



CURRICULUM VITAE

NAME : SOUNAK KUMAR CHOUDHURY (Male)

DATE OF BIRTH : April 30, 1956.

MARITAL STATUS : Married, with one son.

ADDRESS : Mechanical Engineering Department
P.O. - I.I.T. Kanpur, INDIA – 208016
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DESIGNATION : Professor (HAG), Indian Institute of Technology Kanpur

NEED AREA OF SPECIALIZATION : Manufacturing Science and Automation

EDUCATION:

- 1) Post doctor fellowship (Mfg.Sc.) 1986,
from Lumumba University, Moscow, Russia.
- 2) Ph.D. (Manufacturing Science) 1984,
from Lumumba University, Moscow, Russia.
- 3) M.Sc.(Mech.Engg.), with honours (Equivalent to B.Tech. and M.Tech., Six years Integrated course, 1979, from Lumumba University, Moscow, Russia.

(Ph.D. Thesis Title: Adaptive Control System of the indices of dynamic performances of a lathe.)

Ph.D. Thesis Guide : Prof. V.A. Kudinov
Ex Dy. Director, Machine Tool Research Institute, ENIMS,
Moscow, Russia.

TEACHING EXPERIENCE :

- i) Visiting Faculty – 16 October 1986 – Nov, 1987 (1 year)
- ii) Assistant Prof. - Nov, 1987 – 17 May, 1994 (6.5 years)
- iii) Associate Prof. – 18 May, 1994 – 1 December, 1999 (5 years 7 months)
- iv) Professor – 2 December, 1999 – Till date (16 years)
- v) Visiting Professor in Asian Institute of Technology, Bangkok from September to December 2013.
- vi) Visiting Professor in the Department of Mechanical Engineering, Indian Institute of Science (IISc) Bangalore, February – July, 2018.

COURSES TAUGHT :

Undergraduate:

- i) Automatic Control
- ii) Design of Machine Tools
- iii) Mechanical Design I & II
- iv) Manufacturing Processes
- v) Production Technology
- *vi) Manufacturing Automation

* - Course developed by me at IIT/Kanpur.

Postgraduate

- i) Analysis and Design of Machine Tools
- ii) Manufacturing Science
- iii) Manufacturing Automation

RESEARCH EXPERIENCE : 1986 till date - Research while teaching
1984 to 1986 - Research in Post doctorate.
1979 to 1984 - Research leading to Ph.D. degree

THESES SUPERVISION : Completed - i) 70 M.Tech.Theses
ii) 6 Ph.D. Theses
In progress – 1 M.Tech. and 4 Ph.D. Theses

TITLES OF THESES SUPERVISED:

M.Tech. : (70)

1. Development of Vegetable Oil-Based Metal Cutting Fluid and MQL Application On CNC Milling Machine – Roushan Kumar, 13 July 2020
2. Experimental Study of Machining of EN20 Steel And BT3-1 Titanium Alloy By Internally Cooled Insert – Ankush Kumar, 1 July 2020
3. Experimental Study of Solid Lubricants on Turning Operation For Various Geometrically Shaped Micro Textured Tools - Vishal Kawadu Shrirame, 1 July 2020
4. Experimental Study of CFRP Drilling for Optimizing the Cutting Parameters to Reduce the Delamination Factor – Veerendra Prajapati, 6 August, 2018
5. A Study on the Machining of Titanium Alloy Bt3-1 Russian Grade Under Various Environmental Conditions – Shyam Kishor, 1 Jun 2018
6. Prediction of Process Parameters and kerf profile in Abrasive Water Jet Machining for maximum depth (Alok Ranjan Patel, Sept. 2017)
7. Study of Machining Parameters on DMR-249A (Military Grade Steel) using Abrasive Water Jet Machining (Lt.Cdr. N. Vijay Ganesh, June, 2017)
8. On the control of Machine Tool Vibration using Magneto-rheological Damper (Rahul Kishore, May 2017)
9. Experimental investigation and optimization of cutting parameters to minimise delamination factor during GFRP drilling using Taguchi L25 Orthogonal Array (Yash Mahanot, 15th June 2016)
10. Investigation of recast layer in near-dry electric-discharge machining on HSS steel using rotary tool electrode (Saurabh Purwar, 15th July 2015)
11. Experimental investigation into Micro Surface Texturing on Cylindrical Surface using Tool fabricated by Abrasive Waterjet Milling (Mrigank Singh, May 2015)
12. Experimental investigation into Micro Texturing with Tool fabricated using Waterjet Machining Process (Rajat jain, June 2014)

13. Experimental investigation of cutting forces, surface roughness and chip-tool interface temperature in hard turning (Awadhesh Pal, July, 2013)
14. Parametric optimization and surface characterization of powder mixed dielectric EDM (Ankur Sharma, July, 2013)
15. Hard turning under dry and minimum quantity lubrication using coated carbide tool (Karandeep Singh, June, 2013)
16. Thickness and axial force during single point incremental forming: An experimental study (Sateesh Kumar Yadav, June, 2013 with Dr. N.V. Reddy)
17. Design and development of a single axis MEMS vibratory gyroscope (Ashutosh Singh, August, 2012 with Dr. N.S. Vyas)
18. Experimental investigation into Electro Discharge Micro Drilling (ECMD) using insulated tool and masked workpiece (Shweta Singh, Dec 2011 with Dr. V.K. Jain)
19. Electro discharge diamond grinding: Effects of minimum quantity lubrication (MQL) and mathematical modelling (Gaurav Sharma, July 2011)
20. Effect of PEG-400 mixed dielectric on wire electro discharge machining (Vijendra Pardhi, June 2011)
21. Bilayer Staggered Herringbone Micromixers (Rahul Choudhary, September 2009 with Dr. S. Bhattacharya)
22. Investigation into dry and near-dry EDM of Stainless Steel (Lakshmi Pathi Jakkamputi, June 2009)
23. Improvement of Ti6Al4V grinding performance using solid lubricants (K. Saikumar, June 2008)
24. Investigation on Hard Turning of AISI 4340 Alloy Steel using Water Vapour as a Coolant (T. Mahesh Reddy May 2008)
25. Experimental Investigation of the Dry Electric Discharge Machining (Dry EDM) Process (Sourabh Kumar Saha, May 2008)
26. Modeling of Unsegmented Cloud point Data for Rapid Prototyping (Sanjay K. Shukla, June 2007 with Dr. N.V. Reddy)
27. Experimental Investigation into hot machining of EN-24 with cryogenic cooling of tool (C. Gangadhar Reddy, June 2007)
28. Experimental Investigation into Hot Machining of EN-24 (Suresh Kumar Thandra, June 2006)
29. Wire EDM of HSS using Brass and Coated Wire (Rajnish Kumar, June 2006)
30. Prediction of wear and surface roughness in electro-discharge diamond grinding: A design of experiment and artificial neural network approach (Sanjeev Kumar, May 2005)
31. Investigation of tool wear and cutting force in cryogenic machining (K.V.B.S. Kumar, May 2005)
32. Experimental study and modelling of surface characteristics in pseudo dry green machining (Ravi Sankar, Aug 2004)
33. Investigation and on-line monitoring of grinding process to improve the surface finish (Deepak Sharma, July 2004)
34. Tool wear prediction based on cutting power and cutting force using design of experiment (Ravi Kumar, October 2003)
35. On-line monitoring and control of surface roughness in turning operation (Avisekh Banerjee, April 2003)
36. Optimization of machining parameters in multi-pass turning (Brijesh K. Tiwari, Sept 2002)
37. Role of temperature and surface finish in predicting tool wear using neural network and design of experiments (Gaurav Bartarya, March 2002)
38. Thermo-EMF analysis of Flank Wear in Turning (Vivek M Muttur, February 2001)

39. Investigation in Orthogonal Turn Milling towards better surface finish (J.B. Bajpai, July 2000)
40. Roll crown prediction for plain strain rolling (Nilanjan Sasmal, Feb 2000 with Dr. N.V. Reddy)
41. Tool Wear Monitoring in Turning (P. Srinivas, June 1999)
42. Force Monitoring in Drilling considering in-process Vibration (K. Janardhana Reddy, June 1999)
43. Tool Wear Measurement in Turning through Cutting Force (Amit Kumthekar, July 1999)
44. Investigation of Orthogonal Turn-Milling for the machining of Rotationally Symmetrical Work pieces (K.S. Mangrulkar, Jan. 1999)
45. In-process Tool Wear estimation in Milling using Cutting Force Model (Subhashree Rath, Jan. 1999)
46. Effect of Cutting Parameters on the Crater Wear in Drilling (P.V.G. Ganga Raju, Dec. 1998)
47. On-line Tool Wear Monitoring in Turning using Force Ratio (Kota Krishna Kishore, Dec. 1998)
48. Electro Chemical Spark Machining using Abrasive Cutting Tools (K. Masa Ramesh, Dec. 1998 with Dr. V.K. Jain)
49. On-line Monitoring of Tool Wear and Control of Dimensional Inaccuracy in Turning (N. Shiva Rama Krishna, Aug, 1998 with Dr. V.K. Jain)
50. On the Abrasive Flow Machining (AFM) Process Performance (Sunil Jha, April, 1998 with Dr. V.K. Jain)
51. Suppression of Machine Tool Chatter by Passive Damping (Lt. Sanjeev Raman, March, 1998)
52. Optimisation of cutting parameters using Neural Network (Vikas Gupta, Jan. 1998)
53. A scheme of adaptive turning operation (Eswar K. Kunisetty, June, 1997 with Dr. A. Ghosh)
54. Optimisation of cutting parameters for maximising tool life (June, 1997)
55. Electrical discharge diamond grinding of high speed steel (Feb. 1997)
56. On-line monitoring of tool wear in turning using neural network (Ch. V.V. Rama Rao, Feb. 1997 with Dr. V.K. Jain)
57. Design and Implementation of a Knowledge-based System for Anti friction Bearing Selection (N.K. Gupta, Dec., 1995 with Dr. Kripashankar)
58. Computer Aided Design and Manufacturing of Plate Cams (Vijaykumar S. Kale, June, 1995 with Dr. Kripashankar)
59. Knowledge-based System of Welding Processes (Neeraj K. Bansal, June, 1995 with Dr. Kripashankar)
60. Travelling-wire Electro-Chemical Spark Machining of Kevlar-Epoxy Composites (Vivek Nesarikar, July, 1994 with Dr. V.K. Jain)
61. Design and development of a novel Electro-hydro-mechanical stepping motor (Bibhash Ghosh, June, 1994)
62. An expert system for welding processes - the Welder (Neelesh Katiyar, June, 1994 with Dr. Kripashankar)
63. On the feasibility of application of fibre optics in profile measurements (Lt. Pravin Dixit, Feb., 1992 with Dr. V.K. Jain)
64. Suppression of machine tool chatter by passive damping (Kallol Bandyopadhyay, April, 1991)
65. Active stabilisation technique of dynamic machining system during boring (March, 1991)

66. Investigations of the effects of non-uniform insert pitch on vibration during face milling (Jose Mathew, March, 1990)
67. On-line tool wear sensing and compensation during turning operations (Anuj Sanjanwala, Jan., 1989 with Dr. V.K. Jain)
68. Application of travelling wire - ECSM process for machining of composites (P. Sreenivasa Rao, Sept., 1988 with Dr. V.K. Jain)
69. On-line tool wear sensing and compensation in turning operation (Sep., 1988)
70. On-line control of machine tool vibration during turning operation (Sept., 1988)

Ph.D. (6)

1. Experimental and analytical investigations of flat-end milling operation with lubricated textured and non-textured inserts and FE modeling of the process (Muhammed Muaz, Feb 2021)
2. Process Enhancement, Mathematical Modelling and Environmental Aspects of The Electric Discharge Machining Process (Anand Prakash Dwivedi, Aug 2020)
3. On-line control of machining performance in turning process using adaptive control system (Kashfull Orra, July 2019)
4. Fabrication, Tribological Analysis and mathematical Modelling of Complex Blind Features machined by Abrasive Water Jet Machining (Vijay Kumar Pal, June 2017)
5. Experimental investigation and mathematical modeling of tool wear and machining performance of coated carbide tools in turning hardened AISI 4340 steel (Satish Chinchankar, January, 2014)
6. Experimental and analytical investigations of Finish Hard Turning through Force Modeling and FEM Analysis of Residual Stresses for improvement of the Process Performance (Gaurav Bartarya, January, 2014)
7. Design and development of a high torque and high resolution electro-hydro-mechanical stepper motor (Ngo Sy Loc, March, 1994 with Dr. B. Sahay)

PUBLICATIONS : (Total 102)

Published/accepted in refereed journals:

1. **Kashfull Orra and Sounak K. Choudhury**, "Stability analysis in machining process by using adaptive closed loop feedback control system in turning process" Journal of Vibration and Control, 2020 (Accepted for publication)
2. **M. Muaz and S. K. Choudhury**. "Enhancing the tribological aspects of machining operation by hybrid lubrication assisted side flank face laser textured milling insert" J Brazilian Soc Mech Sci Eng, 2019; Vol. 41, pp. 1-11. doi:10.1007/s40430-019-2025-z:1-11.

3. **M. Muaz and S. K. Choudhury.** "3-D FEM Study for Slot Cutting by Utilizing Inserts having Side Flank Face Textures Combined with Cutting Edge Micro-Serrations" *IJAMT*, 2019. DOI: 10.1007/s00170-020-05085-4.
4. **Amarjit P. Kene, Sounak K. Choudhury,** "Analytical modeling of tool health monitoring system using multiple sensor data fusion approach in hard machining" *Measurement*, Vol. 145, pp. 118-129, 2019.
5. **Muhammed Muaz, Sounak Kumar Choudhury,** "Experimental investigations and multi-objective optimization of MQL-assisted milling process for finishing of AISI 4340 steel", *Measurement*, Vol. 138, pp. 557-569, 2019.
6. **Anand Prakash Dwivedi and Sounak Kumar Choudhury,** "Surface morphology analysis of AISI-D3 tool steel using rotary tool electric discharge machining process" *Int. J. Microstructure and Materials Properties*, Vol. 14, No. 4, pages 361-373, 2019.
7. **Kashfull Orra and Sounak K. Choudhury,** "Mechanistic modelling for predicting cutting forces in machining considering effect of tool nose radius on chip formation and tool wear land", *International Journal of Mechanical Sciences*, Volumes 142-143: Pages 255-268, 2018; <https://doi.org/10.1016/j.ijmecsci.2018.05.004>
8. **Kashfull Orra and Sounak K. Choudhury,** "Tribological aspects of various geometrically shaped micro-textures on cutting insert to improve tool life in hard turning process", *Journal of Manufacturing Processes*, Volume 31: Pages 502-513, 2018. <https://doi.org/10.1016/j.jmapro.2017.12.005>
9. **Amlan Kar, Sounak Choudhury, Satyam Suwas, Satish V. Kailas,** "Effect of interlayer in dissimilar friction stir welding of Aluminum to Titenium", *International Journal of Material Characterization*, Vol.145, Nov.2018, pp.402-412, DOI: <https://doi.org/10.1016/j.matchar.2018.09.007>
10. **Rahul Kishore, Sounak K. Choudhury, Kashfull Orra,** "On-line Control of Machine Tool Vibration in Turning Operation Using Electro-Magneto Rheological Damper", *Journal of Manufacturing Processes*, Vol.31, pp. 187-198, 2018
11. **Shikha Awasthi, Vijay K. Pal, S.K. Choudhury,** "Effect of Surface Modifications by Abrasive Water Jet Machining and Electrophoretic Deposition on Tribological Characterization of Ti6Al4V Alloy" *International Journal of Advanced Manufacturing Technology*, 2018, Vol. 96 (5-8), pp. 1769-1777, DOI: 10.1007/s00170-017-1164-6.
12. **Anand P. Dwivedi, Sounak K. Choudhury,** "Increasing the Performance of EDM Process Using Tool Rotation Methodology for Machining AISI D3 Steel" *Procedia CIRP*, 2016, Vol. 46, pp. 131-134.

13. **Anand P. Dwivedi, Sounak K. Choudhury**, “Improvement in the Surface Integrity of AISI D3 Tool Steel Using Rotary Tool Electric Discharge Machining Process” *Procedia Technology*, 2016, Vol. 23, pp. 280-287.
14. **Kashfull Orra, Sounak K. Choudhury**, “Development of Flank Wear model of cutting tool by using Adaptive Feedback Linear Control System on machining AISI D2 steel and AISI 4340 steel” *Mechanical Systems and Signal Processing*, 2016, Vol. 81, pp. 475-492.
15. **Anand Prakash Dwivedi, Sounak Kumar Choudhury**, “Effect of Tool Rotation on the MRR, TWR and Surface Integrity of AISI D3 Steel using Rotary EDM Process” *Materials and Manufacturing Processes*, 2016, Vol. 31(14), pp. 1844-1852
DOI: 10.1080/10426914.2016.1140198
16. **M. Singh, Vijay Pal, S.K. Choudhury**, “Methodology to predict the shape of the tool fabricated by AWJM process” *Int Journal of Procedia CIRP*, 2016, Vol. 41, pp. 898 – 901.
17. **Gaurav Bartarya, Sounak Kumar Choudhury**, “Effect of tool wear on white layer thickness and sub-surface hardness on hard turned EN-31 steel” *International Journal of Machining and Machinability of Materials*, 2016, Vol.18, No.5/6, pp. 483-500.
18. **Satish Chinchani, S.K. Choudhury**, “Comparative evaluations of nose wear progression and failure modes during hard turning under dry and near-dry cutting conditions” *International Journal of Machining and Machinability of Materials*, 2016, Vol.18, No.5/6, pp. 466-482.
19. **Vijay Pal, S.K. Choudhury**, “Fabrication and analysis of complex-shape electrode/tool for EDM by AWJM process” *Int J of advances in material processing technology*, 2015, Vol. 1(3-4), pp. 444-452.
20. **Vijay Pal, S.K. Choudhury**, “Fabrication of texturing tool to produce array of square holes for EDM by abrasive water jet machining ”, *International Journal of Advanced Manufacturing Technology*, 2015, 10.1007/s00170-015-7875-7.(Springer)
21. **Satish Chinchani, S.K. Choudhury**, "Machining of hardened steel: Experimental investigations, performance modeling and cooling techniques: A review" *International Journal of Machine Tools and Manufacture*, Vol. 89, pp. 95–109, 2015.
22. **Satish Chinchani, S.K. Choudhury**, “Predictive modeling for flank wear progression of coated carbide tool in turning hardened steel under practical machining conditions” *International Journal of Advanced Manufacturing Technology*, 2015, Vol. 76, pp. 1185-1201.
23. **Vijay Pal, S.K. Choudhury**, “Fabrication and analysis of micro-pillars by abrasive water Jet machining”. *Int J of Procedia material science*, 2014, Vol. 6, pp. 61-71.

24. **Vijay Pal, S.K. Choudhury**, “Surface characterization and machining of blind pocket on Ti6Al4v by abrasive water jet machining” *Int J of Procedia material science*, 2014, Vol. 5, pp. 1584-1592.
25. **Satish Chinchani, S.K. Choudhury**, “Experimental investigations to optimise and compare the machining performance of different coated carbide inserts” *Proc IMechE Part B: J Engineering Manufacture*, 2014, Vol. 228(9), pp. 1104–1117.
26. **Satish Chinchani, S.K. Choudhury**, “Characteristics of wear, force and their inter-relationship: In-process monitoring of tool within different phases of the tool life” *Procedia of Material Science*, Vol. 5, pp. 1424–1433, 2014.
27. **Satish Chinchani, S.K. Choudhury**, “Evaluation of chip-tool interface temperature: Effect of tool coating and cutting parameters during turning hardened AISI 4340 steel” *Procedia of Material Science*, Vol. 6, pp. 996–1005, 2014.
28. **Avdesh Pal, S.K. Choudhury, Satish Chinchani**, “Machinability assessment through experimental investigation during hard and soft turning of hardened steel” *Procedia of Material Science*, Vol. 6, pp. 80–91, 2014.
29. **Satish Chinchani, S.K. Choudhury**, “Hard turning using HiPIMS-coated carbide tools: Wear behavior under dry and minimum quantity lubrication (MQL)” *Measurement*, Vol. 55, pp. 536- 548, 2014.
30. **G. Bartarya, S.K. Choudhury**, “Influence of Machining Parameters on Forces and Surface Roughness during Finish Hard Turning of EN 31 steel”, *Proc. of IMechE Part B, Journal of Engineering Manufacture*, Sep 2014, Vol. 228, pp 1068-1080, DOI: 10.1177/0954405413500492
31. **Satish Chinchani, S.K. Choudhury**, “Modeling and evaluation of flank wear progression of coated carbide tools in turning hardened steels” *International Journal of Manufacturing Technology and Management*, Vol. 27, Nos. 1/2/3, 2013.
32. **Satish Chinchani, S. K. Choudhury**, “Investigations on machinability aspects of hardened AISI 4340 steel at different levels of hardness using coated carbide Tools” *International Journal of Refractory Metals and Hard Materials*, Vol. 38, pp.124-133, 2013.
33. **Satish Chinchani, S. K. Choudhury and A.P. Kulkarni**, “Investigation of chip-tool interface temperature during turning of hardened AISI 4340 alloy steel using multi-layer coated carbide inserts” *Advanced Materials Research* Vol. 701 (2013) pp 354-358
34. **Satish Chinchani, S. K. Choudhury**, “Wear behaviors of single-layer and multi-layer coated carbide inserts in high speed machining of hardened AISI 4340 steel” *Journal of Mechanical Science and Technology*, Vol. 27(5), pp. 1451-1459, 2013.
35. **Satish Chinchani, S. K. Choudhury**, “Effect of work material hardness and cutting parameters on performance of coated carbide tool when turning hardened steel: An optimization approach” *Measurement* (2012), Volume 46, Issue 4, May

36. **G. Bartarya, S.K. Choudhury** – “State of the Art in Hard Turning”, *Int. J. of Machine tools and Manufacture*, Vol. 53, Issue 1, 2012 pp. 01-14. DOI:10.1016/j.ijmachtools.2011.08.019
37. **Gaurav Bartarya, S.K.Choudhury**, “Effect of cutting parameters on cutting force and surface roughness during finish hard turning AISI52100 grade steel”, *Procedia CIRP* 1 (2012) 674-679.
38. **Gaurav Bartarya, S.K.Choudhury** - “A methodology to estimate the forces on the tool insert in finish hard turning”, *Int. J. of Machining and Machinability of Materials*, Inderscience Publications Vol. 11, No. 3, pp.280-296, 2012.
39. **G. Bartarya, S.K.Choudhury** – “A regression model for force and surface roughness estimation during hard turning” *Advanced Materials Research*, Vols. 299-300 (2011), pp. 1167-1170, Trans Tech Publisher, Switzerland, doi: 10.4028/www.scientific.net/AMR299-300.1167.
40. **Kumar Sambhav, Abhishek Kumar, S.K. Choudhury** – “Mechanistic Force Modeling of Single-Point Cutting Tool in terms of Grinding Angles” *International Journal of Machine Tool and Manufacture*, Volume 51, Issues 10–11, October–November 2011, Pages 775-786.
41. **Rajnish Kumar, S.K. Choudhury** - "Prevention of Wire Breakage in Wire EDM" *International Journal of Machining and Machinability of Materials*, Vol.9, Nos.1/2, pp. 86-102, 2011.
42. **S.K. Thandra, S.K. Choudhury** - "Effect of Cutting Parameters on Cutting Force, Surface Finish and Tool Wear in Hot Machining" *International Journal of Machining and Machinability of Materials*, Vol.7, Nos.3/4, pp.278-291, 2010.
43. **Sourabh Kumar Saha, S.K. Choudhury** - "Experimental Investigation and Empirical Modeling of the Dry Electric Discharge Machining Process" *International Journal of Machine Tools and Manufacture*, Vol. 49 (3-4), pp.297-308, March 2009.
44. **A. Banerjee, E.V. Bordatchev, S.K. Choudhury** - "On-line monitoring of Surface Roughness in turning operations with a bifurcated opto-electrical transducer" *International Journal of Manufacturing Research*, Vol. 4/1, pp.57-73, 2009.
45. **K.V.B.S. Kalyan Kumar, S.K. Choudhury** – “Investigation of Tool Wear and Cutting Force in Cryogenic Machining using Design of Experiments” *Journal of Materials Processing Technology*, Vol. 203(1-3), pp.95-101, 2008. (available on-line: <http://dx.doi.org/10.1016/j.jmatprotec.2007.10.036>)
46. **Sanjeev Kumar, S.K. Choudhury** – “Prediction of Wear and Surface Roughness in Electro-Discharge Diamond Grinding” *Journal of Materials Processing Technology*, V. 191, pp. 206-209, 2007.
47. **S.K. Choudhury, J.B. Bajpai** – “Investigation in Orthogonal Turn Milling towards

better Surface Finish” *Journal of Materials Processing Technology*, V. 170, pp. 487-493, 2005.

48. **S.K. Choudhury, P. Srinivas** – “Tool Wear Prediction in Turning” *Journal of Materials Processing Technology*, V. 153-154, pp. 276-280, 2004.
49. **S.K. Choudhury, Gaurav Bartarya** - "Role of temperature and surface finish in predicting tool wear using neural network and design of experiments" *International Journal of Machine Tools and Manufacture*, V. 43, pp. 747-753, 2003.
50. **V.K.Jain, S.K. Choudhury and K.M. Ramesh** – “On the machining of Alumina and Glass”, *Int. Journal of Machine Tools and Manufacture*, Vol. 42, pp.1269-1276, 2002.
51. **S.K. Choudhury, V.K. Jain, S. Rama Krishna** - "On-line Monitoring of Tool Wear and Control of Dimensional Inaccuracy in Turning" *Transaction of ASME: Journal of Manufacturing Science and Engineering*, Vol. 123, pp. 10-12, February 2001.
52. **S.K. Choudhury and K.K.Kishore** – “Tool Wear Measurement in Turning using Force Ratio” *International Journal of Machine Tools and Manufacture*, V.40, No. 6, pp. 899-909, 2000.
53. **S.K. Choudhury and Ganga Raju** – “Investigation into Crater Wear in Drilling” *International Journal of Machine Tools and Manufacture*, V.40, No. 6, pp. 887-898, 2000.
54. **S.K. Choudhury and Subhashree Rath** – “ In-process Tool Wear Estimation in Milling using Force Model” *Journal of Materials Processing Technology*, V.99 (1-3), pp. 113-119, 2000.
55. **S.K. Choudhury and K.S. Mangrulkar** – “Investigation of orthogonal turn milling for the machining of rotationally symmetrical workpieces” *Journal of Materials Processing Technology*, V.99 (1-3), pp. 120-128, 2000.
56. **S.K. Choudhury, V.K.Jain and Ch.V.V.Rama Rao** - "On-line monitoring of Tool Wear in Turning using Neural Network" *International Journal of Machine Tools and Manufacture*, vol.39(3), 1998, pp.489-504
57. **S.K. Choudhury and Appa Rao** - "Optimization of Cutting Parameters for Maximising Tool Life", *International Journal of Machine Tools and Manufacture*, vol.39(2), 1998, pp.343-353
58. **S.K.Choudhury, Eswar Kumar and A.Ghosh** - "A Scheme of Adaptive Turning Operation" *Journal of Materials Processing Technology*, V.87 (1-3), 1999, pp. 119-127.
59. **S.K. Choudhury, V.K. Jain and Manoj Gupta** - "Electrical Discharge Diamond Grinding of High Speed Steel" *International Journal of Machining Science and Technology*, V.3(1), 1998
60. **S.K.Choudhury, N.N.Goudimenko, V.A. Kudinov** - "On-line control of machine tool vibration in turning" - *International Journal of machine Tools and Manufacture*, Vol.37,

No.6, 1997, pp.801-811.

61. **S.K. Choudhury, V.K. Jain, P. Dixit** - "Application of fibre optics in profile and burr measurement" - *Journal of the Institution of Engineers (India)*, Vol.76, Nov.1995, pp.41-45.
62. **S.K. Choudhury, Jose Mathew** - "Investigations of the Non-uniform Insert Pitch on Vibration during Face Milling" - *International Journal of Machine Tools and Manufacture*, Vol.35, No.10, 1995, pp.1435-1444.
63. **S.K. Choudhury, S.Ramesh** - "On-line Tool Wear Sensing and Compensation in Turning" - *Journal of Mat. Processing Tech.*, V.49, No.3-4, 1995, pp.247-254
64. **S.K. Choudhury, M.S. Sarath** - "On-line Machine Tool Vibration during Turning Operation" - *Journal of Materials Processing Technology*, vol.47, No.3-4, 1995, pp.251-259.
65. **V.K. Jain, P.S. Rao, S.K. Choudhury, K.P. Rajurkar** - " Experimental investigations into travelling wire ECM spark machining of composites " - *Trans.of ASME, Journal of Engg. for Industry*, Vol.113, No.1, Feb.1991, pp. 75 - 84.
66. **Anuj Sanjanwala, S.K. Choudhury, V.K. Jain** - "On-line tool wear sensing and compensation during turning operation." *Precision Engineering*, April, 1990, Vol.12, No.2, pp. 81 - 84.
67. **Sounak Kumar, Goudimenko N.N.** - "Investigation of automatic control system of indices of dynamic performances of a turning lathe" *Investigation of technology and design of machine parts*, Moscow, P.F.U., 1985, pp.136-140. (in Russian)
68. **Sounak Kumar , Goudimenko N.N.** - "Experimental procedure of automatic control system evaluation." *Investigation of technology and design of machine parts*, Moscow, P.F.U., 1985, pp.130 - 135. (in Russian)
69. **Sounak Kumar, Goudimenko N.N.** - "Investigation of adaptive control system in a mathematical model". *Problems of increasing quality of metal cutting equipment*, Moscow, P.F.U., 1984, pp.64-69. (in Russian)
70. **Sounak Kumar, Goudimenko N.N.** - "Methods of automatic control systems of metal cutting process in machine tools". *Problems of static and dynamic characteristics of metal cutting equipment*, Moscow, P.F.U., 1983, pp.129 - 132.(in Russian)

Published in International/National conference proceedings :

71. **Anand Prakash Dwivedi, Sounak Kumar Choudhury**, "Increasing the Performance of EDM Process Using Tool Rotation Methodology for Machining AISI D3 Steel" 7th HPC 2016 – CIRP Conference on High Performance Cutting-2016 (Germany), CIRP, Elsevier, Vol. 46, pp. 131-134. DOI: 10.1016/j.procir.2016.03.207

72. **Amarjit Kene, Kashfull Orra, S.K. Choudhury**, “Experimental Investigation of Tool Wear Behavior of Multi-Layered Coated Carbide Inserts Using Various Sensors in Hard Turning Process” 8th IFAC Conference on Manufacturing Modeling, Management and Control (MIM 2016), University of Technology of Troyes, France, June 28-30, 2016, IFAC-PapersOnLine, 49-12 (2016) 180–184
73. **Anand Prakash Dwivedi, Sounak Kumar Choudhury**, “Improvement in the Surface Integrity of AISI D3 Tool Steel using Rotary Tool Electric Discharge Machining Process” 3rd International Conference on Innovations in Automation and Mechatronics Engineering, ICIAME 2016 (India), Procedia Technology, Elsevier, Vol. 23, pp. 280-287. DOI:10.1016/j.protcy.2016.03.028
74. **Anand Prakash Dwivedi, Sounak Kumar Choudhury**, “Comparative Assessment of MRR, TWR and Surface Integrity in Rotary and Stationary Tool EDM for Machining AISI D3 Tool Steel” Proceedings of the World Congress on Engineering 2015 Vol II pp. 1219-1224 WCE 2015, July 1 - 3, 2015, Imperial College London, U.K.
75. **Amarjit Prakashrao Kene, S.K. Choudhury**, “Behaviour of cutting forces in hard turning considering effect of tool wear on principal flank, auxiliary flank and rake faces: individually and in combination” 5th International & 26th All India Manufacturing Technology, Design and Research (AIMTDR 2014) Conference, Indian Institute of Technology Guwahati, INDIA, Dec. 12th–14th, 2014, Vol. 1, pp. 516-1 to 516-6.
76. **Satish Chinchankar and S.K. Choudhury** “Comparative evaluations of tool nose wear progression under dry and near-dry cutting conditions during hard turning through experimentation and mathematical modeling” 5th International & 26th All India Manufacturing Technology Design and Research, (AIMTDR-2014) Conference, India, 8th-9th December, 2014.
77. **Satish Chinchankar and S.K. Choudhury** “Multi-objective optimization of cutting parameters: A desirability function approach” International Colloquium on Materials, Manufacturing and Metrology at IIT Madras, Chennai, India, 8th-9th August 2014 (ICMMM 2014), ISBN 978-93-80689-18-0.
78. **Satish Chinchankar, S.K. Choudhury**, “Characteristics of wear, force and their inter-relationship : In-process monitoring of tool within different phases of the tool life” International Conference on Advances in Manufacturing and Materials Engineering at NIT Suratkal, India, 27th-29th March 2014 (AMME 2014).
79. **Avdesh Pal, S.K. Choudhury, Satish Chinchankar**, “Machinability assessment through experimental investigation during hard and soft turning of hardened steel” International Conference on Materials Processing and Characterisation at GRIET Hyderabad, India, 8th-9th March 2014 (ICMPC 2014).
80. **Satish Chinchankar, S.K. Choudhury**, “Evaluation of chip-tool interface temperature: Effect of tool coating and cutting parameters during turning hardened

AISI 4340 steel” 3rd International Conference on Materials Processing and Characterisation at GRIET Hyderabad, India, 8th-9th March 2014 (ICMPC 2014).

81. **Gaurav Bartarya, S.K.Choudhury**, “Effect of Tool Wear on White Layer Thickness and Subsurface Hardness on Hard Turned EN31 Steel”, Proc. of 5th Intl. and 26th National AIMTDR conf., Dec.12-14, 2014, IIT Guwahati, pp.854-1 to 854-6
82. **Shweta Singh, V.K.Jain, S.K.Choudhury**, (2013), Quality aspects of electrochemical micro-drilling with insulated tool and masked workpiece, Proceedings of IMECE-13 ASME 2013 International, ASME International Mechanical Engineering Congress & Exposition, November 15-21, 13, San Diego, USA.
83. **G. Bartarya, S.K.Choudhury**, “Finite Element Analysis of Residual Stresses in Hard turning of AISI 52100 Steel using Worn-out CBN Tools”, Proceedings of 2nd Int. Conf. IRAM 2013, Dec. 16-18, 2013, IIT Indore, pp 411-417
84. **Vijay Kumar Pal, Sounak Kumar Choudhury, Punnet Tandon**, “Time reduction by using square path and elliptical path in controlled depth milling using abrasive water jet machining”, International Conference on Innovations in Design and Manufacturing (InnDeM 2012), IITDM Jabalpur, India, December 05-07, 2012.
85. **Satish Chinchani, S. K. Choudhury and A.P. Kulkarni**, “Investigation of chip-tool interface temperature during turning of hardened AISI 4340 alloy steel using multi-layer coated carbide inserts” International Conference on Key Engineering Materials (ICKEM 2013), March 8 - 9, 2013, Kota Kinabalu, Malaysia.
86. **Satish Chinchani, S. K. Choudhury**, “Investigation of the effects of different coated carbide inserts on surface roughness and cutting force in turning AISI 4340 steel”: 4th International & 25th All India Manufacturing Technology Design and Research, (AIMTDR-2012) Conference, India, 14-16 December, 2012, Vol.1:249-254
87. **Gaurav Bartarya, S.K.Choudhury**, “Influence of machining parameters on forces and surface roughness during finish hard turning AISI 52100 grade steel”, Proc. of 4th Intl. and 25th National AIMTDR conf., Dec.14-16, 2012, Jadavpur Univ., Kolkata pp.293-298
88. **Satish Chinchani, S. K. Choudhury**, “Flank wear progression modeling in turning hardened steel using multi-layer coated carbide inserts” International Conference on Innovations in Design and Manufacturing, at PDPM IITDM Jabalpur, India, 5th-7th December 2012 (**InnDeM 2012**).
89. **Gaurav Bartarya, S.K.Choudhury**, “Effect of Cutting Parameters on Cutting Force and Surface Roughness during Finish Hard Turning Aisi52100 Grade Steel”, Paper no. 157, 5th CIRP Conf. on High Performance Cutting, 4-7 June, 2012, ETH Zurich. Switzerland.
90. **Gaurav Bartarya, S.K.Choudhury**, “A Regression Model for Force and Surface Roughness Estimation during Hard Turning”, Int. Conf. on Materials and

Manufacturing, Liaoning Univ. of Technology Liaoning Jinzhou, China Sep. 7-9, 2011(#D080).

91. **Gaurav Bartarya, S.K.Choudhury**, “Modeling the Forces in Finish Hard Turning considering Tool Flank Wear”, Proc. of 3rd Intl. and 24th National AIMTDR conf., Dec.13-15, 2010, Andhra University College of Engineering (A), Visakhapatnam, pp81-86
92. **Gaurav Bartarya, S.K.Choudhury**, “Modeling of Cutting Forces considering Chip-Tool Interaction and Flank Wear in Finish Hard Turning” 2nd CIRP Intl. conf. on Process Machine Interactions, June 10-11, 2010, Univ. of British Columbia, Vancouver, CANADA.
93. **Mamilla Ravi Sankar, S.K. Choudhury** – “High Speed Turning with Minimum Quantity Cutting Fluid”, *Proceedings of International Conference on Advanced Manufacturing Technologies*, pp. 97-106, 29-30 November 2007, CMERI, Durgapur, India.
94. **Banerjee, A., Bordatchev, E.V., Choudhury. S.K.** - 2006, in IFIP International Federation for Information Processing, Volume 220, Information Technology for Balanced Manufacturing Systems, ed. She, W., (Boston:Springer), pp. 489-498.
95. **Sanjeev Kumar, S.K. Choudhury** – “Prediction of Wear and Surface Roughness In Electro-Discharge Diamond Grinding” - *Proceedings of AMPT 2006, Jul 30-Aug 3, 2006*, Las Vegas, USA.
96. **Sunil Jha, V.K. Jain, S.K. Choudhury** – “On the performance of Abrasive Flow finishing process”, *Proceedings of Precision Engineering Conference* held at CMTI Bangalore, pp. 216-223, 2003.
97. **S.K. Choudhury, P. Srinivas** – “Tool Wear Prediction in Turning” *Proceedings of AMPT 2003, Jul 8-11, 2003*, Dublin, Ireland.
98. **V.V. Nesarikar, V.K.Jain, S.K.Choudhury** - "Experimental Investigations into electro-chemical spark machining of kevlar epoxy composites" - *Proc. of the X annual meeting, The American Society for Precision Engineering*, October 15-20, V.12, 1995, Austin, Texas, pp.292-295.
99. **V.Nesarikar, V.K.Jain, S.K.Choudhury** - "Travelling wire Electro-Chemical Spark Machining of thick sheets of Kevlar-Epoxy Composites" - *Proc. 16th. All India Manufacturing Technology Design and Research Conference* held at Bangalore, Dec.1994, pp.672-677. (Received Best Paper Award in the Conference)
100. **Ngo Sy Loc, S.K.Choudhury, B.Sahay** - "A new Electro-hydro-mechanical stepping motor, Part - 2 - Theoretical aspects of the motor" - *Proc. of 20th.National Conf. on Fluid Mechanics and Fluid Power*, Dec. 1993, Fluid Control Research Institute, Kanjikode West, India, pp.C16-1 - C16-7.
101. **Ngo Sy Loc, S.K.Choudhury, B.Sahay** - "A new Electro-hydro-mechanical stepping motor, Part - 1 - Working principle of the motor and its design" - *Proc. of 20th.National Conf. on Fluid Mechanics and Fluid Power*, Dec. 1993, Fluid Control

Research Institute, Kanjikode West, India, pp.C15-1-C15-4.

102. **S.K.Choudhury** -"Control of machine tool vibration by feed back neutralizer."
13th. AIMTDR conference, Jadavpur university, Calcutta.1988, pp.A53-A57.

Papers under review in the International Journals :

1. **S.K. Choudhury and Vikas Gupta** - "Optimization of Cutting Parameters using Neural Network"
2. **S.K. Choudhury, Vivek Muttur**, Thermo-emf analysis of flank wear in turning

BOOK CHAPTERS (7):

1. **M. Muaz, S.K. Choudhury**, Simultaneous Optimization of Milling Process Responses for Nano-Finishing of AISI-4340 Steel through Sustainable Production, in: M.S. Shunmugam, M. Kanthababu (Eds.), Adv. Forming, Mach. Autom. Lect. Notes Multidiscip. Ind. Eng., Springer Nature Singapore Pte Ltd., Singapore, 2019: pp. 361–374. doi:https://doi.org/10.1007/978-981-32-9417-2_29.
2. **S. K. Choudhury and M. Muaz**, “Natural Oils as Green Lubricants in Machining Processes,” in Reference Module in Materials Science and Materials Engineering, M. S. J. Hashmi, Ed. Dublin: Elsevier, 2018. doi: 10.1016/B978-0-12-803581-8.10848-3
3. **S. K. Choudhury and M. Muaz**, “Renewable Metal Working Fluids for Aluminum and Heavy Duty Machining,” in Encyclopedia of Renewable and Sustainable Materials, M. S. J. Hashmi, Ed. Dublin: Elsevier Ltd., 2019. 10.1016/B978-0-12-803581-8.11546-2
4. **Anand Prakash Dwivedi, Sounak Kumar Choudhury**, “Assessment and Comparison of Machining Performance in Rotary and Stationary Tool EDM for Machining AISI D3 Tool Steel”, Transactions on Engineering Technologies, Editor: Sio-iong Ao, Gi-Chul Yang, Len Gelman Springer, Singapore, ISBN: 978-981-10-1087-3, pp. 95-109, June 2016. DOI: 10.1007/978-981-10-1088-0_8
5. **S.K. Choudhury, S. Chinchani**, “Finish Machining of Hardened Steel” in the book: Reference Module in Materials Science and Materials Engineering, Editor: Hashmi Saleem, Publisher: Elsevier, 2016.
6. **Bartarya Gaurav, S.K. Choudhury**, “Surface Integrity Issues in Finish Hard Turning” in the book: Reference Module in Materials Science and Materials Engineering, Editor: Hashmi Saleem, Publisher: Elsevier, 2016, pp.1-11, ISBN: 978-0-12-803581-8.
7. **Bartarya Gaurav, S.K. Choudhury**, “Tool wear progression and its effect on finished hard-turned products” in the book: Reference Module in Materials Science and Materials Engineering, Editor: Hashmi Saleem, Publisher: Oxford, Elsevier, 2016, pp. 1-10, ISBN: 978-0-12-803581-8

CONTINUING EDUCATION ACTIVITIES :

1. Co-ordinated and organised Short Term course on "NC Machine Tools and Part Programming" for the Polytechnic Teachers held at IIT Kanpur from August 10 to August 21,

1998.

2. Co-ordinated and organised Short Term course on "Hydro-Pneumatic Systems in Automation" for the Polytechnic Teachers held at IIT Kanpur from September 15 to September 19, 1998.

3. Coordinated and organised Winter School on "Production Technology" for the Polytechnic Teachers held at IIT Kanpur from December 3 to December 13, 1996.

4. Organised XI National Convention of Production Engineers at IIT Kanpur on October 25-26, 1996.

5. Developed two Course Packages for the Quality Improvement Program on :

i) *METAL CUTTING THEORY AND PRACTICE* in 1992, and

ii) *DESIGN OF MACHINE TOOLS* in 1994.

6. Organised Summer School under Quality Improvement Programme (QIP) for the Practising Engineers and Engineering College Teachers on : *DESIGN OF MACHINE TOOLS* in June, 1992 at IIT Kanpur.

7. Organised Winter School under Quality Improvement Programme (QIP) for the Practising Engineers and Engineering College Teachers on :

ADVANCED MACHINING TECHNIQUES (AMT) in December, 1991 at IIT Kanpur.

PROJECTS COMPLETED/SUBMITTED/ONGOING :

1. Consultancy Project on Technical Consultancy from EdCIL, New Delhi, 2018

2. Consultancy project from CST, UP for conducting On-Line Talent Search Examination, 2017 till date

3. Submitted IMPRINT project proposal on "Development of a Prognostics enabled Intelligent Milling Machine Development" as a Co-Investigator. Investigator: Prof. N. Arunachalam, Mech. Engg. Dept, IIT Madras, July 2016.

4. Industry sponsored project on "Design and Development of Hydraulic Components for Light Combat Aircraft" Duration : May 1994-May 1995.

5. "Design and development of variable delivery pump used in the Light Combat Aircraft", sponsored by The Hindustan Aeronautics Limited, duration: October 1995-February, 1997.

6. "Design and development of a hydraulic control valve to be used in the Light Combat Aircraft", sponsored by The Hindustan Aeronautics Limited, duration: October 1995-February, 1997.

7. "Application of fibre optics in conjunction with laser beam for on-line measurement and control of tool wear" Council of Scientific and Industrial Research (CSIR) Project, duration - May 1995 - July 1998.

CORPORATE ACTIVITIES:

1. Serving as Member 7th UG Academic Review Committee, IIT Kanpur, 2018 till date

2. Serving as Co-ordinator, Machine Tool Laboratory (TA202), 2015 till date
3. Served as Chairman, Graduate Aptitude Test in Engineering (GATE) 2016
4. Served as **Organising Chairman**, Graduate Aptitude Test in Engineering (GATE) 2015
5. Served as Chairman, IIT Joint Entrance Examination (JEE) - 2012
6. Served as **Organising Chairman**, IIT Joint Entrance Examination (JEE) - 2011
7. Served as Chairman, IIT Joint Entrance Examination (JEE) 2007.
8. Served as Chairman, Senate Scholarships and Prizes Committee, 2005 - 2006.
9. Served as Head, Central Workshop of IIT Kanpur for about 10 years.
10. Served as Co-ordinator, Machine Tool Laboratory and Manufacturing Science Laboratory.
11. Served as Chairman, Graduate Aptitude Test in Engineering (GATE) in 2004 and 2005.
12. Served as the Warden-in-charge in one of the UG hostels (Dec. 1994 – July 1998)
13. Served as member, Core Curriculum Committee of the institute.
14. Served as Convenor, Department Undergraduate Committee for two years.
15. Served as the Head, Counselling of the Institute for two years (Jan 5, 2000- Aug.15, 2001).
16. Served as the Warden, Married Students' Hostel for two years (Jan 5, 2000- Aug.15, 2001).
17. Served as Vice Chairman, IIT Joint Entrance Examination 2002 (April 2001 – July 2002).

AWARDS :

- i) Best Paper Award in the 16th. AIMTDR Conference, 1994, Bangalore, India.
- ii) 17 Commendations from the Director, Indian Institute of Technology Kanpur for Excellent Teaching of Core and Professional Courses.
- iii) PATENT (AA 3416 dated January 09, 1999) on Electro-Mechano-Hydraulic Stepping Motor.

PUBLICATION OF BOOK :

“Fundamentals of Manufacturing Processes”, G.K. Lal and S.K. Choudhury, Published by Narosa Publishers, India and Alpha Science Publisher, United Kingdom, 2005.

GOOGLE SCHOLAR LINK:

<https://scholar.google.co.in/citations?hl=en&user=-FhQMRMAAAAJ>