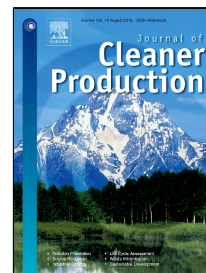


# Accepted Manuscript

Environment-Friendly Technological Advancements to Enhance the Sustainability in Surface Grinding- A Review



Manu Dogra, Vishal S. Sharma, Jasminder Singh Dureja, Simranpreet Singh Gill

PII: S0959-6526(18)31639-1  
DOI: 10.1016/j.jclepro.2018.05.280  
Reference: JCLP 13137  
To appear in: *Journal of Cleaner Production*  
Received Date: 05 October 2017  
Accepted Date: 31 May 2018

Please cite this article as: Manu Dogra, Vishal S. Sharma, Jasminder Singh Dureja, Simranpreet Singh Gill, Environment-Friendly Technological Advancements to Enhance the Sustainability in Surface Grinding- A Review, *Journal of Cleaner Production* (2018), doi: 10.1016/j.jclepro.2018.05.280

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## Environment-Friendly Technological Advancements to Enhance the Sustainability in Surface Grinding- A Review

Manu Dogra <sup>a\*</sup>, Vishal S Sharma<sup>b</sup>, Jasminder Singh Dureja<sup>c</sup>, Simranpreet Singh Gill<sup>d</sup>

<sup>a</sup> Department of Mechanical Engineering, Panjab University SSG Regional Centre, Hoshiarpur, India

<sup>b</sup> Department of Industrial & Production Engineering, Dr. B R Ambedkar NIT Jalandhar, India

<sup>c</sup> Department of Mechanical Engineering, Panjabi University Patiala, India

<sup>d</sup> Department of Mechanical Engineering, Beant College of Engineering & Technology, Gurdaspur, India

\*Corresponding Author, Email:mdogra7@gmail.com

### Abstract

Surface grinding is a widely used machining process for finishing of materials. Industry is looking for materials and techniques which are more productive as well as environment friendly. Researchers have worked upon various aspects to improve the overall performance of surface grinding in context of environmental and economic issues. But no comprehensive review on surface grinding, which covers all technological issues related to the process, including modelling and simulation, has been reported yet. This review is on research and technological advancements in surface grinding. It discusses critical findings pertaining to these advancements and gives recommendations related to surface grinding.

**Keywords:** MQL, UVAG, EGT, CBN, Solid Lubricants

Abbreviations	
CBN	Cubic Boron Nitride
ELID	Electrolytic in-process dressing
MQL	Minimum Quantity Lubrication
NMQL	Nanoparticles based Minimum Quantity Lubrication
MWF	Metal Working Fluids
SQL	Small Quantity Lubrication
SQCL	Small Quantity Cooling Lubrication
NDM	Near Dry Machining
FEM	Finite Element Method
FDM	Finite Difference Method
UAG	Ultrasonic Assisted Grinding
UVAG	Ultrasonic Vibration Assisted Grinding
UADG	Ultrasonic Assisted Dry Grinding
UAWG	Ultrasonic Assisted Wet Grinding
UACFG	Ultrasonic Assisted Creep Feed Grinding
EUAG	Elliptical Ultrasonic Assisted Grinding
EGT	Engineered Grinding Tools
PCBN	Polycrystalline Cubic Boron Nitride
MCBN	Monocrystalline Cubic Boron Nitride
PCBN-U	Ultrafine Polycrystalline Cubic Boron Nitride
NL	Nanolubricants
NF	Nanofluids
CNT	Carbon Nanotubes
IPA	Isopropyl Alcohol
HPGW	Heat Pipe Grinding Wheel

Download English Version:

<https://daneshyari.com/en/article/8093773>

Download Persian Version:

<https://daneshyari.com/article/8093773>

[Daneshyari.com](https://daneshyari.com)