

**Mr. L. KARTHICK, M.E.,(Ph.D.)**

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## RESUME

***Awarded as a Best Teacher by Hindusthan College of Engineering and Technology (2021).***

***Institution Mentor for Bureau Of Indian Standards Club.***

### Education

- ***Pusuing***, Doctorate of Philosophy (Ph.D): ***Mechanical Engineering*** from *Anna University, Chennai-India* from the year June 2019 (***Awaiting for Viva voce***).
- Master of Engineering (M.E): ***Engineering Design*** from, *Anna University, Chennai (Nandha Engineering College)* during the year February 2013 with **First Class**.
- Bachelor of Engineering (B.E): ***Mechanical Engineering*** from *Anna University, Tiruchirappalli (MIET Engineering College)*, during the year May 2011 with **First Class With Distinction**.
- Diploma: ***Mechanical Engineering*** from *Board of Technical Education, Tamil Nadu -Namakkal (Sri Ragavendra Polytechnic College)* during the year April 2008 with first class and distinction.

### Professional experience

- Working as a ***Assistant Professor in Mechanical Engineering, Hindusthan College of Engineering and Technology***, Coimbatore from July 2015 to till date.
- Worked as a ***Assistant Professor in Mechanical Engineering, Surya Engineering College, Erode*** from June 2013 to April 2015.

### Research Interest

- ***Engineering Materials***: Characterization of thermal properties, mechanical properties, development of new materials for electrical motors and pumps etc.
- ***Engineering Design***: Finite element analysis, vibrational analysis for structural elements.

- **Renewable Energy Utilization:** Photovoltaic heat sinks, Renewable energy water pumping systems, Photovoltaic heat pumps, Photovoltaic-thermal hybrid systems, Forced convection solar driers, Solar air heaters using heat storage materials and pin-fins, Solar heat pumps using latent heat storage, Thermal energy storage in solar stills. Regeneration type heat pumps etc.
- **Automobile Engineering:** Transport cooling systems using phase change materials, alternative refrigerants for automobile cooling systems etc.

### Subjects handled

Finite Element Analysis; Design of Machine Elements; Kinematics of Machinery, Engineering Graphics; Fluid Mechanics and Machinery; Strength of Materials; Engineering Mechanics; Refrigeration and Air Conditioning; Heat and Mass Transfer; Engineering Thermodynamics; Thermal Engineering; Design of Heat Exchangers; Automobile Engineering; Renewable Energy Sources; Power Plant Engineering; Manufacturing Technology; Metrology and Measurements; Principles of Management.

### Innovative teaching methods practiced

- Finite Element Analysis
- Strength of Materials,
- Design of Machine Elements
- Refrigeration and Air conditioning,
- Engineering Thermodynamics,
- Automobile Engineering,
- Thermal Engineering,
- Engineering Mechanics
- Engineering Graphics

### Publications

#### **International Journals**

1. Dr. M. Mohanraj, **L. Karthick**, R. Dhivagar (2021). Performance and economic analysis of a heat pump water heater assisted regenerative solar still using latent heat, **Applied Thermal Engineering**. Vol. 196, 117263. (Elsevier Publishers).

2. L. Karthick et al., (2022). Influence of Nano-/Microfiller Addition on Mechanical and Morphological Performance of Kenaf/Glass Fibre-Reinforced Hybrid Composites, **Journal of Nano Materials**. Vol 2022, Article ID 9778224.
3. L. Karthick et al., (2022). Heat Index Based Optimisation of Primary Process Parameters in Friction Stir Welding on Light Weight Materials, **Journal of Nano Materials**. Vol 2022, Article ID 2494750.
4. L. Karthick et al., (2022). Energy performance of a compression refrigeration cycle using environment-friendly refrigerants, **Materials Today: Proceedings**. Vol. 66, 1519-1525. (Elsevier Publishers).
5. Dr. M. Mohanraj, **L. Karthick**, R. Dhivagar (2021). Performance and economic analysis of a heat pump water heater assisted regenerative solar still using latent heat, **Applied Thermal Engineering**. Vol. 196, 117263. (Elsevier Publishers).
6. **L.Karthick**, A.Shanmugasundaram, C.A.Jagadish, T.Prabhu, S.Vidya Prakash (2021). Numerical analysis of Modified tooth in Spur Gear for increasing the performance using fool proofing technology, **Materials Today: Proceedings**. Vol. 47, 5862-5868. (Elsevier Publishers).
7. **L Karthick**, Naresh Mallireddy, J Yogaraja, S Sivakumar, A Sasikumar (2021). Modelling and Analysis of an EN8 crankshaft material in comparison with Forged steel crankshaft, **Materials Today: Proceedings**. Vol. 47, 6168-6172. (Elsevier Publishers).
8. **L.Karthick**, S.Sivakumar, A.Sasikumar, A.Prabhu, J.Senthil Kumar, L.Vadivukarasi (2021). A comparison and analysis of mechanical properties of glass fiber and banana fiber composite, **Materials Today: Proceedings**. <https://doi.org/10.1016/j.matpr.2021.09.073> (In Press). (Elsevier Publishers).
9. **L. Karthick**, D. Prabhu, K. Rameshkumar, T. Prabhu, C.A. Jagadish (2021). CFD analysis of rotating diffuser in a SUV vehicle for improving thermal Comfort, **Materials Today: Proceedings**. <https://doi.org/10.1016/j.matpr.2021.10.482> (In Press). (Elsevier Publishers).
10. **L. Karthick**, J. Stephen leon, Rajesh ravi, Joseph Michel, Naresh Mallireddy, L. Vadivukarasi (2021). Modelling and analysis of an EN8 crankshaft in comparison

with AISI 4130 crankshaft material, **Materials Today: Proceedings.** <https://doi.org/10.1016/j.matpr.2021.10.484> (In Press). (Elsevier Publishers).

11. L. Karthick, S Giri Haran, B Arun, RP Gughan, B Jeevanandham (2018). Semi-automation of Fitting Electric Motor into a Fuel Dispenser, **International Journal of Innovative Research in Science, Engineering and Technology.**
12. L. Karthick, J. Stephen leon, Rajesh ravi, Joseph Michel, C. A. Jagadish (2021). Vehicle Safety System for Two Wheeler - A Critical Review, **Materials Today: Proceedings.**<https://doi.org/10.1016/j.matpr.2021.11.258> (In Press). (Elsevier Publishers).

#### **Patent Grant /Publication :**

- Applied Design Grant on **“Automatic Adjustable Seed Sowing Machine” (Published & Waiting for Grant)**
- Applied Design Grant on **“Rotating Solar Platform Structure” (Published & Waiting for Grant)**
- Published more than 20 patents in the field Mechanical and its applications.

#### **Conferences**

1. **Karthick L**, Yogaraja J, Senthilkumar C, Naresh Mallireddy, (2021). Experimental Investigation for heat transfer enhancement of heat pipe using DI water. **Virtual International Conference on Advanced Technologies and Research in Mechanical Engineering.** Malappuram, Kerala , India.
2. **Karthick L** (2021). Numerical Analysis of Modified Tooth in Spur Gear for Increasing the Performance Using Fool Proofing Technology. **International Conference on Technological Innovations in Mechanical Engineering.** Bhopal.
3. **Karthick L** (2021). Modelling and Analysis of an EN8 Crankshaft Material in comparison with Forged Steel Crankshaft. **International Conference on Technological Innovations in Mechanical Engineering.** Bhopal.
4. **Karthick L** (2021). A comparison and analysis of mechanical properties of Glass Fiber and Banana Fiber Composite. **International Conference on Smart and Sustainable Developments in Materials, Manufacturing and Energy Engineering,** Karnataka.

5. **Karthick L** (2021). CFD analysis of rotating diffuser in a SUV vehicle for improving thermal comfort. ***International Conference on Smart and Sustainable Developments in Materials, Manufacturing and Energy Engineering***, Karnataka.
6. **Karthick L** (2021). Modelling and Analysis of an EN8 Crankshaft in comparison with AISI 4130 Crankshaft Material. ***International Conference SME-2021***, Karnataka.
7. **Karthick L**, B Jeevanandam, A T M Arjunkanth (2018). Investigation and Analysis on EN8 Crankshaft in comparison with forged steel. ***International Conference on Technological Advances in Mechanical Engineering***. AMET (Deemed to be University), Chennai.
8. **Karthick L**, B Jeevanandam, A T M Arjunkanth (2018). Investigation and Analysis on EN8 Crankshaft in comparison with forged steel. ***International Conference on Engineering and Technological***. Coimbatore.
9. **Karthick L**, M. Mohanraj (2017). Numerical simulation of a heat pump assisted regenerative solar still with PCM. ***International Conference on Renewable and Sustainable Energy***. Coimbatore.
10. **Karthick L**, Mohanraj M (2018). Energy and Exergy analysis of forced convection solar air heater using pin-fin absorber plate. ***International Conference on Thermal Analysis and Energy Systems 2018***. Coimbatore.
11. **Karthick L** (2013). Design and Analysis of Newly Developed Automotive Alumina Crankshaft Material In Comparison With En8. ***National Conferene "SURYARISE"***. Erode.
12. **Karthick L** (2013). Design and Analysis of Newly Developed Automotive Alumina Crankshaft Material In Comparison With Forged Steel. ***National Conferene "MTME-2013"***. Erode.
13. **Karthick L** (2013). Design and Analysis of Newly Developed Automotive Alumina Crankshaft Material In Comparison With Castiron. ***National Conferene "ACME-2013"***, Erode.

#### Publication links

**Research gate:** <https://www.researchgate.net/profile/Karthick-Loganathan>

**Google scholar:** <https://scholar.google.com/citations?user=qkQoGJM AAAAJ&hl=en>

**Web of Science:** *Web of Science Researcher ID: P-9064-2018*

**Scopus Author ID:** *55190552100*

**Orchid ID:** *https://orcid.org/0000-0002-1403-8179*

**Recognition as a reviewer (Reviewed more than 18 papers in reputed Journals)**

- Mechanics Based Design of Structures and Machines, An International Journal (Taylor & Francis Online),
- Biomass Conversion and Biorefinery (Springer),
- Materials Today: Proceedings (15 papers) (Elsevier),
- Proceedings of Engineering and Technology Innovation

**Guest lecturers delivered**

1. Delivered a lecture on ***Applications of Finite Element Analysis*** at Surya Engineering College, Erode on August 11<sup>th</sup> 2021.
2. Delivered a lecture on ***“Uses of Solar Still”*** at Hindusthan Institute of Technology, Coimbatore 2021.
3. Delivered a lecture on ***“Solar assisted heat pumps”***. Nehru Institute of Engineering and Technology, Coimbatore 2021.
4. Delivered an invited talk on ***Applications of solar heat pumps*** at Hindusthan Institute of Technology, Coimbatore on July 17<sup>th</sup> 2021.
5. Delivered a lecture on ***Role of Engineers in Industries*** at Nandha Engineering College, Erode on September 11<sup>th</sup> 2020.
6. Delivered an lecture on ***“Heat Assisted Solar Still”*** at Surya Engineering College, Erode on March 10<sup>th</sup> 2020.

**Books/Lab Manuals/Lecture notes**

1. Textbook on ***Finite Element Analysis*** for B.E Mechanical engineering students (Incampus only).
2. Text book on ***CAD/CAM*** for B.E Mechanical engineering students. (Incampus only)
3. Text book on ***Strength of Materials*** for B.E Mechanical engineering students. (Incampus only)
4. ***Simulation and Anaysis, CAD/CAM, Strength of Materials, Fluid Mechanics and Machinery, Manufacturing and Engineering Practices*** lab manuals

(Incampus purpose only in Hindusthan College of Engineering and Technology and Surya Engineering College).

### **Projects Supervisions**

#### ***UG/PG Projects completed***

1. Design and development of solar water heating using packed bed absorber plate.
2. Development and testing of heat pump for assisted desalination system.
3. Performance investigation on solar still using pin-fin basin.
4. Performance enhancement of solar still using heat storage materials.
5. Development and testing of solar water heater assisted active solar still.
6. Development of solar photovoltaic water pumping system with economic assessment.
7. Development of biomass assisted heat pump desalination system.
8. Real time experimentation of performance of vertical axis wind turbine with tail guide mechanism.
9. Design and development of shell and coil heat exchanger for heat pump application.
10. Performance of a walk in cooler working with R22A and R431A.
11. Investigation on different Crankshaft Materials in comparison with EN8.
12. CFD analysis of rotating diffuser in a SUV vehicle for improving thermal comfort.
13. CFD analysis on centrifugal pump.
14. CFD analysis on Conventional Solar Still.

#### **Technical Consultancy:**

1. Provided technical consultancy to ***L & P Renewable System Integrator***, Erode for developing Modified Trolley design for loading and unloading application in Reputed Industry in Erode.

#### **Grants Applied**

- Applied grant for Tamilnadu State Council For Science And Technology, **Development And Testing of Regenerative Solar Still**, 2021.
- Applied grant for Access to Knowledge for Technology Development & Dissemination (A2K+) Studies (DSIR), **Development And Testing Of Solar Assisted Heat Pump Desalination Unit Integrated With Heat Storage Materials**, 2020.

### **Programs organized**

1. Organized webinar on **Global Changes in New Product Development** during the month of February 2021 at Hindusthan College of Engineering and Technology, Coimbatore. India.
2. Organized webinar on **Job applications, Resume preparation and Industry preparedness** during the month of June 2021 at Hindusthan College of Engineering and Technology, Coimbatore. India.
3. Organized webinar on **Role of AI in Mechanical Engineering** during the month of June 2021 at Hindusthan College of Engineering and Technology, Coimbatore. India.
4. Organized webinar on **How to become an Entrepreneur** during the month of July 2021 at Hindusthan College of Engineering and Technology, Coimbatore. India.
5. Organized one-week faculty development program on **Solar Energy Applications** during the month of July 2020 at Hindusthan College of Engineering and Technology, Coimbatore. India.
6. Organized webinar on **Energy Conservation Management** during the month of October 2020 at Hindusthan College of Engineering and Technology, Coimbatore. India.
7. Organized one day workshop on “**Automobile Air Pollution**” by Dr.S.Murugan , NIT Roorkee at Surya Engineering College (2015), Erode.
8. Organized one day workshop on “**Dynamic Problems**” in FEM on 8th February 2014 at Surya Engineering College (2015), Erode.
9. Acted as a Co-coordinator in organizing Anna University, Chennai Sponsored Faculty Development Training Programme on “**ME6301 - Engineering Thermodynamics**” held at Surya Engineering College during 16th to 22nd June 2014.
10. Organized one day workshop on “**Competitive Exams in Competition world**” on 6th September 2014 at Surya Engineering College, Erode.
11. Organized Guest Lecture on the topic “**Emerging Entrepreneurship in India**” by S.Manikandan, CEO, Mill Tex Pvt Ltd (2014), Coimbatore.
12. Organized Guest Lecture on the topic “**Welding Electrode Manufacturing**” (2013) by C.V.Pathy, CEO Noveaux Industries Kangeyam.



13. Organized Guest Lecture on the topic “**Basic Manufacturing Engineering**” (2013) by Balakrishnan, CEO Sri Krishna Foundry, Coimbatore.

**Curriculum developed:**

1. Developed and delivered a course module on **Finite Element Analysis subject**.
2. Developed and delivered a course module on **CAD/CAM subject**.
3. Developed and delivered a course module on **Strength of Materials subject**.

**Academic responsibilities:**

1. Department coordinator for AICTE.
2. Department coordinator for NPTEL and MOOC courses.
3. Developing a Design lab at Hindusthan College of Engineering and Technology.
4. Acted as an examiner for Anna University theory and practical examinations.
5. Acted as a department association in charge, Faculty advisor and Students Project coordinator for under graduate students.

**Conferences/ Workshops/ Training Programs Participated:**

1. Participated in Online Workshop on CFD Fundamentals – Theory and Practice on 18<sup>th</sup> May 2021.
2. Participated in ATAL FDP on various topics during 2020 to 2021.
3. Short Term Course on “Machine Learning & Artificial Intelligence for Real Time Applications” from 9th to 11th July 2020.
4. Participated FDP on “Recent Innovations and Futuristic Scope for Research in Internal Combustion Engines” from 29th June to 4th July, 2020.
5. Short Term Course on “Computational Dynamics” ” (AICTE Sponsored) IIT MADRAS, Chennai from 1.09.2014 to 5.09.2014.
6. Participated FDP On “Recent Trends in Automobile Electronics” conducted by Department of Automobile Engineering ,IRTT,Erode from 03rd to 16th June 2013.
7. Short Term Course on “Product Design & Engineering” (AICTE Sponsored) IIT MADRAS, Chennai from 21.10.2013 to 25.10.2013.

**Membership in professional bodies**

- Life member in International Association of Engineers (IAENG).

**Computer knowledge**

- Packages: AutoCAD, SOLIDWORKS, ANSYS, ANSA, M.S Office.

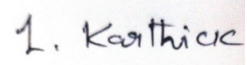
**Personal information**

Date of birth : 29. 04.1989  
Nationality : Indian  
Languages known : English, Tamil  
Marital status : Married

Confirm that above cited information's are true to the best of my knowledge and belief.

Coimbatore  
20.03.2022

Yours sincerely,



**Mr. L. Karthick**

**References:**

- 1. Dr. M. Mohanraj, Ph. D.**  
Professor, Department of Mechanical Engineering,  
Hindusthan College of Engineering and Technology, Coimbatore. INDIA.
- 2. Dr. P. Ponnusamy, Ph. D.**  
Professor, Department of Mechanical Engineering,  
Vellore Institute of Technology, Chennai. INDIA.
- 3. Dr. M. Mohammed Asif, Ph. D.**  
Associate Professor, Department of Mechanical Engineering,  
Vignan's Lara Institute of Technology & Science, Andhra Pradesh. INDIA.
- 4. Dr. P.Suresh, Ph. D.**  
Associate Professor, Department of Mechanical Engineering,  
MVJ College of Engineering, Bengaluru. INDIA.