AGENDA

New Production Technologies in Aerospace Industry

December 06th and 07th 2017 at the Hannover Centre for Production Technology PZH (Garbsen, Germany)
Greetings

Dear Ladies and Gentlemen,

there is no other branch, which combines such high safety standards and requirements on cost efficiency than the aerospace industry. To meet these challenges, a continuous development of new light and high-strength materials in aerospace industry is necessary. Alongside with the sales forecasts for the upcoming years this leads to new challenges for manufacturing technology in the aerospace industry.

Manufacturing processes must be continuously improved to ensure the expected high quality while achieving constantly high output numbers by reducing production related waste. Just by constantly pushing the boundaries of today’s manufacturing processes it will be possible to meet the future demands in aerospace industry. There are two important key factors for this kind of improvement: On the one hand the cutting and machine technology and on the other hand intelligent production planning and organization known as “Industry 4.0”.

The combination of these two key factors has the potential for a significant improvement of today’s aerospace industry. To maintain and even increase this development the Institute of Production Engineering and Machine Tools of the Leibniz University Hannover (IFW) and the Machining Innovations Network e.V. (MIN) have been organizing the „Machining Innovations Conference for Aerospace Industry“ since many years. The conference provides a platform for remarkable discussions and exchanges between experts and scientists at an international level in the field of manufacturing technology.

On behalf of the Organizing Committee we cordially invite you to the “17th Machining Innovations Conference for Aerospace Industry” - MIC 2017 on 06th and 07th December 2017 in Garbsen, Germany. This year’s conference will provide deep insights into the latest developments and trends in regards the main topics machine tools and intelligent production planning. For this, international experts, scientists and managers will report on current trends, innovations and challenges within production engineering. They will also present their latest research results and visions.

The conference will also include an exhibition with renowned companies and a guided tour through the IFW-laboratory. As a special highlight, we invite you to a conference dinner at the skylight Hannover Airport in the evening of December 06th. There, you will have the chance to get in touch with other participants and exchange ideas. And by the way: The restaurant is located on the 5th floor of the terminal building, offering a spectacular view on the events of run-up and the southern runway.

We proudly present the agenda of this year’s conference. To register or for further information please visit our website: www.mic-conference.com

We are looking forward to welcome you to the MIC 2017.

Yours sincerely,

Dipl.-Ing. Gerd Weber
Chairman of the Machining Innovations Network e.V.,
Head of Varel/Bremen Site at Premium AEROTEC GmbH

Prof. Dr.-Ing. Berend Denkena
Member of the Board of the Machining Innovations Network e.V.,
Head of Institute of Production Engineering and Machine Tools,
Leibniz Universität Hannover
Program I Overview and Structure

- Conference Structure

<table>
<thead>
<tr>
<th>06th December</th>
<th>07th December</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditorium: Welcome &amp; Keynote Speeches</td>
<td>Auditorium: Welcome &amp; Keynote Speeches</td>
</tr>
<tr>
<td>Auditorium: Session 1 (Industry)</td>
<td>Auditorium: Session 3 (Industry)</td>
</tr>
<tr>
<td>Seminar room: Session 2 (Science)</td>
<td>Seminar room: Session 4 (Science)</td>
</tr>
<tr>
<td><strong>Machine Tool Technologies</strong></td>
<td><strong>Digitalization &amp; Trends Industry 4.0</strong></td>
</tr>
<tr>
<td>Lunchbreak &amp; Guided Tour in the IFW Laboratory</td>
<td>Lunchbreak</td>
</tr>
<tr>
<td><strong>Special Applications in Manufacturing</strong></td>
<td><strong>Development &amp; Process Engineering</strong></td>
</tr>
<tr>
<td>Spine: Poster Session</td>
<td></td>
</tr>
<tr>
<td>Evening Gala at the skylight Hannover Airport</td>
<td></td>
</tr>
</tbody>
</table>

- Overview of the PZH
Program | December 06th

▶ Welcoming Speech (Auditorium)
09:00 a.m.  Introduction Speech for the Machining Innovations Conference 2017
Prof. Dr.-Ing. Berend Denkena, Head of the Institute of Production Engineering and Machine Tools, Leibniz Universität Hannover and Member of the Board of the Machining Innovations Network e.V.

▶ Keynote Speeches (Auditorium)
09:15 a.m.  Digitalization of aircraft-MRO – challenges and opportunities in an asset heavy industry
Dr.-Ing. Johannes Bussmann, Chairman of the Executive Board, Lufthansa Technik

tbd
Georg Rayczyk, Director R&T / TR, Liebherr-Aerospace Lindenberg GmbH

10:25 a.m.  Coffee Break

▶ Session 1:  11:00 a.m. – 05:00 p.m.
Machine Tool Technologies & Special Applications in Manufacturing

11:00 a.m.  Current status of chinese machine tool industry, future trends and developments for aircraft industry
Dr. Xiyou Guan, Chairman, Shenyang Machine tool group Co Idt
Dr. Ömer Sahin Ganiyusufoglu, Consultant to Chairman, Shenyang Machine Tool Co., Ltd.

11:30 a.m.  Effect of process chain on additive manufactured Ti-structures for aerospace applications
Dr.-Ing. Kai Schimanski, Director technology, Premium AEROTEC GmbH

12:00 p.m.  Deep rolling of turbine components
Dr.-Ing. Karsten Röttger, Chief Executive Officer, Ecoroll

12:30 p.m.  Lunch Break and Technology Demonstrations in the IFW-Laboratory

02:30 p.m.  Intelligent production – Process reliability, with high performance and precision. 5 axis simultaneous cutting of structural parts in the aerospace industry
Jürgen Möbus, Technical Director, Handtmann A-punkt

03:00 p.m.  How new challenges boost tool developments for aerostructure parts
Sebastian Mayer, Business Development Industries/Aerospace, ISCAR Germany GmbH

03:30 p.m.  Coffee Break

04:00 p.m.  High-Speed PCMM in aerospace industry
Andreas Kirsch, Managing Director, Akcurate GmbH

04:30 p.m.  Process optimisation of aerospace structures
Markus Heuwinkel, Direktor business development aviation and aerospace, Walter AG

05:00 p.m.  End of the parallel-running sessions
Short poster presentations
Session 2: 11:00 a.m. – 05:00 p.m.
Introductory lecture

11:00 a.m.  Influence of procedure-related cutting edge micro geometry forming on the production quality when milling fibre reinforced plastics
Prof. Eckart Uhlmann, Technische Universität Berlin

Scientific presentations with topics of the Session 1

11:30 a.m.  Experimental investigations for a simulative optimization of the cutting edge design of twist drills used in the machining of Inconel 718
Milan Bücker, Technische Universität Dortmund

11:50 a.m.  Development of novel cutting tools with dimple textured surfaces for dry machining of aluminum alloys
Ph. D. Tatsuya Sugihara, Osaka University

12:10 p.m.  Structure model based correction of thermally induced motion errors of machine tools
Xavier Thiem, TU Dresden

12:30 p.m.  Lunch Break and Technology Demonstrations in the IFW-Laboratory

02:30 p.m.  Identification of temperatures in cutting zone when dry machining of Nickel Alloy Inconel 718
Prof. Andrej Czán, University of Zilina

02:50 p.m.  Identification of technological parameters when machining Ni-Alloys by monolithic Ceramic milling tool
Ph.D. Michal Šajgalík, University of Zilina

03:10 p.m.  Suitable process design for rough machining of Ti6Al4V integral components
Markus Kannwischer, TU Darmstadt

03:30 p.m.  Coffee Break

04:00 p.m.  Increasing productivity in turning of hard-to-cut materials by means of modified flank faces
Oliver Pape, Leibniz Universität Hannover

04:20 p.m.  Verifying the accuracy of 5-axis machine tools focused on kinematic ISO tests using a newly derived test workpiece
Dr. Guido Florussen, IBS Precision Engineering

04:40 p.m.  Modification of oscillation shapes in low frequency vibration assisted drilling
Oliver Pecat, Universität Bremen

05:00 p.m.  End of the parallel-running sessions
Short poster presentations
The guided tour will be implemented parallel to the lunch break in the laboratory of the Institute of Production Engineering and Machine Tools. Current research topics for tool and machine tool manufacturers as well as technology users will be presented in three tours.

Main topics:

Manufacturing technology:
- Grinding technology
- Cutting
- Tailored Surfaces

Machine tools and controls:
- Components and monitoring systems
- Machine tools and robots

Production systems:
- Production planning and control
- Process planning and simulation
Evening Gala | December 06th

Location: skylight Hannover Airport
Interact with other participants, exchange ideas and enjoy an excellent conference dinner in a very special atmosphere. In the evening of December 06th we invite you to a conference dinner at the skylight Hannover Airport. The skylight at the Hannover Airport is located on the 5th floor of the terminal building and offers a spectacular view on the events of run-up to and the southern runway.
Take also the opportunity to gather first flight experience with help of a Flight Simulator and get interesting insights behind the scenes of this fascinating place. While enjoying regional delicacies in this special atmosphere, you will have the chance to get in touch with other conference participants.

Address
skylight Hannover Airport  |  Flughafen Hannover-Langenhagen GmbH
Petzelstraße 84  |  30855 Langenhagen

Program Overview
07:30 p.m. Opening of the Evening Gala
08:00 p.m. Dinner Speech: “XtremeAir – Push The Limits”
            Mr. Stefan Hasper, Chief Executive Officer of XtremeAir GmbH
08:30 p.m. Dinner
09:30 p.m. Get together
12:00 a.m. End of the first conference day

Transfer
On December 06th a shuttle service will be provided between the conference venue (PZH), the offered hotels and the venue of the evening event (skylight Hannover Airport).
Following are the planned routes:
Centre for Production Technology (PZH)  |  Hotels
Hotels  |  Evening Event skylight Hannover Airport
Evening Event skylight Hannover Airport  |  Hotels

The exact schedule will be available in the conference documents.
Welcoming Speech (Auditorium)

08:50 a.m. Introduction Speech for the second day
Gerd Weber, Chairman of the MIN e. V. and Head of the Varel/Bremen site at Premium AEROTECH GmbH

Keynote Speeches (Auditorium)

09:15 a.m. Delivering excellence in digital manufacturing, today!
Sanjay Ravi, Head of Manufacturing business, Microsoft Corporation

09:50 a.m. Industrie 4.0 usecases with SME to foster digitalization transition
Dr.-Ing. Dominik Rohrmus, Netzwerk 4.0

10:25 a.m. Coffee Break

Session 3: 11:00 a.m. – 03:00 p.m.
Digitalization & Trends Industry 4.0 & Development & Process Engineering

11:00 a.m. Digital devices and platforms – so what?
How to increase production process efficiency step by step
Stefan Walter, Sensior VP Business Development and Product Management, MSG System AG

11:30 a.m. Innovative CAM strategies to realise significant time savings in the aerospace industry
Dr.-Ing. Josef Koch, Chief Technology Officer, Open mind

12:00 p.m. FORCE – Reduced machining time with physics-based feed rate optimization
Phillip Block, Head of marketing, CGTech Deutschland GmbH

12:30 p.m. Lunch Break

01:30 p.m. DMG MORI—the path of digitization
Björn Peters, Head of sales, ISTOS GmbH

02:00 p.m. Smart machine tool in a smart ecosystem
Sebastian Mergler, Professional digitization/4.0, Schaeffler

02:30 p.m. S&P Innovation cube – How to develop innovations of other industry sectors by using modular principles
Dr.-Ing. Arne Engelbrecht, Director, Salt and Pepper

03:00 p.m. End of MIC 2017
Session 4: 11:00 a.m. – 05:00 p.m.
Introductory lecture
11:00 a.m.  Enabling manual assembly and integration of aerospace structures for Industrie 4.0-methods
            Prof. Heiko Grendel, Hochschule Bremen

Scientific presentations with topics of the Session 3
11:30 a.m.  Study of the CAM programming process in the aerospace industry
            Ana Bonilla, University West Trollhättan

11:50 a.m.  Design of individual re-contouring processes
            Felix Rust, Leibniz Universität Hannover

12:10 p.m.  Data synchronization for model-based process monitoring
            Sven Goetz, RWTH Aachen

12:30 p.m.  Lunch Break

01:30 p.m.  tbd
            xxx

01:50 p.m.  Evaluation for mechanical characteristics of Inconel 625 – SUS316L joint produced
            with direct energy deposition
            Ryo Koike, Keio University

02:10 p.m.  Design and optimization of a machining robot
            Thomas Lepper, Leibniz Universität Hannover

02:30 p.m.  Machining of large scaled CFRP-parts with mobile CNC-based robotic system in
            aerospace industry
            Christian Möller, Fraunhofer-Institut

03:00 p.m.  End of MIC 2017
Accompanying exhibition

IBS Precision Eng. Deutschland GmbH
Stresstech GmbH
MSG Services AG
ISCAR Germany GmbH
FUCHS Schmierstoffe GmbH
SCHUNK GmbH & Co. KG
Linear- und Handhabungstechnik GmbH & Co. KG
ISBE GmbH
Hedelius Maschinenfabrik GmbH
SolidCAM GmbH
INDEX-Werke GmbH & Co. KG
Blaser Swisslube GmbH
Houghton Deutschland GmbH
CGTech Deutschland GmbH

Auditorium
Entrance
Conference Venue

Hannover Centre for Production Technology (PZH)
of the Leibniz Universität Hannover
An der Universität 2
30823 Garbsen

www.pzh-hannover.de

Host
The conference is hosted by the Machining Innovations Network e.V. in cooperation with
the Institute of Production Engineering and Machine Tools of Leibniz Universität Hannover,
Germany.

Gerd Weber
Chairman of the Board of
Machining Innovations Network e.V.
and Head of the Varel/Bremen site at
Premium AEROTEC GmbH

Prof. Dr.-Ing. Berend Denkena
Board Member of Machining Innovations
Network e.V. and Head of Institute of
Production Engineering and Machine Tools
of Leibniz Universität Hannover
For your stay in Hanover, we reserved hotel accommodations near the conference venue or the dinner location. Please address all hotels directly for bookings. The room rates are listed below. Please indicate the keyword “MIC 2017” for booking.

- **Hotel Landhaus am See****
  Seeweg 27-29
  30827 Garbsen
  Phone: +49 5131 4686-0
  info@landhausamsee.de

- **Hotel Amadeus****
  Fössestraße 83
  30451 Hannover
  Phone: +49 511 219760
  info@hotelamadeus.de

- **Hotel Globotel***
  Porschestraße 8
  30827 Garbsen
  Phone: +49 5131 492-0
  info@globotel.de

- **Hotel-Restaurant Bullerdieck****
  Bürgermeister-Wehrmann-Straße 21
  30826 Garbsen-Frielingen
  Phone: +49 5131 458-0
  info@bullerdieck.de

- **City Hotel Hannover***
  Limburgstraße 3
  30159 Hannover
  Phone: +49 511 3607-0
  info@cityhotelhannover.de
17th Machining Innovations Conference for Aerospace Industry

Prices for participation

650 EUR per person (+ VAT)  
(participation on December 06th and 07th 2017)

550 EUR for members of the Machining Innovations Network e.V. (+ VAT)  
(participation on December 06th and 07th 2017)

400 EUR per person (+ VAT)  
(participation on December 06th 2017)

400 EUR per person (+ VAT)  
(participation on December 07th 2017)

For further information about the conference and to register please visit the website www.mic-conference.com

Contact
For organisational issues and further information please contact:

Oliver Bub
Machining Innovations Network e.V.
Phone: +49 4451 91845-303
Fax: +49 4451/91845-399
info@machining-network.com

Rolf Hockauf
Institute of Production Engineering and Machine Tools
Phone: +49 511 762-4788
Fax: +49 511 762-5115
Hockauf@ifw.uni-hannover.de

The number of participants is limited. The participation fee includes conference documents, two lunches, the conference dinner, coffee and soft drinks during the breaks and shuttle service between the conference venue and the evening event. All presentations of Session 1 and 3 will be translated simultaneously into German and English.

The certificate of participation and invoice will be sent to you after receiving your registration. If you cancel your registration until November 15th 2017, we will refund the participation fee deducting an administrative charge of 50 €. Otherwise, the participation fee must be paid in full.
Prices for participation

16th Machining Innovations Conference for Aerospace Industry

Contact
For organisational issues and further information please contact:

650 EUR per person ( + VAT)
Participation on November 23rd and 24th 2016

550 EUR for members of the Machining Innovations Network e.V. ( + VAT)
Participation on November 23rd and 24th 2016

400 EUR per person ( + VAT)
Participation only on November 23rd 2016

400 EUR per person ( + VAT)
Participation only on November 24th 2016

The number of participants is limited. The participation fee includes conference documents, two lunches, the conference dinner, coffee and soft drinks during the breaks and shuttle service between the conference venue and the evening event. All presentations will be translated simultaneously into German and English.

The certificate of participation and an invoice will be sent to you after receiving your registration. If you cancel your registration until October 31st 2016, we will refund the participation fee deducting an administrative charge of 50 EUR. Otherwise, the participation fee must be paid in full.

For further information about the conference and to register please visit the website www.mic-conference.com
MIC 2017
17th Machining Innovations Conference for Aerospace Industry

www.mic-conference.com