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Materials Science Forum
Volume 911 MSF, 2018, Pages 20-27
8th International Conference on Manufacturing Science and Technology, ICMST 2017; Hong Kong; Hong Kong; 23 June 2017 through 25 June 2017; Code 210469

Micro electro discharge machining of non-conductive ceramic (Conference Paper)

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Abstract

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Electro discharge machining (EDM) as a die sinking process has taken off in 1943. Since then it was known as a non-conventional machining process and its application was limited for processing only electrically conductive materials. Later on, due to the widespread applications, this EDM process is considered conventional as usual. However, in the recent years EDM has gone through considerable changes especially with dielectric fluids, simple to complex geometry, meso to micro sized structures, nanometric surface finish, and so on. In addition, the application of EDM has also been extended for processing electrically semi-conductive and non-conductive materials like ceramics and composites. This paper discussed micro electro discharge machining of non-conductive ceramic materials. It includes detail process development, modelling of material removal rate and surface finish which include the effect of multi spark and random spalling conditions. © 2018 Trans Tech Publications, Switzerland.

Author keywords

Assisted electrode | Micro-EDM | Modelling | Mrr | Non-conductive ceramics | Spalling | Surface finish | Zirconia (ZrO^2)

Indexed keywords

Engineering controlled terms: Ceramic materials | Finishing | Machining | Manufacture | Models | Spalling | Zirconia

Compendex keywords: Conductive ceramics | Electrically conductive | Electro discharge machining | Micro EDM | Micro electro-discharge machining | Non-conductive materials | Nonconventional machining | Surface finishes

Engineering main heading: Conductive materials

Funding details

Funding number	Funding sponsor	Acronym	Funding opportunities
FRGS 14-156-0397	Ministry of Higher Education, Malaysia	MOHE	

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Funding text
The authors would like to thank the Ministry of Higher Education (MOHE), Malaysia for financial support under the Project FRGS 14-156-0397.

ISSN: 02555476
ISBN: 978-303571203-2
CODEN: MSFOE
Source Type: Book series
Original language: English
DOI: 10.4028/www.scientific.net/MSF.911.20
Document Type: Conference Paper
Volume Editors: Debnath S.
Sponsors:
Publisher: Trans Tech Publications Ltd

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