
Editorial

J. Paulo Davim

Department of Mechanical Engineering,
University of Aveiro,
Campus Santiago, 3810-193 Aveiro, Portugal
E-mail: pdavim@ua.pt

Biographical notes: J. Paulo Davim received his PhD in Mechanical Engineering from University of Porto in 1997 and the Aggregation from University of Coimbra in 2005. Currently, he is an Aggregate Professor in Department of Mechanical Engineering of the University of Aveiro and the Head of MACTRIB – Machining and Tribology Research Group. He has more than 24 years of teaching and research experience in manufacturing, materials and mechanical engineering with special emphasis in machining and tribology. He is the Editor of five international journals, Guest Editor, editorial board member, Reviewer and Scientific Advisory for many international journals and conferences. He has also published more than 300 articles in journals and conferences (more 150 articles in ISI Web Science, h-index 15).

Titanium and its alloys are in important group of engineering materials due to their excellent combination of strength and fracture toughness as well as low density and very good corrosion resistance. These materials have received special attention recently due to their wide range of applications in aerospace, aircraft, automotive, chemical and biomedical industries. However, these expansive materials present poor machinability because of their low thermal conductivity and high chemical reactivity with cutting tool materials. Therefore, the use of non-traditional machining processes is also currently an important option.

After the review process, five articles were selected for inclusion in this special issue. The first two articles provides information on a study of phase transformation and work hardening phenomenon during drilling of Ti-5553 and Ti-64 as well as on drilling of composite and titanium stacks with alternating machining parameters by PCD drill. The following two articles deal with analysis of surface characteristics of titanium during ECM and investigation into micro-hole geometrical accuracy during micro-EDM of Ti-6Al-4V employing different dielectrics. Finally, the last review article of this issue is focused on ultrasonic machining of titanium and its alloys. The Editor hopes that this special issue will stimulate more research on this topic.

The Editor would like to thank all the authors and all the referees for their time and their thorough evaluations of these articles.