

Preface

The ‘WGP-Jahreskongress’ is an annual conference series that is supported by over 40 German institutes, which are leading in the field of production engineering. They are organised within the German Academic Society for Production Engineering (WGP). In 2015 the 5th edition of the conference takes place at the Laboratory of Production Engineering (LaFT) after being hosted by the Department of Mechanical Engineering of the Friedrich-Alexander-University Erlangen Nürnberg for two consecutive years. The LaFT is part of the Helmut-Schmidt-University (HSU) which is one of the two universities of the Federal Armed Forces in Germany.

At the Helmut-Schmidt-University the course of studies is organized within trimesters. Due to the fact that the HSU is also open for non-officer candidates, mainly companies send scholars to profit from the tight schedule and therefore short time of education. Furthermore the university offers a low student to teacher ratio of currently 22:1. As part of the Department of Mechanical Engineering the LaFT’s research activities cover a wide range. There are three main disciplines: automation and robotics; micro machining; value creation taxonomy. The overall aim is to gain results in fundamental research and to transfer those into industrial applications to reach high technology readiness levels. This is done for several application oriented projects, especially in the field of aviation industries.

The vision of the ‘WGP-Jahreskongress’ is to organize a meeting for young researchers presenting their scientific results under their own name and to provide a floor for networking activities within the WGP. Furthermore, as a change to previous editions, the congress is open for representatives of production engineering companies. This allows for a beneficial direct communication between industry and research throughout the various sessions. Additionally a ‘dating service’ is set up to provide a fast and easy contact between parties.

For me, it is a pleasure to welcome all WGP-members at the conference in Hamburg. There will be approximately 70 presentations by young scientists organised in six topics covering forming, cutting, joining, machine tools, assembly and organisation. There will be three keynote presentations underlining the need for high level research in the field of production engineering. As an additional highlight two rewards will be presented. The ‘Otto-Kienzle-Gedenkmünze’ is awarded to a young researcher, indicating that noticeable success can be reached within a few years of scientific work. The best paper award is awarded to one of the scientists in each of the six topics to acknowledge highly relevant work.

Please enjoy the conference and the city of Hamburg, use the chance to network and gain an inside view on current research.

Prof. Dr.-Ing. Jens P. Wulfsberg

Organisation of the 2015 WGP

Editors

Prof. Dr.-Ing. Jens P. Wulfsberg	LaFT, Helmut-Schmidt-University, Hamburg, Germany
Dipl.-Ing. Benny Röhlig	LaFT, Helmut-Schmidt-University, Hamburg, Germany
M. Sc. Tobias Montag	LaFT, Helmut-Schmidt-University, Hamburg, Germany

Conference Scientific Committee

Prof. E. Abele	Prof. G. Hirt	Prof. V. Schulze
Prof. J. C. Aurich	Prof. H. Hoffmann	Prof. G. Seliger
Prof. T. Bauernhansl	Prof. B. Karpuschewski	Prof. D. Spath
Prof. A. Behrens	Prof. M. Kleiner	Prof. A. E. Tekkaya
Prof. B.-A. Behrens	Prof. F. Klocke	Prof. H. K. Tönshoff
Prof. D. Biermann	Prof. R. Kopp	Prof. E. Uhlmann
Prof. H. Bley	Prof. J. Krüger	Prof. A. Verl
Prof. C. Brecher	Prof. G. Lanza	Prof. W. Volk
Prof. E. Brinksmeier	Prof. M. Liewald	Prof. F. Vollertsen
Prof. B. Denkena	Prof. W. Maßberg	Prof. G. Warnecke
Prof. W. Eversheim	Prof. H. Meier	Prof. H.-J. Warnecke
Prof. K. Feldmann	Prof. M. Merklein	Prof. M. Weck
Prof. J. Fleischer	Prof. J. Milberg	Prof. K. Weinert
Prof. J. E. Franke	Prof. R. Neugebauer	Prof. E. Westkämper
Prof. M. Geiger	Prof. P. Nyhuis	Prof. H. Weule
Prof. G. Goch	Prof. G. Pritschow	Prof. H.-P. Wiendahl
Prof. P. Groche	Prof. G. Reinhart	Prof. J. P. Wulfsberg
Prof. K. Großmann	Prof. R. Schmitt	Prof. M. F. Zäh
Prof. U. Heisel	Prof. B. Scholz-Reiter	
Prof. J. Hesselbach	Prof. G. Schuh	

Local Organising Committee

Prof. Dr.-Ing. Jens P. Wulfsberg	LaFT, Helmut-Schmidt-University, Hamburg, Germany
Dipl.-Ing. Benny Röhlig	LaFT, Helmut-Schmidt-University, Hamburg, Germany
Captain M. Sc. Marc Fette	LaFT, Helmut-Schmidt-University, Hamburg, Germany
Dipl.-Ing. Manuel Moritz	LaFT, Helmut-Schmidt-University, Hamburg, Germany
M. Sc. Tobias Montag	LaFT, Helmut-Schmidt-University, Hamburg, Germany

Acknowledgements

The organisers of the 'WGP-Jahreskongress' 2015 wish to thank the following companies and institutions for their sponsorship and support.



Airbus GmbH



Hamburg Aviation e.V.



Life Science Nord



Helmut-Schmidt-University,
University of the Federal
Armed Forces Hamburg