

## Acoustic diagnostics in the process of electrical discharge machining

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*The paper presents theoretical and experimental investigation results concerning acoustic waves generated during electrical discharge machining; we determine and study their sources. We establish that all sources are a function of the discharge current (pulse energy), electric current pulse duration and physical properties of the material being machined. We show that the amplitude of acoustic signals generated during electrical discharge machining is proportional to the working pulse frequency and energy, as well as linked to the output parameters of the machining process. Electrical discharge machining performance may be considered an informative parameter suitable for real-time process diagnostics in order to improve process quality and control efficiency.*

**Keywords:** *electrical discharge machining, acoustic waves, electrical discharge pulse parameters, acoustic signal amplitude, electrical discharge process diagnostics, electrical discharge process control*

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