
Editorial

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Biographical notes: Zhengyi Jiang is currently an Associate Professor in the School of Mechanical, Materials and Mechatronic Engineering. He received his PhD in Materials Processing Engineering from the State Key Laboratory of Rolling and Automation, Northeastern University in 1996, and was appointed as a Vice Director of the State Key Laboratory in 1996 and as a Professor of Materials Processing Engineering in 1998 at Northeastern University. He received two Australian Research Fellowship Awards from the Australian Research Council, in 2002 and 2008. His main research interests are computational mechanics, contact mechanics, and tribology of materials processing engineering, particularly in metal rolling.

Sihai Jiao received his PhD in Material Processing Engineering from Northeastern University, China in 1998. As the Principal Researcher of Baosteel Research Institute, he works in the field of rolling and heat treatment technologies, especially, the application of thermo-mechanical processing.

Metal manufacturing, such as metal rolling, micro-forming and machining, is an essential processing in the production of a variety of products. All the processes involve surface contact mechanics, which is relevant to the tribology. Compared to many relatively old and well established basic engineering subjects, e.g., thermodynamics, mechanics and plasticity, tribology is still in an imperfect state and subject to some controversy which has impeded the diffusion of information to technologists in general. In particular, the development of tribology in metal manufacturing is still ongoing, and new knowledge, fundamental principles, and experimental and simulation skills are continuously being generated in this field.

The purpose of this special issue on ‘Advances in Tribology in Metal Manufacturing’ of the *International Journal of Surface Science and Engineering (IJSurfSE)* is to collect research experiences and innovations in the field of tribology in metal manufacturing,

and to provide a forum for developing new methodology and modelling skills for identifying the advances in tribology in metal manufacturing processes.

After the peer-review processes, eight papers were finally selected for inclusion in the special issue, all of which are original contributions. The first two papers in this special issue provide the tool surface features and their effects during metal micro-tube manufacturing and cold metal rolling. The third paper is focused on friction in the rough rolling mill. The following four contributions are research papers on surface roughness of the titanium alloy Ti6Al4V in conventional lathe and mill machining, hot rolled low carbon steel in Compact Strip Production (CSP), oxide scale and its behaviour during hot rolling of stainless steel, and Fe-Ni36 invar alloy. The final paper deals with the slab edging process using the Reproducing Kernel Particle Method (RKPM), and the friction effects have been investigated in a mesh-free finite element simulation. The papers cover a broad area ranging from numerical simulation to experiments and applications, and the tribological investigations cover rolling, machining and micro-manufacturing. We hope this special issue can stimulate more research interest in this area, leading to investigations into new tribological knowledge and the fundamentals of special metal manufacturing, and nano/micro-manufacturing.

As guest editors, we take this opportunity to thank all the authors for the time and effort spent in preparing their papers and revising their manuscripts according to the referees' comments. We thank all the referees who reviewed the papers and made valuable comments, which are essential for the achievement of a high quality special issue. Finally, we would like to thank Editors-in-Chief, Professor L.C. Zhang and Professor J.P. Davim, for giving us this opportunity to publish this special issue.