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Abstract

An Unconventional View of Vibro-Impact Process in Machining

Vibration seems to be at the root of the essence of life on earth and all communicational relationships in the universe. The Schumann resonance (hearth's Ohm) has been reported to cadencing the rhythm of our lives. Rife frequencies are used for healing purpose. Engineering makes use of vibration in various forms. However, machining has limited applications of vibration, due the difficulties in embedding vibration into the structural design of machine tools. These difficulties are somehow due to a missing link in the theoretical understanding vibratory process, as the notion of Vibro-Impact is overlooked. Recent introduction of very hard-to-machine aerospace materials e.g. titanium aluminides, C/SiC matrix composites, aggravate the challenges in machining. Therefore, this talk will cover an unconventional view of the importance of Vibro-Impact Processes (VIP). A review of vibratory processes will be given along with associated problems, followed by the fundamental principles as to why vibratory processes will be the preferred solution in future machining, and the implementation of VIP in machine tools.

Professional Career

Dr. Andre is a long serving reviewer for Elsevier over 15 years. He was awarded a certificate for his outstanding contribution to the quality of the Machine Tools and Manufacture journal. He was Editorial Board member for the Heliyon journal and currently member of the editorial advisory board. He is a reviewer for a number of journals, including, International Journal of Machine Tool and manufacture, International Journal of Advanced Manufacturing Technology, Proceedings of the IMechE, Part B & C, Journal of Sound and vibration, Composites, part B, Journal of Manufacturing ASME, to name only few. He has authored two books and three book chapters and over 100 papers. He was one of the organisers and editor of the former Liverpool John Moores General Engineering Annual Research Symposium. (www.ljmu.ac.uk). Currently organising the GCMM2020 conference, guest editor for the GCMM2020 proceeding and guest editor of Special issue on "Modelling of Manufacturing Processes: For Game-Changing New Technologies in [journal of Manufacturing and Materials Processing](#) (ISSN 2504-4494).