CURRICULUM VITAE

Dr. B. K. GNANAVEL
PROFESSOR

Address:
Plot No.15, Door No. 3A,
Indira Gandhi First Street,
Choolaimedu,
Chennai – 600094,
Tamilnadu, India

Phone:
91-44-23632803
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9444179138
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Personal profile:

Father's Name: *B. Kannaiyan*

Date of Birth : *05.06.1971*

Gender : *Male*

Nationality : *Indian*

Marital Status: *Married*

Linguistic:

Speak **:** *English, Tamil, Telugu*

Write **:** *English, Tamil*

OBJECTIVE

To make a sound position in institute world and work enthusiastically in team to achieve goal of the college with devotion and hard work.

SUMMARY

I would like to teach design related subjects for undergraduate, graduate students and MS & PhD research scholars. Based on my own academic background and my careful study of the current course settings of the Madras University, Bharathiyar University and Anna University mechanical engineering department, I would like to design two new courses: a mechanical engineering course and computer aided design and manufacturing course. Both of them can be offered to graduate students or senior undergraduate students. The following subjects are handled for graduate students or senior undergraduate students: Engineering Graphics, Engineering Mechanics, Mechanics of solids, Kinematics of Machine, Dynamics of Machine, Design of Machine Elements, Design of Transmission System, Mechanical Vibration, Finite Element Analysis, Advanced Strength of Materials, Theory of Elasticity.

ACADEMIC RECORD

2011 ***Ph.D***

Anna University, Chennai

Specialization: Cable Mechanics

Dissertation title: Contact Models in Cable Assemblies

2000 ***Master of Engineering***

Kongu Engineering College

Erode

Specialization: Engineering Design

Aggregate : 69%

1994 ***Bachelor of Engineering***

Sri Venkateswara College of Engineering

Chennai.

Specialization: Mechanical Engineering

Aggregate : 67%

ACADEMIC EXPERIENCE - 24 Years

Designation : Professor
Institution : Saveetha Engineering College, Chennai
Experience : June 2020 to till date)

Designation : Professor & Head
Institution : Saveetha Engineering College, Chennai
Experience : 6 years 5 months (December 2013 to May 2020)

Designation : Professor
Institution : Saveetha Engineering College, Chennai
Experience : 2 years 9 months (February 2011 to November 2013)

Designation : Teaching Research Associate (TRA)
Institution : College of Engineering Guindy, Anna University. Chennai.
Experience : 3 years 6 months (August 2008 to February 2011)

Designation : Associate Professor
Institution : Dr. MGR Educational and Research Institute
Experience : 5 years (August 2003 to August 2008)

Designation : Senior Lecturer
Institution : S.A. Engineering College
Experience : 2 years 2 months (June 2001 to August 2003)

Designation : Senior Lecturer
Institution : Sapthagiri College of Engineering
Experience : 4 months (January 2001 to May 2001)

Designation : Lecturer
Institution : Sapthagiri College of Engineering
Experience : 5 years (June 1994 to June 1999)

SOCIAL NETWORK & RESEARCH URLs INFORMATION

LinkedIn profile **:** https://www.linkedin.com/in/gnanavel-b-k-2b1949132/
Facebook profile **:** https://www.facebook.com/b.k.gnanavel/
Twitter handle **:** https://twitter.com/BKGNANAVEL1
Google Scholar: https://scholar.google.co.in/citations?user=qXdK0BoAAAAJ&hl=en&authuser=2
Research Gate : https://www.researchgate.net/profile/Gnanavel_B_K
Scopus ID **:** 35388184100
Orcid ID **:** 0000-0002-5644-4888
Web of Science Researcher ID: E-1838-2017
Anna University supervisor recognition: 1920104

AREA OF RESEARCH

My research work is on the area of mechanics of thin rods, biomechanics, waste materials, vibration, image processing, ergonomic intervention, hybrid renewable energy and energy storage. At presently I am having Eighteen PhD Scholars and one MS scholar. My scholars are doing their research in the above mentioned research areas. ***I am having the plan to receive fund from different funding agency one Billion within the year 2025.*** Also planning to do patent in the area of energy storage & microneedle and publication in the above mention areas. Hereby I am furnishing the details of research scholars who are doing their research under my guidance.

Mechanics of thin rods

1. Mr. S. Boopathy - Effect of interfacial contact forces in cardiac lead outer insulation due to internal cable motion.
2. Mr. G. Raja - Effect of interfacial contact forces for lay ratios used in analyzing the cardiac lead cable assemblies.
3. Mr. V. Vijaya Rajan - Static friction analysis of wire ropes.

Biomechanics

1. Dr. N. Raja Rajeswari - Performance optimization of MEMS based microfluidic drug delivery system for cancer therapy. 2016
2. Ms. C. Radhika - Numerical simulation of microneedle insertion.
3. Mr. K. Ashokkumar - Quantifying the mechanical properties of human skin to optimize future micro-needle device design.

Waste materials

1. Dr. V. Subathra Devi – Experimental investigation on the strength and durability proprieties of steel slag based Ceracrete. 2017

Vibration

1. Dr. L. Subramaniam - The studies on vibration in centrifugal pump impeller for blade thickness.
2. Dr. S. Sellakumar - Analysis of ovality in pipe bends for automotive air conditioning applications. 2020

Image processing

1. Mr. P. Pathmanaban - Thermal image processing and pattern recognition techniques for fruits and vegetables.
2. Dr. V. Perumal - Network security – energy efficient wireless security using dynamic key and novel cipher. 2018

Ergonomic intervention

1. Mr. M. Shanmugam - Assessment of risk factors and ergonomic intervention among building painters

Hybrid renewable energy and energy storage

1. Mr. S. Shenbagaraman – Environmental impacts of micro wind turbine and their potential contribute to India climate change.
2. Dr. S. Lakshmanan - Design of hybrid energy storage system using A-CAES and flywheel.
3. Ms. S. Shobana - Research analysis of hybrid energy system based on compressed air energy storage and flywheel energy system for renewable energy application.
4. Ms. S. M. Kalai Arasi - Analysis of design and operating parameters for a small compresses air energy storage system integrated with a stand alone renewable power plant.
5. Mr. M. Gokul - Novel concept of air pressure driven micro turbine for Power generation
6. Mr. C. Prakash - Contribution of hybrid solar- wind- hydro pumped storage systems in meeting in India electrical energy demand.
7. Mr. E . Leelakrishnan – Development of active pitch angle mechanism for a small scale vertical axis wind turbine

Computational Fluid dynamics

1. Mr. Prabhakar subrahmanyam - Jet Vectoring Impingement Heat Transfer Distributions in High Power Density Silicon

PUBLICATIONS

International Journal

1. **Gnanavel, B., K.,** Gopinath, D., Parthasarathy, N., S., 2010, Effect of Friction on Coupled Contact in a Twisted Wire Cable, Journal of Applied Mechanics, 77(1), pp. 1-6.
2. **Gnanavel, B., K.,** Parthasarathy, N., S., 2011, Effect of Interfacial Contact Forces in Radial Contact Wire Strand, International Journal of Archive of Applied Mechanics, 81, pp. 303-317.
3. **Gnanavel, B., K.,** Parthasarathy, N., S., 2011, Effect of Interfacial Contact Forces in Lateral Contact Wire Strand, Lecture Notes in Engineering and Computer Science, 2192(1), pp. 2057-2063.
4. **Gnanavel, B., K.,** Parthasarathy, N., S., 2012, Effect of Interfacial Contact Forces in Single Layer Cable Assemblies, International Journal of Mechanics and Materials in Design, 8(2), pp. 183-195.
5. Subathra Devi, V., **Gnanavel**, **B. K.,** 2014, Properties of Concrete Manufactured using Steel Slag, Procedia Engineering, 97, pp. 2001-2010.
6. Rakesh Sidharthan, **Gnanavel**, **B. K.,** 2014, Numerical Analysis of Independent Wire Strand Core (IWSC) Wire Rope, International Journal of Engineering Research & Technology (IJERT), 3(12), pp.335-339.

7. Raja Rajeswari, N., Malliga, P., **Gnanavel**, **B. K.,** 2015, Design and Simulation of Microactuator using Phase Change Liquid for Drug Delivery System, International Journal of ChemTech Research, 8(11), pp 271-276.
8. Raja Rajeswari, N.**,** Malliga, P., **Gnanavel, B. K.,** 2016, Hollow Microneedle for Drug Delivery Applications to Improve Patient Compliance, Asian Journal of Research in Social Sciences and Humanities, 6 (11), pp. 519-530.
9. Raja, G., **Gnanavel, B. K.,** Ramesh, T., Kumar, L, M., 2017, Analyzing the Mechanical Properties of Lead Cable used in Cardiac Pacemaker, Indian Journal of Science and Technology , 10 (13), pp. 1-8.
10. Subathra Devi, V., **Gnanavel, B. K.,** Murthi, P., Madhanagopal, M., 2017, Investigation of Novel Sustainable Concrete using Optimization Technique, Advanced Materials Proceedings, 2(2), pp. 86-92.
11. Raja, G., **Gnanavel, B. K.,** 2018, Frictional Effect in Pacemaker Lead Cable Due to Coupled Contact Mode, ARPN Journal of Engineering and Applied Sciences, 13(3), pp. 934-938.
12. S. Sellakumar, **B. K. Gnanavel**, R. Venkatasamy, 2019, Analysis of ovality effect in a non-linear stand alone pipe bend, Journal of the Balkan Tribological Association Vol. 25, No 3, 651–664.
13. P. Pathmanaban, **B. K. Gnanavel**, Shanmuga Sundaram Anandan, 2019, Recent Application of imaging techniques for Fruit quality Assessment, Trends in Food Science & Technology, doi.org/10.1016/j.tifs.2019.10.004.
14. R. Vishal, K. Nimel Sworna Ross, G. Manimaran, and **B. K. Gnanavel**, "Impact on Machining of AISI H13 Steel Using Coated Carbide Tool under Vegetable Oil Minimum Quantity Lubrication," Materials Performance and Characterization, 8, no. 1 (2019): 527–537. https://doi.org/10.1520/MPC20190154.
15. R Ravi Raja Malar Vannan, TV Moorthy, P Hariharan, **B. K. Gnanavel**, 2020, Effect of Physical Vapour Deposition Coatings on High Speed Steel Single Point Cutting Tool, Advances in Material Sciences and Engineering, Springer, Singapore, 2020.1-5.
16. V. Subathra Devi, M. Madhan Kumar, N. Iswarya, **B.K. Gnanavel,** Durability of Steel Slag Concrete under Various Exposure Conditions, Materials Today: Proceedings 22 (2020) 2764–2771.
17. P. Pathmanaban, Shanmuga Sundaram Anandan, **B. K. Gnanavel,** C. P. Murigan, Application of thermal imaging for detecting cold air leak location in cold storage, International Journal of Advances in Applied Sciences (IJAAS) Vol. 9, No. 4, 2020, pp. 294~301
18. G. Raja, D. Chandramohan**, B.K. Gnanavel** and T. Sathish, Effect of Inter-facial Coupled Contact Forces in the Multilayered Pacemaker Lead cable, AIP Conference Proceedings 2283, 020081 (2020); https://doi.org/10.1063/5.0024971
19. G. Raja, D. Chandramohan, **B. K. Gnanavel**, and T. Sathish, Numerical analysis of cardiac lead due to internal cable motion, AIP Conference Proceedings 2283, 020085 (2020); https://doi.org/10.1063/5.0024980
20. Prabhakar Subrahmanyam, **B. K. Gnanavel**, Influences of Small Jet-to-Wall Spacings on Heat Transfer Characteristics and Flow Field Entrainment Effects of Micro-Scale Jets, ASME Journal of Electronic Packaging, https://doi.org/10.1115/1.4049579
21. Leelakrishnan E., **Gnanavel B K**., Sunil Kumar M., Mohamed Faisalkhan M., Peter Devadoss, Silambarasan R., Performance Evaluation Of Engine By Using Designed And

Fabricated Dual Intake Manifold, Materials Today: Proceedings, https://doi.org/10.1016/j.matpr.2020.10.748

22. Sellakumar S, **Gnanavel. B. K,** Ganesamoorty. R, Venkatasamy R, Effect Of Internal Pressure In Super Duplex Stainless Steel Pipe, Solid State Technology Vol. 63, No. 6, pp. 1-21, 2020.
23. C. Radhika and B. K. Gnanavel, Finite element analysis of polymer microneedle for transdermal drug delivery, Materials Today: Proceedings, https://doi.org/10.1016/j.matpr.2020.05.549
24. B K Gnanavel, Effect of Interfacial Contact Forces in ACSR Dog Conductor, The journal of CPRI - Power Research, 15 (2), 110-115, 2019.
25. C. Radhika and B. K. Gnanavel, Buckling analysis of polymer microneedle for transdermal drug delivery, Materials Today: Proceedings, https://doi.org/10.1016/j.matpr.2020.12.397.

International Conference

1. Eaben Raj Kumar, **Gnanavel, B., K.,** Supply Chain Management for Inter enterprise Fusion, e- Manufacturing: An Emerging Need for 21st Century World Class Enterprises, The Institution of Engineers (India), M.P. State Centre, Bhopal at Maulana Azad National Institute of Technology, Bhopal, India, 17th –19th, November 2002.
2. **Gnanavel, B., K**., Eaben Raj Kumar, e-Procurement for Future Generation, e-Manufacturing: An Emerging Need for 21st Century World Class Enterprises, The Institution of Engineers (India), M.P. State Centre, Bhopal at Maulana Azad National Institute of Technology, Bhopal, India, 17th –19th, November 2002.
3. **Gnanavel, B., K.,** Parthasarathy, N., S., Contact Stresses in Single Layered Cable Assemblies, Resource Utilisation and Intelligent systems – INCRUIS 2006 Kongu Engineering College, Perundurai, Erode, Tamilnadu, India, 4th –6th, January 2006.
4. **Gnanavel, B., K**., Gopinath, D., Parthasarathy, N., S., Effect of Friction on Mixed Contact in a Twisted Wire Cable, Fourth International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Department of Aerospace Engineering, Indian Institute of Technology, Kharagpur - 721302, India, 27th -29th December 2007.
5. Gopinath, D., **Gnanavel, B., K.,** Parthasarathy, N., S., Tangential Contact Stresses of a Strand Cable, Fourth International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Department of Aerospace Engineering, Indian Institute of Technology, Kharagpur - 721302, India, 27th -29th December 2007.
6. **Gnanavel, B. K.,** Gopinath, D., Parthasarathy, N. S., Tension, Torsion, and Bending Behavior of a Stranded Cable with Friction, Asian conference on mechanics of function materials and structures, Oct.31-Nov.3, 2008, Matsue, Shimane, Japan.
7. Gopinath, D., **Gnanavel, B., K.,** Parthasarathy, N., S., Bending of a Stranded Cable over a Sheave, Asian conference on mechanics of function materials and structures, Oct.31-Nov.3, 2008, Matsue, Shimane, Japan.
8. **Gnanavel, B., K.,** Parthasarathy, N., S., Effect Of Interfacial Contact Forces In Coupled Contact Wire Rope, International Conference on Advances in Mechanical and Building Sciences in the 3' rd Millennium(ICAMB-2009) VIT University**,** Vellore**,** Tamilnadu – 632014, India**,** 14th to16th December 2009.

9. **Gnanavel, B., K.,** Parthasarathy, N., S., Effect of Interfacial Trellis Contact Forces in a Wire Rope, ASME International Mechanical Engineering Congress and Exposition, November 12th -18th, 2010, Vancouver, British Columbia.
10. **Gnanavel, B., K.,** Parthasarathy, N., S., "Nano Technology Applications Relevant to Electricity Transmission Conductor", Nano Technology Materials and Composites for Frontier Applications on 14th & 15th October, 2010, Bharati Vidyapeeth University, College of Engineering, Pune, India.
11. **Gnanavel, B., K.,** Parthasarathy, N., S., "Effect of Interfacial Contact Forces in Lateral Contact Wire Strand", World Congress on Engineering (WCE) 2011, International Conference on Mechanical Engineers, IAENG, 6th -9th July 2011.
12. **Gnanavel, B., K.,** Radhika, C., Mariselvam, V., "Characterization of High Temperature Low Sag (HTLS) Conductor using Finite Element Analysis", Second International Conference on Advances in Materials Processing and Characterization (AMPC 2013), Vol. II, pp. 976-983, February 6th - 8th 2013, Anna University, Chennai.
13. Subathra Devi, V., **Gnanavel**, **B. K.,** Properties of concrete manufactured using Steel slag, 12th Global Congress on Manufacturing and Management (GCMM 2014). VIT, Vellore, 2014.
14. Raja Rajeswari, N., Malliga, P., **Gnanavel, B. K.,** Numerical Modelling and Optimization of Square Microneedle Array for Efficient Transdermal Drug Delivery' In International Conference on Industrial Engineering and Operations Management (IEOM), Kuala Lumpur, Malaysia, March 8-10, 2016, DOI: 978-1-4673-7762-1/16, IEEE Xplore.
15. **Gnanavel, B., K.,** Leelakrishnan, E., Raja Rajeswari, N, Analysis of wind power generation in train for Vertical Axis Wind Turbine, International NAFEMS Conference on Engineering Analysis, Modeling, Simulation and 3D-Printing (NAFEMS-3D) – 2016" at Bangalore during, 29-31 August 2016.
16. **Gnanavel, B., K.,** Radhika, C., Vijaya Rajan., Numerical Analysis of Composite Core in ACCC/TW Conductor, International NAFEMS Conference on Engineering Analysis, Modeling, Simulation and 3D-Printing (NAFEMS-3D) – 2016" at Bangalore during, 29th - 31st August 2016.
17. Raja Rajeswari, N., Malliga, P., **Gnanavel, B. K.,** Buckling Analysis of Hollow Microneedle in Transdermal Drug Delivery, ASME's International Mechanical Engineering Congress and Exposition (IMECE), Phoenix Convention Center, Phoenix, AZ, USA, November 11th – 17th , 2016.
18. **B. K. Gnanavel**, S. Boopathy, N. Raja Rajeswari, Effect of Friction on the Mechanical Behavior of Cardiac Lead (1x19 Cable) with Hierarchical Helical Structures, First International Conference on "Advanced Technology in Engineering & Management – ICATEM'19" on 11th February, 2019 at Taylor's University and 14th February, 2019 at MDIS University, organising by Saveetha Engineering College.
19. K. Kamesh, **B. K. Gnanavel**, N. Raja Rajeswari, Effect of Interfacial Contact Force in A Bimetallic Single Layer Conductor, First International Conference on "Advanced Technology in Engineering & Management –ICATEM'19" on 11th February, 2019 at Taylor's University and 14th February, 2019 at MDIS University, organizing by Saveetha Engineering College.
20. **Gnanavel, B. K.,** Raja Rajeswari, N., Kalai Arasi, S. M., Malini, K., A Study on Small Scale Compressed Air Energy Storage System, First International Conference on "Advanced Technology in Engineering & Management –ICATEM'19" on 11th February,

2019 at Taylor's University and 14th February, 2019 at MDIS University, organizing by Saveetha Engineering College.

21. Raja Rajeswari N, Praveen Kumar S, **Gnanavel B. K,** Radhika C, Jayasree R, Numerical Analysis of Hollow Microneedle and Soft Tissue Interaction in Transdermal Drug Delivery, First International Conference on "Advanced Technology in Engineering & Management – ICATEM'19" on 11th February, 2019 at Taylor's University and 14th February, 2019 at MDIS University, organizing by Saveetha Engineering College.
22. J. Vijay Amirtha Rayan, **B. K. Gnanavel**, N. Raja Rajeswari, Effect of Interfacial Contact Forces in 7 X7 Wire Strand Core Rope, First International Conference on "Advanced Technology in Engineering & Management –ICATEM'19" on 11th February, 2019 at Taylor's University and 14th February, 2019 at MDIS University, organizing by Saveetha Engineering College.
23. **Gnanavel, B. K.,** Raja Rajeswari, N., Boopathy, S, Kamesh, K., Vijya Amrithya Rayan, J., Effect of interfacial contact force in real time interactive assembly simulation of cable harness, ASME's International Mechanical Engineering Congress and Exposition (IMECE), Calvin L. Rampton Salt Palace Convention Center, Salt Lake City, Utah, USA, November 08th – 14th , 2019.
24. Kamesh, K., **Gnanavel, B. K.,** Raja Rajeswari, N., Vijya Amrithya Rayan, J., Effect of interfacial contact force in a wire rope, ASME's International Mechanical Engineering Congress and Exposition (IMECE), Calvin L. Rampton Salt Palace Convention Center, Salt Lake City, Utah, USA, November 08th – 14th , 2019.
25. Singaram Lakshmanan and **Gnanavel B. K.,** , Modelling and Thermodynamic Analysis of Small Scale Compressed Air Energy Storage Systems with Thermal Recovery, 2020 MIT A+B Applied Energy, Aug 13-14, 2020, Boston, USA, virtual MITAB2020.
26. Prakash Chinnakutti and **Gnanavel B. K.,** Design and Analysis of Spinning Reserve Gravity Hydro Energy Storage Technology, 2020 MIT A+B Applied Energy, Aug 13-14, 2020, Boston, USA, virtual MITAB2020.
27. Prakash Chinnakutti and **Gnanavel B. K.,** Design and Analysis of Uninterrupted Power Grid using hybridnation of sustainable energy 2020 MIT A+B Applied Energy, Aug 13-14, 2020, Boston, USA, virtual MITAB2020.
28. Singaram Lakshmanan**, B. K. Gnanavel**, Modelling and Thermodynamic Analysis of Small Scale Compressed Air Energy Storage Systems with Thermal Recovery, 2020 MIT A+B Applied Energy, Aug 13-14, 2020, Boston, USA, virtual MITAB2020.
29. **Gnanavel B K** and Raja G.,Effect of Interfacial Contact Forces and Lay Ratio in Cardiac Lead Outer Insulation Due to Internal Cable Motion, International Mechanical Engineering Congress & Exposition (IMECE) 2020, Virtual Conference: November 16 – 19, 2020.
30. **Gnanavel B K** and Kalai Arasi, S. M., Analysis of Small Scale Compressed Air Energy Storage (Caes) Integrated With Photovoltaic (PV) Cell Array, International Mechanical Engineering Congress & Exposition (IMECE) 2020, Virtual Conference: November 16 – 19, 2020.
31. **Gnanavel B K** and Radhika C Fluid Analysis of Polymer Microneedle for Transdermal Drug Delivery, International Mechanical Engineering Congress & Exposition (IMECE) 2020, Virtual Conference: November 16 – 19, 2020.
32. **Gnanavel B K** and S. Sellakumar, Structural Study Ovality Effect in an Incoloy 800 Nonlinear Pipe Bend, International Mechanical Engineering Congress & Exposition (IMECE) 2020, Virtual Conference: November 16 – 19, 2020.

33. Radhika, C., **B. K. Gnanavel**, Buckling analysis of polymer microneedle for transdermal drug delivery, 3rd International Conference on Materials, Manufacturing And Mechanical Engineering for Sustainable Development (ICMSD 2020), November 19-20, 2020.

National Conference

1. **Gnanavel, B., K.,** Parthasarathy, N., S., Contact Stresses in Single Layered Cable Assemblies, Recent Advasnces in Mechanical Engineering – RAME – 2004, Department of Mechanical Engineering, K.K. Wagh College of Engineering Nashik – 422 003, Maharashtrea, India, 16 – 17th, January 2004.
2. **Gnanavel, B., K.,** Parthasarathy, N., S., Elastic Models of Axially Loaded Stranded Cables, Advances in Mechanical Engineering, Department of Mechanical Engineering, Jawaharlal Nehru National College of Engineering, Shimoga – 577204, Karnataka, India.
3. **Gnanavel, B., K**., Parthasarathy, N., S., Contact Stresses in Twisted wires", Recent Trends in Science and Technology, Dr. M.G.R. Educational and Research Institute, Tamilnadu, India, 26-27th May 2005.
4. **Gnanavel, B., K.,** Senthil kumar, Vibration Analysis and Diagnostic studies", Innovations in Mechanical Engineering, R. M. K Engineering College, Tamilnadu, India, 17-18th September 2005.
5. **Gnanavel, B., K.,** Parthasarathy, N., S., Bending analysis of single layer stranded cable using FEM, National conference on Extreme Engineering and Technological Advancements –XETA -2006, Jayam College of Engineering & Technology, Tamilnadu, India, 21st & 22nd April 2006.
6. **Gnanavel, B., K.,** Gopinath, D., Parthasarathy, N., S**.,** Effect of Friction on Coupled Contact in a Twisted Wire Cable, Dr. M.G.R. Educational and Research Institute, Tamilnadu, India, 24th - 25th April 2008.
7. **Gnanavel, B., K.,** Parthasarathy, N., S., Contact stresses in Multilayered conductors, National Conference on Latest Trends in Design & Testing of Transmission line components, 22nd -23rd November 2010, Central Power Research Institute, Bangalore.
8. Subathra Devi, V., **Gnanavel**, **B. K.,** Properties of concrete using ceramic waste as coarse aggregate" in the national conference on "Waste management – NCWM'14 in association with The Madras Chamber of Commerce and Industries (MCCI) on 25.03.2014 at Saveetha Engineering College.
9. **Gnanavel**, **B. K.,** Raja, G., Parthasarathy, N., S., Effect of interfacial contact in cardiac lead cable", NAFEMS India Regional Conference 2015 on Engineering Analysis, Modeling and Simulation, 8th February 2015.

INVITED LECTURES

1. Jury head for First National Technical Symposium - MECHREVZ'14 organized by Department of Mechanical Engineering, to be held at Panimalar Institute of Technology, CHENNAI on 1st March 2014.
2. Invitation for technical talk –Faculty Development Training Programme (FDTP) on ME2303-Design of Machine elements, Organised by Department of Mechanical Engineering, Sri Venkateswara College of Engineering during 13th - 20th June 2014, sponsored by Center for Faculty Development, Anna University, Chennai.
3. **Gnanavel, B., K.,** Numerical Analysis of Polymer Insulation Materials in Implanted Cardiac Lead Mechanical System, International Conference on Advancements in Polymeric

Materials, 8th in the series, CIPET, February 11th - 13th 2017, Centre for Scientific and Industrial Consultancy, IISc, Bangalore.

4. **Gnanavel, B., K.,** Radhika, C., Raja Rajeswari, N., Effect of buckling analysis of biocompatible polymer based microneedle for transdermal drug delivery, International Conference on Advancements in Polymeric Materials, 9th in the series, CIPET, Bhubaneswar, February 2nd - 4th 2018.
5. **Gnanavel, B., K.,** (a). Effect of Interfacial Contact Forces in ACSR Overhead Conductors, (b). Numerical Analysis of Cardiac Lead due to Internal Cable Motion, National Seminar on Challenges and Probabilities in Design and Testing of Overhead Transmission Line Components and Accessories on 16th February 2018.

GRANTS RECEIVED FROM GOVERNMENT & PRIVATE FUNDING AGENCIES

STUDENT PROJECT

- ✓ BAJA SAEINDIA 2007 – Lucas - TVS, Rs. One Lakh (Fabrication) and LOMBARDINI Engine, 21st to 23rd December 2007 at NATRAX Facility of NATRIP, UDALI, PITHAMPUR, DHAR, M.P.

TRAVEL GRANT (INTERNATIONAL CONFERENCE)

- ✓ Department of Science Technology - ASME International Mechanical Engineering Congress and Exposition, November 12-18, 2010, Vancouver, British Columbia.

- ✓ Department of Science Technology - World Congress on Engineering (WCE) 2011, International Conference on Mechanical Engineers, IAENG, 6th -9th July 2011.

ADJUNCT FACULTY

- ✓ Rs. 6 Lakh in a semester, financial year 2016-2017 . One of the key objectives is to have a strong and robust collaboration between the educational Institutions and industry. The guidelines seek to encourage quality involvement of persons working in industry, academicians, scholars, practitioners, policymakers in teaching, research, and related services on a regular basis. Such involvement helps in bringing external perspective to regular teaching to make classes more interesting and to further enrich existing knowledge of faculty members.

MODROBS

- ✓ Rs. 12 Lakh - Modernisation and Removal of Obsolenscence (MODROBS), Enhancement of Cleaner Production by Transforming Manufacturing Laboratory with MQL Systems, 2019-2020

WORKSHOP/ SEMINAR / FDP

Received funding and acted as a Convener & Coordinator for the following Workshop/ Seminar/ FDP

- ✓ Centre for Faculty Development, Anna University, Chennai 602105, acted as a Coordinator for the Faculty Development Training Programme on ME2302 Dynamics of Machinery during period of 19th – 26th June 2012.The grant is Rs.0.7 Lakh.

- ✓ Received Rs.1.39 lakh grant from NMEICT-MHRD through IIT Bombay for Two week workshop on Engineering Mechanics, November 26th to December 6^{th}, 2013.

- ✓ Received Rs.1.25 lakh grant from Department of Science & Technology, New Delhi to organize (as Convener of the event) Three Days National Seminar on Hybrid Renewable Energy System, during February 19-21, 2014.

- ✓ Centre for Faculty Development, Anna University, Chennai 602105, Served as a Coordinator for the Faculty Development Training Programme on ME2352 Design of Transmission System during period of 12th – 19th December 2014.The grant is Rs.0.25 Lakh.

- ✓ Centre for Faculty Development, Anna University, Chennai 602105, and Served as a Coordinator for the Faculty Development Training Programme on ME6503 Design of Machine Element during period of 13th – 20th June 2016.

OTHER ACTIVITIES

REVIEWER OF THE JOURNAL

- Reviewer for **IEEE, PES Transactions on Power Delivery**
- Reviewer for **Springer, Journal of Mechanical Science and Technology**

PROFESSIONAL BODY MEMEBERSHIP

Life Member of

- **Indian Society for Technical Education**, India. Member No: LM32154
- **IEI, India,** Member No: M-1609984
- **SAEINDIA,** Menmber No: 706041006
- **IAENG, London** Member No: 113468

TEACHING PHILOSOPHY

By adapting Pedagogy teaching methodology & Learning Management System (LMS), I would like of Transmission System, Mechanical Vibration, Finite Element Analysis, Advanced Strength of Materials, Theory of Elasticity for undergraduate, post graduate & Research Scholars (PhD & MS to teach design oriented subjects integrated with lab such as Engineering Graphics, Engineering Mechanics, Mechanics of solids, Kinematics of Machine, Dynamics of Machine, Design of Machine Elements, Design).

RESEARCH PHILOSOPHY

My research work is on the area of mechanics of thin rods, biomechanics, waste materials, vibration, image processing, ergonomic intervention, hybrid renewable energy and energy storage. I'm expertise in formulating Analytical model of the problem, Developing Numerical model and validating the results of experimental works. Interested in exploring Industrial problems and government R&D organization problems such as CPRI, NIWE, DRDO, CVDRE on Mechanics & Vibration

ADMINISTRATIVE RESPONSIBILITIES

From December 2011 to till date I have headed my department in major administrative works such as additional intake, Research centre recognition from Anna University & Recognized as Scientific & Industrial Research Organisation (SIRO), NBA accreditation, NAAC accreditation, NBA accreditation renewal, Autonomous status, Counseling of students & parents (one student went missing from hostel, two students had attempted suicide), Adjunct faculty grant from AICTE, MODROBS grant from AICTE, motivate the faculties to pursue higher studies such as ME, PhD, IPR, Professional body membership such as IEI, SAEINDIA, ISTE, SFA, ASME & IAEng and implementing online course to our department during the lock down period.

SKILLS

- MATLAB,
- MICROSOFT,
- Finite Element Analysis (FEA),
- Noise Vibration and Harshness (NVH),
- Formulation of analytical model and validation of experimental work & numerical model with mathematical model

INDUSTRY AND LAB & BUILDING MAINTENANCE EXPERIENCE

I am having the experience as a Plant Engineer in Annapoorna Food and Beverages Pvt. Ltd., Chennai, Sapthagiri Pee Gee Fruit Processing Industry, Dharmapuri during the period of 1994 to 1999 & January 2001 to May 2001. Also Maintenance Engineer in college laboratory (all labs) and building (Plumbing, Pumps, Carpentry and transport) maintenance from 1994 to till date at different engineering colleges as follows: Saveetha Engineering College, Chennai (February 2011 to till date), College of Engineering Guindy, Anna University. Chennai (August 2008 to February 2011), Dr. MGR Educational and Research Institute (August 2003 to August 2008), S.A. Engineering College (June 2001 to August 2003), Sapthagiri College of Engineering (January 2001 to May 2001 & June 1994 to June 1999)

- NVH (Noise, Vibration, Harshness) analysis
- ALL APPLICATION OF PNEUMATIC AND HYDRALIC OPERATING MACHINE LIKE ASEPTIC FILLING MACHINE, VERPACO PACKING MACHINE
- ALL FOOD AND FRUIT PROCESSING MACHINE
- IDENTIFYING, ANALYZING, AND SOLVING IMMEDIATE ISSUES WITH TECHNICAL EQUIPMENT.
- MECHANICAL SYSTEMS (HVAC, FANS, BOILERS, CHILLERS, PUMPS, PIPING, VALVES, AND OTHER) AND CONTROL (INSTRUMENTATION, PCS, AND OTHER) SYSTEMS.

REFERENCES

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