

# CURRICULUM VITAE

**Prof. Manoj Kumar Tiwari** (FNAE, FNASc, FIISE, FIIIE, FIETI)

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(On lien from: *Department of Industrial and Systems Engineering, Indian Institute of Technology, Kharagpur*)



**Date of Birth:** September 10<sup>th</sup>, 1962 (Age 59 Years)

## Academic Qualifications:

- 1999-2004 :** Ph.D. “Application of intelligent search heuristic to resolve the complexities of machine loading problems of FMS”  
Department of Production Engineering, **University of Jadavpur, West Bengal, India**
- 1988-1990 :** M. Tech. (Production Engg.) [First Division]  
Department of Mechanical Engineering, **Motilal Nehru Regional Engineering College (now known as MNNIT Allahabad), Prayagraj, Uttar Pradesh, India**
- 1982-1986 :** B. E. in Mechanical Engineering [First Division]  
Department of Mechanical Engineering, **Visvesvaraya Regional Engineering College (now known as VNIT), Nagpur, Maharashtra, India**

## Academic Experience:

### Professional Experience:

- 2019 (Nov 05 – Present)** **Director**  
NITIE Mumbai, India
- 2016 (August 18 – Nov 2019) #** **Professor (*Higher Academic Grade Scale*)**  
Department of Industrial and Systems Engineering, Indian Institute of Technology (IIT), Kharagpur, India
- 2010 - 2016** **Professor**  
Department of Industrial and Systems Engineering, Indian Institute of Technology (IIT), Kharagpur, India
- 2007-2010:** **Associate Professor**  
Department of Industrial Engineering and Management, Indian Institute of Technology (IIT), Kharagpur, India
- 2005-2007\*:** **Professor**  
Department of Forge Technology, National Institute of Foundry and Forge Technology (NIFFT), Ranchi, India  
*NIFFT is fully funded and administered by Ministry of Human Resource Development, Government of India.*
- 1998 –2005:** **Assistant Professor**  
Department of Manufacturing Engineering, NIFFT, Ranchi, India
- 1996 – 1998:** **Senior Lecturer**  
Department of Mechanical Engineering, North Eastern Regional Institute of Science and Technology (NERIST), Itanagar, India  
*NERIST is established and funded by Ministry of Human Resource Development, Government of India.*
- 1990- 1996:** **Lecturer**  
Department of Mechanical Engineering, NERIST, Itanagar, India

**\*Visiting Professor:** From 11th July 2006 to 11th September 2006 at Department of Industrial and Systems Engineering, University of Wisconsin-Madison, USA

**#Director, NITIE Mumbai:** On lien from IIT Kharagpur from Nov 4, 2019 – till date

**Current Assignments/Responsibilities:**

- Director, NITIE Mumbai (05-Nov-2019 – till date)
- Chairman, Sectional Committee of Global Initiative for Academic Networks (GIAN) in Higher Education (Dec 2019 – till date)
- Member, Board of Governor, National Institute of Foundry and Forge Technology, Hatia, Ranchi (Nominated by AICTE, New Delhi, (July 2016-continuing)
- Member, Board of Governor, Institute of Chemical Technology, Mumbai, India. (January 2020 - continuing)
- Member of Board of UG Studies AICTE since 2016 and after that appointed as Chairman of Board of UG Studies AICTE (2018-continuing)

**Administrative Contribution:*****Director, NITIE (2019 – present)***

As a Director of NITIE Mumbai, Prof. Tiwari is responsible for implementing the policies related to admission, faculty recruitment, staff recruitment, and training, ensuring industry connections, and running the institute as an administrative head. He started several reforms related to academics and research, especially actionable analysis and performance standards for faculty and staff. Under his leadership, the institute rank has been improved to 12 from 29 in the National Institutional Ranking Framework (NIRF) ranking for Management. Furthermore, NITIE has been ranked 68<sup>th</sup> globally and 3<sup>rd</sup> in India on Times Higher Education's Impact Ranking 2021 on Sustainability Development Goals (SDG)-8. Initiatives to launch programs are in progress to cover the different aspects of oil and petroleum sector executives, supply chain and manufacturing analytics, etc. During the COVID-19 pandemic, NITIE has carried the process of final exams, admission, interview through online mode under the leadership of Prof. Tiwari. Numerous lecture series, workshops, webinars, and Annual Leadership Summit - Prerana Business Meet 2020 have also been successfully completed.

***Dean Planning and Coordination at IIT Kharagpur (2017 - 2019)***

Prof. Tiwari developed an effective ground-level structure to establish the performance of institute ranking data to fully responsible for enhancing the ranking, particularly QS and THE ranking of IIT Kharagpur. The fastest improvement in the QS Ranking has been witnessed under the leadership of Prof. Tiwari (308 in 2018, 295 in 2019, and 281 in 2020). Similarly, in subject ranking under Engineering and Technology, IIT Kharagpur improved from 7<sup>th</sup> to 3<sup>rd</sup> in India between the same period. He also carried the responsibility to MoU between MHRD and IIT Kharagpur, RTI responses, Ministry Communication, Parliamentary Questions, Annual Reports, Prepared documents for Institute of Eminence (IoE), Convocation Report, etc.

***Head of Department, ISE, IIT Kharagpur (2013-2016)***

Prof. Tiwari is a key motivator to change the department's name from Industrial and Engineering Management to Industrial and Systems Engineering in 2013. During his tenure, the 2<sup>nd</sup> floor of the department has been established with several laboratories and classes with prominent machines and software-related 3D printing, Logistics Laboratory, Design for Manufacturing and Assembly Laboratory (with software). Due to careful monitoring, articles in reputed journals have been increased in the department. He led the foundation to purchase SAS Software and implement a fully flagged Artificial Intelligence and Machine Learning application in academia and research. Quality Engineering Design and Manufacturing (QEDM) planned in 2012 has been successfully implemented under his term as Head of Department.

***Member of Board of Governor, IIT Kharagpur***

Prof. Tiwari is actively involved with the key policies initiative related to Human Resource Development as a chair of the HR Committee of IIT Kharagpur. Many issues have been resolved by timely interrogation by Prof. Tiwari as Board Member at IIT Kharagpur.

**Research Interests:**

- Decision Support Models, Planning, Scheduling and Control Problems of Manufacturing System, Supply Chain Network
- Operations Research and Simulation Model for decision making in Manufacturing and Supply Chain
- Computational Intelligence and Analytics (Manufacturing and Logistics domain)
- Product and Process Improvements (Design for Manufacturing and Assembly, Quality Improvements methods)

**Teaching Interests:**

During his academic career, he has taught several courses, which includes Supply Chain Management, Intelligent Manufacturing, Flexible Manufacturing System, Operations Research, Operations Management, Computational Intelligence, Networks and Project Management, and Design for Manufacturing (DfM), and Design for Assembly and Automation (DfAA) at various institutes and universities.

**Contribution as a Supervisor:**

- Supervised 10 Ph.D. students and presently running six more Ph.D. students.

#	Student Name	Year of Completion	Type
1	Mayank Shukla	Ongoing	Joint Supervisor*
2	Rony Mitra	Ongoing	Joint Supervisor*
3	Rosalin Sahoo	Ongoing	Joint Supervisor*
4	Aishwarya Dash	Ongoing	Joint Supervisor
5	Jasashwi Mandal	Ongoing	Joint Supervisor*
6	Sumit Kumar Biswas	Ongoing	Supervisor*
7	Vishal Kumar Gupta	Ongoing	Supervisor*
8	Sankara Narayanan G	Ongoing	Joint Supervisor
9	Sube Singh	2021	Supervisor
10	Yerasani Sinjana	2019	Supervisor
11	Mogale Dnyaneshwar Gangadhar	2019	Supervisor
12	Arijit De	2018	Supervisor
13	Ramkrishna Punjaji Manatkar	2017	Supervisor
14	Saurabh Pratap	2016	Supervisor
15	Mohit Goswami	2016	Supervisor
16	Vijaya Kumar Manupati	2014	Supervisor
17	Priyabrata Mohapatra	2012	Supervisor
18	Hiremath Nagayya C	2011	Supervisor
*Working with me.			

- Mentor of about 100 students, among them 20 are pursuing their master's and Doctoral work in various USA, UK, Hong Kong, and Canada universities. All of them have learned the research methodologies under my supervision and published articles in leading international journals and conferences.
- Supervised 60 Master's thesis.

- Supervised over 150 Bachelor's project work.

#### **Honors:**

- Fellow of the National Academy of Sciences (NASI), Allahabad, India (effect from Dec 2019)
- Fellow of National Academy of Engineering, India (Effect from 2013)
- Fellow of Institute of Industrial and Systems Engineers (IISE) (IIE Fellow), in May 2018, during IISE Annual Conference, held at the Loews Royal Pacific Resort at Universal Orlando, Florida, USA. (22nd May 2018)
- Fellow of International Engineering and Technology Institute, Hong Kong (FIETI) on July 18, 2019.
- Visiting Fellow in Durham University Business School, Durham, the UK for a period of two years from January 1, 2019, to December 31, 2020.
- Recipient of Fellowship of Indian Institution of Industrial Engineering (IIIE) Mumbai for the recognition of his outstanding contribution to the promotion of the Industrial Engineering profession (29th September 2018)
- Recipient of Institute Chair Professorship Award 2018 for outstanding contributions towards Teaching, Research, and Institutional Development at IIT Kharagpur, during 68th Foundation Day of Indian Institute of Technology Kharagpur (18th August 2018)
- Appointed as an Honorary Visiting Professor of Computational Intelligence in Manufacturing in the Wolfson School of Mechanical, Electrical and Manufacturing Engineering, at Loughborough University, UK (2018-21).
- Recipient of Mahalanobis Distinguished Educator Award from the Operations Research Society of India (ORSI), as Distinguished Educator in the field of Management for his noteworthy contribution (21st Dec 2017)
- Recipient of Dr. R.P. Mohanty Gold Medal Award (2016) for Outstanding Teacher in Industrial Engineering by Indian Institution of Industrial Engineering on 59th National Convention of IIIE at Aurangabad, 2017.
- Member, Board of Governor, IIT Kharagpur, January 2016-2018
- Member, Board of Governor, National Institute of Foundry and Forge Technology, Hatia, Ranchi (Nominated by AICTE, New Delhi, July 2016-continuing)
- Chairman of Board of UG Studies AICTE (2018-continuing) and Member of Board of UG Studies AICTE since 2016
- Member of Steering Committee, International Federation of automatic control (IFAC TC 5.2), France, (2014-Continuing). IFAC TC 5.2 is the technical committee under IFAC for the domain of Manufacturing Modelling for Management and Control
- Member of National Research Development Corporation (NRDC) Expert Screening Committee for selecting the NRDC National Awards in three categories of Innovation Awards, Societal Innovation Awards, and Budding Innovators Awards. (2017-continuing)

## Achievements:

- Our paper published on COVID-19 and Logistics System is Most Read Article in the 60-year-old Journal, International Journal of Production Research (IJPR) (67K+ views)
- Top leading author in the domain of Supply Chain Analytical Techniques who has published in Journal of Computer & Industrial Engineering during last 25 years (CAIE, Volume 137, November 2019, 106015).
- Commended Paper Award in 9th IFAC Conference Manufacturing Modelling, Management and Control MIM 2019 for an article titled as “Digital Twin Driven Inclusive Manufacturing Using Emerging Technologies”
- Recipient of Most Influential Researcher Award in the domain of Operations and Supply Chain Management (Award is given to the Third Green Supply Chain International Conference, 2016 organized by School of Business and Economics, Loughborough University, London Campus. Prof. Sir Mike Gregory, Founder and Former Head of IFM, Cambridge University has presented the award)
- Rated 2<sup>nd</sup> among many researchers working in Logistics and Supply Chain Management in India (Analysis of the logistics Research in India-White paper published in TU Dortmund University, Dortmund Germany-2012)
- Placed at the 14<sup>th</sup> position in the world’s top 20 most productive authors in five leading POM journals (1959-2008), and 9<sup>th</sup> position in the world’s top 10 most productive authors in the last decade (1999-2008). [As published in a research article in the Int. J. Production Economics, 2009, vol-120, pp. 540-551]
- Rated as Rank 1 among top 100 individual researchers across the world, who had published research articles in International Journal of Production Research (Taylor and Francis) during the time period 1985-2010. The origins of research and patterns of authorship in the International Journal of Production Research. International Journal of Production Research, 2013 Vol. 51, Nos. 23–24, 7470–7500.  
<http://dx.doi.org/10.1080/00207543.2013.832436>
- Rated as Rank 5<sup>th</sup> among top 100 authors (distributed articles) based on papers published in top 11 journals of Operations Management (between 1985-2010). Reported in International Journal of Production Research, 5<sup>th</sup> May 2015. (**DOI**:10.1080/00207543.2015.1037935)
- Ranked 5<sup>th</sup> Among top ten authors in India among the entire Engineering Section as a subject area on account of a number of publications in 2002-2014. Among these authors, Prof. Tiwari is having second highest H-index. [Listed in Bibliographic study conducted by a study group engaged by DST-Govt of India-April 2016] (<http://nstmis-dst.org/PDF/Elsevier.pdf>)
- Received “Leadership in Inspiring Research in Management Science” award during XX Annual International Conference of the Society of Operations Management, SOM 2016, held at ABV-IIITM Gwalior on December 23, 2016.
- Received the IJPR Best Paper Award for the article: “Distributed manufacturing: scope, challenges and opportunities” (2018)
- Listed the article “Optimising integrated inventory policy for perishable items in a multi-stage supply chain” in a Special Issue of Leading Scholars in Production Research published by IJPR on its 55<sup>th</sup> anniversary (2018)

### Editorial Responsibilities:

- Senior Associate Editor of *Sadhana*, Academy Proceedings in Engineering Sciences, Indian Academy of Sciences Bangalore, Springer (2015 – continuing)
- Senior Editor of *Production and Operations Management*, published by Production and Operations Management Society (2019 – continuing)
- Associate Editor of *IEEE Transactions on Systems, Man, and Cybernetics: Systems* (2012 – continuing)
- Associate Editor of *International Journal of Production Research*, published by Taylor and Francis. (2005 – continuing)
- Associate Editor of *Expert Systems with Applications*, published by Elsevier. (2020 – till date)
- Associate Editor of *Manufacturing and Logistics Systems - Manufacturing Modeling for Management and Control* for IFAC 2020.
- Regional Associate Editor (Asia) of *Journal of Intelligent Manufacturing*, published by Springer (2005 – continuing)
- Associate Editor of *International Journal of System Science*, published by Taylor and Francis (2006 – continuing)
- Area Editor (chief in Manufacturing Process) of *Journal of Computers and Industrial Engineering*, published by Elsevier (2012 – continuing)
- Associate Editor of *Journal of Decision Support System*, published by Elsevier (2010-2012) second term( August 2014 – continuing)
- Associate Editor of *Cogent Engineering*, published by Taylor & Francis (2015 – till date)
- Associate Editors of *Smart and Sustainable Manufacturing Systems*, published by ASTM International (2016 – continuing)
- Associate Editor of *Journal of Advanced Manufacturing Systems*, published by World Scientific (2018 – continuing)
- Associate Editor of *Journal of Neurocomputing*, Published by Elsevier (2012 – 2019)
- Managing Editor of *OPSEARCH*, Journal of the operational research society of India published by Springer (2018 – 2021)
- Associate Editor of *OPSEARCH*, Journal of the operational research society of India published by Springer (2017 – 2021)
- Associate Editor of *Sadhana*, Academy Proceedings in Engineering Sciences, Indian Academy of Sciences Bangalore, Springer (2013 – 2015)
- Associate Editor, Engineering Applications of Artificial Intelligence, Elsevier (2016-2018)
- Editorial Board Member of European Journal of Operational Research (EJOR) published by Elsevier (2010- 29<sup>th</sup> October 2014)
- Editorial Board Member of International Journal of Computer Integrated Manufacturing (IJCIM), published by Taylor and Francis
- Editorial Board Member of Robotics and Computer Integrated Manufacturing (RCIM), published by Elsevier (2007 – 2018)
- Editorial Board Member of International Journal of Advanced Manufacturing Technology (IJAMT), Published by Springer
- Editorial Board Member of Journal of Transportation Security (JTS) published by Springer
- Editorial Board Member of International Journal of Decision Making in Manufacturing and Services, AGH University of Science and Technology Press, Poland

- Editorial Board Member of International Journal of Mechanical Engineering Science, (Proceedings the IMechE, Part C) (2007-2012), Professional Engineering Publisher
- Guest Editor of Special issue of International Journal of Production Research (IJPR), published by Taylor and Francis
- Member of the team working on “Next-Gen Supply Chain” (A European Council Project). It was headed by CS Lalwani (University of Hull, UK). Other members of the team are from other IITs and IIMs.
- Member of Scientific Committee of 7<sup>th</sup> International Conference on Manufacturing Research (ICMR 09). (<http://go.warwick.ac.uk/icmr09>)(2008-2010)
- Member of Scientific Committee of 3<sup>rd</sup> International Conference on Changeable, Agile, Reconfigurable and Virtual Production (CARV) 2009
- Member of Scientific Committee of Flexible Automation and Intelligent Manufacturing (FAIM) 2005, 2006 and 2007
- Member of International Advisory Committee of International Manufacturing Leaders Forum (IMLF) 2006, Taipei, Taiwan
- Member of Program Committee of International multiconference of Engineers and Computer Scientists (IMECS) 2007

**Listed in the panel of reviewers of 37 International Journals:**

- ASME - Journal of Manufacturing Science and Engineering
- Computers and Industrial Engineering (CIE)
- Engineering Optimization (T&F)
- European Journal of Operation Research (EJOR)
- IEEE Transactions Automation Science and Engineering
- IEEE Transactions on Engineering Management
- IEEE Transactions on Evolutionary Computation
- IEEE Transactions on Systems, Man, and Cybernetics (Part: A)
- IEEE Transactions on Systems, Man, and Cybernetics (Part: B)
- IEEE Transactions on Systems, Man, and Cybernetics (Part: C)
- Information Sciences
- Integrated Computer-Aided Engineering (ICAE)
- Integrated Manufacturing Systems
- International Journal of Advanced Manufacturing Technology.
- International Journal of Business Performance Management
- International Journal of Computer Integrated Manufacturing
- International Journal of Management Science (Omega)
- International Journal of Manufacturing Technology & Management
- International Journal of Material Processing Technology
- International Journal of Mechanical Sciences
- International Journal of Production Economics (IJPE)
- International Journal of Production Research (IJPR)
- International Journal of Six Sigma and Competitive Advantage
- International Journal of System Science (IJSS)
- International Journal of Technology Management
- Journal of Heuristics
- Journal of Operation Research Society (JORS)
- Journal of Organizational Computing and Electronic Commerce
- Management Research News
- Physica A: Statistical Mechanics and its Applications
- Proceedings of Institute of Mechanical Engineering Part: B Journal of Engineering Manufacture
- Proceedings of Institute of Mechanical Engineering Part: C Journal of Mechanical Engineering Science
- Proceedings of Institute of Mechanical Engineering Part: G Journal of Aerospace Engineering

- Production Planning and Control (PPC)
- Transactions of Institute of Industrial Engineering (Design and Manufacturing) (*now IISE*)
- Transactions of Institute of Industrial Engineering (Quality and Reliability) (*now IISE*)
- Transportation Research Part E: Logistics and Transportation Review

#### **Societies Membership:**

- Institute of Industrial and Systems Engineering – IISE (Fellow and Senior Member) - (*March 2005 – continuing*)
- Institute for Operations Research and the Management Sciences – INFORMS (*January 2011 – continuing*)
- IEEE Membership (Senior Member) – (*March 2011 – continuing*)
- Production and Operations Management Society - POMS (*January 2019 – continuing*)
- Council of Supply Chain Management Professionals – CSCMP (*September 2018 – continuing*)
- Society of Manufacturing Engineers – SME (*Nov 2016 – continuing*)
- Operational Research Society of India – ORSI (*Lifetime member*)
- Indian Institution of Industrial Engineering – IIIE (*Lifetime member*)

#### **Keynotes/Invited Lectures/Seminar (International):**

1. Delivered a short talk on “Sustainability risk and mitigation strategy with analytical approaches” in a workshop Sustainability Risk (ESG Risk), organised by the UK Forum for Supply Chain Sustainability, Loughborough University, UK, 10 Feb, 2021 (Online)
2. Delivered a keynote talk on “An operational perspective on data analytics for resilience in the age of ‘digital twin’ supply chains” in 24th Cambridge International Manufacturing Symposium held during 17-18 September 2020. (Online)
3. Delivered a Track Keynote talk on “Manufacturing Analytics” at MIM 2019: 9th IFAC Triannual Conference on Manufacturing Modeling, Management and Control. Berlin, GERMANY (28-30 August, 2019).
4. Visited Loughborough University and Durham University, UK to pursue academic interaction with Prof. Jenny Harding and Prof. Kiran Fernandes (8-9 June 2019)
5. Visited Cambridge University (IfM), UK for attending the Leadership for Academicians Programme (LEAP) sponsored by Ministry of Human Resource Development (MHRD), India (2-7 June 2019)
6. Delivered a seminar talk at Warwick Manufacturing Group (14th July 2018)
7. Delivered a talk on digital product, process, and service platform with reference to Smart Manufacturing at Loughborough School of Business and Economics, Loughborough University, Loughborough, UK (11th July 2018)
8. Visited Warwick Manufacturing Group, Bristol University Business School, Cardiff Business School, UK, 14<sup>th</sup>-19<sup>th</sup> July 2016.
9. Delivered a keynote on Modern Trends in Sustainable Supply Chain at 3<sup>rd</sup> GSC (Green Supply Chain Conference) held at Loughborough School of Business and Economics, London (10-13<sup>th</sup> July 2016)
10. Chaired two sessions at Manufacturing Modelling Management and Control (MIM), held at University of Technology of Troyes, France, June 28-30, 2016.
11. Delivered a talk and coordinated a session on Distributed Manufacturing at Institute for Manufacturing, the University of Cambridge on 23<sup>rd</sup> September 2015.



12. Delivered a keynote on “An Integrated Framework based on Virtual Manufacturing to Enhance the Capability of SMEs”, in a joint workshop organized by Royal Academy of Engineering, UK and Indian National Academy of Engineering. The workshop was coordinated by Professor Mike Gregory, Head, Institute for Manufacturing, University of Cambridge. June 16<sup>th</sup> -18<sup>th</sup>, 2014 at London.
13. Invited Talk on Supply Chain and Food Security, Invited by The University of Waikato, School of Management, Hamilton, 9<sup>th</sup> -17<sup>th</sup> May 2014
14. Invited Talk on Self-Healing architecture of Supply chain, Invited by TU Dortmund University, Dortmund Germany-2013
15. Warwick Manufacturing Group (WMG) UK-2009
16. School of Business and Economics, University of Exeter, Exeter, UK (July 2006)
17. Department of Mechanical Engineering, University of Bath, UK (July 2006)
18. Wolfson School of Mechanical and Manufacturing Engineering, Loughborough University, UK (July 2006)
19. Department of Engineering Management and Systems Engineering, Engineering Management, University of Missouri-Rolla, USA (September 2006)
20. Department of Industrial Engineering, University of Wisconsin-Madison, Wisconsin, USA (July-September, 2006)

**Keynotes/Invited Lectures/Seminar (National):**

- Chief Guest during Inaugural Ceremony of ATAL FDPs - Faculty Development Program (FDPs) of AICTE on 15th November 2021.
- Delivered a keynote session on the topic “Key Logistics and Supply Chain Challenges” organized by IEEE CS Bombay Chapter on 26th June 2021.
- Keynote speaker in an online Half-day Workshop on “Additive Manufacturing for Competitiveness” held at NITIE Mumbai on May 20, 2021.
- Delivered several webinars talks on Impact of COVID-19 on Supply Chain, Manufacturing Systems, and Digital Supply Chain, hosted by numerous renowned institutions in India, like, MANIT Bhopal, NIT Jamshedpur, NIT Jalandhar, NITIE Mumbai, Doon University, etc.
- Participated in various high level panel discussions on implementation and future outcomes of National Education Policy 2020 (NEP-2020).
- Keynote speaker in 3rd National Conference on Industrial Engineering and Technology Management 2018 held at NITIE Mumbai during 30<sup>th</sup> November to 1<sup>st</sup> December 2018. (1<sup>st</sup> December, 2018)
- Delivered keynote talk on Industry 4.0: an era of digital manufacturing in Diamond Jubilee Convention of IIE and International Conference ICIEIND at ITER, Bhubaneswar, India (27<sup>th</sup> to 30<sup>th</sup> September, 2018)
- Craft & Small Scale Manufacturing: Policy for IM at Inclusive Manufacturing Forum 2018-NIAS, Bangalore, India (05<sup>th</sup> -7<sup>th</sup> April 2018)
- Delivered an invited lecture on Operations Research and Nature inspired Search Algorithms: A Lethal combination for solving large sized problems. At Operational Research Society of India (ORSI) during its Diamond Jubilee, India (21<sup>st</sup> to 23<sup>rd</sup> December, 2017)

- Delivered an invited talk on Sustainable freight transportation for food grain distribution at IIT Delhi, India (1<sup>st</sup> November, 2017)
- Application of Machine Learning and Big Data Analytics in Smart Manufacturing at IIT Madras, India (23<sup>rd</sup> June, 2017)
- Framework of Inclusive Manufacturing at Inclusive Manufacturing Forum 2017-NIAS, Bangalore, India (06<sup>th</sup> -8<sup>th</sup> April 2017)
- Delivered an invited talk on Sustainable Manufacturing at XX Annual International Conference of the Society of Operations Management, IIITM, Gwalior, (22<sup>nd</sup> -23<sup>rd</sup> December 2016)
- Modeling and analysis of Sustainable Shipping Operations at International Conference on E-Business and Supply Chain Competitiveness, IISc Bangalore (19<sup>th</sup> -21<sup>st</sup> December 2016)
- Delivered an invited talk on Digital product and Service Platform to exchange the Manufacturing Productivity at Design Workshop, IIITDM Jabalpur (12<sup>th</sup>-14<sup>th</sup> December 2016)
- Delivered an invited talk on Digital product and service platforms at NIAS, Bangalore (21<sup>st</sup>-22<sup>nd</sup> Oct 2016)
- Delivered an invited talk on Distributed Manufacturing at NIAS, Bangalore (18<sup>th</sup> June 2016)
- Delivered a keynote on Predictions in Product Development at SOM Conference held at IIM Kolkata (12<sup>th</sup> December 2015).
- Delivered an invited talk on Digital Manufacturing and Case studies in an international conference organized by DRDO, December 2015.
- Delivered a keynote on Product Process and Service Platform at ITER Bhubaneswar on October 2015.
- Delivered a keynote and presented a report on a Joint study on “Requirements for and impact of ICT-based advanced manufacturing with special reference to an International context” sponsored by ACATECH (German National Academy of Science and Engineering), and INAE (Indian National Academy of Engineering) under a research project “Advanced Manufacturing/Industry 4.0 and Urban Development- the Case of Indian Metropolitan Areas”, Conference held in Delhi on September 3<sup>rd</sup> - 4<sup>th</sup> 2014.
- Delivered an invited talk on Supply Chain Network Design at IIT Bhubaneswar, 6<sup>th</sup> April 2014
- Delivered a keynote to address Self-Healing in Supply Chain Management and was a part of the core team to organize an International Conference of Society of Operation Management, IIT Delhi, (Dec 2012).
- Keynote speaker at International Conference on Swarm Evolutionary and Memetic Computing Conference (SEMCCO-2012), SOA University, Bhubaneswar, Odisha (held on Dec 2012)
- Keynote speaker at International Conference on Best Practices in Supply Chain Management (BPSCM) 2012, SOA University, Bhubaneswar, Odisha (held on 22<sup>nd</sup>-23<sup>rd</sup> November 2012).
- Keynote speaker at National Conference on Research Scholars in Management-NCRSM-2011, ABV-IIIT Gwalior, India (held on 26<sup>th</sup>-27<sup>th</sup> March 2011).
- Delivered a lecture on Evolutionary computations in solving the Manufacturing Planning Problems (July 2010, Jadavpur University).
- Keynote speaker at National Conference on "Emerging Trends in Nano-Technology and Innovations in Design and Manufacturing-ETNDM-2006, Rourkela, India (held on 18<sup>th</sup> February 2006).

- Keynote speaker at National Conference on Quality and Reliability – CQR-2006, Rourkela, India (held on 4<sup>th</sup> November 2006)

#### Summary of Research Publications:

Site	H-Index	Citations (on 1-Jan-2022)
<a href="#">Google Scholar</a>	71	20122
<a href="#">Scopus</a>	56	12338
<a href="#">Web of Science</a>	51	11478
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i. <a href="#">Refereed International Journal Publications</a>		338
ii. <a href="#">Scientific Report (Nature)</a>		2
iii. <a href="#">International Conferences Proceedings</a>		55
iv. <a href="#">National Conferences Proceedings</a>		31
v. <a href="#">Edited Books</a>		4
vi. <a href="#">National Journals</a>		2
vii. <a href="#">Book Chapters</a>		7
viii. <a href="#">Research reports</a>		10
ix. <a href="#">News articles/mentions</a>		12

#### i. Refereed International Journal Publications

1. Sahoo, R., Pasayat, A. K., Bhowmick, B., Fernandes, K., & **Tiwari, M. K.** (2021). A hybrid ensemble learning-based prediction model to minimise delay in air cargo transport using bagging and stacking. *International Journal of Production Research*, 1-17. Accepted *in press*.
2. Dixit, V., & **Tiwari, M. K.** (2021). Learning curve based integrated procurement and project scheduling of multiple sister ships project. *Computers & Industrial Engineering*, 162, 107691.
3. Sahoo, R., Bhowmick, B., & **Tiwari, M. K.** (2021). Developing a model to optimise the cost of consolidated air freight considering the varying scenarios. *International Journal of Logistics Research and Applications*, 1-25. Accepted *in press*.
4. Dwivedi, Y. K., Hughes, L., Kar, A. K., Baabdullah, A. M., Grover, P., Abbas, R., ..., **Tiwari, M. K.**, ..., & Wade, M. (2022). Climate change and COP26: Are digital technologies and information management part of the problem or the solution? An editorial reflection and call to action. *International Journal of Information Management*, 63, 102456.
5. Mishra, A., Verma, P., & **Tiwari, M. K.** (2021). A circularity-based quality assessment tool to classify the core for recovery businesses. *International Journal of Production Research*, 1-19. Accepted *in press*.
6. Ng, F., Harding, J. A., & **Tiwari, M. K.** (2021). A bespoke PSS development roadmap for construction OEMs. *Sādhanā*, 46(3), 1-14. Accepted *in press*.
7. Rai, R., **Tiwari, M. K.**, Ivanov, D., & Dolgui, A. (2021). Machine learning in manufacturing and industry 4.0 applications. *International Journal of Production Research*, 56(16), 4773-4778. Accepted *in press*.
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## ii. Scientific Report (Nature)

1. Bhalodiya, J. M., Palit, A., Ferrante, E., Tiwari, M. K., Bhudia, S. K., Arvanitis, T. N., & Williams, M. A. (2019). Hierarchical Template Matching for 3D Myocardial Tracking and Cardiac Strain Estimation. *Scientific reports*, 9(1), 1-13.
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## iii. International Conferences Proceedings

1. Singhania, R., Sawkar, C., & Tiwari, M. K. (2021, June). Optimal Sensor Deployment to Diagnose Large-Scale Manufacturing Systems Using a Convergence-Trajectory Controlled Ant Colony System Algorithm. In *International Manufacturing Science and Engineering Conference* (Vol. 85079, p. V002T09A002). American Society of Mechanical Engineers.

2. Mitra, R., Shukla, M., Goswami, A., & **Tiwari, M. K.** (2021, September). Digitization of Real-Time Predictive Maintenance for High Speed Machine Equipment. In *IFIP International Conference on Advances in Production Management Systems* (pp. 132-140). Springer, Cham.
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8. Gupta, V., Chaudhuri, A., & **Tiwari, M.K.** "Modeling for Deployment of Digital Technologies in the Cold Chain". In *9th IFAC Conference Manufacturing Modelling, Management and Control MIM 2019*, August, 2019. IFAC: Berlin, Germany.
9. Gupta, E.V., Mogale, D. G., & **Tiwari, M.K.** "Optimal Control of Production and Maintenance Operations in Smart Custom Manufacturing Systems with Multiple Machines". In *9th IFAC Conference Manufacturing Modelling, Management and Control MIM 2019*, August, 2019. IFAC: Berlin, Germany.
10. Gupta, V., Dakare, S., & **Tiwari, M.K.** "Direct and Wholesale Price Optimization in Omnichannel Environment Using Bilevel Optimization Model". In *INFORMS Annual Meeting 2018*, November, 2018. INFORMS: Phoenix, AZ, USA.
11. Dakare, S., Gupta, V., & **Tiwari, M.K.** "Revenue Management for Dual Channel Retailer Using Randomized Decomposition Based Evolutionary Algorithm". In *INFORMS Annual Meeting 2018*, November, 2018. INFORMS: Phoenix, AZ, USA.
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2. Modeling of Responsive Supply Chain, Edited by Prof. **M. K. Tiwari**, Prof. B. Mahanty, Prof. S.P. Sharma and Prof. M. Jenamani, CRC Press, Taylor & Francis Group. 2012
3. Evolutionary Computing in Advanced Manufacturing, Edited by **Prof. M. K. Tiwari** and Jenny A. Harding, Scrivener Publishing, WILEY, 2011.
4. Swarm Intelligence, Focus on Ant and Particle Swarm Optimization, Edited by Prof F. T. S. Chan and **Prof M. K. Tiwari**, I-Tech Education and Publishing, Vienna, Austria, 2007.

#### vi. National Journal:

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#### vii. Book Chapters

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#### **viii. Research reports**

1. Adaptive production control system: A Genetic Algorithm and Neural Network based approach
2. Development of framework for e-manufacturing
3. Simulation and Analysis of Practical Issues in Scheduling Wafer Fabrication: A Simulated Annealing Based Approach
4. Hole quality evaluation in reaming an evolutionary fuzzy system
5. Evaluation of engineering design with imprecise parameter: a fuzzy based approach
6. A GA approach for slab stack shuffling problem
7. Process plan selection problem: a game theory based heuristic approach
8. Generating a robust schedule for a wafer fabrication facility via expert enhanced high level colored time Petri net and neuro-simulated annealing based heuristic
9. Analysis of miniaturized electromagnetic devices using evolution algorithms with fast simulated annealing based approach (EFSA)
10. Analysis of assembly operation difficulty using advanced expert fuzzy Petri net

#### **ix. News Articles/Mentions (National and International)**

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2. Mediawire. (2021, April 17). NITIE, Mumbai successfully completes the 30 Hour Global Online Certification Course on Supply Chain Digitization and Management for 2500+ Participants. *Times of India*.
3. Tiwari, M. K., Date, H., Sharma, V., Singh, P. K., Ramakrishna, K., Kumar, S., Pathak, V. (2020, December 14). A joint view of Tata Consultancy Service (TCS) & National Institute of Industrial Engineering (NITIE) to manage COVID vaccine distribution for India. *Times of India*.
4. Mediawire. (2020, August 13). Prof David Simchi-Levi at NITIE Webinar - Government should prioritize critical supply chains to apply stress-test. Content Produced by *Optimal Media Solutions*. *Times of India*.
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### **Sponsored Project:**

#### ***At NITIE Mumbai***

Last one year as a director of the institute and as a professor in domain of logistics and supply chain management. The following project has been undertaken.

- ***Pradeep Metals Limited***  
This is an integrated project of several activities including, Pre-order inventory to reduce lead time and increase production speed, identify material type required over the next 2-months time period, and pre-plan inventory for these materials through forecasting using machine learning techniques.
- ***o9solutions:***  
It is a start-up, which offers as a project to identify and build a forecasting model for large scale retailers. (5 Lakh per Annum)
- ***Air Asia:***  
Under my principal investigator implementing real-life project related to ground staff demand generation and roster allocation, crew planning, tail mapping and optimal development for manpower allocation. (16 Lakh per Annum)  
In two of project, the company save more than one crore rupees after implementing as staff allocation model.
- ***Sustainable Logistics of the Future (FutureLOG) (International collaboration)***  
This Research project is funded by the Research Council of Norway and collaboration with eighteen research organisation across the globe. I have been a partner of Research Council and led by Prof. Dr Fabio Sgarbossa, Norwegian University of Science and Technology, Norway. (10 Lakh per Annum)

#### ***At IIT Kharagpur***

- ***Digital manufacturing and industrial internet of things for enhanced supply chain coordination, quality, and maintenance (Role: Principal Investigator)***  
This project aims to provide visibility, traceability, and simulated setting of the products and entire value chain for performance assessment of manufacturing and supply chain efficiently and reliably, to develop a framework to apply digital manufacturing and the Internet of things across different partners of discrete products and heavy industry units and contribute to technological progress in manufacturing and supply chain environment on a global scale. I am the principal project investigator of this project. It is sponsored by the Department of Heavy Industry under the component Centre of Excellence for Technology Development (COE) of the Scheme on enhancing competitiveness in the Indian capital goods sector. The value of this project is Rs 3.34 crores (0.48 Million USD @ 69.25 Indian rupees to 1 US dollar.). It is a five-years duration project (2018-2022).
- ***Sustainable Food Security through Technological Interventions for Production, Processing and Logistics (Role: Principal Investigator)***  
The vision of this research is to develop integrated and focused mission projects to pursue aggressive research and innovation, which will guide to enhance the food productivity, appropriate storage optimally, reduced wastage and logistics, to support the realization of sustainable implementation of NFSA and positively contribute to safe, healthy and on-time supply to the beneficiaries. It is sponsored by the Ministry of Human Resource Development, Govt of India. The value of this project is Rs 16 crores(2.3 Million USD). It is a three-years duration project (2014-2017).
- ***Center of Excellence on E-Business (Role: Principal Investigator)***  
The center is developed to support logistics and manufacturing, decision making and operation analytics. It is conceptualized to foster research and develop decision support models with view to resolve complexities in the area of loading/unloading of vehicles, market analysis, procurement, supplier selection, manufacturing planning and scheduling, etc. It is sponsored by Ministry of Human Resource Development, Govt. of India, providing a competitive project grant of Rs 4 crores.

#### ***At NIFFT Ranchi***

- ***Technical Education Quality Improvement Programme (TEQIP)***

To develop the institute and modernize the laboratories, I took the lead and prepared comprehensive project documents. After presentation and scrutiny, National Project Implementation Unit (NPIU), a body responsible to implement World Bank project, considered NIFFT in the category of Lead Institutions. Under this project, institute received a grant of Rs. 14 Crore (US \$3.04 Million) and I was acting as its coordinator of the project till July 2007.

- ***Campus wide Networking (CWN)***

This project was of worth Rs 1.5 Crore (US \$ 0.32 Million). Its proposal was prepared by me and under the plan grant of the institute. The project was sanctioned by Board of Governors and controlling Ministry (year 2002). I was convener of the project. Here, main task was to prepare the specifications of networking components and other hardwares and softwares by involving experts from premier institutions like IIT's. I have coordinated each and every activity, right from selection of networking experts, procurement consultant, floating the advertisement, evaluation of tenders, installation and commissioning, and finally certification. This project was success fully completed and institute was fully connected with internet.

As a coordinator, I prepared the documents and supervised the visit of National Board of Accreditation (NBA) team deputed by AICTE. It was a massive coordinated efforts from various agencies and departments and all the six programs got accredited by the team in 2004.

Presented the case of NIFFT before the University Grant Commission for Deemed to be University status. Commission agreed to send an expert team to assess the institute and its proposal (2005).

#### **Sponsored Project (Supported by International Agencies):**

- Requirements for and impacts of ICT based advanced manufacturing with special reference to Indian context sponsored by **Germany- ACATECH, Indian Institute of Technology National Academy of Science and Engineering.**
- Studying and analyzing carbon trading regime for Global Collaborative Supply Chain (ACTR) sponsored by **The University of Sheffield, UK.**
- Dynamic Scheduling and chartering of oil tankers and their solution by simulation based Optimization sponsored by **University of Connecticut, Gali, Zaicek.**
- ***EU Indian Research & Innovation Partnership for efficient and sustainable freight Transportation (REINVSET). Duration: 4 Year; Amount: 30 Lakh Rupee***

Prof M K Tiwari is the main Project Investigator and here work package proposed are leading to exploration of areas related to sustainable freight analysis and intermodal transportation. The Key performance indicators related to freight transportation (that covers flexible, quality, reaction time and intermodal freight transfer) need to be evolved and linked with developing supply chain network, cross docking and profit and carbon trading among the partners (EU sponsored project, where main leading partners are Sheffield university-UK, Loughborough University-UK, South East European Research Centre (SEERC), IIT-B and IIT-D).

#### **Industrial and Consultancy services:**

1. Organized a 20-hour Global Online Certification Course on 'End-to-End Supply Chain Transformation through Digitization' in association with Prof. David Simchi-Levi (MIT, USA) during 13th November 2021 – 5th December 2021
2. Organized a 30-hour Global Online Certification Course on 'Supply Chain Operations & Disruptions Management' in association with Prof. Tadeusz Sawik (AGH University, Poland & Reykjavik University, Iceland) during 29<sup>th</sup> September 2021 – 27<sup>th</sup> October, 2021
3. Organized a 30-hour Global Online Certification Course on 'Business and Operations Analytics' in association with Prof. David Simchi-Levi (MIT, USA) during 3<sup>rd</sup> July 2021 – 5th September 2021
4. Organized a 30-hour Global Online Certification Course on Supply Chain Digitization and Management with Prof. David Simchi Levi (MIT, USA) by engaging 2500+ participants from academia and industry professionals (16<sup>th</sup> January 2021 – 21<sup>st</sup> March 2021)

5. Developed and taught 20 hours course material - Decision support on modeling of naval operations to the officers of Indian Navy. It was organized by Prof. Ravi Shankar, Dept of Management Studies, IIT Delhi on 01.06.2011 to 08.07.2011, 2013
6. Delivered 3 hours talk on Coordination in Supply Chain Management in a week long QIP course "Supply Chain Excellence" organized by Dept of Management Studies, IIT Delhi on 13.06.2011 to 18.06.2011.
7. Organized a short term course on "Facility Layout and Decision Modeling" Dept of Industrial Engineering and Management, IIT Kharagpur on 04.07.2011 to 08.07.2011.
8. Developed a Software to address the route optimization and Truck Load Capacity Planning for Proctor Gamble India Limited. (I am the Project Investigator, Project cost is 3 Lac, 2011).
9. Conducted a Course on Reconfigurable Manufacturing System for Faculty members of different Technical Institutes. (Cost was 1.5 Lac, Feb-2010).
10. Conducted a Course on Lean Manufacturing for managers of different companies. (Cost was 1.35 Lac, Dec-2010).
11. Developed a Faculty Retention Plan and Man Power Planning to Establish Indian Institute of Corporate Affairs, New Delhi.(I was one of the co-Project Investigator, Project Cost was 1.5 core, 2009-2010).
12. Implementation of Lean Manufacturing in a Repair Department of Indian Air- Force. (Completed in one and half years, Project Cost was 56 Lac; I was a Co-Project Investigator, 2008-2010).
13. Involved in a Project to train the Engineers and Managers of Maccanly Bharat India Limited on Different Aspect of Project Management. (I was one of the Co-Project investigator and imparted training for three consecutive years, Project cost Average one Lac per year, 2008-2009-2010).
14. Conducted a Course on PLM/PDM for DRDO Professionals. (Cost of the Course 8 Lac, 2008-2009).
15. Conducted a course on Lean Manufacturing for Air-Force Professionals. (Cost was 4 Lac, 2008-2009).
16. Conducted a 3-days course on Facility Layout Planning at TATA Steel, Jamshedpur.(Cost was 54 Thousands, Feb-2008).
17. Developed resource material for selection of executive trainees for ACC Cement Ltd., Mumbai (2005 and 2007).
18. Delivered lectures to the graduate engineers trainees of ACC Ltd., Mumbai on implementation of project management techniques (2004).
19. Organized a National level Workshop on Six Sigma Implementation in Foundry/Forge and other allied Manufacturing Industries (2004).
20. Conducted a week long course on Quick Response Manufacturing (2003).
21. Participated as a member of expert committee to develop the tool room by Govt. Jharkhand, Ranchi.

**Contribution to Laboratory Development:**

- Developed Internet Laboratory at NIFFT, Ranchi (2005)
- Involved in Developing CAD lab at NIFFT, Ranchi (2005-2007)
- Involved in modernizing the laboratories of Forge Department, NIFFT, Ranchi (2005-2007)
- Developed a Research Promotion Cell at NIFFT, Ranchi (2004)
- Associated with development of establishing Machine shop, Tool room, Welding shop in the department of mechanical engineering at NERIST, Itanagar, (1992-1998)
- Development a Computer Integrated Manufacturing System Lab in the Tool Room of the Mechanical Engineering Department, NERIST (1993).

**Contribution to the Curriculum Development:**

- Member of core group looking after the academic requirement of a new school “Ranbir and Chitra school of Infrastructure Design and management” at IIT Kharagpur.
- Attached with development of syllabus to a proposal on a course “Quality Engineering Design and Manufacturing” at IIT Kharagpur.
- Developed the syllabus and course structure for IGNOU, New Delhi (2004-2006).
- Member of a committee that looks into the syllabus revision for U.G. and Graduate program related to manufacturing engineering at NIFFT, Ranchi (1999)
- Developed the syllabus of theory and practical contents related to Industrial Engineering, Operational Research, CAM, AI & Robotics Manufacturing Science, Production Engineering, etc. at NERIST, Itanagar, (1990-1998) and NIFFT, Ranchi (2004)
- Co-coordinator for preparing and presenting the proposal of a Graduate Program on CAD/CAM by Mechanical Engineering department at NERIST, Itanagar (1996-1997)

**Administrative Assignments:****At NITIE Mumbai:**

- Director (Nov 2019 – till date)

**At IIT Kharagpur:**

- Dean (Planning and Coordination), (Jan 2018 – Nov 2019)
- Former Member, Board Of Governors IIT Kharagpur (Jan 2016 - Dec 2017)
- Head of Department -Industrial and Systems Engineering (Jan 2013 – Dec 2015)
- Head of Reliability Engineering center (2013-2014)
- Senate appointed member of RPC (Research promotion Committee)
- Member of a review committee to assess Reliability Engineering centre, IIT Kharagpur.
- Member of Curtain Raiser Committee to celebrate Diamond Jubilee Year (2011-2012) of IIT, Kharagpur.
- Co-Chairman of the Spring Fest, IIT Kharagpur, 2010.
- Member of a committee for running the “Ranbir and Chitra School of Infrastructure Design and Management” at IIT Kharagpur (2007- 2010).
- Examination in- Charge for Post-Graduate program in IE&M Department, IIT Kharagpur, 2007-2010.

**At NIFFT, Ranchi**

- Head of the Department, Forge Technology, NIFFT, Ranchi (2006-2007 )
- I was TEQIP Co-Coordinator of worth 14 Core Rupees. This project aims to upgrade the Laboratories, Curriculums and Networking of Institute at NIFFT, Hatia, Ranchi. This Project was conceded and almost implemented by me. (2004-2007 July).
- I was Coordinator of NBA (National Board of Accredition ) at NIFFT, Hatia, Ranchi. I got all the program accredited at NIFFT, Ranchi, 2005.
- Team member to select a security agency for NIFFT (2005)
- Team member to select civil work contractors at NIFFT (2001-2004)
- In-charge of Training and Placement for Under Graduate and Graduate students at NIFFT, Ranchi (1998-2001).
- Three times participated in conducting assembly elections and parliamentary elections as a patrolling magistrate and sector magistrate in Ranchi (1998-2005)
- Transport Chairman (1996-1997) at NERIST, Itanagar
- Involved in conducting the entrance examination at different places for Under graduate and post graduate students.

#### **Other Assignment:**

- I was a Programme Coordinator of Leadership for Academicians Programme (LEAP) sponsored by MHRD, India and completed three modules, two at IIT Kharagpur and one with foreign collaborators at IFM Cambridge University, UK, 13<sup>th</sup>-24<sup>th</sup> May 2019 and 3<sup>rd</sup> -7<sup>th</sup> June. 2019 respectively.
- I was a Coordinator in organizing 2<sup>nd</sup> INAE Youth Conclave 2018 held at IIT Kharagpur during 10<sup>th</sup> -12<sup>th</sup> August, 2018.
- I was the member of selection committee for selecting the faculty members at M.S. University, Baroda.
- I was the member of selection committee for selecting the faculty members at NIT, Jamshedpur.
- Member of faculty selection committee at IIT Delhi, IIT Roorkee (2018), IIT Madras (2019), IIT BHU (two times), IIT Goa (2019), NITIE Mumbai, and several other IITs and NITs.
- Member of Selection Committee for selecting the senior officer (Grade-A) in the All India Council for Technical Education (AICTE) under Requirement Regulation, 2007. (December 2018)
- Member of an Expert Committee for subject wise ranking of Engineering Discipline, constructed by National Board of Accreditation (NBA), New Delhi, India. (January 2019)
- Developed a Decision support system for Pradhan Mantri Ujjwala Yojana (PMYU) to analyze the impact of maximum cylinder (subsidised) available per connection on dealers commissioned (PMYU is a flagship energy policy initiated by the government of India to provide women below poverty line (BPL) access to clean energy fuel, Liquefied Petroleum Gas).
- Developed the forecast model of daily cash demand of currency chests in India for the Reserve bank of India, central banking institution.
- Part of an organizing committee of 3-days Inclusive Manufacturing Forum held at National Institute of Advanced Studies, Bangalore, India with the participants from Cambridge University, Cranfield University, and delegates from BRICS nations in April 2017 and April 2018.
- Prepared action plan for the Institute of Eminence (IoE) of IIT Kharagpur and it results to get the recognition in 10 IoE of the country from the Government of India.
- Patron and member of organizing committee of International Conference on E-Business and Supply Chain Competitiveness (EBSCC 2016) held at IIT Kharagpur, Kharagpur, India

#### **Social Activities:**

- Helping the students of weaker sections to pursue higher studies.

**Research Collaborators:**

1. Prof. Y.J. Son, Department of Systems and Industrial Engineering, The University of Arizona, Tucson, AZ, USA
2. Prof. David Ben Ariah, Department of Manufacture and system Engineering, Kansas State University, Kansas, USA
3. Prof. Venkat Allada, Department of Engineering Management and Systems Engineering, Engineering Management, Missouri University of Science and Technology-Rolla, USA
4. Prof. Ming J. Zuo , Department of Mechanical Engineering, University of Alberta, Edmonton, Canada
5. Prof. Stephan Newman, Department of Mechanical Engineering, University of Bath, UK
6. Prof. Jenny Harding, Wolfson School of Mechanical, Electrical & Manufacturing Engineering, Loughborough University, UK
7. Prof. F.T.S. Chan, Department of Industrial & Manufacturing Systems Engineering, The University of Hong Kong, Hong Kong
8. Prof. Ravi Shankar, Department of Management Studies, Indian Institute of Technology Delhi, New Delhi, India
9. Prof. K.P. Karunakaran, Professor, Department of Mechanical Engineering, Indian Institute of Technology Bombay, Mumbai.
10. Dr. B. K. Panigrahi, Associate Professor, Department of Electrical Engineering, Indian Institute of Technology Delhi, New Delhi, India

**Eminent Academicians well known to me:**

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