Preface

The SheMet Conference takes place for the 19th time in 2021 and, for the fourth time after 1999, 2005 and 2015, it is hosted by the Institute of Manufacturing Technology of the Friedrich-Alexander-Universität Erlangen-Nürnberg. I am very honoured to chair this year's conference, which presents every two years results from research and development in the field of sheet metal processing. For 18 times we have met, listened to presentations, discussed in the sessions, during the breaks and in the evenings. This year is the first time the conference cannot be organised in its traditional setting due to the worldwide coronavirus pandemic. SheMet 2021 must be realised in the format of a digital conference. Nevertheless, I am very pleased to welcome again numerous participants and to be able to hold the conference even in these difficult times. Even though the conference is held in a new format, new knowledge can be exchanged and research in the field of sheet metal can be advanced.

The conference is an interdisciplinary and international forum for researchers from science and industry and provides the great opportunity for the diffusion of research results between the different fields and disciplines represented here, including material science, manufacturing engineering and computer science. In this way, SheMet allows scientists and industry representatives from around the world to discuss the current research status and future trends in sheet metal processes. Research thrives on the exchange of experience and ideas. This also applies in this difficult year. Thus, the conference serves as an important basis for the further development of technologies and processes in this field.

SheMet is subject to constant change and transformation in terms of topics and content. However, the processing of sheet metal remains an interesting and fascinating area of research and development with regard to many new trends in industry and society. With joining as one of the main issues of this year's conference, an essential research area is addressed, which offers high potential regarding innovative joining technologies with and without auxiliary elements. Another key topic is the wide-ranging field of sheet metal forming. Forward-looking concepts of incremental forming are presented in a specific session. Another session deals with the latest research concerning bonding and welding. Furthermore, since the processes are always related to the sheet materials and the material properties, characterisation also represents a considerable issue of the conference. These proceedings include all the contributions to the SheMet 2021 and will hopefully be able to enrich future research activities.

On this occasion, I would like to thank everybody for his or her support and assistance to realise SheMet 2021 and make an international conference possible in times like these. Furthermore, I would like to thank the authors and presenters for their contributions and effort in sheet metal research as well as for sharing their knowledge with us. I would also like to thank the authors of the keynote papers and the members of the Scientific Committee who assessed the scientific level of the papers presented. I wish all participants a pleasant conference and hope that we can meet again at the next SheMet in two years.

Prof. M. Merklein
Chairperson, Organising Committee
March 2021

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