

**S. P. Harsha**

**Chair Professor Indian Railways (Rail Vehicle Dynamics)**

**Department of Mechanical & Industrial Engineering**

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

**ORCID ID: <https://orcid.org/0000-0003-4749-9892>**



## **AREAS OF INTERESTS**

Machine Learning and Soft Computing Methods, Dynamics of FGM Structures & Rail Vehicle, Carbon Nano Tube based Mass Sensors and, 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**

- |  |                                  |
|--|----------------------------------|
| ➤ Vice-Chairman, JEE (Advanced)                          | 2021 -                           |
| ➤ 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 -                           |
| ➤ 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                                     | 2013 - 2016                      |
- (Effective Utilization of Noida Campus, IIT Roorkee Extension Center)

### **Best Paper Award India/Abroad**

07

1. Placed 2<sup>nd</sup> 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:

<b>A. International Collaborations Projects:</b>		<b>03</b>
1. Collaborative Research in the field of Sound and Vibrations		<b>Euro (€) 968546</b>
a. Funding Agency: <b>European Commission Asia Link Project, EC</b>		
b. Duration: Three years (2007- 2010)		
c. (Participating originations: <b>IITR (Coordinator), IITD, KTH Sweden, Loughborough University, UK &amp; RDSO, Lucknow</b> )		
2. Influence of Low Frequency Vibration on Activity Comfort while Travelling by Railway Vehicles		
a. Funding Agency: <b>Sweden International Developing Agency (SIDA), Sweden</b>		<b>Rs. 40 Lac</b>
b. Duration: Three Years (2007- 2010); (Participating originations: <b>IITR &amp; KTH Sweden</b> )		
3. Indo-US Science and Technology Forum (IUSSTF)		
a. Indo-US project on “Elasto hydrodynamic Lubrication Contact”		<b>Rs. 28.54 Lac</b>
b. Duration Two Years (2014- 2015)		
c. (Participating originations: <b>IIT Roorkee, Northwestern University, Chicago &amp; Akron University, Ohio</b> )		
<b>B. Govt. of India Funded Projects:</b>		
1. Design of Fixture for Road Transport of Stator of 800 MW Turbo-generator		
a. Funding Agency: <b>BHEL, Haridwar</b>		<b>Rs. 10.25 Lacs</b>
b. Duration: Two Years (2008 - 2009)		
2. Diagnostic and Prognostic Analysis of High Speed Rolling Element Bearings		
a. Funding Agency: <b>SERC - DST, India</b>		<b>Rs. 31.84 Lacs</b>
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: <b>BHEL, Haridwar</b>		<b>Rs. 7.15 Lacs</b>
b. Duration: One Year (2008)		
4. Design of Fixture of 28 Axle Rail Wagon		
a. Funding Agency: <b>BHEL, Haridwar</b>		<b>Rs. 9.60 Lacs</b>
b. Duration: Two Years (2009 - 2011)		
5. Study and Design Improvement in CTRB of Freight Stock of Indian Railways		
a. Funding Agency: <b>RDSO, Lucknow</b>		<b>Rs. 23.60 Lacs</b>
b. Duration: Two Years (2010 - 2012)		
6. Planning and Design of Gravity Ropeway in Nagaland		
a. Funding Agency: <b>National Horticulture Board, New Delhi</b>		<b>Rs. 16.55 Lacs</b>

- 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 & Koteshtwor 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. 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)
21. 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)

<b>C. Private Organization Funded Projects:</b>	<b>05</b>
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1. Study and Root Cause Analysis of High Vibration Analysis in Circulating Water Pumps 2x250 MW Thermal Power Plant, Chhabra
  - 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)
5. Design and Development of Vertical Axis Wind Turbine (VWAT) 50W for Jio-Smart Pole
  - a. *Funding Agency:* **Reliance Jio Infocom Ltd., Noida** **Rs. 25.96 Lacs**
  - b. *Duration:* 1 months (2022- 2023)

<b>Conferences Organized</b>	<b>04</b>
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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.

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  
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 – June, 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 – May, 2022  
Remarks: - Post-doctoral fellow,

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**(Under Progress)**

<b>Supervision of M. Tech Dissertations: 70 (Completed), 03 (In progress)</b>
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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  
Year - 2009
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**

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|--|-----------------|---|-------------------|
|  | 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:  | <b>Flow Induced Vibrations Analysis in a AUSC High Speed IP Turbine</b>                                   |   |                    |
|             | Candidate   | - | Vivek Kumar Sharma |
|             | Year  | - | 2021               |
| 67. Title:  | <b>Evaluation of Ride Index and Ride Comfort of Railway Vehicle for Indian Railway</b>                    |   |                    |
|             | Candidate   | - | Arun Kumar         |
|             | Co – Supervisor   | - | Dr. SC Sharma      |
|             | Year  | - | 2021               |
| 68. Title:  | <b>Fault Classification &amp; Detection of High-Speed Rolling Bearing Using Soft Computing Techniques</b> |   |                    |
|             | Candidate   | - | Ayush Jain         |
|             | Year  | - | 2022               |
| 69. Title : | <b>Dynamics of Sigmoidal Based Functionally Graded Piezoelectric Plates</b>                               |   |                    |
|             | Candidate   | - | Raj Kumar Gupta    |
|             | Co – Supervisor   | - | Dr. VH saran       |
|             | Year  | - | 2022               |
| 70. Title : | <b>Ride Comfort Analysis of Smart Material based Secondary Suspension in Railway Vehicle</b>              |   |                    |
|             | Candidate   | - | Amit Kumar         |
|             | Co – Supervisor   | - | Dr. SC Sharma      |
|             | Year  | - | 2022               |

**(Under Progress)**

<b>Supervision of B. Tech Dissertations:</b>	<b>44 (groups)</b>
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<b>Short Term Organized:</b>	<b>13</b>
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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

<b>Courses Developed under NPTEL (MHRD Scheme):</b>	<b>02</b>
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- 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.

<b>Copyright</b>	<b>03</b>
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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.

<b>Research Publications:</b>	<b>285</b>
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|--|-----|
| ➤ International Journals Papers              | 175 |
| ➤ Book Chapters                              | 10  |
| ➤ International/ National Conferences Papers | 100 |

[Google Scholar report:](#)

Citation – 5308  
h- index – 34  
i-10 index - 95

**INTERNATIONAL JOURNAL RESEARCH PAPERS: 175**

➤ **2022**

1. 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 = 6.54**). <https://doi.org/10.1080/15397734.2022.2081176>
2. 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**). <https://doi.org/10.1177/14644207221101694>
3. MS Rathore, and **SP Harsha**\*, “Rolling Bearing Prognostic Analysis for Domain Adaptation Under Different Operating Conditions.” **Journal of Failure Analysis**, Elsevier publishers, 2022. (**Impact factor = 3.114**). <https://doi.org/10.1016/j.engfailanal.2022.106414>
4. 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. <https://doi.org/10.1007/s11265-022-01761-8>
5. 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**). <https://doi.org/10.1142/S0219455422501553>

6. 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 = 1.889). <https://doi.org/10.1007/s42417-022-00467-2>
7. V Parmar, VH Saran and **SP Harsha**, “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 = 1.713). <https://doi.org/10.1177/14644193221098891>
8. 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>
9. 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 = 0.926) <https://doi.org/10.1007/s11668-022-01357-1>
10. 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). <https://doi.org/10.1080/15397734.2021.1971090>
11. 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). <https://doi.org/10.1142/S0219455422410012>
12. 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 IMECH E, Part K: Journal of Multibody Dynamics**, Sage publishers 2022. (Impact factor = 1.713). <https://doi.org/10.1177/14644193221078656>

## ➤ **2021**

13. 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). <https://doi.org/10.1016/j.mechrescom.2021.103765>
14. 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). <https://doi.org/10.1007/s11668-021-01282-9>
15. 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). <https://doi.org/10.1016/j.ergon.2021.103195>
16. 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). <https://doi.org/10.1016/j.compstruct.2021.113901>
17. 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) <https://doi.org/10.1016/j.measurement.2021.109394>
18. 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

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19. 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) <https://doi.org/10.1016/j.euromechsol.2020.104124>
  20. 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) <https://doi.org/10.1177/1099636220904338>
  21. 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) <https://doi.org/10.1016/j.euromechsol.2020.104125>
  22. 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). <https://doi.org/10.1177/1464419321994986>
  23. 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). <https://doi.org/10.1177/1464420720980031>
  24. 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). <https://doi.org/10.1177/1464420720980491>
  25. 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. (Impact factor = 1.11)
  26. 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). <https://doi.org/10.1177/1350650120973798>
  27. 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) <https://doi.org/10.1115/1.4051314>
  28. 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) <https://doi.org/10.1080/13588265.2021.1926844>
  29. 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>

## ➤ 2020

30. Simran J Singh and **SP Harsha**, “Thermal Buckling of porous symmetric and non-symmetric sandwich plate with homogenous core and S-FGM face sheets resting on Pasternak Foundation” **International Journal of**

31. 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>
32. AP Patil, BK Mishra and **SP Harsha**, “Vibration Based Modelling of Acoustic Emission of Rolling Element Bearings” **Journal of Sound and Vibration**, Vol. 468, 2020. Elsevier publishers (Impact Factor 3.429). {Q-1}  
<https://doi.org/10.1016/j.jsv.2019.115117>
33. 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>
34. 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>
35. 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 = 2.169). {Q-1} <https://doi.org/10.1177/1077546320912109>
36. 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>
37. 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}
38. 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}
39. 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}
40. 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>
41. 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 <https://doi.org/10.1007/s11668-020-00929-3>
42. M. Goel, **SP Harsha**, MP Mishra and RK Mishra “Buckling Failure Analysis of Defective Carbon Nanotubes Using Molecular Dynamics Simulation.” Vol. 20, 868 - 881, 2020, **Journal of failure Analysis and Prevention**, Vol 20, pp. 868 - 881, 2020 <https://doi.org/10.1007/s11668-020-00886-x>
43. 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. 1875-1883, 2020 <https://doi.org/10.1007/s11668-020-01001-w>

44. Simran J Singh and **SP Harsha**, “Nonlinear dynamic analysis of sandwich S-FGM plate resting on pasternak foundation under thermal environment” **European Journal of Mechanics: Part A - Solids**, Vol 76, pp. 155 - 179, 2019. Elsevier publishers (**Impact factor = 3.786**) [**Citation: 1**] **{Q-1}**
45. Simran J Singh and **SP Harsha**, “Exact solution for Free Vibration and Buckling of sandwich S-FGM Plates on Pasternak Elastic Foundation with Various Boundary Conditions” **International Journal of Structural Stability and Dynamics**, Vol 19, No. 4. 2019. World Scientific press (**Impact factor = 2.156**). [**Citation: 1**] **{Q-2}**
46. Simran J Singh and **SP Harsha**, “Buckling analysis of FGM plates under uniform, linear and non-linear in-plane loading” **KSME Journal of Mechanical Science and Technology**, Vol 33, No. 4., pp. 1761 - 1767, 2019. Springer Publication (**Impact factor = 1.221**) **{Q-3}**
47. VM Nistane and **SP Harsha** “Assessment of bearing degradation by using intrinsic mode functions and k-medoids clustering”, **Proceedings of IMECH E, Part K: Journal of Multibody Dynamics**, Vol. 233, 4: pp. 379-390, 2019. (**Impact factor = 1.242**). **{Q-3}**
48. P. Singh and **SP Harsha** “Statistical and frequency analysis of vibrations signals of roller bearings using empirical mode decomposition”, **Proceedings of IMECH E, Part K: Journal of Multibody Dynamics**, Vol. 233, 4: pp. 856-870, 2019. (**Impact factor = 1.242**). **{Q-3}**
49. Pravjyoti Patra, VH Saran and **S P Harsha** “Nonlinear Dynamic Response Analysis of Cylindrical Roller Bearings due to Rotational Speed,” **Proceedings of IMECH E, Part K: Journal of Multibody Dynamics**, Vol. 233, 2: pp. 379-390, 2019, (**Impact factor = 1.242**). **{Q-3}**
50. Mehra, D., Mahapatra, M.M. and **Harsha, S.P.**, Abrasive wear analysis of RZ5/TiC in situ composites: A statistical approach, **Industrial lubrication and Tribology**, Vol. 71, No. 9, pp. 1029-1037, 2019. Emerald Publication (**Impact factor 1.037**) **{Q-4}**
51. VM Nistane and **Suraj P Harsha** “Combination of envelope spectra and generative topographic mapping to diagnose bearing fault and evaluate degradation of bearing” Vol 50 No. 5, pp. 143 - 156, 2019. **Noise and Vibration Worldwide**. Sage Publishers **{Q-4 Scopus}**
52. Mahesh Bhiwapurkar, V Huzur Saran and **Suraj P Harsha** “Seat to Head Transmissibility during Exposure to Vertical Seat Vibration: Effects of Posture and Vibration Magnitude,” **International Journal of Acoustics and Vibrations (IJAV)**, Vol 24, No. 1, pp 3 - 11, 2019. (**Impact factor = .578**). **{Q-4}**
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