

Magnetic Field Assisted Machining

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Abstract

In line with studies towards sustainable machining, dry machining technique is often preferred. Yet, shortened tool life is a common consequence with this technique, possibly offsetting the environmental benefit with higher cost. In an effort to prolong tool life, magnetic field assisted machining can be applied, in particular when tool vibration or chatter is the cause for the rapid tool wear. This paper summarizes magnetic field assisted machining processes, including drilling, milling, and turning. The effect of magnetic field use in combination with other machining conditions to various machining responses is presented.

Keywords

Machining; magnetic field; cutting conditions

Biography

Farhad Najarian is a PHD candidate on Mechanical Engineering in University Technology Malaysia (UTM). He earned B.S. and Master in Mechanical Engineering (Manufacturing) from Islamic Azad University of Iran. He has published journal and conference papers. He was part time lecturer in many branches of Islamic Azad University in Iran for several years. He has some experience about training the technicians for modeling the parts by CATIA. He has done some academic projects. His research interests include manufacturing, machining, NDT, Taguchi design of experiment, deep hole drilling, modeling software.