schuler Inc., 7145 Commerce Blvd., Canton, MI 48187, USA
Location:	Schuler Inc.
Unit 2: 01:30 p.m.	Hands-On Press Hardening Tools Engineering Paul Thom (Schuler Inc. Canton, MI, USA)
Unit 1: 03:00 p.m.	Hands-On Experience; Process Inputs for Press-Hardening Engineering and Simulation Eric Kam (AutoForm Engineering USA, Inc., Troy, MI, USA)
04:30 p.m.	End of Day 2

HIGH QUALITY TRAININGS SPECIFICALLY DEDICATED TO PHS TECHNOLOGY

ADDITIONAL TRAININGS



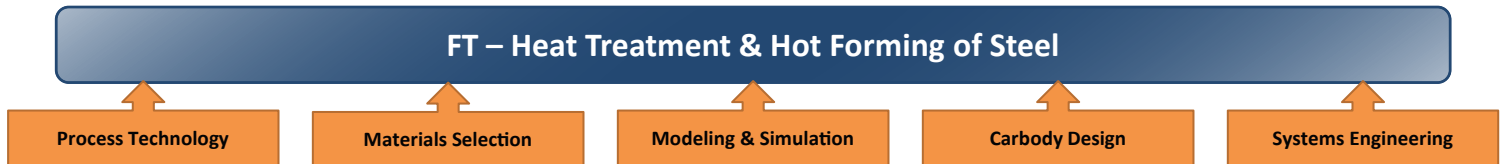
ONSITE EXECUTIVE TRAININGS



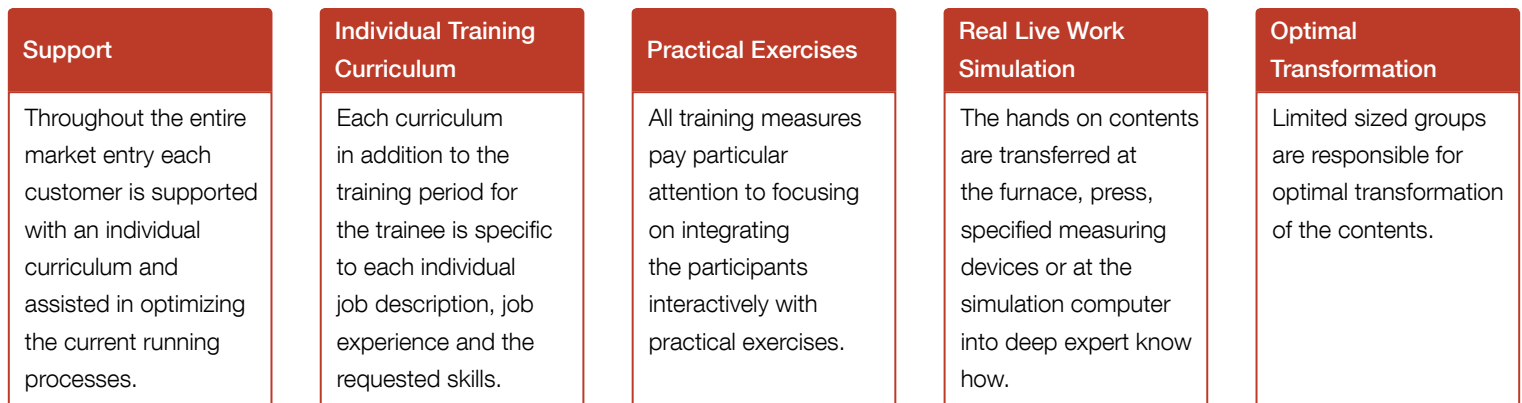
ADVANCED TRAININGS



FOUNDATION TRAINING



The GRUNDIG AKADEMIE is extending its highly successful and OEM-accepted training and qualification program for hot forming as well as PHS. Our particular attention is paid to:



ADDITIONAL TRAININGS

The additional trainings offer a wide range of suitable add on courses referring to the technology in complex metal forming, press hardening and hot stamping.

ONSITE EXECUTIVE TRAININGS

These trainings consist of concentrated and specific knowledge transfer in the form of seminar lectures and discussions, including joint field visits in the relevant fields (including the production, materials laboratory, receiving stock, finished goods, etc.).

ADVANCED TRAININGS

These trainings combine theoretical explanations of the respective core area with experimental internship in the laboratory and final analytical examination of generated press hardened parts.

FOUNDATION TRAINING

The range of this training begins with the stages of the art press hardening process, through solution-based problem solving approaches and finishes with new innovative ideas in the hot forming sector.



“We work continuously to set the standards in further education, to include the newest technology and in doing so retain the innovative ability for our partners.”

Christian Kovacs, Technical Sales Manager, GRUNDIG AKADEMIE





VENUE

The NAFTA TRAINING CENTER FOR HOT STAMPING TECHNOLOGY will take place at:

The Inn at St. John's
Conference Center
44045 Five Mile Road
Plymouth, MI 48170
USA

Phone: +1 734 414 0600
Fax: +1 734 414-0606
web: www.stjohnsgolfconference.com

GRUNDIG AKADEMIE

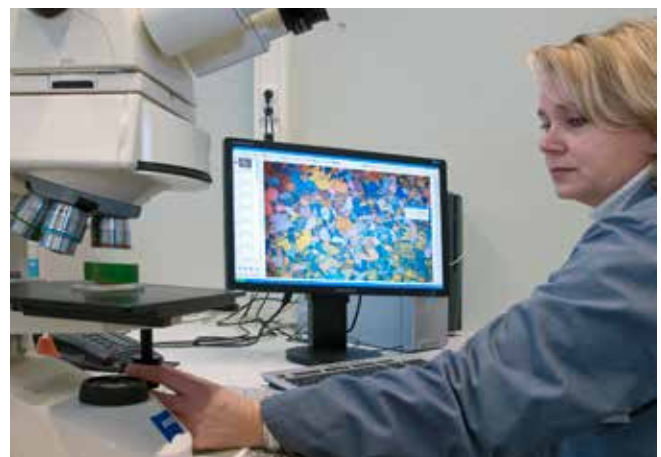
The GRUNDIG AKADEMIE is one of the most internationally renowned institutions in postgraduate training. The qualification in "Press Hardening" is internationally accredited and focused on the needs of each individual company. The specified seminars are aimed at combining practical experience, fundamentals and innovative technology on the shop floor.



Most Modern Learning Concepts and Learning Facilities

Partnership with Leading Institutes

Each Training includes Laboratory Internships



EUROPEAN TRAINING CENTER FOR HOT STAMPING TECHNOLOGY

Hanover, Germany
October 26th – 27th, 2016



EUROPEAN TRAINING CENTER FOR HOT STAMPING TECHNOLOGY

Constitutive on the successful "INTERNATIONAL SEMINAR on Hot Sheet Metal Forming of High-Performance Steel" held at the EuroBLECH 2012 and EuroBLECH 2014 in Hanover, Germany, we would like to invite you to a scientific and innovative seminar and interesting hands-on

trainings, together with international PHS-key players, presenting latest developments at the EuroBLECH 2016, Hanover, Germany, October 25th - 29th. – www.euroblech.com

We are looking forward to meeting you there.

5. CONGRESS RESSOURCES EFFICIENT PRODUCTION

Leipzig, Germany
March 8th, 2017



The continuation of the successful series of conferences will take place during the International Trade Fair for Machine Tools, manufacturing and automation technol-

ogy (intec) and the International Supplier Fair. Our focus is this time will be on the topic: The digital factory as a resource-efficient product. In this context will realize i.a. industry-related presentation of the results of the E3-lead project. In addition to the lectures on the previous day we will offer individual workshops on the three components of the E3-concept: efficient technology, energy-saving factory and human as factor of success.

We would like to open up the possibility of the meeting and the seminars to experience future production already and invite you for 8 March to Leipzig.

We are looking forward to meeting you there.



ORGANIZED BY



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