

## BIO-DATA



1. **Name** Badal Kudachi
2. **Designation** Assistant Professor
3. **Residential Address** # 5 to 212 B, Trikani Colony Farm, Krishna Kittur (PO) 591303 Athani (TK), Belgaum (DT),Karnataka, India
4. **Date of birth** June 01<sup>st</sup>
5. **Total Experience** 9.5 years
  - i. **Teaching** 9 years
  - ii. **Industrial** 6 months

### 6. **Qualifications**

<b>Exam Passed</b>	<b>Year</b>	<b>Institution/ University</b>	<b>Branch/Specialization</b>	<b>Percentage/CGPA</b>
M.Tech	2012-2014	Visvesvaraya Technological University Regional Office, Mysore	Thermal Power Engg.	75.41
B.E.	2007-2011	Sri Jayachamarajendra College of Engineering, Mysore-570006.	Mechanical	8.22 CGPA
PUC II	2007	S D M PU College Dharwad.	PCMB	64.65
SSLC	2005	Sri Morarji Desai Residential School, Nidasoshi.		90.24

### **Additional Qualification:**

### 7. **Employment Record**

<b>Institution</b>	<b>Year (From To)</b>	<b>Designation</b>
Fr. C. Rodrigues Institute of Technology, Vashi Navi Mumbai	June 2017 to till date	Assistant Professor
Vidya Vikas Institute of Engineering and Technology, Mysore	Jan 2016 to June 2017	Assistant Professor
PA College of Engineering, Mangalore	July 2014 to June 2015	Lecturer

**8. Undergraduate / Postgraduate Teaching Experience and Subjects Taught****Subjects Taught at UG level**

Sr.No.	Name of Subject	Semester
1.	ELEMENTS OF MECHANICAL ENGINEERING	I
2.	THERMODYNAMICS	III
3.	FLUID MECHANICS	IV
4.	THERMAL ENGINEERING	V
5.	TURBOMACHINERY	VI
6.	RENEWABLE ENERGY SYSTEMS	VII/VIII

**9. Research Experience****10. Research Funding / Consultancy Services:****Research Grants:**

Sr. No.	Name of Funding Organization	Type of Grant	Amount (Rs.)	Year	Name of Research Project
01	University of Mumbai	University Minor Research	40,000	2019-20	Design and Fabrication of Nanoparticle Enriched PCM based Thermal Energy Storage System
02	Fr. C. Rodrigues Institute of Technology	Departmental research grant	10,000	2019- 20	PCM Based Thermal Energy Storage System

**11. Professional Societies Fellowship / Membership**

- Member of “National Society of Fluid Mechanics and Fluid Power (FMFP)”, Mechanical Engineering, IIT Bombay.

**12. Achievements / Awards / Position**

- Department NBA Coordinator
- E-Cell Coordinator

**13. Projects guided in UG/PG level**

- Passive Control of Thermo-Acoustic Instabilities (2017-18)
- Design and Fabrication of PCM Based Heat Exchanger for Energy Storage (2018-19)
- Experimental Study of PCM Based Latent Heat Thermal Energy Storage System Using Cylindrical Fins (2019-20)
- Design and fabrication of Nano-Enhanced PCM based thermal energy storage system (2019-20)
- Experimental Study of PCM Based Triple Tube Latent Heat Thermal Energy Storage System Using Longitudinal Fins (2020-21)
- Experimental Study of Nano (Graphene) PCM Based Triple Tube Latent Heat Thermal Energy Storage System (2020-21)
- Low Cost Cooling/Heating System using Ground Coupled Heat Exchanger (2021-22)

- Hybrid cooling of Photovoltaic panel using finned PCM and water cooling (2021-22)
- Power Generation Using Speed Breaker (2023-24)
- Development of Dual Axis Solar Tracking System (2023-24)
- Experimental Study of Design and Installation of Vertical Axis Wind Turbine (2023-24)

#### 14. Short Term Training Programmes

##### Organised

- Webinar on “Nuclear Reactor Technology in India- Advances & Opportunities”, 22<sup>nd</sup> December 2020
- Webinar on “Battery modelling simulation using STARCCM+ Software”, 22<sup>nd</sup> May 2020
- Webinar on Webinar on “Heat Transfer and Fluid Flow Simulation for a Heat Exchanger Unit Using Ansys Fluent” 8<sup>th</sup> May 2020

##### Attended

- Six Days (Jan. 29<sup>th</sup> to 03<sup>rd</sup> Feb, 2024) Industrial Training on “Hand-on Training of Power Plant Familiarization”, Conducted by Adani Electricity Mumbai LTD, Dahanu, Mumbai.
- 30 hours (Jan. 01-06, 2024) Training Program on “Python for Mechanical Systems”, conducted by Department of Mechanical Engineering, Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai.
- One day (05<sup>th</sup> Aug., 2022) IP Awareness/Training program under National Intellectual Property Awareness Mission, Intellectual Property Office, Mumbai, India.
- One day (29<sup>th</sup> July, 2022) Regional Meet of IIC, organised by G H Raison College of Engineering, Nagpur.
- One day (15<sup>th</sup> May, 2021) virtual workshop on Excel at MS Excel for Effective Organization of Quantitative Metrics data for NAAC, VIT, Mumbai.
- One week (Nov. 2-6, 2020) AICTE Training and Learning (ATAL) Academy Online FDP on “**Electric Vehicles**” conducted by Department of Mechanical Engineering, Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai.
- Three days training program (6<sup>th</sup>, 20<sup>th</sup> July and 14<sup>th</sup> Sep, 2019) on “**Measurement, Control and Virtual Instrumentation**” conducted by Department of Mechanical Engineering, Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai.
- One week (June 25-29, 2019) training on “**ANSYS Mechanical and CFD**” conducted by Department of Mechanical Engineering, Fr. C. Rodrigues Institute of Technology, Vashi Navi Mumbai in association with ARK Infosolutions Pvt. Ltd.

- One week (June 17-21, 2019) AICTE-QIP Sponsored short term course on “**Solar Thermal Technologies for Process Heat and Power**” organized by Department of Energy Science and Engineering (DESE), IIT Bombay.
- One-week (May 28-June 3, 2018) AICTE-QIP Sponsored short term course on “**Introduction to Numerical Heat Transfer, Fluid Flow and its Applications**” organized by Mechanical Engineering Department, CIT, Coimbatore.
- One-week (Dec 25-30, 2017) AICTE-QIP Sponsored short term course on **Renewable Energy Sources for Sustainable Development, Need, Technologies and Policies** organized by Mechanical Engineering Department, VJTI, Mumbai.
- Three days (Dec 05-07, 2017) workshop on “**ANSYS skill development program**” conducted by VJTI in association with Fr. C. Rodrigues Institute of Technology, Vashi, Mumbai.
- One Day National Seminar on “**Recent Trends in Sustainable and Clean Energy Technologies**” held on 17<sup>th</sup> April 2017 at NIE Institute of Technology, Mysore Karnataka.
- Participated in One Day National Workshop on “**Advances in Metrology**” held on 8<sup>th</sup> April 2017 at ATME College of Engineering, Mysore Karnataka.

#### 15. List of Papers Published Journal/ Book Chapter

- ❖ Rukhande, Sanjay, Siddhant Amrutkar, Abhishek Joshi, Yash Jethwa, Kaushal Gujar, Aqleem Siddiqui, and Badal Kudachi. "Wet Sliding Wear Investigation of Ni-Based Coating for Piston Cylinder." *Journal of Materials and Applications* 13, no. 2 (2024): 21-29.
- ❖ Varkute, Nilesh, Badal Kudachi, Shardul Kachare, Chintan Mange, Jigar Gandhi, and Harish Menon. "Thermal Analysis of Earth Tube Heat Exchanger Using Experimental Setup and Simulation." In *Recent Advances in Mechanical Engineering: Select Proceedings of CAMSE 2021*, pp. 445-454. Singapore: Springer Nature Singapore, 2022.
- ❖ Varkute, Nilesh, Badal Kudachi, Bipin Mashilkar, Priyan Kamble, Anmol Rane, Aishwarya Harad, and Glen Rebello. "Experimental and Numerical Investigation of Latent Heat-Based Energy Storage System Using Nano-Enhanced Phase Change Material." In *Recent Advances in Mechanical Engineering: Select Proceedings of CAMSE 2021*, pp. 559-571. Singapore: Springer Nature Singapore, 2022.
- ❖ Kudachi, Badal, Bipin Mashilkar, Nilesh Varkute, Omkar Mawalankar, Ashish Shanbhag, Shalom Gaikwad, and Antony Maria Camillus. "Experimental Study of PCM Based Latent Heat Thermal Energy Storage System Using Fins." In *International Conference on Advances in Energy Research*, pp. 789-801. Singapore: Springer Nature Singapore, 2022.
- ❖ Kudachi, Badal, Nilesh Varkute, Bipin Mashilkar, Srikant Guthulla, Prabhav Jayaprakash, Alex Aaron, and Simran Joy. "Experimental and computational study of phase change material based shell and tube heat exchanger for energy storage." *Materials Today: Proceedings* (2021).

- ❖ Kudachi, Badal, Nitin Satpute, Nilaj N. Deshmukh, and Bipin Mashilkar. "Performance and Emission Characteristics of Thermal Barrier Coating on Diesel Engine Fueled with Cottonseed Biodiesel." In *Advances in Applied Mechanical Engineering*, pp. 205-213. Springer, Singapore, 2020.

**16. List of Papers Published in National and International Conferences (list in IEEE format)**

- ❖ "Experimental Study of Solar Water Heater System Using Phase Change Material", International Conference on Technologies for Energy, Agriculture, and Healthcare (ICTEAH 2024), K J Somaiya College of Engineering, Vidyavihar, Mumbai, 15-16 April 2024.
- ❖ "Experimental Studies of Various Properties of Nano-Enhanced Phase Change Materials", International Conference on Sustainability: Integrated and Scientific Approach (ICS-2022), University of Mumbai, 04-06 August 2022.
- ❖ "Experimental Study of PCM Based Latent Heat Thermal Energy Storage System Using Fins", 8th International Conference on Advances in Energy Research (ICAER-2022), IIT Bombay, 07-09 July, 2022.
- ❖ "Analysis of Thermal Battery Management Systems for Lithium-Ion Battery Cell", 20th ISME Conference on Advances in Mechanical Engineering, IIT Ropar, 19-21 May, 2022.
- ❖ "Experimental and Numerical Investigation of Latent Heat Based Energy Storage System Using Nano Enhanced Phase Change Material", 2nd International Congress on Advances in Mechanical and Systems Engineering (CAMSE-2021), Dr. B. R. Ambedkar NIT Jalandhar, 17-19 July 2021
- ❖ "Thermal Analysis of Earth Tube Heat Exchanger Using Experimental Setup and Simulation", 2nd International Congress on Advances in Mechanical and Systems Engineering (CAMSE-2021), Dr. B. R. Ambedkar NIT Jalandhar, 17-19 July 2021
- ❖ "Experimental and Computational Study of Phase Change Material Based Shell and Tube Heat Exchanger for Energy Storage", 2nd International Mechanical Engineering Congress (IMEC – 2019), NIT Tiruchirappalli, 29 Nov. 2019 – 01 Dec. 2019.
- ❖ "Performance and Emission Characteristics of Thermal Barrier Coating on Diesel Engine Fuelled with Cottonseed Biodiesel", 1st International Conference on Applied Mechanical Engineering Research (ICAMER - 2019), NIT Warangal, 2-4 May 2019.
- ❖ "Recent Progress in Renewable Energy Sources and Challenges to Meet Future Energy Demands in India", International Conference on Energy and Environmental Challenges (CE<sub>2</sub>C 2019), VNIT Nagpur, pp-46, 18-19 Jan 2019.
- ❖ "Suppression of Thermo-Acoustic Instabilities Using Helmholtz Resonator", International Conference on Nascent Technologies in Engineering (ICNTE 2019), IEEE, 4-5 Jan 2019.
- ❖ "Hybrid Shock Absorber with Electromagnetic and Fluid Damper for Application in an Automotive Suspension", International Conference on Nascent Technologies in Engineering (ICNTE 2019), IEEE, 4-5 Jan 2019.

- ❖ “Experimental Evaluation of Yttria Partially Stabilized Zirconia Thermal Barrier Coating by Plasma Sprayed Technique on I.C engine”, International Conference on Frontiers in Engineering, Applied Sciences and Technology (FEAST 2018), NIT Tiruchirappalli, 27 April 2018.
- ❖ “Mechanical Characterization of Hybrid Epoxy Reinforced with Carbon & Jute Fiber by Varying Fiber Orientation”, 4th International Conference on Innovative Research in Engineering Science and Management” (ICIRESM-16), GIIT, Madhya Pradesh, IJETMAS, May 2016 (ISSN 2349-4476, Vol-4).
- ❖ “Hydro Dynamic Journal Bearing analysis by using FEM” in International conference on Technology Management for Green Environment, VTU RC Mysore, Sep 2013.

**17. Book**

- “Engineering Thermodynamics”, ISBN: 978-93-5451-560-6, July 2022, Nirali Prakashan Publisher.

**18. Invited Lectures in FDP/ STTP**

**19. International Conference Technical Program Committee Member / Reviewer**

Reviewer for International Conference

- National Conference on Emerging Trends in Electric-Mobility and Sustainable Development: Opportunities & Challenges, 22<sup>nd</sup> April 2022, RIT, Islampur.
- IEEE & IAS Technically Co-Sponsored 4<sup>th</sup> Biennial International Conference on Nascent Technologies in Engineering (ICNTE-2021), Jan 15-16, FCRIT, Vashi Navi Mumbai.
- IEEE Technically Co-Sponsored 3<sup>rd</sup> Biennial International Conference on Nascent Technologies in Engineering (ICNTE-2019), Jan 4-5, FCRIT, Vashi Navi Mumbai.

**20. Patents**