

Curriculum Vitae

Dr. Mohamed Shafiullah Hussain V

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Education:

Doctor of Philosophy (PhD) in Reliability & Quality Engineering

Indian Institute of Technology, Kharagpur (School of Quality & Reliability Engineering), INDIA
(QS Asia World University Ranking, Ranked 59th in Asia, Year: 2024), *Year of Completion: 2017*

Master of Engineering in Production Engineering

Annamalai University (Faculty of Engineering & Technology), INDIA
Year of Completion: 1999

Bachelor of Engineering in Mechanical Engineering

Vellore Institute of Technology, University of Madras, INDIA
(QS Asia World University Ranking, Ranked 173rd in Asia, Year: 2024) *Year of Completion: 1997*

Professional Development

IBM Data Science Professional Certificate

In Progress

Course on Python for Data Analysis

In Progress

Teaching Experience

National Institute of Advanced Manufacturing Technology (Formerly NIFFT)

Hatia, Ranchi – 834 003, INDIA

Assistant Professor (May 2006 – Present); Lecturer (March 2000 – April 2006)

- ◆ Delivering lectures and conducting interactive sessions (see Annexure-I for subjects taught) for both Masters (Post Graduate) and Under Graduate students.
- ◆ Imparting training to industrial personnel and R&D personnel
- ◆ Engaging students in hands-on projects and practical applications to enhance learning.
- ◆ Mentoring and advising students on academic and career-related matters.
- ◆ Developed and implemented innovative teaching methods to enhance student understanding.
- ◆ Participated in curriculum development and assessment activities.
- ◆ Setting & reviewing university level question paper for UG and masters level courses
- ◆ External examiner for different courses at Ranchi University, Jharkhand Technological University, and Central University of Jharkhand.

Additional Academic Responsibilities

- Managed Machine shop & Foundry pattern shop as faculty-in-charge of labs (2011 – 2019).
- Managed CNC & Robotics lab as faculty-in-charge (2005 - 2008).
- Worked as Course Co-coordinator (Equivalent to Assistant Dean) for Post-Graduate studies (2006 - 2008).
- Worked as a Tabulator for university results publication.
- Worked as a Course coordination committee member (equivalent to Assistant Controller of Examination).
- Academic Conferences Coordination (as a Core Committee Member)

Periyar University, Salem (AMSEC, Namakkal – 637 013), Tamil Nadu, INDIA

Lecturer (July 1999 – March 2000)

- Delivered lectures on [specific subjects or courses].
- Provided mentorship and guidance to students in academic and extracurricular activities.

Research Experience

PhD in Reliability Modeling of Rotating Systems

& Research Associate (August 2008 – October 2016)

School of Quality & Reliability Engineering, Indian Institute of Technology, Kharagpur, India

- Conducted innovative investigation on analytical real-time reliability modeling, resulting in publications in reputable journals and conferences.

- Collaborated with industry partners to apply research findings in real-world contexts, contributing to the improvement of industrial system reliability.
- Presented research at international and national conferences, fostering academic dialogue and knowledge exchange.
- **Received the Best Paper Award (Reliability Track)** for outstanding contributions to the field (from IEOM conference, **Lawerance Technological University, Detroit, US**).

Research Supervision (July 2000 – Present)

Research Supervisor

Department of Mechanical and Manufacturing Engineering, National Institute of Advanced-Manufacturing Technology, Ranchi, India.

- Supervising Ph.D. candidates in their research projects, providing guidance and mentorship (one PhD thesis is on the verge of submission and another thesis is in progress - See annexure-II).
- Supervised research-dissertations of post-graduate students (18 finished and one in progress) – See annexure-II.
- **Research Evaluation Committee member of PhD candidates** (in 2 committee)
- **Member, Departmental Research Committee** (Manages all research scholars of the department)
- Collaborating with research candidates on Reliability topics specifically FMEA.
- Facilitating regular research discussions and guiding the development of research methodologies.
- Supporting PhD candidates in the publication of their research findings in reputable journals and conferences.
- **Chaired a conference technical session** & member of technical committee, international conference (2nd ICRAMDM), Aligarh Muslim University, India.
- **Invited Lecture** on the topic “Implementing Reliability Measures in Product cycle” at Faculty of Engineering and Technology, Aligarh Muslim University, India.

Research Publications (Orcid id: 0000-0002-5058-5532)

Refereed Journals:

1. A Sharma, **VMS Hussain**, PA Kumar, M Pandit, “Prioritization of Forging die design criteria based on failure analysis using fuzzy analytic hierarchy process (FAHP)”, Materials today: Proceedings; Elsevier USA, In Press; 2022.
2. A Sharma, **VMS Hussain**, PA Kumar, M Pandit, "Failure Modes and Effects Analysis of Forging Die Design: An integrated approach", Materials today: Proceedings; Elsevier USA, 2022: Vol 62 (6) 4041-4045, 2022.
3. **Hussain, VMS**, and Naikan, VNA, “Vibration Response Based Reliability Modeling for Rotary systems with imbalance” International Journal of Performability Engineering, 2016, Vol. 12 (3) 283-296
4. **Hussain, VMS.**, and Naikan, VNA., “Reliability Modeling for Rotary systems subjected to imbalance” International Journal of Performability Engineering, 2013, Vol. 9 (4) 423-432.
5. **Hussain, VMS**, and Naikan, VNA, “Reliability and Imbalance modeling of a low-pressure turbine rotor” International Journal of Life cycle, Reliability and Safety engineering, 2012, Vol.1 (2) 61-70.
6. Singh, N.K., Rajamohan, G., and **Hussain, VMS**, “Rejection Control of Crankshafts: A case study” Journal of Plant Engineering, July – September 2005.

Under review:

7. **Hussain, VMS**, and Naikan, VNA, “Reliability Modeling of Bearing Inner-Race in Systems Experiencing Misalignment Fault Using Vibration Response Analysis” Journal of Machinery Manufacturing and Reliability, 2024, (Under review)
8. **Hussain VMS**, Equbal A., Equbal M. I, Zahid A. Khan, Badruddin I. A., Kamangar S., Shaik A. S., (2024) Reliability quantification model based on vibration analysis for flexible-coupling hub with parallel-misalignment, Mathematics – Quality & Reliability International - 2024 (under review).
9. Sharma A., Raj, M. P., **Hussain VMS**, “A Novel Hybrid Framework for Prioritization of Failure Modes During Forging Die-Design”, Journal of the Brazilian Society of Mechanical Sciences and Engineering, 2024 (under review)

Book Chapter Published

- ◆ **Title of the Book: Innovative Product Design and Intelligent Manufacturing Systems**
Chapter title: “Optimizations of Process Parameters for Friction Stir Welding of Al Alloy Al 7050”
Authors: Vineet Chak; **V. M. S. Hussain**; Mayank Verma
Name of the Publisher: Springer International
Month & Year of Publication: 2020; ISBN: 978-981-15-2696-1

Patent

- ◆ Holding a **United Kingdom design patent** for “**Automated Medical Instruments sterilization device**”
Design number: 6326126, Grant date: 23 November 2023
Certificate granted by Intellectual Property Office, UK

Conference Publications

1. **Hussain VMS**, Vibration analysis based analytical reliability model for flexible-coupling pins with parallel-misalignment, 14th International Conference on Industrial Engineering and Operations Management, **Khalifa University, Dubai, UAE**. Feb 2024. (Accepted & communicated)
2. Ravindrannair P., Equbal A., Equbal M. I., **Hussain VMS**, RSM Based Desirability Optimization for FDM Printed Poly Lactic Acid parts, 2nd International Conference on Recent Advancements in Materials, Design & Manufacturing, **Aligarh Muslim University, Aligarh, India**, December 2023.
3. A Sharma, **VMS Hussain**, PA Kumar, M Pandit, Prioritization of forging die design criteria based on failure analysis using fuzzy analytic hierarchy process. (FAHP). **2nd Global Conference on Recent Advances in Sustainable Materials (RASM - 2022)**, **A. J. Institute of Engg. & Technology, Mangalore, India** Jul 2022.
4. A Sharma, **VMS Hussain**, PA Kumar, M Pandit, Failure Modes and Effects Analysis of Forging Die Design: An integrated approach, 13th **International** conference on Materials Processing and Characterization, **GRIET Hyderabad. 22-24 April 2022**.
5. Vineet Chak, **Hussain VMS** and Mayank Verma, Optimizations of process parameters for Friction stir welding of aluminum alloy Al 7050, Proceedings of 1st International Conference on Innovative Product Design and Intelligent Manufacturing System, **NIT-Rourkela, India. 17-18 May, 2019**.
6. **Hussain, VMS**, and Naikan, V.N.A., “Reliability Modeling for Rotor Systems with Imbalance Based on Vibration Analysis”, Proceedings of the 2016 International Conference of Industrial Engineering and Operations Management, **Lawrance Tech., Detroit, Michigan, USA, Sep. 23 – 25, 2016**.
7. **Hussain, VMS**, and Naikan, V.N.A., “Point Process Based Maintenance Modeling for Repairable Systems: A Review”, Proceedings of the 2010 **International** Conference on Industrial Engineering and Operations Management, **Dhaka, Bangladesh, January 9 – 10, 2010**.
8. Singh, N.K., Rajamohan, G., and **Hussain, VMS**, “Rejection Control of Crankshafts: A case study” Proceedings of the **National** Conference on emerging Trends in Mechanical Engineering, **KDK College of Engineering, Nagpur, India. February 2004**.
9. Hussain, V.M.S., Rajamohan, G., and Singh, N.K., “Advanced trends in Electro Discharge Machining” Proceedings of the **National** Conference on emerging Trends in Mechanical Engineering, **KDK College of Engineering, Nagpur, India. February 2004**
10. Singh, N.K., Rajamohan, G., and Hussain, V.M.S., “Environment and Indian Foundries” Proceedings of the **National** Seminar on environment friendly Industries – Today and Tomorrow, **Indian Institute of Plant Engineers, Jharkhand State Chapter, Ranchi, India November 8 – 9, 2003**.

Additional Institution Management Responsibilities

- **Hostel Administration**
 - Hostel Warden, Institute Dormitory (2013 – 2017).
- **Academic & Institute Management Responsibilities**
 - Institute Liaison Officer for marginalized communities’ upliftment (OBC) (2021 - Present)
 - Chairman, Campus Security Management Committee (2017 – 2019)
 - Member, Security Management Committee (2015 – 2017)
 - Member, Non-teaching Staff Recruitment Committee (2014, 2023-present)
 - Scheduling Member, Academic Schedule Preparation Committee (2002 – 2008)

- Active Member, Committee for Prevention of Sexual Harassment of Women at Workplaces (2006 – 2008)
- Member, Library Stock Verification Team (2004)
- Invigilator and Member, Entrance Examination Committee (2000 – 2001)
- Task Member, Strategic Committee for Institute Future Directions (2001)

Professional Bodies membership:

- ◆ Held the post of Honorary Treasurer, The **Institute of Indian Foundrymen (IIF)**, Ranchi chapter, in the year 2005-2007.
- ◆ License Member (MIE) & Chartered Engineer (CEng), **Institution of Engineers (India)**.

Details of Training & Workshops attended:

1. Building Advanced Data Analytics Applications with Cloud, **Earnest & Young, U.K.**, and AICTE Training program, September 11 to 15, 2023
2. Conveyor Technology for Bulk Material Transport, **Indian Institute Technology Kharagpur**, Kharagpur 721 302, West Bengal, India. October 14 – 20, 2019
3. Machine Learning Techniques for Manufacturing Optimization, Thiagarajah College of Engineering, Madurai – 625 015. India. December 14th – 20th 2017
4. Strategic Human Resource Development, **Indian Institute Technology Kharagpur**, Kharagpur 721 302, West Bengal, India. October 23 – 28, 2017.
5. NI Engineering Education & Research Seminar, Ranchi – 834001, India. 17th November 2017
6. Workshop on Recent Trends in Welding Processes (Sponsored by **Royal Academy of Engineering, United Kingdom**), NIFFT, Hatia Ranchi – 834003, India. On 26th July 2016.
7. Workshop on Monte Carlo Simulation, Lawrence Technological University, **Detroit, MI, USA**. September 23 – 25, 2016.
8. Workshop on Electron Microscopy, NIFFT, Hatia, Ranchi – 834003. India. 2nd – 5th April 2007.
9. Selection of Steels for Engineering Applications, NIFFT, Hatia, Ranchi – 834003, India. 12th – 23rd February 2007.
10. Multivariate Data Analysis & Design of Experiments (DoE), Camo Software India pvt. Ltd., at NIFFT, Hatia: Ranchi – 834003, India. 27th – 30th June 2006.
11. Introduction to Computer Aided Engineering, **Indian Institute of Technology, Madras** – 600 036, India. 27th June – 8th July 2005.
12. Recent Trends in Supply chain Management, **Indian Institute of Technology, Delhi**, New Delhi – 110016, India. 6th June – 11th June 2005.
13. Advances in Aerospace Engineering and Rocket Propulsion, Birla Institute of Technology, Mesra, Ranchi – 835215, India. 28th June – 10th July 2004.
14. Machine Tool Design course – six weeks course, conducted by Indian machine tools manufacturers association (IMTMA) at **Central Machine Tools Institute, Bangalore**, India June – July 2003

Languages for communication

- ✓ **English (First language; Read, Write & Speak - Fluent)**
- ✓ **Tamil (Second language; Read, Write & Speak - Fluent)**
- ✓ Deccani-Urdu (Mother tongue)
- ✓ Hindi, Bengali – (speak only)
- ✓ Russian, Turkish (Beginner; Speak& Read and understand basics)

-S/d-

(Mohamed Shafiullah Hussain V)

Date: 02 January 2024

Annexure - I

At National Institute of Advanced Manufacturing Technology (Formerly NIFFT)

S#	Course/Paper (Subjects Taught)	Course Level	Classes per week (L-Lecture T-Tutorial P-Practical) L-T-P
1	Engineering Drawing -I (*RU)	Under Graduate	1-0-3
2	Engineering Drawing -II (*RU)	Under Graduate	1-0-3
3	Machine Drawing (*RU)	Under Graduate	1-0-3
4	Material Handling & Automation (*RU)	Under Graduate	4-0-0
5	Introduction to Manufacturing Processes (**JTU)	Under Graduate	1-0-3
6	Manufacturing Design and CAE (**JTU)	Under Graduate	3-0-3
7	Engineering Metrology (*RU)	Under Graduate	0-0-3
8	Engineering Mechanics (*RU)	Under Graduate	0-1-0
9	Computer Graphics & CAD (**JTU)	Under Graduate	1-0-3
10	Engineering Graphics & CAD -I (**JTU)	Under Graduate	1-0-2*2
11	Engineering Graphics & CAD -II (**JTU)	Under Graduate	1-0-2*2
12	Manufacturing Systems Engineering (*RU)	Under Graduate	4-0-0
13	Manufacturing Systems Engineering (**JTU)	Post Graduate	3-0-3
14	Reliability Engineering (**JTU)	Post Graduate	4-0-0
15	Non- Traditional Machining (*RU)	Post Graduate	4-0-0
16	Metal Shaping Processes (*NIAMT)	Advanced Diploma Course	1-0-2
17	CAD & Process Simulation (*NIAMT)	Advanced Diploma Course	2-02*2
18	Workshop Practice – I (*RU)	Under Graduate.	0-0-3
19	Workshop Practice – II (*RU)	Under Graduate	0-0-3
20	Disaster Mitigation & Management (**JTU)	Post Graduate	3-0-0

*at Ranchi University (RU), ** at Jharkhand Technological University (JTU)

At IIT Kharagpur

20	Statistical Methods in Reliability	Post Graduate	0-1-0
21	Simulation Tutorial	Under Graduate	0-1-0

Annexure - II

S. No.	Title of the Master's Level (M. Tech.) Dissertation	Name of the student and Year	Institute / University
1	Development of prototype model management system	Md. Afzal (1999-2001)	NIFFT; Ranchi University
2	Design and manufacturing of wheel-nut removing device for four wheelers.	Yogesh Balasaheb (2000-2002)	NIFFT; Ranchi University
3	Design and development of an expert system for foundry applications with graphical user interface.	Sreenivasalu P. (2001-2003)	NIFFT; Ranchi University
4	Determining optimum inspection intervals for the condition monitoring	Hulas Raj Tondy (2010-2012)	NIFFT; Ranchi University
5	Reliability modeling of fuel feed tubes for chemical applications (Indian Space Research Organization)	Vaibhav Vashista (2012-2014)	NIFFT; Ranchi University
6	Reliability estimation of flexible coupling used in rotor system (HAL)	Md. Shabir Ansari (2012-2014)	NIFFT; Ranchi University
7	Reliability modeling for rotor system containing crack as a fault	Nilamber Kumar (2013-15)	NIFFT; Ranchi University
8	Reliability modeling for a faulty deep-groove ball bearing	Ravi Ranjan Jha (2013-15)	NIFFT; Ranchi University
9	Reliability modeling for rotor system subjected to parallel misalignment.	Vivek Singh (2013-15)	NIFFT; Ranchi University
10	Process reliability estimation of forging die design process.	Shashant Singh (2014-16)	NIFFT; Ranchi University
11	Friction stir welding of dissimilar Al Alloy: Mechanical evaluation and reliability analysis	Gappu Kumar (2014-16)	NIFFT; Ranchi University
12	Reliability modeling of rotor systems with competing faults	Karthik Kumar B. (2014-16)	NIFFT; Ranchi University
13	Reliability estimation of shielded metal arc welding process.	Dayanand Kumar (2015-17)	NIFFT; Ranchi University
14	Impact of remanufacturing concept in close-loop supply chain management	Sunil Kumar (2015-17)	NIFFT; Ranchi University
15	Reliability estimation for Friction stir welding joints of Al alloy 7075	Mayank Verma (2016-2018)	NIFFT; Ranchi University
16	Reliability modeling for ball bearings with common faults	Rajat (2016-2018)	NIFFT; Ranchi University
17	Risk analysis using FMEA on forging die design	Md. Azizur Rahman (2017 – 2019)	NIFFT; Ranchi University
18	Performance evaluation of trucking industry: A truck drivers' perspective	Vivekanand Kumar (2017 – 2019)	NIFFT; Ranchi University
19	Failure Analysis of Forging Die Design using Improved Failure Mode and effects analysis & Fuzzy Analytic Hierarchy Process	P Abhishek Kumar (2019-2020)	NIFFT, Jharkhand University of Technology
20	A Novel Integrated design FMEA approach for risk prioritization in Forging Die Design using Entropy weighted and TOPSIS method	Manish Pandit (2019-2020)	NIFFT, Jharkhand University of Technology
21	A study on reduction of defects in friction stir welding using Failure Mode and Effects Analysis	Amrendra Raj (2020-2021)	NIFFT, Jharkhand University of Technology
22	<i>Failure Analysis of the mechanical system (Broad area of research, title yet to be decided)</i>	J. Chatterjee (2024-25)	NIAMT, Jharkhand University of Technology

Research (Ph.D.) Supervision:

1. Thesis Title: Reliability Analysis of Manufacturing Processes using FMEA approach

Mr. Abhishek Verma (Research scholar) from August 2018 – Ranchi University, Ranchi, India. **(Thesis submission is in progress).**

2. Thesis Title: Reliability evaluation of systems by vibration analysis

Mr. Subodh Kumar (Research scholar) From January 2022 – Jharkhand University for Technology, Ranchi