

Dr. Giridhara G *M.E., Ph.D (IISc)*
FIE, AeSI, MISTE

Professor & Former Head

Department of Mechanical Engineering
(Program Accredited by NBA for 6 Years in Tier-I,
cycle 2 of Washington Accord)
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Education

- ❖ Ph.D. – Aerospace Engineering Department, Indian Institute of science (IISc), Bangalore, India
“Novel Damage Detection Methodologies for Structural Health Monitoring in Metallic Structures”
- ❖ M.E (Machine Design)- Bangalore University, Bangalore, India
- ❖ B.Tech (Mechanical Engineering)- SV University, Tirupati, India

Employment details

Existing position	: Professor & Former Head, Dept. of Mechanical
Nature of Employment	: Permanent (GIA)
Date of joining the Institute	: 20.10.1994
Present Designation	: Professor since 2010
Number of years of teaching service	: 31 Years
Date of Birth	: 04-05-1968

Previous Employment details

Senior Research Fellow (SRF) at National Aerospace Laboratories (NAL), Bangalore from Dec 1993 to Oct 1994.

Accomplishments during the tenure of Headship of Department of Mechanical Engineering, BMSCE

- ❖ **UG - Mechanical Engineering program Accredited for 6 years by NBA (2022 to 2028), Tier-I, cycle 2 of Washington Accord**
- ❖ **PG – Machine Design program Accredited for 6 years by NBA (2024 to 2030)**

Research Scholars: 7

Ph.D awarded – 3, Ph.D pursuing -4, M.Sc Engg. Research - 1

- ❖ *H.M Shivaprasad, (1BM13PMN03), “Inter-Shaft Squeeze Film Dampers – an Investigative Study” – Ph.D. Awarded (2019), VTU, Belagavi*
- ❖ *Yathish Muddappa P P (1BM18PME08), “Dynamic Behaviour of Interlaminar Hybrid Fibre Metal Laminates” – Ph.D. Awarded (2022), VTU, Belagavi*

- ❖ *Manjunath K, (1BM18PME09)* (QIP, MHRD Fellowship) – “Erosion and Corrosion studies by HVOF method using Carbon Nano Tubes reinforced with Cr3C2-NiCr on SAE213-T12 material for boiler tube applications”. Ph.D. *Awarded (2023), VTU, Belagavi*
- ❖ *Chidananda B K, (1BM15PMJ02)*, “Dynamic studies on Radial Foil Bearings” - Ph.D pursuing
- ❖ *Gururaj S R, (USN : 1BM6BM21MME01)* “Novel Reduction and Realignment of Sloshing forces in Automobile fuel Tanks”, - M.Sc Engg. by Research - pursuing
- ❖ *Kiran Kumar K U (USN : 1BM22PME03)* “Investigation of subcooled boiling heat transfer to water ethanol mixture in metal foams” - Ph.D pursuing
- ❖ *Bharath V (USN : 1BM22PME01)* (QIP, MHRD Fellowship) “Greenhouse Design and Analysis using Computational Fluid Dynamics - Ph.D pursuing

Patents : 4; (Granted 1 + Published 1) + 2 under preparation

- ❖ Magnetic Coupling for Improved Torque Transmission Using Pivoted Magnets
Patent Number: 511084, Date of Grant: 15-02-2024, Application No. 2807/CHE/2015
- ❖ Inter-Shaft Squeeze Film Damper Ring; Ref. No. /Application No. 201943017494, TEMP/E-1/18128/2019-CHE, dated: 02.05.2019 (Patent Published, Application in hearing)
- ❖ Ice detection sensors operating on pseudo stiffness reduction mechanism (leading to relatively higher sensitivity)
- ❖ Semi-Active Shaft Systems

Experience & Knowledge sharing at National level :

- ❖ Expert Member / Evaluator, National Board of Accreditation (NBA), New Delhi.
- ❖ Member, Bureau of Indian Standards (BIS), PGD 36-Fluid Power Systems Sectional Committee
- ❖ Member, Project Review Committee – GATET - GTRE – DRDO.
- ❖ Member, Promotional review committee – ISRO, Bangalore.
- ❖ Member, PDR committee, Development of Lube Filter for KDE- GTRE – DRDO.
- ❖ Technical Advisor, National Design Research Forum (NDRF), Institution of Engineers (India), IEI
- ❖ Academic Leadership Programme for TEQIP Institutions @ IIM Kozhikode, Kerala, March 02-07, 2015

Industry - Academia initiatives :

- ❖ Setting up of BMSCE-VOLVO GROUP Centre for Flexible Material Research cell for advanced Research and Consultancy
- ❖ Council Member, Fluid Power Society of India (FPSI) for the period 2024-26
- ❖ Vice Chairperson, Student Chapter Relations Committee, Fluid Power Society of India (FPSI) for the period 2024-26

Contributions in various capacities at other Universities/Institutions in India :

- ❖ Member, Academic Council (AC), G Pulla Reddy College of Engineering, Kurnool, Andhra Pradesh, period 2025 to 2028
- ❖ Member, Governing Body (BoG), Satyadev Group of Colleges, Ghazipur, Uttara Pradesh, period 2024 to 2027
- ❖ Member, Local Inspection Committee - VTU, Belagavi, Karnataka.

- ❖ Board of Studies (BoS) member of several institutions, latest are
 - PSNA college of Engineering, Dindigul, TN, period 2022 to till date
 - Dr. AIT, Bengaluru, VTU nominee, period 2022 to till date
 - Galogotias University, Greater Noida, UP, period 2023 to till date
 - BNMIT, Bengaluru, period 2023 to till date
- ❖ Board of Examiner (BoE) member of several institutions, latest are
 - UVCE, Bengaluru, period 2023 to till date
- ❖ Member, Staff Selection and Evaluation committee of several Institutions / Organisations / Universities.
- ❖ Member, external audit to several Institutions.
- ❖ Assignment with Andhra Pradesh Research Common Entrance Test (APRCET), Andhra Pradesh
- ❖ Deputy Co-coordinator (2 terms) and coordinator (2 terms) for VTU valuation (UG&PG), Bangalore centre, Visvesvaraya Technological University (VTU), Belagavi, Karnataka.

Additional responsibilities executed at BMSCE :

- ❖ Head, Department of Mechanical Engineering, BMS College of Engineering, Bangalore 2022 to 2024.
- ❖ Member Secretary, BMSET Hostels, BMS College of Engineering, Bangalore, 2017 to 2019
- ❖ Warden, BMSET Hostels, 2010 to 2017
- ❖ Member – Board of Studies (BoS), Board of Examiner (BoE), Department Academic Committee (DAC), Department Advisory Board (DAB)
- ❖ Involved in setting up of CAED laboratory and Design laboratory
- ❖ Member, BMSCE Co-operative Society
- ❖ Member, UTSAV committee, the Annual Techno-Cultural Fest of B.M.S. College of Engineering, Bangalore.

Research areas

- ❖ Structural Dynamics
- ❖ Structural Health monitoring
- ❖ Advanced Materials
- ❖ Rotor Dynamics
- ❖ Finite element methods

Research Projects Funded by External Agencies: DRDO & Volvo

Total grants received till date is Rs. 1.7 Crores from 8 Projects

- 1) Title: *“Design and Implementation of Wireless Energy Harvesting Sensor System with integrated Data Acquisition and Communication System for Gas Turbine Engine Application”*
 Funding agency: **DRDO – GTRE – CARS scheme GTRE/MMG/BMR1/1148/15/CARS/A/15**
 Principal /Co-Investigator: *Co- Principal Investigator*
 Amount: **8.94 Lakhs**
 Status: Completed

- 2) Title: *“Inter-Shaft squeeze film dampers – an Exploratory study”*
Funding agency: **DRDO – GTRE – GATET scheme** GTRE/GATET/CS19/1516/070/16/01
Principal /Co-Investigator: *Principal Investigator*
Amount: **9.92 Lakhs**
Status: Completed
- 3) Title: *“Development of Carbon Fiber Reinforced plastic (CFRP) torque transmission tube.”*
Funding agency: **DRDO – CVRDE – CARS scheme** CVRDE/MMG/SPC/15-16/65
Principal /Co-Investigator: *Principal Investigator*
Amount: **17.31 Lakhs**
- 4) Title: *“Exploratory studies on introducing damping for flexible shafts”*
Funding agency: **DRDO – GTRE – GATET scheme** GTRE/GATET/CS29/1516/106/16/01
Principal /Co-Investigator: *Principal Investigator*
Amount: **9.20 Lakhs**
Status: Completed
- 5) Title: *“Develop coatings to enhance corrosion resistance of metals used in underwater applications”*
Funding agency: *TEQIP*
Principal /Co-Investigator: *Principal Investigator*
Amount: **9.50 Lakhs**
Status: Completed
- 6) Title: *“Design and Development of testing rigs and a data acquisition device”.*
The scope of work is to develop test rigs, to determine Axial Stiffness, Bending Stiffness, Torsional stiffness and to correlate the physical (actual) behaviour with the simulation behaviour of a flexible.
Funding agency: **VOLVO**
Collaboration Agreement - Volvo Group India Private Limited & BMS College of Engineering 14-07-2023 Document Reference No. 28502
Technical Team member
Amount: **24.80 Lakhs**
Status: On going
Duration : 1 Year
- 7) Title: *“Technology Demonstration of intershaft squeeze film damper (ISSFD) for two spool Gas Turbine application”*
Funding agency: **DRDO-AR& DB-GIA scheme;** ARDB/PP/4255/2122 dated 08-05-2024
Principal /Co-Investigator: *Co- Principal Investigator*
Amount: **67.85 Lakhs**
Status: On going
Duration : 3 Years

- 8) Title: “Curvic coupling preloading and friction coefficient evaluation for a small gas turbine engine”
Funding agency: **DRDO – GTRE – CARS scheme; GTRE/25CR0003/RSS/GN/CMS-III dated 16-07-2024**
Amount: **22.10 Lakhs**
Principal /Co-Investigator: *Principal Investigator*
Status: On going
Duration : 6 months

Consultancy works executed: 4 works worth of Rs. 7. 45 Lakhs

- 1) Design, Fabrication and Testing of Wind Power system for Duo Pack Electronic Module for Electric Vehicles Propulsion.
Year : 2024 - **on Going**
Amount : **Rs.5,00,000**
Company : Innovmon Technologies Pvt Ltd Bangalore
- 2) Comparative Evaluation of the Influence of Two Different Mesostructured Materials on Stress Distribution in Mandibular "All On Four" Implant Treatment.
Year : 2024 - **on Going**
Company : Department Of Prosthodontics,
The Oxford Dental College, Bengaluru.
- 3) Design, Development, Testing of the IoT based next Patient button
Year : March 2024
Amount : **Rs.10,000**
Company : DocTrue Start up company, Bangalore
- 4) Minor Irrigation project: structural details of trash track and stop log, design details for butterfly valve, dismantling joint and NRV for lift pumps of Mudhuvadi, yedururu and somayajulapalli water tanks for lift irrigation.
Year : 2023
Amount : **Rs.1,35,000**
Company : RPC-ACCo-DPIPL JV, Bangalore
- 5) Design and development of a prototype clamping mechanism.
Year : 2022
Amount : **Rs.1,10,000**
Company : M/S . Aryabhata Motors Private Limited, Bengaluru-68.

Other Innovative/Developmental project related works :

- Development of Boundary Element Software Package – Analysis of Contact stress problems using Boundary element Method Software (**ACBMS**) using C language, AR&DB sponsored project 1997.
- Design and Analysis of material handling systems (up to 80KN) for ARMATIC INDIA Pvt. Ltd., Bangalore.

- Design and Analysis of C type hooks for handling steel sheet metal rolls ranging from 5 KN to 50 KN for ARMATIC INDIA Pvt. Ltd., Bangalore.
- Flexibility analysis and the support design for Bleed air pipe (pipeline subjected to high pressures and temperatures) for VENT AIR CORPORATION, Bangalore
- Dynamic analysis and testing of an Automobile chassis for SAN Engineering Locomotive company Ltd., Bangalore. The work involved determination of Eigen value and Eigen vectors of a chassis using NISA and comparing experimental work carried out using modal analysis software package (SMS STAR)
- Development of FORTRAN codes for studying the characteristics of blade profiles.
- Static and Dynamic analysis of Turbine blade and Rotor by using NISA (Finite Element Analysis software). The effect of shrouding on stresses and natural frequencies was also carried out

List of Awards/Fellowships/Scholarships :

- 1) Senior Research Fellow : National Aerospace Laboratories (NAL), Bangalore
 - Duration : Dec 1993 – Oct 1994
 - Amount : Rs.3,600P.M
 - Granting Body : Council of Scientific and Industrial Research, New Delhi
 - Purpose : Research
- 2) Graduate Aptitude Test in Engineering
 - Duration : 1991-1993
 - Amount : Rs.1,800 P.M.
 - Granting Body : All Indian Council for Technical Education, New Delhi
 - Course : M.E
- 3) National Merit Scholarship
 - Duration : 1984-1985
 - Course : 11th & 12th standard
 - Company : RPC-ACCo-DPIPL JV, Bangalore
- 4) National level Techno Exhibition held in Dr.AIT, Bangalore on 14-04-2018
 - Won 3rd prize; Carbon Fibre Reinforce Plastics - Product development; prize money 25,000/-
- 5) Best Paper award
 - 16th International Conference on Vibration Engineering and Technology of Machinery (**VETOMAC-2021**), Bangalore, India.
 - Paper title:* Optimum Design of Intershaft Squeeze Film Damper (ISSFD) Ring for vibration Attenuation

Journal Papers in Peer reviewed Journals : 24

- 1) Giridhara, G et al. 2006. "Repair Effectiveness Studies on Impact Damaged Sandwich Composite Constructions." *Journal of Reinforced Plastics and Composites* 25(1): 5–16.
- 2) Gupta, Priyank, G. Giridhara, and S. Gopalakrishnan. 2008. "Damage Detection Based on Damage Force Indicator Using Reduced-Order FE Models." *International Journal of Computational Methods in Engineering Science and Mechanics* 9(3): 154–70.
- 3) Giridhara, G., and S. Gopalakrishnan. 2009. "Frequency Domain Based Damage Index for Structural Health Monitoring." *Structural Durability & Health Monitoring* 5(1).
- 4) Giridhara, G., V. T. Rathod, S. Naik, D. Roy Mahapatra, and S. Gopalakrishnan. 2010. "Rapid Localization of Damage Using a Circular Sensor Array and Lamb Wave Based Triangulation." *Mechanical Systems and Signal Processing* 24(8):2929–46.
- 5) Giridhara, G et. al. "Comparison Of Machining Performances In Wire EDM For HChCr Material Using Group Method Data Handling Technique And Artificial Neural Network" *Proceedings of the ASME 2015*
- 6) Sharanagouda G. Malipatil, H.M. Shivaprasad, G. Giridhara, "Calibration for Non-Contact Loading Potential as Function Gap and Voltage-Current for Static and Operating Shaft", *International Journal of Innovative Research in Science, Engineering and Technology*. ISSN(Online): 2319-8753 ISSN (Print): 2347-6710, Vol. 4, Issue 12, December 2015, pp.12113-12120
- 7) Nadeem, S. K. Shoaib, G. Giridhara, and H. K. Rangavittal. 2018. "A Review on the Design and Analysis of Composite Drive Shaft." *Materials Today: Proceedings* 5(1, Part 3):2738–41.
- 8) Sahith, Morumpalle Sai, G. Giridhara, and R. Suresh Kumar. 2018. "Development and Analysis of Thermal Barrier Coatings on Gas Turbine Blades – A Review." *Materials Today: Proceedings* 5(1, Part 3):2746–51.
- 9) Shivaprasad, H. M., and G. Giridhara. 2018. "Preliminary Studies of Newly Conceptualized Intershaft Squeeze Film Damper (ISSFD) Rings." 13(7):5304–10.
- 10) Hirehallur, Shivaprasad Mallaiah, Giridhara G. Gaikwad, and Arunkumar V. 2019. "Static Stiffness Parametric Studies of Newly Conceptualized Inter Shaft Squeeze Film Damper (ISSFD) Rings." *International Journal of Engineering Materials and Manufacture* 4(2):77–84.
- 11) Manjunatha, K., G. Giridhara, and N. Jegadeeswaran. 2020. "Effect of Carbon Nanotube (CNT) Additions in Cr₃C₂-25%NiCr Coatings on Microstructural and Mechanical Properties." *Materials Today: Proceedings*.
- 12) Yathish Muddappa, P. P., Giridhara, G., & Rajanna, T. (2020). Buckling behavior of interlaminar hybrid fiber metal laminate (HFMLs) subjected to uniaxial compressive loading. *Materials Today: Proceedings*.
- 13) Yathish Muddappa, P. P., Giridhara, G., & Rajanna, T. (2020). Buckling behavior of GLARE panels subjected to partial edge loads. *Materials Today: Proceedings*.
- 14) K. Manjunath, G. Giridhara, N Jagadesshwaran and Praveen (2021) "Effect of carbon nanotubes on microhardness and adhesion strength of high-velocity oxy-fuel sprayed NiCr-Cr₃C₂ coatings", *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and application* 1-11.
- 15) Yathish Muddappa, P. P., Rajanna, T., & Giridhara, G. (2021). Effects of different interlaminar hybridization and cutout sizes on the vibration and buckling characteristics of fiber metal composite laminates under partial edge loads. *Proceedings of the*

Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 0(0), 1–16.

- 16) Yathish Muddappa, P. P., Giridhara, G., & Rajanna, T. (2021). Buckling behavior of interlaminar hybrid fiber metal laminate (HFMLs) subjected to uniaxial compressive loading. *Materials Today*:
- 17) Yathish Muddappa, P. P., Giridhara, G., & Rajanna, T. (2021). Effect of localized edge loads on the buckling behaviour of hybrid fibre metal laminates. *Materials Today: Proceedings*.
- 18) Yathish Muddappa, P. P., Rajanna, T., & Giridhara, G. (2021). Effect of compression and tension types of concentrated edge loads on buckling and vibration behavior of interlaminar hybrid fibre metal laminates. *Composites Part C: Open Access*, 5, 100167.
- 19) Yathish Muddappa, P. P., Rajanna, T., & Giridhara, G. (2021). Effects of different interlaminar hybridization and localized edge loads on the vibration and buckling behavior of fiber metal composite laminates. *Composites Part C: Open Access*, 4(October 2020), 100084.
- 20) K Manjunatha, G. Giridhara & N Jegadeeswaran, (2021). Oxidation performance of CNT-reinforced Cr₃C₂-NiCr coatings sprayed by HVOF method, *Journal of Mines, Metals and Fuels*, 214-223,
- 21) K. Manjunath, G. Giridhara & D Shivalingappa (2021). Hot-Corrosion behavior of CNT reinforced Cr₃C₂-NiCr coatings working under high-temperature sprayed by HVOF method, Part L: *Journal of Materials: Design and Applications*, SAGE.
- 22) Harish R, D. Shivalingappa, G. Giridhar (2022), Low Plasticity Burnishing Surface Treatment: Impact On Surface Integrity parameters Of turned Cylindrical Ti- 6Al-4V, *Australian Journal of Mechanical Engineering*, Taylor & Francis.
- 23) K. Manjunath, G. Giridhara & D Shivalingappa (2022), High temperature erosion behaviour of high-velocity oxy-fuel sprayed CNT/NiCr-Cr₃C₂ composite coatings, *Journal: Surface & Coatings Technology*, Elsevier Publication, 448, 128900.
- 24) Jayanth N., Santhosh D., G. Giridhara, and J. Sharana Basavaraja,(2022), Design and Development of Sheet Metal Rack via Static, Modal and Seismic Analysis, *Journal: Research and Development in Machine Design*, Vol:5, Issue:3, PP:1--17.

Books/Chapters : 2

- 1) Shivaprasad H.M., Giridhara G., Kumar A., Kamanat P., Arun Kumar V. (2021) *Feasibility Studies on Newly Conceptualized Inter-shaft Squeeze Film Damper (ISSFD) Rings for Vibration Attenuation*. In: Rao J.S., Arun Kumar V., Jana S. (eds) *Proceedings of the 6th National Symposium on Rotor Dynamics. Lecture Notes in Mechanical Engineering*. Springer, Singapore.
- 2) Shivaprasad H.M., Giridhara G., Raghu Yogaraju., Yathish Muddappa., R N Ravikumar., Arun Kumar V. (2024) *Optimums Design of Intershaft Squeeze Film Damper (ISSFD) Ring for Vibration Attenuation*, *Vibration Engineering and Technology of Machinery*, Volume II, Springer, Singapore.

Conferences : 28 (International 22 + National 6)

International Conferences : 22

1. *"Analytical solutions for a sandwich structure with visco-elastic damping material"* 45th ISTAM, Sivakasi
2. *"Development of Boundary Element software for contact stress problems-interference pin with frictional interface in orthotropic plate and subjected to plate load"* ICME-2002, Dhaka (Bangladesh)
3. *"Frequency Domain based Damage index for structural health monitoring using laser vibrometry"* 48th AIAA, Honolulu, Hawaii (USA)
4. *"Strain Energy based damage index using reduced order models"* Indian Institute of Science, Bangalore
5. *"A new Damage measure for structural health monitoring using reduced order FE models and free vibration data"* ICCES-08, Honolulu, Hawaii (USA)
6. *"Comparison Of Machining Performances In Wire EDM For HChCr Material Using Group Method Data Handling Technique And Artificial Neural Network"* IMECE2015, International Mechanical Engineering Congress & Exposition, Houston, Texas, USA, 13-19 November 2015
7. *"Synthesis and Characterization of Titania nanoparticles and photo killing of micro-organisms using them"* ICAMA-2016, BMSCE, Bangalore
8. *"A Review on the design and analysis of composite drive shaft"* ICAMA-2016, BMSCE, Bangalore
9. *"Buckling behavior of inter layer hybrid fiber metal laminate subjected to tensile and compressive edge"* ATMA-2019, Dayananda Sagar University, Bengaluru, India.
10. *"Buckling behavior of GLARE panels subjected to partial edge loads"* ICAMMME-2020, REVA University, Bangalore, India.
11. *"Buckling behavior of Interlaminar Hybrid Fiber Metal Laminate (HFMLs) subjected to uniaxial compressive loading"* ICAMMME-2020, REVA University, Bangalore, India.
12. *"Effect of Carbon Nano Tube (CNT) Additions in Cr₃C₂-25%NiCr Coatings on Microstructural and Mechanical Properties"* ICAMMME-2020, REVA University, Bangalore, India.
13. *"Investigations of Adhesive Strength on CNTs Reinforced Cr₃C₂-25%NiCr Coatings Sprayed by HVOF Method"* AIMS-2020, BMSIT, Bangalore, India
14. *"Vibration and Buckling behavior of Intralayer Hybrid Fiber Metal Laminates (HFML's) With and Without Cut-outs subjected to inplane varying edge loads"* ICRACEM 2020, Indian Institute of Technology, Kharagpur, India
15. *"Optimum Design of Intershaft Squeeze Film Damper (ISSFD) Ring for vibration Attenuation"* VETOMAC 2021, Bangalore, India
16. *"Design Of Spindle Assembly For Sliding Head Automate"* International Conference on Mechanical, Industrial and Production Engineering (ICMIPE), Hubli, India 23 December, 2021.
17. *"Experimental investigation on air film thickness measurement of airfoil thrust bearing leading to performance evaluation under different operating conditions."*, Proceedings of XVII Vibration Engineering & Technology of Machinery Conference, VETOMAC 2022, December 15 - 17, 2022, DMAE, IOE Pulchowk, Nepal.

18. "Creep constants evaluation, creep growth and life prediction of aero engine gas turbine compressor disc" Emerging Aspects of Manufacturing, Thermal and Design Engineering (MATHED-22), National Institute of Technology, Hamirpur, February 15-17, 2023.
19. "Effect of Plasma sprayed TiO₂ -15wt% Inconel 718 composite coatings on salt spray corrosion of on SS304 steel", 29th International Conference on Processing and Fabrication of Advanced Materials (PFAM-XXIX), IIT, Tirupati, India, September 6-8, 2023
20. "Slurry Erosive Wear Behavior of TiO₂-Inconel718 Composite coatings Plasma Sprayed on Mild Steel Substrate" 29th International Conference on Processing and Fabrication of Advanced Materials (PFAM-XXIX), IIT, Tirupati, India, September 6-8, 2023
21. "Convective Heat Transfer In Lid Driven Porous Cavity Filled With Ternary Hybrid Nanofluids", 27th National and 5th International ISHMT-ASTFE Heat and Mass Transfer Conference, IIT Patna, December 14-17, 2023
22. "Design, Analysis and Optimization of Composite Propeller Shaft", International Conference on Advanced Materials and Fluid Mechanics(ICAMFM-2023), BNM Institute of Technology, Bengaluru, 23-24 November 2023.

National Conferences : 6

1. "Some preliminary studies on elastomeric dampers on Jeff-cott rotor system" NCABE-94, Trivendrum
2. "Dynamic Testing and analysis of a typical automobile bracket" XI- NASAS, NAL, Bangalore
3. "Direct Boundary Element Method (DBEM) Applied to 2-D Elastostatic problems" NAME 2004, JNNCE, Shimoga
4. "Predicting the Effective properties of Composite Material through Numerical Simulation" RAMEAF-2016, Sir.MVIT, Bengaluru
5. "Feasibility studies on newly conceptualized Inter-Shaft Squeeze Film Damper (ISSFD) Rings for Vibration Attenuation" NSRD 2019, National Aerospace Laboratories, Bangalore.
6. "Bird impact simulation: Comparison of composite fan blade with and without leading edge reinforcement" IPSASFM-2020, HKBK College of Engineering, Bangalore, 2020.
7. "Design and Development of Magnetic Suspension Damper", 7th National Symposium on Rotor Dynamics, NSRD 2024, SRM IST, Chennai, 18th to 20th December, 2024

Projects guided for UG & PG : 82

No. of M.Tech projects guided : 40

Selected Postgraduate level Projects :

- Evaluation of Stress Intensity Factors for two dimensional mixed mode problems using Modified Crack Closure Integral methods.
- Analytical solutions and comparison with finite element analysis using MSC-NASTRAN for a sandwich structure with viscoelastic damping material, estimation of modal frequencies and loss factor.
- Frequency response analysis of a smart bullet cone nose.
- Fail safe design of a bracket - Damage tolerance study, crack growth check, residual strength check.
- Stress analysis and weight optimisation of Gas Turbine Compressor Bladed Disc & Blisk.
- Analysis of composite laminates and its effects on delamination.

No. of B.Tech projects guided : 42

Selected Graduate level Projects:

- Buckling analysis of shell structures leading to casing buckling analysis in a Gas Turbine Engine.
- Static analysis of an undercarriage jack attachment bracket of LCA
- Computer Aided Design of machine tool gear box using C language
- Computer Aided Analysis of laminated composites using C
- Computer Aided Design and ANALYSIS of 6 axis sensor to determine forces and moments using C and VB
- Computer Aided Design of Mechanical Elements using Object Oriented Programming concepts (JAVA)
- Computer Aided Design of Cams using C++

Curriculum Development:

- ❖ Designed courses relating to Design specialisation for Under Graduate program (Mechanical Engineering) under Autonomous stream, BMSCE.
- ❖ Designed courses relating to Design specialisation for Post Graduate program (Machine Design) under Autonomous stream, BMSCE.

Conferences/STTP/seminars Conducted:

- ❖ Faculty Development Program on *CAMD with SOLIDWORKS and GD&T* at BMSCE, Bangalore from 8th to 12th August 2016
- ❖ National conference on "*Additive Manufacturing in Aerospace, Defense (AMAD-2022) & other Engineering Sectors* (in collaboration with NDRF and IEI, India) 2nd July 2022 at BMSCE, Bengaluru.
- ❖ Fluid Power R & D Confluence (FPRD 2023) in association with Fluid Power Society of India (FPSI), 7th October, 2023 at BMSCE, Bengaluru.
- ❖ Fluid Power R & D Confluence (FPRD 2024) in association with Fluid Power Society of India (FPSI), to be held on 4th & 5th October, 2024, Bengaluru.

Technical/Organising/ Advisory Committees:

- ❖ International Conference on Advanced Materials and Applications, ICAMA 2016, 15th to 17th June 2016, BMSCE, Bangalore
- ❖ Technical/Organising- Co-Chair for National conference on "*Additive Manufacturing in Aerospace, Defence (AMAD-2022) & other Engineering Sectors* (in collaboration with NDRF and IEI, India) 2nd July 2022 at BMSCE, Bengaluru.
- ❖ Technical Advisor, National Design Research Forum (NDRF), Institution of Engineers (India), IEI
- ❖ National Advisory Committee member, International Conference on Processing and Fabrication of Advanced Materials (PFAM-XXIX), 6th to 8th September 2023, IIT, Tirupati, India.

Reviewer for Journals:

- ❖ ISSS Journal of Micro and Smart Systems, Springer
- ❖ International journal of turbo and jet-engines, Walter de Gruyter GmbH

Professional society Affiliations:

- ❖ Fellow of Institute of Engineers (India) – (F-1293350)
- ❖ Life Member of The Aeronautical Society of India, AeSI – (M-20933)
- ❖ Life Member of Indian Society of Technical Education (ISTE)
- ❖ Life Member of Indian Society for Advancement of Materials and Process Engineering (ISAMPE L-2019)