ENERGY-BASED PROCESS SIGNATURE – AN INVERSE APPROACH TO PREDICTING SURFACE INTEGRITY

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ABSTRACT

The prediction of surface integrity has attracted much interest in academia and industry over the past several decades. Although some progress has been made for unit manufacturing processes, it is still far away to predict surface integrity from work materials and machining process parameters. In this research, energy is used to correlate processes with surface integrity. Energy can also be used to show similarities between processes. However, despite the fact that all machining processes have similarities, there is no general approach for describing them in a unified way. An energy-based process signature may provide a method to predict suitable machining processes to achieve specific surface integrity.

Keywords: process signature, energy, surface integrity, machining conditions

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