

S. P. Harsha

Chair Professor Indian Railways (Rail Vehicle Dynamics)

Coordinator, Centre for Railway Research (CRR)

Department of Mechanical & Industrial Engineering

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Web of Science Researcher ID: [G-6532-2018](#)

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RESEARCH AREAS

Machine Learning and Soft Computing Methods, Machine Design, Dynamics of FGM Structures & Rail Vehicle System, Nano Sensor, Condition Monitoring of High-Speed Machines, Whole Body Vibrations

Academic Qualifications

- Post-Doctoral Fellow, US Defense Project (ONR) at Villanova University, Philadelphia, USA, 2006 - 07
- PhD (Nonlinear Dynamics & Control) from Mechanical Engineering Department at Birla Institute of Technology and Science (BITS), Pilani, India, 2004.
- ME (Thermal Engineering) from M. B. M. Engineering College, J. N. V. U., Jodhpur, India, 1999.
- BE (Mechanical Engineering) from M. B. M. Engineering College, J. N. V. U., Jodhpur, India, 1996.

Academic Experience

- **Chair Professor Indian Railways (Rail Vehicle Dynamics)** from May 2022
- **Professor**, Department of Mechanical & Industrial Engineering, IIT Roorkee, Roorkee from December 2018
- **Associate Professor**, Department of Mechanical & Industrial Engineering, IIT Roorkee, Roorkee from October 2012 to December 2018
- **Assistant Professor**, Department of Mechanical & Industrial Engineering, IIT Roorkee, Roorkee from May, 2007 to September 2012
- **Post-Doctoral Fellow**, Villanova University, Philadelphia, USA from January, 2006 to April, 2007.
- **Assistant Professor**, Department of Mechanical, BITS, Pilani from January, 2005 to December, 2005
- **Lecturer**, Department of Mechanical Engineering, BITS Pilani, from December, 1999 to December, 2004

Administrative Experience

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| ➤ Coordinator , Centre for Railway Research, IIT Roorkee | 2022 - |
| ➤ Vice-Chairman , JEE (Advanced) | 2021 - 2022 |
| ➤ Chairman , JEE (Advanced) | 2022 - |
| ➤ Member of Institute/Dept. Faculty Assessment Committee | 2020 - 2021 |
| ➤ Coordinator, Machine Design Section | 2020 - |
| ➤ Member of UG/PG Committee (DAPC) | 2007 - 2009 & 2012 - 2014, 2020- |
| ➤ Member of Doctoral Research Committee | 2009 - 2012 & 2018 - 2020 |
| ➤ Member of Departmental Administrative Committee | 2017 - 2019, 2020 - |
| ➤ Member of Departmental Finance Committee | 2016 - 2022 |
| ➤ Coordinator of Library Committee | 2017 - 2020 |
| ➤ In-charge of Advanced Vibration & Noise Control Lab | 2008 - |
| ➤ Coordinator, Machine Design Labs | 2015 - 2020 |
| ➤ Coordinator, CAD/CAM & Robotics MTech program | 2017 - 2020 |
| ➤ Task Force Manager
(Effective Utilization of Noida Campus, IIT Roorkee Extension Center) | 2013 - 2016 |

1. Placed 2nd in the list of Vibration group in top 2% Indians scientists in the world years 2020 and 2021 published by Stanford University
2. Best Paper Awards in RAME-2020, DTU, Delhi
3. Best Paper Awards in NSC - 2019, IIT Roorkee
4. Best Paper Awards in ICETEST - 18, 2018, MMU, Ambala
5. Best Paper Awards in ICNDME - 14, 2014, MMU, Ambala
6. Best Paper Awards in ASME-2012 IDETC/CIE, August, 2012, CHICAGO, ILLINOIS, USA
7. Best Poster Paper Presentation Award in ICIT, 2008, New Delhi
8. Best Paper Award at Nonlinear Dynamics and Chaos in International Symposium on Nonlinear Dynamics held in Shanghai, CHINA, 2005

Projects:

A. International Collaborations Projects:

03

1. Collaborative Research in the field of Sound and Vibrations Euro (€) 968546
 - a. Funding Agency: **European Commission Asia Link Project**, EC
 - b. Duration: Three years (2007- 2010)
 - c. (Participating originations: **IITR (Coordinator)**, **IITD**, **KTH Sweden**, **Loughborough University, UK** & **RDSO, Lucknow**)
2. Influence of Low Frequency Vibration on Activity Comfort while Travelling by Railway Vehicles
 - a. Funding Agency: **Sweden International Developing Agency (SIDA)**, Sweden Rs. 40 Lac
 - b. Duration: Three Years (2007- 2010); (Participating originations: **IITR & KTH Sweden**)
3. Indo-US Science and Technology Forum (IUSSTF)
 - a. Indo-US project on “Elasto hydrodynamic Lubrication Contact” Rs. 28.54 Lac
 - b. Duration Two Years (2014- 2015)
 - c. (Participating originations: **IIT Roorkee**, **Northwestern University, Chicago** & **Akron University, Ohio**)

B. Govt. of India Funded Projects:

22

1. Design of Fixture for Road Transport of Stator of 800 MW Turbo-generator
 - a. *Funding Agency:* **BHEL, Haridwar** Rs. 10.25 Lacs
 - b. *Duration:* Two Years (2008 - 2009)
2. Diagnostic and Prognostic Analysis of High Speed Rolling Element Bearings
 - a. *Funding Agency:* **SERC - DST**, India Rs. 31.84 Lacs
 - b. *Duration:* Three Years (2009 - 2012)
3. Design of Erection Base of 800 MW Turbo-generator used for rotor insertion Stator at Test Bed W/o Using Crane
 - a. *Funding Agency:* **BHEL, Haridwar** Rs. 7.15 Lacs
 - b. *Duration:* One Year (2008)
4. Design of Fixture of 28 Axle Rail Wagon
 - a. *Funding Agency:* **BHEL, Haridwar** Rs. 9.60 Lacs
 - b. *Duration:* Two Years (2009 - 2011)
5. Study and Design Improvement in CTRB of Freight Stock of Indian Railways
 - a. *Funding Agency:* **RDSO, Lucknow** Rs. 23.60 Lacs
 - b. *Duration:* Two Years (2010 - 2012)

6. Planning and Design of Gravity Ropeway in Nagaland
 - a. *Funding Agency:* **National Horticulture Board, New Delhi** **Rs. 16.55 Lacs**
 - b. *Duration:* Three Years (2010 - 2013)
7. Feasibility Study For Use of PTFE (Teflon) Multiball Bearings Support for Condenser
 - a. *Funding Agency:* **BHEL, Haridwar** **Rs. 9.35 Lacs**
 - b. *Duration:* Two Years (2011 - 2012)
8. Computation & Validation of Lube Oil & Jacking Oil Flows/Losses As Well As Stiffness & Damping Coefficient in Hydrodynamic Journal Bearings of Steam Turbine
 - a. *Funding Agency:* **BHEL, Haridwar** **Rs. 14 Lacs**
 - b. *Duration:* Two Years (2013 - 2014)
9. Development of Upgraded Draft Gear For Freight Stock: Development of Testing Regimes
 - a. *Funding Agency:* **RDSO, Lucknow** **Rs. 23.80 Lacs**
 - b. *Duration:* Three Years (2014 - 2017)
10. A Study on Hydrodynamic Journal Bearings of Steam Turbine to Compute the Lube Oil and Jacking Oil Flow/Losses by Considering the Temperature Variation in Oil Film
 - a. *Funding Agency:* **BHEL, Haridwar** **Rs. 22.20 Lacs**
 - b. *Duration:* Three Years (2014 - 2017)
11. Develop Welding Parameters for Outer Ring of GBC 250/500/600/800 MW To Control Distortion
 - a. *Funding Agency:* **BHEL, Haridwar** **Rs. 10.12 Lacs**
 - b. *Duration:* Three Years (2014 - 2016)
12. Residual Life Prediction and Vibration Analysis of a High Speed Rotor Bearing System
 - a. *Funding Agency:* **ARDB, DRDO India** **Rs. 11.64 Lacs**
 - b. *Duration:* Three Years (2015 - 2018)
13. Design And Development of A Proof of Concept Model of An Adaptive Membrane
 - a. *Funding Agency:* **ISRO, India** **Rs. 29.75 Lacs**
 - b. *Duration:* Three Years (2015-2018)
14. Vibration Data Analysis of High Speed Rotary Machine & Auxiliaries at Tehri HPP & Koteshwor HEP
 - a. *Funding Agency:* **THDC, Tehri** **Rs. 14.88 Lacs**
 - b. *Duration:* Two Years (2016 - 2017)
15. Evaluation & Validation of Sperling's Ride Index for Indian railway Rolling Stock as per ORE -C-116
 - a. *Funding Agency:* **RDSO, Lucknow** **Rs. 5.90 Lacs**
 - b. *Duration:* Two Years (2017 - 2018)
16. Technical innovation challenges floated by Indian Railways
 - a. *Funding Agency:* **RDSO - Lucknow, India** **Rs. 25.53 Lacs**
 - b. *Duration:* One Year (2018)
17. Evaluation of Performance of partial arc (120)) Hydro-static hybrid journal Bearings for wet ball mill applications
 - a. *Funding Agency:* **BHEL, Hyderabad** **Rs. 18.88 Lacs**
 - b. *Duration:* Two Years (2018 - 2019)

18. Dynamic Analysis of lube oil tank system under static and multi-excitation dynamic loading for 800 & 660 MW
 - a. *Funding Agency:* **BHEL, Haridwar** **Rs. 15.57 Lacs**
 - b. *Duration:* Two Years (2018 - 2019)
19. Design & Validation of Thermal Shield in Intermediate Pressure (IP) Turbine for Advanced Ultra Super Critical (AUSC) Thermal Parameters
 - a. *Funding Agency:* **BHEL, Haridwar** **Rs. 20.65 Lacs**
 - b. *Duration:* One Years (2019 - 20)
20. Experimental and Numerical Analysis of Light Weight Nano Composites for Static and Dynamic Loading
 - a. *Funding Agency:* **VSSC, ISRO** **Rs. 22.25 Lacs**
 - b. *Duration:* One Years (2022 - 24)
21. Design and Development of Blowing Horns of Specific Frequencies for Distraction of Cattles/Wild Animals from Railway Track on Approach of Train
 - a. *Funding Agency:* **RDSO, Lucknow** **Rs. 29.50 Lacs**
 - b. *Duration:* Three Years (2022 - 2024)
22. Development of a Methodology for Calculating Stresses in Rail And SEJ For IR under Different Operating Conditions
 - a. *Funding Agency:* **RDSO, Lucknow** **Rs. 35.40 Lacs**
 - b. *Duration:* Three Years (2022 - 2024)
23. Development of a Digital Test Rig Module for simulation of Indian Railway Freight Vehicle Twin Pipe Air Brake System
 - a. *Funding Agency:* **RDSO, Lucknow** **Rs. 19.50 Lacs**
 - b. *Duration:* Three Years (2023 - 2024)

C. Private Organization Funded Projects:

04

1. Study and Root Cause Analysis of High Vibration Analysis in Circulating Water Pumps 2x250 MW Thermal Power Plant, Chabbra
 - a. *Funding Agency:* **Punj, Llyod** **Rs. 7.72 Lacs**
 - b. *Duration:* Two Years (2010 - 2012)
2. Erosion Analysis of Guide Vane- for Karcham Wangtoo HEP
 - a. *Funding Agency:* **JP Associates, Noida** **Rs. 9 Lacs**
 - b. *Duration:* Two Years (2015 - 2016)
3. Design Optimization of Emergency Spring for Passenger Coach Secondary Suspension
 - a. *Funding Agency:* **Aryan Exporters Pvt Ltd - Lucknow** **Rs. 11.80 Lacs**
 - b. *Duration:* Two Years (2018 - 2019)
4. Design and Drawings of Radial gate and Stop Log gate of LOWER ORR Major Irrigation Project
 - a. *Funding Agency:* **ORR River Project Management Unit, Shivpuri (MP)** **Rs. 14.60 Lacs**
 - b. *Duration:* 1 months (2020- 2021)

Conferences Organized

04

1. Organized the symposium on Nonlinear Dynamics and Chaos in International Symposium on Nonlinear Dynamics held in Shanghai, CHINA, 20-21 Dec., 2005.

2. Organized the symposium on Rotor Dynamics: Nonlinear Analysis, Control & Diagnostics ASME International Design Engineering Technical Conference (IDETC) September 4-7, 2007, Rio All-Suite Hotel & Casino, Las Vegas, Nevada, USA
3. Organizing Secretary, National Tribology Conference (NTC), IIT Roorkee, 8-10 Dec., 2011.
4. Organizing Secretary, National Systems Conference (NSC), IIT Roorkee, 8-10 Dec., 2019.

Supervision of PhD Theses [PhD – 28 Awarded, and 06 in progress]

1. Title: **A Theoretical and Experimental Study of Nonlinear Aspects of High Speed Rolling Element Bearings**

Candidate	-	Sanjay K. Upadhyay
Co – Supervisor	-	Dr. S.C. Jain
Year	-	July 2006 – July 2009
Remarks:	-	Prof., MIED, IIT Roorkee
2. Title: **Fault Diagnosis of High Speed Rotor Bearing Systems**

Candidate	-	Pavan K. Kankar
Co – Supervisor	-	Dr. S.C. Sharma
Year	-	January, 2009 – January, 2011
Remarks:	-	Associate Prof., Mech. Engg Dept., IIT Indore
3. Title: **Effect of Whole Body Vibration on Activity Comfort**

Candidate	-	Mahesh Bhiwapurkar
Co – Supervisor	-	Dr. V. H. Saran
Year	-	January, 2009 - February, 2011
Remarks:	-	Prof. OP Jindal Univ, Raipur; [Ex. Faculty SP Col. of Engg, Mumbai]
4. Title: **Dynamic Analysis of Carbon Nanotube Based Mass Sensors.**

Candidate	-	Anand Y. Joshi
Co-Supervisor	-	Dr. S. C. Sharma
Year	-	July, 2009- August, 2011
Remarks:	-	Professor, Mechatronics Dept., Parul Univ., Vadodara
5. Title: **CNT Reinforce Nano-composites: Modeling, Evaluation of Mechanical Properties and Defects Analysis**

Candidate	-	Ms Unnati A. Pandya
Co-Supervisor	-	Dr. S. C. Sharma
Year	-	December, 2009 – February, 2012
Remarks:	-	Professor, Mech. Engg Dept., Parul University, Vadodara
6. Title: **Effect of Low Frequency Vibration on Human Comfort**

Candidate	-	A. S. Prasanth
Co-Supervisor	-	Dr. V. H. Saran
Year	-	December, 2009 – July, 2014
Remarks:	-	Assistant Prof, AIT, Bangalore
7. Title: **Nonlinear Analysis of High Speed Rolling Element Bearings Due to Various Defects**

Candidate	-	Divyang Pandya
Co-Supervisor	-	Dr. S. H. Upadhyay
Year	-	July 2011 – August 2013
Remarks:	-	Associate Prof, LD Col of Engg., Ahmedabad
8. Title: **Study and Analysis of failure of Line Contact Element under Micro-EHL conditions**

Candidate	-	G. D. Thakre
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| Co-Supervisor | - | Dr. S. C. Sharma & Dr. M. R. Tyagi |
| Year | - | July, 2011 – Dec, 2015 |
| Remarks: | - | Sr. Scientist and Head (Tribology Center), IIP – CSIR, Dehradun |
9. Title: **Dynamic Analysis of Inflatable Membrane Structure For Space Application**
Candidate - Sachin C Gajbhiye
Co-Supervisor - Dr. S. H. Upadhyay
Year - **July, 2011 – August, 2013**
Remarks: - Associate. Prof., Govt. Engg Col, Durg
10. Title: **Nonlinear Dynamics of Rail Wheel Contact of Freight Wagons**
Candidate - Nagvendra Kanoje
Co-Supervisor - Dr. S. C. Sharma
Year - **July, 2011 – April, 2015**
Remarks: - SRA at Central Railway Research, Newcastle Univ. UK
11. Title: **Dynamic Analysis of High Pressure Steam Turbine Blades**
Candidate - Akash Shukla
Year - **January, 2010 – July, 2015**
Remarks: - Sr. Manager, Steam Turbine, BHEL – Hardwar
12. Title: **Experimental & Numerical Modeling of Tool Design Effects on FSW of Al-Zn and Al-Cu Alloys**
Candidate - Venkateswarlu Devuri
Co-Supervisor - Dr. MM Mahapatra
Year - **December, 2010 – May, 2015**
Remarks: - Assistant Prof., Mech. Engg Dept., MLRITM, Hyderabad
13. Title: **Dynamic Analysis of Boron Nitride Reinforced Nano Composite as Mass Sensor**
Candidate - Sandesh Trivedi
Co-Supervisor - Dr. S. C. Sharma
Year - **July, 2012 – June, 2015**
Remarks: - Assistant Prof., Mech. Engg Dept., Govt. Engg. Col., Ajmer
14. Title: **Dynamic Analysis of Draft Gear of freight Vehicle of Indian Railways**
Candidate - Sachin S. Harak
Co-Supervisor - Dr. S. C. Sharma
Year - **July 2012 – June 2015**
Remarks: - Prof., Mech. Engg Dept., GNS. Col. of Engg, Nasik
15. Title: **Design Analysis of Multi-walled CNT Reinforced Polymer based Nano-composites**
Candidate - Anand Gupta
Year - **January, 2012 – November, 2015**
Remarks: - Scientist F & Joint Director, IRDE – DRDO, Dehradun
16. Title: **Prognostics of High Speed Rolling Element Bearing Using Soft Computing Technique**
Candidate - Vinod Nistane
Year - **July, 2015 – June, 2018**
Remarks: - Assistant Prof., VNIT – Nagpur
17. Title: **Manufacturability of In situ TiC Reinforced Metal Matrix Composite**
Candidate - Deepak Mehra (**QIP Scheme**)
Co-Supervisor - Dr. MM Mahapatra
Year - **July 2015 – August 2018**
Remarks: - Assistant Prof., NIFT- Bhubneshwar
18. Title: **Analysis of Sandwich Sigmoid Functionally Graded Material Plates**

Candidate	-	Simran Jeet Singh
Year	-	January, 2016 – August, 2019
Remarks:	-	Assistant Prof., NSIT- New Delhi

19. Title: **Molecular Dynamics Study of Effects of Defects and Geometry on Static and Dynamic Mechanical Behavior of Carbon Nanotube**

Candidate	-	Mohit Goel
Year	-	January, 2015 – May 2021
Remarks:	-	Scientist E, IRDE – DRDO, Dehradun

20. Title: **Non Linear Dynamic Response Analysis of High-Speed Cylindrical Roller Bearings**

Candidate	-	Pravjyoti Patra
Co-Supervisor	-	Dr. V. H. Saran
Year	-	January, 2016 – June, 2021 (Completed)

21. Title: **Dynamics of Human Body Exposed to Low-Frequency Vibration During Spaceflight**

Candidate	-	Rajesh Govindan
Co – Supervisor	-	Dr. V. H. Saran
Year	-	January, 2017 – June, 2021
Remarks:	-	Assistant Prof., NIT- Surat

22. Title: **Diagnostic Analysis of High Speed Double Row Ball Bearing Using Soft Computing Methods**

Candidate	-	Vivek Parmar
Co – Supervisor	-	Dr. V. H. Saran
Year	-	January, 2018 – November, 2021
Remarks:	-	Assistant Prof., DIT, Dehradun

23. Title: **Diagnosis of Rolling Element Bearing using Vibration and Acoustic Emission Signals**

Candidate	-	Ajeet P Patil
Co – Supervisor	-	Dr. B. K. Mishra
Year	-	September, 2018 – November, 2021
Remarks:	-	Assistant Prof., Walchand Coll. of Engg., Sangli

24. Title: **Vibration Signature Analysis of Roller Bearing Using Soft Computing Techniques**

Candidate	-	Parbant Singh Sandhu
Year	-	July, 2017 – May, 2022
Remarks:	-	Assistant Prof., CET-BTU, Bikaner

25. Title: **Fault diagnosis of large steam turbine blade using vibration responses**

Candidate	-	Rajesh Kumar Bhamu
Year	-	July, 2018 – August, 2022
Co-Supervisor	-	Dr. S. C. Sharma and Dr. Akash Shukla
Remarks:	-	Assistant Prof., Govt. Engg. College Kota

26. Title: **Dynamics of Piezo-based Functionally Graded Plate**

Candidate	-	Pawan Kumar
Year	-	December, 2018 – August, 2022
Remarks:	-	Post-doctoral fellow,

27. Title: **Static and Dynamic Analysis of Functionally Graded Gears**

Candidate	-	Bikramjit Singh
Year	-	July, 2019 – September, 2022

Remarks: - Asst. Prof., Punjab Agriculture University, Ludhiana

28. Title: **Structural Response of FGM Plate with Variable Thickness**

Candidate - Vineet Kumar
 Year - July, 2017 – November, 2022
 Co-Supervisor - Dr. V. H. Saran
 Remarks: - Asst. Prof., Govt. Engg. College, Bikaner, BTU

29. Title: **Prognostics of High-Speed Cylindrical Roller Bearing**

Candidate - Maan Singh Rathore
 Year - January, 2019 – January, 2023 (Submitted)

(Under Progress)

Supervision of M. Tech Dissertations:	70 (Completed), 03 (In progress)
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1. Title : **Nonlinear Dynamics of High Speed Rolling Element Bearings**
 Candidate - Pavan G
 Year - 2004 (BITS-Pilani)
2. Title : **Vibration analysis of single walled carbon nanotube (SWCNT) based mass sensor**
 Candidate - Ashok Boda
 Co - Supervisor - Dr. IV Singh
 Year - 2008
3. Title : **Evaluation of the mechanical properties of carbon nanotube composites by finite element analysis**
 Candidate - G. Lokeshwari
 Co - Supervisor - Dr. IV Singh
 Year - 2008
4. Title : **Development of Bio-dynamic Model of a Human in sitting posture performing sedentary activities**
 Candidate - Smit Shalva Topno
 Co - Supervisor - Dr. VH Saran
 Year - 2008
5. Title : **Trajectory and Attitude Control of Underwater Robot for Minimum Energy Consumption**
 Candidate - Vikrant Bende
 Co - Supervisor - Dr. PM Pathak
 Year - 2008
6. Title : **Dynamic Behavior of Damper in an End-Mill**
 Candidate - Ravi Kant Mittal
 Co - Supervisor - Dr. SC Sharma
 Year - 2009
7. Title : **Vibration Signature Analysis of High Speed Ball Bearing Due to Defects**
 Candidate - Puspendra Rana
 Co - Supervisor - Dr. SC Jain
 Year - 2009
8. Title : **Modeling and Simulation of Roller Chain Drive**
 Candidate - Mahendra Jangid
 Co - Supervisor - Dr. SC Sharma
 Year - 2009
9. Title : **Trajectory Tracking of an Unmanned Air Vehicle**
 Candidate - Abhijit Deokar
 Co - Supervisor - Dr. PM Pathak

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| Year | - | 2009 |
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10. Title : **Analysis of low frequency vibration on sedentary activity using DOE**
Candidate - P. Pul Singh
Co - Supervisor - Dr. VH Saran
Year - 2010
 11. Title : **Fault Diagnosis of High Speed Rotor Bearing System Using Machine Learning Techniques**
Candidate - K. Kalyan Manohar
Co - Supervisor - Dr. SC Sharma
Year - 2010
 12. Title : **Fault Analysis of Single Walled Carbon Nanotube**
Candidate - Ashish Bhatanagar
Co - Supervisor - Dr. SC Sharma
Year - 2010
 13. Title : **Measurement and Biodynamic model development of seated human subjects exposed to low frequency vibration environment**
Candidate - Desta Milk
Co - Supervisor - Dr. VH Saran
Year - 2010
 14. Title : **Modeling and Simulation of Air Spring for Defense Vehicle**
Candidate - Sanjay Bhinse
Co - Supervisor - Dr. SC Jain
Year - 2010
 15. Title : **A Computational Study of Mechanical Properties of CNT Composites for Various Defects**
Candidate - Preeti Joshi
Co - Supervisor - Dr. SC Sharma
Year - 2011
 16. Title : **Dynamic Analysis of Single Wall Carbon Nanotubes as a Bio-Sensors**
Candidate - Kuldeep Gupta
Co - Supervisor - Dr. SC Sharma
Year - 2011
 17. Title : **Modeling and Simulation of High Speed Spindle**
Candidate - Ganesh Jagdale
Co - Supervisor - Dr. NK Mehta
Year - 2011
 18. Title : **An experimental & computational study of seated postures of human under low frequency vibrations**
Candidate - NV Amar Kishore
Co - Supervisor - Dr. VH Saran
Year - 2011
 19. Title : **Study of Hand writing Activity under Low Cycle Vibrations using Artificial Intelligence Technique**
Candidate - Shabbir Hussain
Co - Supervisor - Dr. VH Saran
Year - 2011
 20. Title : **Dynamic Analysis of Carbon Nanotube based Mass- Sensors using Continuum/ Molecular Mechanics Approach**
Candidate - Ankit Gupta
Co - Supervisor - Dr. SC Sharma
Year - 2012
 21. Title : **FEM Analysis of Rail Wheel of Passenger Coaches**
Candidate - Pankaj Kumar Bhardwaj
Co - Supervisor - Dr. SC Sharma
Year - 2012

22. Title : **Analysis of Noise and Vibration in Relation with Physiological Parameters Using ANN**
Candidate - Prakash Kumar
Co - Supervisor - Dr. VH Saran
Year - 2012
23. Title : **Experimental Study to Analyze Vibration Response of Rotor Bearing System**
Candidate - Alok Mishra
Co - Supervisor - Dr. SH Upadhyay
Year - 2012
24. Title : **An Experimental and Computational Study of Nonlinear Aspects of High Speed Bearing**
Candidate - Ganesh Vinayak
Co - Supervisor - Dr. SH Upadhyay
Year - 2012
25. Title : **Vibration Analysis of Inflatable structures**
Candidate - Dipen Saradara
Co - Supervisor - Dr. SH Upadhyay
Year - 2012
26. Title : **Non-Linear Vibration Signature Analysis of High Speed Roller Bearing**
Candidate - Himanshu Yadav
Co - Supervisor - Dr. SH Upadhyay
Year - 2013
27. Title : **Modeling and Simulation of BNNT Reinforced Polymer Composites**
Candidate - Surinder Kumar
Year - 2013
28. Title : **Dynamics of Single Walled Boron Nitride Nanotube Reinforced Composites Based Mass Sensors**
Candidate - Prabhat Kumar Tripathi
Co - Supervisor - Dr. SH Upadhyay
Year - 2013
29. Title : **Weight Optimization of Railway Freight Bogie**
Candidate - Tony Thomas
Co - Supervisor - Dr. SC Sharma
Year - 2013
30. Title : **Modeling and Simulation of Freight Railway Vehicle**
Candidate - Mulu Girmay
Co - Supervisor - Dr. SC Sharma
Year - 2013
31. Title : **Friction Studies of EHL Lubricated Contacts**
Candidate - Saurabh Chauhan
Co - Supervisor - Dr. SC Sharma
Year - 2013
32. Title : **Fault Diagnosis of High Speed Rolling Element Bearing Using Acoustic Emission Techniques**
Candidate - Nimesh K Patel
Co - Supervisor - Dr. SH Upadhyay
Year - 2013
33. Title : **An Experimental Study for Fault Diagnostics of High Speed Rolling Element Bearings**
Candidate - Waqar A. Khan
Co - Supervisor - Dr. SH Upadhyay
Year - 2013
34. Title : **Vibration Analysis of Flexible Membrane Structure for Space Application**
Candidate - Lokesh Kumar
Co - Supervisor - Dr. SH Upadhyay
Year - 2014
35. Title : **Mathematical Modeling and Simulation of Energy Absorption in Aircraft Arrestor Gear System**
Candidate - Paras Ram

- Co – Supervisor - Dr. SH Upadhyay
Year - 2014
36. Title : **Diagnosis of High Speed Rolling Element Bearings by using Acoustic Techniques**
Candidate - Akshay V. Salunke
Co – Supervisor - Dr. SH Upadhyay
Year - 2014
37. Title : **Dynamic Analysis of Upgraded Draft Gear in Freight Wagon**
Candidate - K. Sanket Pawar
Co – Supervisor - Dr. SC Sharma
Year - 2014
38. Title : **Performance Analysis of a Tilting pad hydrodynamic Journal bearing operating in Turbulent Regime**
Candidate - Asheesh Kumar
Co – Supervisor - Dr. SC Sharma
Year - 2014
39. Title : **Residual Life Prediction of High Speed R. E. Bearing by using Soft computing Techniques**
Candidate - Akshay Kumar
Co – Supervisor - Dr. SH Upadhyay
Year - 2014
40. Title : **Dynamic Analysis of Freight Railway Vehicles**
Candidate - Shashank Kedare
Co – Supervisor - Dr. SC Sharma
Year - 2015
41. Title : **Prognostics Of High Speed Rolling Element Bearings**
Candidate - Abhishek Rawat
Co – Supervisor - Dr. SC Sharma
Year - 2015
42. Title : **Performance Of Partial Arc Hydrostatic/Hybrid Multi-Recess Journal Bearings Considering Wear**
Candidate - Jeevan Chandra Atwal
Co – Supervisor - Dr. SC Sharma
Year - 2015
43. Title : **Vibration Analysis of Inflatable Structures**
Candidate - Ankit Pandey
Co – Supervisor - Dr. VH Saran
Year - 2015
44. Title : **Coronary Stent Design and Analysis Under Dynamic Load**
Candidate - Shurbhi Bhagwat
Co – Supervisor - Dr. VH Saran
Year - 2015
45. Title : **A Study of Suspension System of High Speed Trains**
Candidate - Sahil Jaggi
Co – Supervisor - Dr. SC Sharma
Year - 2016
46. Title : **Analysis of Carbon Nanotubes reinforced Functionally Graded Nano Plate**
Candidate - Lalit Kumar
Year - 2016
47. Title : **Analysis of CNT reinforced epoxy composite due to Thermo-mechanical loading**
Candidate - Anuj Singh
Co – Supervisor - Dr. A Parashar
Year - 2016
48. Title : **Dynamic Analysis of CNT Based Nano Sensors**
Candidate - Ankur Mittal
Year - 2016
49. Title : **Dynamic Analysis of High Speed Rolling Bearing Due to Defects**
Candidate - Devanshu Kaithwas

- Co – Supervisor - Dr. VH Saran
Year - 2016
50. Title : **Modeling and Simulation of Standing Posture Under Low Frequency Vibrations**
Candidate - Mohd. Asif
Co – Supervisor - Dr. VH Saran
Year - 2016
51. Title : **Dynamic Analysis of High Speed Trains**
Candidate - Prem Kumar Singh
Co – Supervisor - Dr. VH Saran
Year - 2016
52. Title : **Analysis of CNT Reinforced FGM under Dynamic Loads**
Candidate - Amit Goyal
Co – Supervisor - Dr. VH Saran
Year - 2017
53. Title : **Modeling and Simulation of CNT Reinforced FGM**
Candidate - Teetu Kumar
Co – Supervisor - Dr. VH Saran
Year - 2017
54. Title : **Bio-dynamic Modeling of Seated Human Under WBV Exposer with ANN**
Candidate - Aman Kumar
Co – Supervisor - Dr. VH Saran
Year - 2017
55. Title : **Modeling and Simulation of Flow Induced Vibration in Pipes**
Candidate - Prashant Varshney
Co – Supervisor - Dr. RK Singh
Year - 2017
56. Title : **Dynamic Analysis of High Speed Freight Wagons of Indian Railways**
Candidate - Shiv Kumar Dubey
Year - 2017
57. Title : **Modeling and Simulation of High Speed Ball Bearings using FEM**
Candidate - Vedant Yadav
Co – Supervisor - Dr. VH Saran
Year - 2018
58. Title : **Design and Analysis of Coronary Stent using FEM**
Candidate - Pradeep Kumar
Co – Supervisor - Dr. VH Saran
Year - 2018
59. Title : **Thermo Mechanical Analysis Sandwich S-FGM plate**
Candidate - Bhusan Patil
Co – Supervisor - Dr. SC Sharma
Year - 2019
60. Title : **Dynamic Analysis of Rail-Wheel Interactions for Freight Wagon**
Candidate - Pulkit Mahera
Co – Supervisor - Dr. SC Sharma
Year - 2019
61. Title: **Prognostics of High Speed Bearings Using Deep Learning Method**
Candidate - Rahul Sharma
Co – Supervisor - Dr. VH Saran
Year - 2020
62. Title: **Dynamic Analysis of Draft Gear in Railway Vehicle**
Candidate - Harshit Rawat
Co – Supervisor - Dr. SC Sharma
Year - 2020
63. Title: **Dynamics of Human Body Exposed to Vibration Environment During Spaceflight**

- | | | | |
|--|-----------------|---|--------------|
| | Candidate | - | Neelu Singh |
| | Co – Supervisor | - | Dr. VH Saran |
| | Year | - | 2020 |
| | Year | - | 2020 |
64. Title : **Dynamic Analysis of Railway Vehicle using Air Spring as Suspension Device**
Candidate - Shubham Kumar
Co – Supervisor - Dr. SC Sharma
Year - 2020
65. Title : **Dynamic Analysis of Sandwiched Functionally Graded Material Plate Using Finite Element Approach**
Candidate - Shivansh Kansali
Co – Supervisor - Dr. VH saran
Year - 2020
66. Title: **Flow Induced Vibrations Analysis in a AUSC High Speed IP Turbine**
Candidate - Vivek Kumar Sharma
Year - 2021
67. Title: **Evaluation of Ride Index and Ride Comfort of Railway Vehicle for Indian Railway**
Candidate - Arun Kumar
Co – Supervisor - Dr. SC Sharma
Year - 2021
68. Title: **Fault Classification & Detection of High-Speed Rolling Bearing Using Soft Computing Techniques**
Candidate - Ayush Jain
Year - 2022
69. Title : **Dynamics of Sigmoidal Based Functionally Graded Piezoelectric Plates**
Candidate - Raj Kumar Gupta
Co – Supervisor - Dr. VH saran
Year - 2022
70. Title : **Ride Comfort Analysis of Smart Material based Secondary Suspension in Railway Vehicle**
Candidate - Amit Kumar
Co – Supervisor - Dr. SC Sharma
Year - 2022

(Under Progress)

71. Title : **Ride Comfort Analysis of Smart Material based Secondary Suspension in Railway Vehicle**
Candidate - Haritha
Year - 2023
72. Title : **Ride Comfort Analysis of Smart Material based Secondary Suspension in Railway Vehicle**
Candidate - Sudhanshu Kumar
Co – Supervisor - Dr. VH Saran Sharma
Year - 2023

Supervision of B. Tech Dissertations:

46 (groups)

Short Term Organized:

14

1. August 11 – 15, 2007 - Role of Sound and Vibrations in Industries by European Comm., at Continuing Education Center IITR
2. Dec 03 – 06, 2008 – Bearing Technology & Maintenance, Continuing Education Center, at IITR
3. Dec. 15 – 17, 2008 – Vibration and Noise: Issues and Challenges by SIDA & EC at Jodhpur
4. January 25, 2008 Organized Workshop on “ Noise and Vibration Issues in Railways” , at Research Design & Standards Organization (RDSO), Lucknow, EU-Asia Link Program & Swedish International Development Cooperation Agency,

5. December, 15, 2009 Organized Workshop on “Noise and Vibrations: Their Influence on Quality of Life and Product”, at College of Engineering, Trivandrum, Organized by Swedish International Development Cooperation Agency (SIDA), on.
6. Dec. 13 - 14, 2009 - Maintenance Systems: Proactive to Predictive by SIDA, Sweden at IITD
7. July 6 - 10, 2009 - Sound and Vibration: Fundamentals, Measurement and Diagnostic Analysis at Continuing Education Center IITR
8. April 3-6, 2010 Diagnostics and Condition Monitoring of Rotating Machines Sponsored by RDSO, NTPC, THDC, CEC, at IIT Roorkee
9. March 7-11, 2011 Vibration Condition Monitoring Techniques for fault Diagnosis Continuing Education Center, Indian Institute of Technology Roorkee
10. June 5-9, 2011 Dynamics and Controls of Mechanical Systems” QIP, IIT Roorkee
11. Dec. 12 - 14, 2012 Noise Monitoring and Control Technique sponsored by Pollution Control Board of India organized at IIT Roorkee
12. Dec. 30 - Jan. 03, 2014 Modeling and Simulation of Dynamical Systems QIP, IIT Roorkee
13. May 27 - May 31, 2019 Railway Vehicle Dynamics for RDSO - Lucknow at IIT Roorkee
14. Oct. 10 -Oct. 14, 2022 Rail Wheel Interactions and Statistical Analysis for RDSO - Lucknow at IIT Roorkee

Courses Developed under NPTEL (MHRD Scheme):

02

- Video Lectures on “**Solid Mechanics**” course (40 lectures) delivered and uploaded on web by IITM under the NPTEL scheme.
- Web and Video Lecture on “**Vibration Control**” course (40 lectures) delivered and uploaded on web by IITM under the NPTEL scheme.

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- “An efficient method to compute performance characteristics of two-lobe Hydrodynamic Journal Bearing” by Navin Kumar*, Akash Shukla*, Sanjay Bansal*, Dr. Satish Chandra Sharma+, **Dr. S. P. Harsha**+, Saurabh Kumar Yadav+ and Chandra B Khatri+, CR_NO: 150284HW and 5136/2016-CO/L. * Bharat Heavy Electricals Limited, India and + Indian Institute of Technology Roorkee, India.
- “Program to compute performance characteristics of two-lobe Hydrodynamic Journal Bearing” by Navin Kumar*, Akash Shukla*, Sanjay Bansal*, Dr. Satish Chandra Sharma+, **Dr. S. P. Harsha**+, Saurabh Kumar Yadav+ and Chandra B Khatri+, CR_NO: 150278HW and 5119/2016-CO/SW. * Bharat Heavy Electricals Limited, India and + Indian Institute of Technology Roorkee, India.
- “Analysis of Lube oil tank under static and multi-excitation dynamic loading for 800 and 660 MW Thermal Power Plant” by, S. Sonkar, Sk Gupta, HS Dogra & **Dr. S. P. Harsha**+, CR_NO: 192655HW and 7225/2019-CO/SW. * Bharat Heavy Electricals Limited, India and + Indian Institute of Technology Roorkee, India.

➤ International Journals Papers	187
➤ Book Chapters	10
➤ International/ National Conferences Papers	100

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[i-10 index – 106](#)

INTERNATIONAL JOURNAL RESEARCH PAPERS: 187

➤ **2022**

1. MS Rathore, and **SP Harsha***, “An attention-based stacked BiLSTM framework for predicting remaining useful life of rolling bearings.” **Applied Soft Computing**, Elsevier publishers, Vol. 131, 109765 (1-18)2022. (Impact factor = **8.623**). {Q-1} <https://doi.org/10.1016/j.asoc.2022.109765>
2. Pawan Kumar and **SP Harsha***, “Dynamic analysis of porosity dependent functionally graded sigmoid piezoelectric (FGSP) plate” **Structures**, Vol. 46, 1735 – 1752, 2022, Elsevier publishers (Impact factor = **4.05**). {Q-1} <https://doi.org/10.1016/j.istruc.2022.11.021>
3. Vikas Tiwari, S. C. Sharma and **SP Harsha***, “Ride comfort analysis of high-speed rail vehicle using laminated rubber isolator based secondary suspension” **Vehicle System Dynamics**, 2022. Taylor & Francis Publishers (Impact factor = 3.749). {Q-1} <https://doi.org/10.1080/00423114.2022.2131584>
4. Pawan Kumar and **SP Harsha***, “Electro-elastic static and vibration response analysis of sigmoid PZT-5A/Pt based smart functionally graded (SFG) plate” **Materials Today Communications**, Vol. 32, 2022, 103929 (1-22). Elsevier publishers (Impact factor = 3.662). {Q-1} <https://doi.org/10.1016/j.mtcomm.2022.103929>
5. Pawan Kumar and **SP Harsha***, “Response analysis of functionally graded piezoelectric plate resting on elastic foundation under thermo-electro environment” **Journal of Composite Materials**, Vol. 56, No. 24 2022. SAGE publishers (Impact factor = 3.191). {Q-2} <https://doi.org/10.1016/j.mtcomm.2022.103929>
6. S. J. Singh*, S. Shikha, V. Kumar and **SP Harsha**, “Effect of thickness stretching and electro-mechanical loading on sandwich FGM plate with piezoelectric face sheet with different boundary conditions: A semi-analytical approach.”, **Mechanics based Design of Structures and Machines**, 2022. Taylor & Francis publishers (Impact factor = 4.54). {Q-1} <https://doi.org/10.1080/15397734.2022.2136687>
7. Bikramjit Singh, RS Mulik and **SP Harsha***, “Static and Vibration Analysis of Functionally Graded Gears.”, **Mechanics based Design of Structures and Machines**, pp. 1-31, 2022. Taylor & Francis publishers (Impact factor = 4.54). {Q-1} <https://doi.org/10.1080/15397734.2022.2081176>
8. Bikramjit Singh, RS Mulik and **SP Harsha***, “Dynamic response analysis of functionally graded gears.”, **Proceedings of IMECH E, Part L: Journal of Design, Materials and Applications**, 2022, Sage publishers. (Impact factor = 2.014). {Q-2} <https://doi.org/10.1177/14644207221101694>
9. MS Rathore, and **SP Harsha***, “Rolling Bearing Prognostic Analysis for Domain Adaptation Under Different Operating Conditions.” **Engineering Failure Analysis**, Elsevier publishers, 2022. (Impact factor = 3.114). {Q-2} <https://doi.org/10.1016/j.engfailanal.2022.106414>
10. V Kumar*, SJ Singh, VH Saran and **SP Harsha**, “Vibration Response Analysis of Tapered Porous FGM Plate Resting on Elastic Foundation” **International Journal of Structural Stability and Dynamics**, 2350024 (1-31), 2022. World Scientific publishers (Impact factor = 2.558). {Q-2} <https://doi.org/10.1142/S0219455423500244>
11. R. Govindan, VH Saran and **SP Harsha***, “Transmissibility response analysis of a human body in semi-supine posture exposed to low-frequency vibrations” **Proceedings of IMECH E, Part C: Journal of Mechanical**

- Engineering Science, Sage publishers, 2022. (Impact factor = 1.758). {Q-3} <https://doi.org/10.1177/14644193221098891>
12. A Mathur, P Kumar and **SP Harsha***, “Performance evaluation of three signal decomposition methods for bearing fault detection and classification” **Proceedings of IMECH E, Part K: Journal of Mechanical Engineering Science**, Sage publishers, 2022. (Impact factor = 1.992). {Q-3} <https://doi.org/10.1177/146441932211366>
 13. MS Rathore, and **SP Harsha***, “Degradation Pattern of High-Speed Roller Bearings using a Data-driven Deep Learning Approach.” **Journal of Signal Processing Systems, for Signal, Image, and Video Technology**, Springer publishers, 2022. {Q-4} <https://doi.org/10.1007/s11265-022-01761-8>
 14. Pawan Kumar and **SP Harsha***, “Electro-elastic static and vibration response analysis of sigmoid PZT-5A/Pt based smart functionally graded (SFG) plate” **International Journal of Structural Stability and Dynamics**, 2022. World Scientific publishers (Impact factor = 2.558). {Q-1} <https://doi.org/10.1142/S0219455422501553>
 15. MS Rathore, and **SP Harsha***, “Non-linear Vibration Response Analysis of Rolling Bearing for Data Augmentation and Characterization.” **Journal of Vibration Engineering & Technology**, 2022. Springer publishers (Impact factor = 2.33). {Q-3} <https://doi.org/10.1007/s42417-022-00691-w>
 16. Pawan Kumar and **SP Harsha***, “Static, Buckling and Vibration Response Analysis of Three-Layered Functionally Graded Piezoelectric Plate under Thermo-Electric Mechanical Environment” **Journal of Vibration Engineering & Technology**, 2022. Springer publishers (Impact factor = 2.33). {Q-3} <https://doi.org/10.1007/s42417-022-00467-2>
 17. V Parmar, VH Saran and **SP Harsha***, An autonomous method for diagnosing raceway defects and misalignment in a self-aligning rolling-element bearing “Developing an autonomous method for diagnosing raceway defects and misalignment in a DR-SABB” Accepted, **Proceedings of IMECH E, Part K: Journal of Multibody Dynamics**, Sage publishers, 2022. (Impact factor = 1.992). {Q-3} <https://doi.org/10.1177/14644193221098891>
 18. V Kumar*, SJ Singh , VH Saran and **SP Harsha**, “Vibration response of exponentially graded plates on elastic foundation using higher-order shear deformation theory” **Indian Journal of Engineering & Materials Sciences**, Vol 29, 181-188. (Impact factor =0.651) {Q-4} <http://nopr.niscpr.res.in/handle/123456789/59748>
 19. Pawan Kumar and **SP Harsha***, “Static and vibration response analysis of sigmoid function-based functionally graded piezoelectric non-uniform porous plate” **Int. Journal of Intelligent Material Systems and Structures**, Accepted. Sage publishers (Impact factor = 2.566). <https://doi.org/10.1177/1045389X221077433>
 20. MS Rathore, and **SP Harsha***, “Roller Bearing Failure Analysis using Gaussian Mixture Models and Convolutional Neural Networks.” **Journal of failure Analysis and Prevention**, Springer publishers, Vol. 22, pp. 1853-1871, 2022, (Impact factor = 0.62) {Q-3} <https://doi.org/10.1007/s11668-022-01469-8>
 21. MS Rathore, and **SP Harsha***, “Prognostics Analysis of Rolling Bearing based on Bi-directional LSTM and Attention Mechanism.” **Journal of failure Analysis and Prevention**, Springer publishers, Vol. 22, pp. 704-723, 2022, (Impact factor = 0.62) {Q-3} <https://doi.org/10.1007/s11668-022-01357-1>
 22. Pawan Kumar and **SP Harsha***, “Vibration response analysis of sigmoidal functionally graded piezoelectric (FGP) porous plate under thermo-electric environment” **Mechanics based Design of Structures and Machines**, pp. 1-31, 2022. Taylor & Francis publishers (Impact factor = 6.54). {Q-1} <https://doi.org/10.1080/15397734.2021.1971090>
 23. Vikas Tiwari, S. C. Sharma and **SP Harsha***, “A Comparative Study on the Behavior of Ride Quality due to Deflated State of Air Spring using different Properties of Hyperelastic Material” **International Journal of Structural Stability and Dynamics**, Vol. 22, No. 11, pp. 1-31, 2022. World Scientific publishers (Impact factor = 2.558). {Q-2} <https://doi.org/10.1142/S0219455422410012>
 24. R. Bhamu, A. Shukla, SC Sharma, and **SP Harsha***, “Vibration Response of Steam Turbine Healthy and Cracked Blade under the Stress Stiffening and Spin Softening Effects” **Proceedings of IMECHE, Part K: Journal of Multibody Dynamics**, Sage publishers 2022. (Impact factor = 1.713). {Q-3} <https://doi.org/10.1177/14644193221078656>

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25. Pawan Kumar and **SP Harsha***, “Vibration response analysis of PZT-4/PZT-5H based functionally graded tapered plate subjected to electro-mechanical loading” **Mechanics Research Communications**, Vol. 116, 103765, 2021. Elsevier publishers (Impact factor = 2.254). {Q-2} <https://doi.org/10.1016/j.mechrescom.2021.103765>
26. R. Bhamu, A. Shukla, SC Sharma, and **SP Harsha***, “Dynamic Analysis of Low-Pressure Steam Turbine Last Stage Fir Tree Root Blade” **Journal of failure Analysis and Prevention**, Vol 21, pp. 2256-2277, 2021. Springer Publishers (Impact factor = 0.926). {Q-3} <https://doi.org/10.1007/s11668-021-01282-9>
27. R. Govindan, VH Saran and **SP Harsha***, “Biodynamic response analysis of semi-supine human under varying vertical excitations” **International Journal of Industrial Ergonomics**, Vol 85, 103195, 2021. Elsevier publishers (Impact factor = 2.656). {Q-3} <https://doi.org/10.1016/j.ergon.2021.103195>
28. Pawan Kumar and **SP Harsha***, “Vibration response analysis of exponential functionally graded piezoelectric (EFGP) plate subjected to thermo-electro-mechanical load” **Composite Structure**, Vol. 267, 113901, 2021. Elsevier publishers (Impact factor = 5.407). {Q-1} <https://doi.org/10.1016/j.compstruct.2021.113901>
29. AP Patil*, BK Mishra and **SP Harsha**, “Raceway defect analysis of rolling element bearing for detecting slip and correlating the force on rolling element with peak acceleration due to impact” **Measurement**, Vol. 179, 109394, 2021. Elsevier publishers (Impact factor = 3.927) {Q-1} <https://doi.org/10.1016/j.measurement.2021.109394>
30. V Parmar*, VH Saran and **SP Harsha**, “Effect of dynamic misalignment on the vibration response, trajectory followed and defect-depth achieved by the rolling-elements in a double-row spherical rolling-element bearing” **Mechanism and Machine Theory**, Vol. 162, 104366, 2021. Elsevier publishers (Impact factor = 3.866) {Q-1} <https://doi.org/10.1016/j.mechmachtheory.2021.104366>
31. V Kumar, SJ Singh, VH Saran and **SP Harsha***, “Vibration characteristics of porous FGM plate with variable thickness resting on Pasternak's foundation” **European Journal of Mechanics: Part A - Solids**, Vol 85, 104124, 2021. Elsevier publishers (Impact factor = 4.220) {Q-1} <https://doi.org/10.1016/j.euromechsol.2020.104124>
32. Simran J Singh*, C. Nataraj and **SP Harsha**, “ Nonlinear Dynamic Analysis of a Sandwich Plate With S-FGM Face Sheets and Homogeneous Core Subjected to Harmonic Excitation” **Journal of Sandwich Structures and Materials**, Vol. 23, No. 6, 2021 (Impact factor = 5.015) {Q-1} <https://doi.org/10.1177/1099636220904338>
33. AP Patil*, BK Mishra and **SP Harsha**, “A mechanics and signal processing based approach for estimating the size of spall in rolling element bearing” **European Journal of Mechanics: Part A - Solids**, Vol. 85, 104125, 2021. Elsevier publishers (Impact factor = 4.220) {Q-1} <https://doi.org/10.1016/j.euromechsol.2020.104125>
34. AP Patil*, BK Mishra and **SP Harsha**, “Fault diagnosis of rolling element bearing using autonomous harmonic product spectrum method” **Proceedings of IMECH E, Part K: Journal of Multibody Dynamics**, Vol. 235. No. 3, pp. 396 - 411, 2021, Sage publishers. (Impact factor = 1.713). {Q-3} <https://doi.org/10.1177/1464419321994986>
35. Pawan Kumar and **SP Harsha**, “Response analysis of hybrid functionally graded material plate subjected to thermo-electro-mechanical loading” **Proceedings of IMECH E, Part L: Journal of Design, Materials and Applications**, Vol. 235, No. 4, pp. 823 - 827, 2021, Sage publishers. (Impact factor = 2.014). {Q-2} <https://doi.org/10.1177/1464420720980031>
36. V Kumar, SJ Singh, VH Saran and **SP Harsha**, “Exact solution for free vibration analysis of linearly varying thickness FGM plate using Galerkin-Vlasov's method.” **Proceedings of IMECH E, Part L: Journal of Design, Materials and Applications**, Vol. 235, No. 4, pp. 880 - 897, Sage publishers, 2021. (Impact factor = 2.014). {Q-2} <https://doi.org/10.1177/1464420720980491>

37. R. Bhamu, A. Shukla, SC Sharma, and **SP Harsha**, “Dynamic Analysis of Low-Pressure Steam Turbine Last Stage Fir Tree Root Blade” **ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems (JNDE)**, Vol. 4, pp. 21001-11, 2021. {Q-3} (Impact factor = 1.11)
38. N Kumar, A Shukla, S Bansal, CB Khatri, GD Thakre, SK Yadav, SC Sharma, **SP Harsha**, “Thermo-hydrodynamic simulation study of twin-groove elliptical (two-lobe) journal bearing of steam turbine with experimental investigations.’ **Proceedings of IMECH E, Part J: Journal of Tribology**, Vo. 235, No. 9, pp. 1745 – 1764, Sage publishers, 2021. (Impact factor = 1.674). {Q-3} <https://doi.org/10.1177/1350650120973798>
39. MS Rathore, and **SP Harsha***, “Prognostic Analysis of High Speed Cylindrical Roller Bearing using Weibull Distribution and KNN” **ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems (JNDE)**, Vol. 5 No. 1, pp. 0110051-14, 2021. (Impact factor = 1.11) {Q-3} <https://doi.org/10.1115/1.4051314>
40. R. Govindan, VH Saran and **SP Harsha**, “Biodynamic human body model to assess the injury risk during space capsule landing” **International Journal of Crashworthiness**, Vol. 27 (2), 2021. Taylor & Francis (Impact factor = 2.055) {Q-3} <https://doi.org/10.1080/13588265.2021.1926844>
41. Simran J Singh and **SP Harsha**, “Analysis of Porosity Effect on Free Vibration and Buckling Responses for Sandwich S-FGM Plate Resting on Pasternak Foundation using Galerkin Vlasov’s Method” **Journal of Sandwich Structures and Materials**, Vol. 23, No. 5, 2021 (Impact factor = 5.497), {Q-1} <https://doi.org/10.1177/1099636220904340>

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43. Simran J Singh and **SP Harsha***, “Thermo-mechanical analysis of porous sandwich S-FGM plate for different boundary conditions using Galerkin Vlasov’s method: A semi-analytical approach,” **Thin Walled Structures**, Vol. 150, 106668, pp. 1-26, Elsevier publishers (Impact factor = 4.442), 2020 (Accepted) {Q-1} <https://doi.org/10.1016/j.tws.2020.106668>
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45. R. Govindan, VH Saran and **SP Harsha***, “Low-Frequency Vibration Analysis of Human Body in Semi-Supine Posture Exposed to Vertical Excitation” **European Journal of Mechanics: Part A - Solids**, Vol. 80, 103906, 2020. Elsevier publishers (Impact factor = 3.786) {Q-1} <https://doi.org/10.1016/j.euromechsol.2019.103906>
46. V Parmar, VH Saran and **SP Harsha**, “Effect of Unbalanced Rotor on Dynamic Characteristics of Double-Row Self-Aligning Ball Bearing” **European Journal of Mechanics: Part A - Solids**, Vol 82, 104006, 2020. Elsevier publishers (Impact factor = 3.786) {Q-1} <https://doi.org/10.1016/j.euromechsol.2020.104006>
47. Pravjyoti Patra, VH Saran and **SP Harsha** “Chaotic dynamics of cylindrical roller bearing supported by unbalanced rotor due to localized defects,” **Journal of Vibration and Control**, Vol. 26, No. 21-22, pp. 1898 – 1908, 2020. (Impact factor = 2.669). {Q-1} <https://doi.org/10.1177/1077546320912109>
48. Parbant Singh and **SP Harsha**, “Vibration Response Based Fault Diagnosis of Cylindrical Roller Bearing Using Response Surface Methodology” **ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems (JNDE)**, Vol.3, No. 2, pp. 0210021-23, 2020. {Q-3} <https://doi.org/10.1115/1.4045959>

49. Pravjyoti Patra, VH Saran and **S P Harsha** “Vibration Response Analysis of High-Speed Roller Bearings Using Response Surface Method,” **Proceedings of IMECH E, Part K: Journal of Multibody Dynamics**, Vol 234, No. 2, pp. 379 – 392, 2020. (Impact factor = 1.533). {Q-3}
50. S. J. Singh and **SP Harsha**, “Nonlinear Vibration Analysis of Sigmoid Functionally Graded Sandwich Plate with Ceramic-FGM-Metal Layers” **Journal of Vibration Engineering & Technology**, Vol. 8, No. 1, pp. 67 – 84, 2020. Springer Publication. (Impact factor = 0.65) [Editor in Chief – Prof. JS Rao]. {Q-3}
51. Vivek Parmar, VH Saran and **S P Harsha** “Nonlinear vibration response analysis of double-row self-aligning ball bearing due to surface imperfections,” **Proceedings of IMECH E, Part K: Journal of Multibody Dynamics**, Vol 234, No. 3, pp. 514 – 535. 2020. (Impact factor = 1.533). {Q-3}
52. M. Goel, **SP Harsha**, MP Mishra and RK Mishra “Influence of Various Defect Parameters on the Vibration Characteristics of a Single-Walled Carbon Nanotube.” **Journal of failure Analysis and Prevention**, Vol 20, pp. 1229-1236, 2020, (Impact factor = 0.62) {Q-3} <https://doi.org/10.1007/s11668-020-00929-3>
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55. M. Goel, **SP Harsha**, S. Singh and AK Sahani “Analysis of temperature, helicity and size effect on the mechanical properties of carbon nanotubes using molecular dynamics simulation”. **Material Science: Proceedings**. Accepted, 2020. Elsevier Publishers. (Scopus indexed) <https://doi.org/10.1016/j.matpr.2020.01.130>

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