Special Issue: Grinding Technology—Commemorating the Scientific Contributions by Professor Stephen Malkin

This special issue of the ASME Journal of Manufacturing Science and Engineering commemorates the scientific contributions by the late Professor Stephen Malkin, and his legacy that spans the whole spectrum of grinding science and technology. Professor Malkin’s contributions and reminiscences from his many friends were dedicated by Professor Yoram Koren and colleagues at the ASME International Manufacturing Science and Engineering Conference held in 2014, less than a year after Professor Malkin’s untimely death. Professor Koren has kindly edited and updated the memoriam dedicated to Professor Malkin, and it is included in this special issue alongside the many research papers submitted by so many of his colleagues.

Professor Malkin’s many contributions expanded our understanding of grinding science in many areas such as the composition of grinding wheels and their properties, grinding geometry and kinematics, dressing and surface topography, grinding mechanisms, thermal modeling, fluid flow, surface roughness, grinding wheel tribology, deflections, vibrations and grinding cycle optimization, and adaptive control of the grinding process.

In response to our call for papers, we received many manuscripts on various aspects of grinding technology such as thermal modeling and measurement, mechanisms of grinding including microscopic interactions, structure of grinding wheels, diamond dressing of grinding wheels, forces and energy in grinding, adaptive control and grinding applications in industry, modeling and topography of ground surfaces, lubrication and cooling in grinding processes including minimum quantity lubrication, and emerging grinding processes such as diamond wire sawing. We thank the reviewers for their time and effort in ensuring that the papers selected for publication were of the highest standard possible.

We also thank Professor Lawrence Yao, Editor-in-Chief of JMSE, for supporting the idea of creating this special issue on grinding technology, and Emily Bosco, Assistant to the Editor, for helping through the reviewing and production processes. It is our hope that readers of this issue will find aspects of grinding technology stimulating enough to invest their time and effort to continue the legacy left behind by Professor Stephen Malkin.

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