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REGULAR PAPER

**Evaluation of Energy Efficiency and Material Removal Rate in Hybrid Manufacturing Processes (Title in English Here, Franklin Gothic Demi Cond 17pt, Bold)**

# John Green1 · Kil-Tong Park2 · Wei Chang3 (Name in English, Franklin Gothic Demi Cond 12pt)

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Abstract

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Keywords Deep reinforcement learning · Energy management strategy · Fuel cell hybrid bus · Smart manufacturing (4 to 6 keywords) (Times New Roman 10pt)

# List of Symbols

vw Workpiece Velocity

a Depth of Cut

Ft Tangential Forces per unit Width Fn Normal Forces per unit Width

R Distance between the Pin and Journal Rw Radius of Pin

Rs Radius of Grinding Wheel

P Grinding Point

 John Green (Times New Roman 8pt) [ijpem.st@kspe.or.kr](mailto:ijpem.st@kspe.or.kr)

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# Introduction (Franklin Gothic Demi Cond 12pt, Bold)

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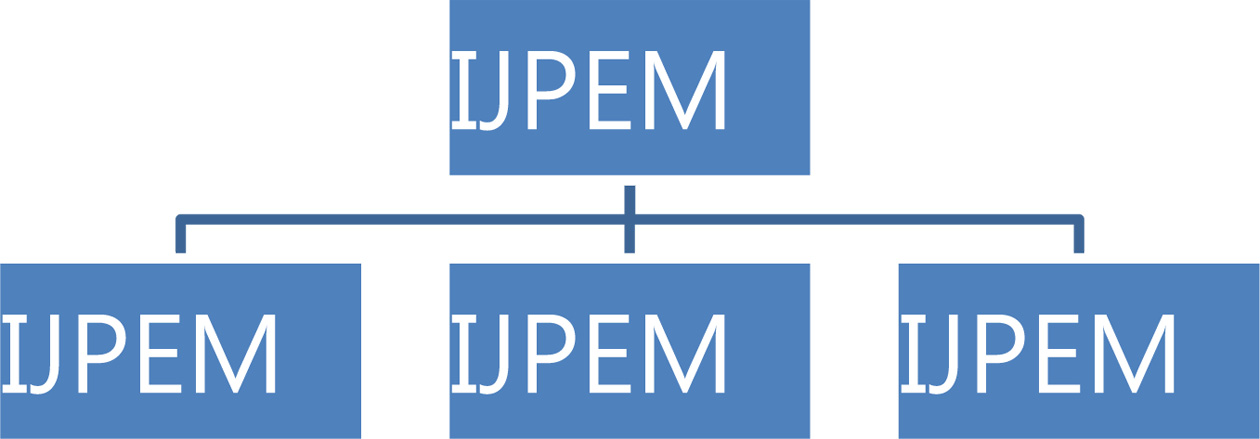
# Extension of Two-Dimensional Model to the Turning Process (Franklin Gothic Demi Cond 12pt, Bold)

## Simulation (Franklin Gothic Demi Cond 11pt, Bold)

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1. / October 2022 International Journal of Precision Engineering and Manufacturing 1(1):2-3 (Myriad Pro 7 pt)

Table 1 Comparison of measured roughness data

|  |  |
| --- | --- |
| Contents of Table |  |
| aaa | 0.97 (cc/rev) |
| bbb | 1 (mm) |
| ccc | 100 (bar) |
| ddd | 1.5 × 109 (Pa) |

Fig. 1 Block diagram of multi-modal chatter model of a high speed machining center (Times New Roman 9pt)

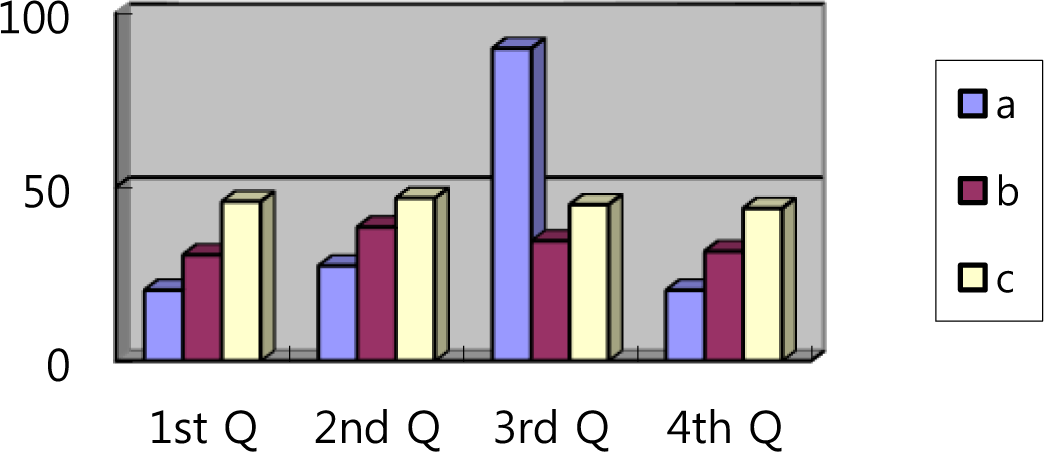


Fig. 2 Diagram of multi-modal chatter model:

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*R*

*cd* ≈ ----*m*---*W*---*s (Times New Roman 10pt, Italic)* (1)

*R eP*

written in English using Times New Roman 10pt. Contents of the journal should be written in English using Times New Roman 10pt. Contents of the journal should be written in English using Times New Roman 10pt [1].

# Conclusions (Franklin Gothic Demi Cond 12pt, Bold)

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*eW*

where *RmW* is the mean cone distance of the wheel, and *RmW* is the outer cone distance of the wheel.

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*ab* = *cd* cos*βmW*

*WW* = *ab* – *hfmW*(tanα*cWX* + tanα*cWV*)

## Simulation (Franklin Gothic Demi Cond 11pt, Bold)

(2)

(3)

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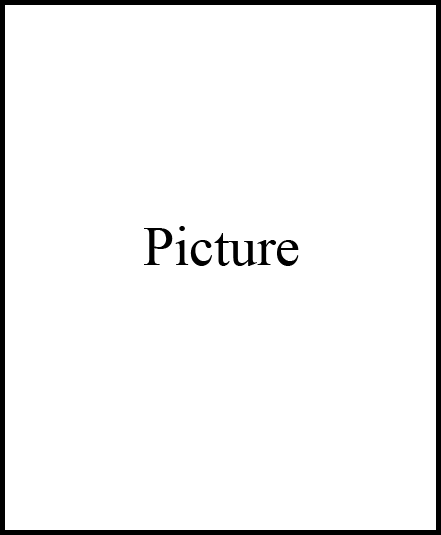
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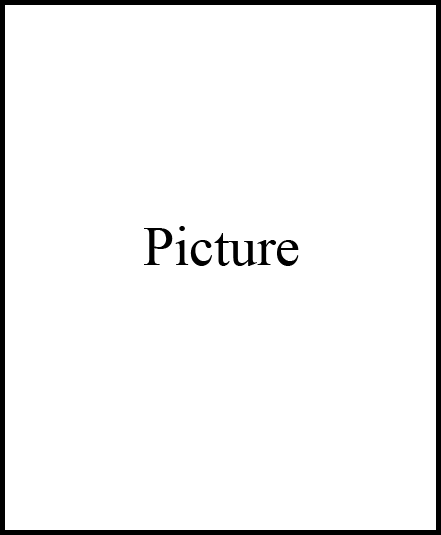
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