

## KANIKA PRASAD

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### **Academic Qualifications:**

Degree/Exam	Year	Institute	Percentage/CGPA
Ph.D.	2013 – 2016	Jadavpur University, Kolkata	N.A.
ME (Production Mgmt.)	2011 – 2013	Jadavpur University, Kolkata	8.94 (CGPA)
B. Tech. (Mechanical)	2006 – 2010	Sikkim Manipal Institute of Technology	9.47 (CGPA)
12 <sup>th</sup> , CBSE	2004	St. Michael's High School, Patna	61%
10 <sup>th</sup> , CBSE	2002	St. Michael's High School, Patna	86.4%

### **Professional Experience:**

Organization	Designation	Duration	Role Description
Sikkim Manipal Institute of Technology	Assistant Professor, Department of Mechanical Engineering	2010 - 2011	Courses Taught – <ul style="list-style-type: none"><li>• Theory of Machine (TOM)</li><li>• Operation Research (OR)</li><li>• Manufacturing Processes</li></ul>
Jadavpur University	DST Research Fellow, Department of Production Engineering	2013 - 2016	Designed expert systems based on QFD technique for solving multi-criteria decision-making problems in manufacturing domain. Also assisted undergraduate students with laboratory modules.
NIT Jamshedpur	Assistant Professor, Department of Manufacturing Engineering	29 July 2016 – Till date DOJ (at regular position) - 04-06-2018	Courses Taught – <ul style="list-style-type: none"><li>• Quality Control, Assurance and Reliability</li><li>• Toyota Production System</li><li>• Manufacturing Planning and Control</li><li>• Industrial Management</li><li>• Workshop Technology</li></ul>

## **Research Publications:**

### **Journals**

- 1) Prasad, K. and Chakraborty, S. (2013) 'A quality function deployment-based model for materials selection', *Materials & Design*, Vol. 49, pp. 525-535.
- 2) Prasad, K., Mahanty, S., Maity, S.R. and Chakraborty, S. (2014) 'Development of an expert system for materials selection', *Journal of Materials Education*, Vol. 36, No. 5-6, pp. 117-138.
- 3) Prasad, K. and Chakraborty, S. (2014) 'A decision-making model for non-traditional machining processes selection', *Decision Science Letters*, Vol. 3, No. 4, pp. 467-478.
- 4) Prasad, K., Zavadskas, E.K. and Chakraborty, S. (2015) 'A software prototype for material handling equipment selection for construction sites', *Automation in Construction*, Vol. 57, pp. 120-131.
- 5) Prasad, K. and Chakraborty, S. (2015) 'Development of a QFD-based expert system for CNC turning centre selection', *Journal of Industrial Engineering International*, Vol. 11, No. 4, pp. 575-594.
- 6) Prasad, K. and Chakraborty, S. (2018) 'A decision guidance framework for non-traditional machining processes selection', *Ain Shams Engineering Journal*, Vol. 9, No 2, pp. 203-214.
- 7) Prasad, K. and Chakraborty, S. (2016) 'A quality function deployment-based model for cutting fluid selection', *Advances in Tribology*, Volume 2016, Article ID 3978102, 10 pages, DOI.org/10.1155/2016/3978102.
- 8) Prasad, K. and Chakraborty, S. (2016) 'A QFD-based decision making model for computer-aided design software selection', *Management Science Letters*, Vol. 6, No. 3, pp. 213-224.
- 9) Prasad, K. and Chakraborty, S. (2016) 'A knowledge-based system for end mill selection', *Advances in Production Engineering and Management*, Vol. 11. No. 1, pp. 15-28.
- 10) Prasad, K. and Chakraborty, S. (2016) 'Quality function deployment- based expert system for industrial truck selection', *Journal of Manufacturing Technology Management*, Vol. 26, No. 6, pp. 800-817.
- 11) Prasad, K., Maity, S.R. and Chakraborty, S. (2016) Quality function deployment- based expert system for materials selection, *International Journal of Materials Science and Engineering*, Vol. 4, No. 2, pp. 80-93.
- 12) Jaiswal, P., Kumar, A. and Prasad, K. (2017) 'Assessment of drivers to implement lean manufacturing in Indian SMEs using intuitionistic fuzzy-based TOPSIS method', *International Journal of Modern Manufacturing Technologies*, Vol. IX, No. 2, pp. 30-38.
- 13) Chakraborty, S. and Prasad, K. (2018) 'A quality function deployment-based model for coordinate measuring machine selection', *International Journal of Productivity and Quality Management* Vol. 25, No. 3, pp. 368-386.
- 14) Prasad, K. and Chakraborty, S. (2018) 'A quality function deployment-based expert system for cotton fibre selection', *Journal of The Institution of Engineers (India): Series E*. Vol. 99, No. 1, pp.43-53.

- 15) Prasad, K. and Chakraborty, S. (2018) 'Application of the modified similarity-based method for cutting fluid selection', *Decision Science Letters*, Vol. 7, No. 3, pp. 273-286.
- 16) Chakraborty, S., Chatterjee, P. and Prasad, K. (2018) 'An integrated DEMATEL–VIKOR method-based approach for cotton fibre selection and evaluation', *Journal of The Institution of Engineers (India): Series E*. Vol. 99, No. 1, pp.63-73.
- 17) Dwivedi, R., Prasad, K., Mandal, N., Singh, S., Vardhan, M. and Pamucar, D. (2021) Performance evaluation of an insurance company using an integrated Balanced Scorecard (BSC) and Best-Worst Method (BWM)', *Decision Making: Applications in Management and Engineering*, Vol. 4. No. 1, pp. 33-50. <https://dmame.rabek.org/index.php/dmame/article/view/165/64>
- 18) Rana, R. S., Kumar, D. and Prasad, K. (2021) Two warehouse dispatching policies for perishable items with freshness efforts, inflationary conditions and partial backlogging', *Operations Management Research*, **Article in press**. <https://doi.org/10.1007/s12063-020-00168-7>

### **Conferences**

- 1) Prasad, K. and Chakraborty, S. (2014) 'An expert system for non-traditional machining process selection', In proceedings of 5<sup>th</sup> International & 26<sup>th</sup> All India Manufacturing Technology, Design and Research Conference, December 12-14, IIT Guwahati, Assam, India. ISBN: 978-8-19274-612-8
- 2) Prasad, K. and Chakraborty, S. (2013) 'A quality function deployment-based model for machining center selection', In proceedings of the International Conference on Advanced Engineering Optimization Through Intelligent Techniques, July 01 - 03, SVNIT, Surat, India.
- 3) Prasad, K. and Dwivedi, R. (2019) 'Application of MOORA method to analyze the factors affecting success of social programs', 2nd International Conference on Mechanical Materials and Renewable Energy (ICMMRE – 2019), SMIT Gangtok, December 06 - 07 2019.
- 4) Gupta, M., Kumar, D. and Prasad, K. (2020) 'Prioritization for barriers for implementation of block chain technology in industries of India', In proceedings of the International Conference on Industrial and Manufacturing Systems (CIMS-2020), October 09 - 11, NIT Jalandhar, Punjab, India
- 5) Prasad, K., Kumar, A., Yadav, J., Akhtar, P. and Ballav, R. (2020) 'Application of green quality function deployment for designing an air purifier', In proceedings of the International Conference on Industrial and Manufacturing Systems (CIMS-2020), October 09 - 11, NIT Jalandhar, Punjab, India.

### **Book Chapters**

- 1) Prasad, K. and Dwivedi, R. (2019) 'Application of modified similarity-based method for cotton fiber selection', *Advanced Multi-Criteria Decision Making for Addressing Complex Sustainability Issues*, IGI Global, Hershey, Pennsylvania. pp 139-161. DOI:10.4018/978-1-5225- 8579-4.ch007
- 2) Prasad, K. and Dwivedi, R. (2019) 'Development of hybrid tool using AHP and BSC models for analysing performance of waste disposal management system of a municipality', *Sustainability Modelling in Engineering a Multi-Criteria Perspective*, World Scientific, Singapore. Accepted for publication.

- 3) Dwivedi, R., Prasad, K., Jha, P. K. and Singh, S. (2021) 'An integrated CRITIC-MARCOS technique for analysing the performance of steel industry', Data-Driven Optimization of Manufacturing Processes, IGI Global, Hershey, Pennsylvania. pp 115-127. DOI: 10.4018/978-1-7998-7206-1.ch008

### **Awards and Recognitions:**

- 1) Awarded esteemed "DST Research Fellowship" from Department of Science and Technology for pursuing doctoral research in the Department of Production Engineering at Jadavpur University.
- 2) Awarded gold medal for first rank in the Master of Production Engineering course at Jadavpur University in a class of 25 students.
- 3) Awarded silver medal for first rank in the undergraduate Mechanical Engineering course at Sikkim Manipal Institute of Technology in a class of 60 students.
- 4) Awarded a Certificate of Appreciation for efficiently serving 'Mechanical Department Association' as the Financial Secretary.

### **Ph.D. Thesis**

Project title: "Development of quality function deployment-based expert systems for decision making in manufacturing environment"

*Description:* Numerous intricate and complicated decisions need to be taken in manufacturing industries while choosing a suitable material, a machining center or an advanced machining technique for a particular application. This is because that a large number of factors influence those decisions. Additionally, multifaceted interrelationship amid different influencing factors, presence of a large number of available options and involvement of complex mathematical calculations make the decision making procedure much more time consuming and elaborate for the managers. Therefore, expert system is designed to resolve complicated problems in a particular domain, at the level of extraordinary human intelligence and knowledge. Visual BASIC (VB) is a popular software package from Microsoft Corporation in which a programmer can utilize a graphical user interface to choose and alter preselected sections of the code written in BASIC programming language. Keeping in view these perspectives, the research work develops expert systems based on quality function deployment technique which can take customers' requirement into consideration while solving selection problems in manufacturing environment with a view to attain competitive edge.

### **Master of Engineering Thesis**

Project title: "Selection of materials, machining centres and advanced machining processes using quality function deployment technique"

*Description:* In this research project, a user-friendly software prototype with appropriate graphical interface in Visual BASIC 6 based on QFD technique is developed to incorporate customers' needs in the decision-making process. The software prototype automated the decision-making process, thus saving a lot of time. An excellent match of the rankings obtained using the QFD-based approach with those derived by the past researchers proves its applicability in providing acceptable and accurate results in the manufacturing domain. While adopting the developed tool, the designers or process

engineers need not now require an in-depth technological knowledge about the capabilities and characteristics of various alternatives and the related criteria

### **Major Project (B. Tech.):**

<b>Name of Organization</b>	<b>Project Title</b>	<b>Duration (in weeks)</b>
Sikkim Manipal Institute of Technology	Determination of irregularities in ball bearings using wavelet transform method	16

*Description:* A theoretical model for predicting frequency and amplitude due to a single point defect in a rolling element bearing, at different locations has been developed. The model incorporated the effects of load distribution in the bearing, the location of defect and the motion of rolling elements. The work was extended further for multiple point defects, with the defect only at the inner race.

### **UG and PG Project Guidance**

Academic Year	Undergraduate	Postgraduate
2016-17	4	2
2017-18	4	4
2018-19	2	1
2019-20	4	2
2020-21	2	1

### **Additional responsibilities**

- 1) Time table in charge of department since 11.06.2018.
- 2) Lab in charge of Advanced Flexible Manufacturing System (AFMS) Laboratory.
- 3) Member of “The Unnat Bharat Abhiyan Cell” of NIT Jamshedpur.

### **Extracurricular activities:**

- 1) Represented Mechanical Engineering Department in Student Council of the engineering college.
- 2) Volunteered medical camp for poor in engineering college.
- 3) Organized blood donation camp.
- 4) Held the post of Finance Secretary in Mechanical Engineering Department during 2008-09.
- 5) Organized cultural fest for Sikkim Manipal Institute of Technology.

### **Personal Details:**

**Date of Birth:** 17<sup>th</sup> March 1986

**Gender:** Female

**Marital status:** Married

**Languages Known:** English, Hindi.