Curriculum Vitae

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Mohamed Shafiullah Hussain V PhD
(Hussain VMS)

Education: (Verified International Academic Qualification – Credentials evaluated by WES)

Doctor of Philosophy (PhD) in Systems-Reliability Engineering (2017)
Indian Institute of Technology, Kharagpur (School of Quality & Reliability Engineering), INDIA
(QS World University Ranking: 59th in Asia, 222nd in World, Year: 2025),
Master of Engineering in Production Engineering (1999)
Annamalai University (Faculty of Engineering & Technology), INDIA
Bachelor of Engineering in Mechanical Engineering (1997)
Vellore Institute of Technology, University of Madras, INDIA
(QS World University Ranking: 150th in Asia; 212th in world (in Engg. & Tech.), Year: 2025)

Software: Python, MATLAB & Origin (for data plotting), CATIA (for 3d Modeling), Excel (data analysis & visualization), MS office 365

Teaching Experience

- ✓ **National Institute of Advanced Manufacturing Technology** (Public University), **Ranchi - 834003, India**
  Department of Mechanical & Manufacturing Engineering
  Assistant Professor (February 2024 to Till Now)
- ✓ **Jharkhand University of Technology, Ranchi – 834 010, India**
  (Affiliate college: National Institute of Advanced Manufacturing Technology, Ranchi – 834003)
  Assistant Professor (July 2018 – January 2024) – (Mechanical Engineering)
- ✓ **Ranchi University, Ranchi – 834 001, India**
  (Affiliate college: National Institute of Foundry & Forge Technology, Ranchi – 834 003)
  Lecturer in Manufacturing Engineering (March 2000 – April 2006),
  Assistant Professor in Manufacturing Engineering (May 2006 – June 2008; July 2013 – June 2018)
- ✓ **Periyar University, Salem – 636 011, India**
  (Affiliate college: AMS Engineering College, Namakkal – 637 013, Tamilnadu)
  Lecturer (July 1999 – March 2000) – Department of Mechanical Engineering

Teaching Duties

- Delivering lectures and conducting interactive sessions (see Annexure-II for subjects taught) for both Masters (Post Graduate) and Under Graduate (UG) students.
- Imparting training to industrial professional and R&D personnel
- Engaging students in hands-on projects and practical applications to enhance learning.
- Supervising UG dissertations/Projects
- Mentoring and advising students on academic and career-related matters.
- Developed and implemented innovative teaching methods to enhance student understanding.
- Participating in curriculum development and assessment activities.
- External examiner & evaluator: for ***Central University of Jharkhand***.

Additional Academic Responsibilities

- Member, Institute's Student-Placement & Professional Development Center (2016-2018)
- 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).
- Provided mentorship and guidance to students in extracurricular activities.
- Member of Institute-Committee for Accreditation & National Institutional ranking framework (NIRF)

Research Experience

PhD in Systems-Reliability Engineering (Topic: 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 - 2016, ***Lawerance Technological University, Detroit, US***).

Research Supervision (*July 2000 – Present***)**

Research Supervisor.

- **Supervising Ph.D. candidates** in their research projects, providing guidance and mentorship (one PhD thesis has been submitted for review and another thesis is in progress - See annexure-I).
- **Supervising research-dissertations of post-graduate students** (22 completed till 2024) – See annexure-I.
- ***Research Evaluation Committee member of PhD candidates*** (of other supervisors, 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. (December 2023)
- **Invited Lecture** on the topic "Implementing Reliability Measures in Product cycle" at Faculty of Engineering and Technology, **Aligarh Muslim University**, India.
- **Program committee member,** The second international conference on ICT application research, Wa-Rasse, **Aomori, Japan** (September 2024)

Research Publications (Orcid id: 0000-0002-5058-5532; Scopus: 56110137700)

Refereed Journals:

1. **Hussain VMS**, Equbal A., Equbal M.I., Khan Z. A., Badruddin I. A., Kamangar S., "A Novel Vibration-Analysis Based Reliability Quantification Model for Flexible Coupling Hub Subjected to Misalignment", *Scientia Iranica* 2024 (accepted, in-Press).
2. Badruddin I. A., Equbal A., Equbal M.I., **Hussain VMS**, "A critical review on Electro Discharge Machining of Non-conductive Materials", *Machining Science and Technology*, 2024 (Accepted, in-press)
3. Sharma A., Raj, M. P., **Hussain VMS**, (2024) "A Novel Hybrid Framework for Prioritization of Failure Modes During Forging Die-Design", *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, Volume 46 (426). https://doi.org/10.1007/s40430-024-05011-9
4. Equbal M. I., Ahmad Saood, **Hussain VMS**., (2024) Forging Die Wear Optimization: A Combined Approach with Finite Element Analysis and Taguchi Methodology, *Applied Mechanics and material (Scientific.net), Volume 922 (89-96)*. https://doi.org/10.4028/p-jpV8GF
5. Sharma, A., **Hussain, V. M. S**., Kumar, P. A., & Pandit, M. (2023). Prioritization of forging die design criteria based on failure analysis using fuzzy analytic hierarchy process (FAHP). Materials Today: Proceedings, 80, 925-932. https://doi.org/10.1016/j.matpr.2022.11.329
6. Sharma, A., **Hussain, V. M. S.,** Kumar, P. A., & Raj, M. P. (2022). Failure mode and effects analysis of forging die design: An integrated approach. Materials Today: Proceedings, 62, 4041-4045. https://doi.org/10.1016/j.matpr.2022.04.607
7. **Hussain, VMS**, and Naikan, VNA, (2016) "Vibration Response Based Reliability Modeling for Rotary systems with imbalance" *International Journal of Performability Engineering*, Vol. 12 (3) 283-296. https://www.ijpe-online.com/EN/10.23940/ijpe.16.3.p283.mag
8. **Hussain, VMS**., and Naikan, VNA., (2013) "Reliability Modeling for Rotary systems subjected to imbalance" *International Journal of Performability Engineering*, Vol. 9 (4) 423-432. https://www.ijpe-online.com/EN/10.23940/ijpe.13.4.p423.mag
9. **Hussain, VMS**, and Naikan, VNA, (2012) "Reliability and Imbalance modeling of a low-pressure turbine rotor" *Life cycle, Reliability and Safety engineering (Since 2017 in Springer)*, Vol.1 (2) 61-70. http://sresa.org.in/SRESAJOURNAL/2012b.pdf

10. Singh, N.K., Rajamohan, G., and **Hussain, VMS**, "Rejection Control of Crankshafts: A case study" *Journal of Plant Engineering*, July – September 2005.

Under review:

11. **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 (communicated & 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; Doi: https://doi.org/10.1007/978-981-15-2696-1_50
  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 (https://www.registered-design.service.gov.uk/find/6326126)
  Certificate granted by Intellectual Property Office, UK

Conference Presentations & Proceedings - Publication

1. **Hussain VMS**, Naikan VNS, Equbal M.I., 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. https://doi.org/10.46254/AN14.20240316
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, **Lawerance 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.**

Details of Training & Workshops attended:

1. Workshop on Open Access Publishing, **Open Research Funders Group** (ORFG - SPARC, Washington DC, US) **NIAMT,** Ranchi, India. June 10, 2024.

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

Professional Bodies membership:

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

Additional Institution Management Responsibilities

- **Hostel Administration**
  - Hostel Warden, Institute Dormitory (2013 – 2017).
- **Academic & Institute Management Responsibilities**
  - Institute Liaison Officer (for Affirmative action) marginalized communities (OBC) – (2021 - Present)
  - Member, Non-teaching Staff Recruitment Committee (2014, 2023-present)
  - Chairman, Campus Security Management Committee (2017 – 2019)
  - Member, Security Management Committee (2015 – 2017)
  - Scheduling Member, Academic Schedule Preparation Committee (2002 – 2008)
  - Active Member, Committee for Prevention of Sexual Harassment of Women at Workplaces (2006 – 08)
  - Member, Library Stock Verification Team (2004)
  - Invigilator and Member, Entrance Examination Committee (2000 – 2001)
  - Task Member, Strategic Committee for Institute Future Directions (2001)

Social work for the communities

- Computer literacy program for the local tribal community (Ranchi) – May 2005 (Institute sponsored)
- Campus-neighborhood cleanliness drive – With dormitory students – August 2015 to August 2018

Languages for communication

- ✓ **English (First language; Read, Write & Speak - Fluent)**
- ✓ **Tamil (Second language; Read, Write & Speak - Fluent)**

- ✓ Deccan-i-**Urdu** (Mother tongue)
- ✓ Hindi (fluent speaker)
- ✓ Russian, Turkish (Beginner; Read and understand basics)

Academic and Research References:

Prof. V. N. A. Naikan,
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Indian Institute of Technology, Kharagpur
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(Dr. **Hussain VMS**)
Date: 20 November 2024

Annexure – I

Research (Ph.D.) Supervision:

1. ***Thesis Title: Reliability Analysis of Manufacturing Processes using FMEA approach***
   Mr. Abhishek Verma (Research scholar) from August 2018 –2024
   Ranchi University, Ranchi, India**. (Submitted & under review - with 2 reviewers)**.

2. ***Thesis Title: Reliability evaluation of systems by vibration analysis***
   Mr. Subodh Kumar (Research scholar) From January 2023 – (in progress)
   Jharkhand Technological University, Ranchi

List of Master's Level Dissertation Supervision

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 (Hindustan Aeronautics Ltd.)	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	Analysis and Optimization of Fatigue Life in Al 6061 Tube Flanged Welded Joint	Jayanta Chatterjee (2022-2024)	NIAMT (Deemed university)

Annexure – II

Courses handled at University & Industrial level

S#	Course/Paper (Subjects Taught)	Course Level	Classes per week (L-Lecture T-Tutorial P-Practical) L-T-P
1	Engineering Drawing -I	Under Graduate	1-0-3
2	Engineering Drawing -II	Under Graduate	1-0-3
3	Machine Drawing	Under Graduate	1-0-3
4	Material Handling & Automation	Under Graduate	4-0-0
5	Introduction to Manufacturing Processes	Under Graduate	1-0-3
6	Manufacturing Design and CAE	Under Graduate	3-0-3
7	Engineering Metrology	Under Graduate	0-0-3
8	Engineering Mechanics	Under Graduate	0-1-0
9	Computer Graphics & CAD	Under Graduate	1-0-3
10	Engineering Graphics & CAD -I	Under Graduate	1-0-2*2
11	Engineering Graphics & CAD -II	Under Graduate	1-0-2*2
12	Manufacturing Systems Engineering	Under Graduate	4-0-0
13	**Manufacturing Systems Engineering**	**Master's**	3-0-3
14	**Reliability Engineering**	**Master's**	4-0-0
15	Non- Traditional Machining	Post Graduate	4-0-0
16	Metal Shaping Processes	Advanced Diploma Course (Industrial)	1-0-2
17	CAD & Process Simulation	Advanced Diploma Course (Industrial)	2-02*2
18	Workshop Practice - I	Under Graduate.	0-0-3
19	Workshop Practice - II	Under Graduate	0-0-3
20	**Disaster Mitigation & Management**	**Master's**	2-0-0
21	Basic Mechanical engineering	Under Graduate	2-0-0
22	Engineering Economics	Under Graduate	2-0-0
23	Project Management	Under Graduate	2-1-0

At IIT Kharagpur

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