CSI Bremen 2012 Preface

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Over the last three decades numerous investigations have been conducted focussing on the effects of surface and sub-surface alterations resulting from manufacturing processes. This includes significant work done in the Scientific Technical Committee "Surfaces" (STC-S) of the International Academy for Production Engineering (CIRP) covering five major keynote papers (1980, 1982, 1984, 1998, 2004). Although a comprehensive standard on Surface Integrity from the American National Standard (ANSI/B211.1-1986) was published by the SME, this dates back over twenty years ago. However, since the publication of this notable document, significant work on surface integrity has been undertaken by various research and application communities, generating new results and findings.

The importance of surface integrity on the quality and performance of machined components has been increasingly recognized by industry and, therefore, acquiring new knowledge and gaining an understanding of its effects is of great interest to both the academic community as well as industry. With the increasing application needs in industry, requesting a better understanding of the functional performance of components and its dependence on surface integrity generated from the various manufacturing processes, the need for focused research activities and collaboration in these areas is highly relevant and timely.

The need for establishing a CIRP Collaborating Working Group (CWG) for initiating international collaborative research on surface integrity and the functional performance of components was expressed by a large number of researchers across the CIRP community for quite some time. It was first discussed at the STC-C meeting in Paris in January 2007, based on the overwhelming positive response received from active researchers across several STCs, and then initiated in 2008. The very active and successful work of the CWG, chaired by I.S. Jawahir, resulted in a highly regarded CIRP keynote paper in 2011. This benchmark study reports on the performance of predictive models and a round robin test aiming at the comparison of surface integrity resulting from different machining processes.

The CWG was the basis for an increased awareness of the influence of surface integrity on the functional performance of components. To proceed with the remarkable discussions on this topic beyond the CWG, and to ensure continuation of the scientific exchange, the CIRP Liaison Committee approved the proposal to initiate a CIRP Conference on Surface Integrity. The Chairmen of the 1st CIRP Conference on Surface Integrity would therefore like to thank the CIRP Board and the Liaison Committee for their confidence in this important step within the research field of surface integrity.
We are very pleased to host the 1st CIRP Conference on Surface Integrity (CSI) in Bremen from January 30th to February 1st 2012. This conference will serve as a platform for researches from both academia and industry to discuss recent findings, developments, and future needs in the area of surface integrity. It will be the first CIRP conference on this emerging topic and hopefully the beginning of a prosperous series of CSI conferences.

We would like to express our gratitude to the members of the International Program Committee for their strong support. We received fantastic response to the call for papers, confirming the relevance of this topic. Because the quality of papers presented at a conference can only be assured by a thorough review process, we are deeply indebted to the reviewers for their time and effort spent on commenting on and reviewing the submitted papers.

Our thanks also goes to Prof. B. Karpuschewski, Prof. B. Lauwers and Prof. D.A. Lucca for preparing highly appreciated keynote papers on emerging topics within the area of surface integrity. Thanks also to the delegates for their contributions and for their kind cooperation during the review phase.

Last but not least, you always need somebody to bring ideas to life. Without the enthusiastic support and tireless effort of the Local Organizing Committee, headed by Mr. Daniel Meyer, a member of staff at the Foundation Institute of Materials Science and CIRP research affiliate, this conference would not have been possible.

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