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## Foreword

Increasing demands for products delivering enhanced functionality, sensor-integration (smart materials), improved speed, reduced costs and increased reliability, drives an ever greater requirement for increased precision and miniaturisation, today down to the nanoscale tolerances. The technology requirements for making very accurate and very small products raises a host of novel scientific and technical problems which cut across many different disciplines. This in turn drives the need for effective interdisciplinary research and collaboration to address these challenges. **euspen** links researchers and industrialists across over 30 countries in an influential and extended network of people involved in the development, application and commercialisation of these ultra-precision engineering technologies. Current key technological issues and their solutions will be comprehensively addressed at this 6<sup>th</sup> International Conference of the European Society for Precision Engineering and Nanotechnology, **euspen**.

The 8 technical sessions of the Society's 2006 international conference will cover new developments and reflect market forces in process technologies, machine tools/instruments and metrology in the ultra-precision, micro and nano engineering sectors. We have received more than 300 abstracts from 29 countries, the conference contributions have been reviewed and selected by an international board and all presented papers have been collated in these proceedings. A particular focus will be given this year to large and nano optics as well as mechatronics. With first proto tools at the final qualification phase, the benefits and challenges of 'optical' lithography at  $\lambda= 13.5\text{nm}$  will also be presented by leading authorities in the field in an invited session on EUV Lithography.

We thank our colleagues on the International Scientific Committee, the conference Session Chairmen and the local organising committee for all their help and assistance. We also thank our sponsors IBS Precision Engineering, Precitech and the Mayor of the City of Baden, Prof. August Breininger, for their support for the conference. We are very grateful to Dr van Dijsseldonk of ASML for his help in the coordination of the EUV Session. We would also like to thank Heidenhain GmbH for their provision of the student and Eastern European academic scholarships.

It gives me great pleasure, on behalf of the **euspen** council, to welcome you to the 6<sup>th</sup> International Conference at the beautiful Congress Casino Baden bei Wien. Austria provides an excellent location for the conference with its geographical position at the crossroads between north, south, east and west Europe. We look forward to meeting with you in a stimulating and interesting environment, where old acquaintances can be renewed, new ones made and where new ideas and new collaborations will be conceived.

Baden bei Wien, Austria May 2006

Prof. Ekkard Brinksmeier  
**euspen** President

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