Dr. Kailasnath B. Sutar

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Education

Ph.D. in Mechanical Engineering: *2010-2015, Indian Institute of Technology Delhi, Department of Mechanical Engineering*

Thesis Title: Development of Downdraft Gasifier Cookstoves for Domestic Application

Supervisors: Prof. M. R. Ravi and Prof. Sangeeta Kohli

The objective of this work is to develop a clean burning domestic downdraft gasifier cookstove which will reduce indoor emissions and will be fuel efficient.

Major Courses Studied: Convective Heat and Mass Transfer, Experimental Methods in Thermal Engineering, Computational Heat Transfer

Research Components:

- Design, fabrication and testing of forced draft versions of domestic downdraft gasifiers of4 kW_{th} and 2.5 kW_{th} capacities
- Development of a mathematical model of fluid flow and heat transfer for partially aerated producer gas burner
- Fabrication and testing of partially aerated burners of 4 kW_{th} and 2.5 kW_{th} producer gas power
- Development of experimental facility for laboratory testing of gasifier cookstoves
- Parametric studies of gasifier cookstoves to investigate their thermal and emission performance
- Computational studies of downdraft gasifiers by adapting previously developed one dimensional code of a gasifier
- Development of natural draft versions of downdraft gasifier cookstove
- Characterization of biomass fuels by conducting ligno-cellulosic analysis, proximate,ultimate analysis and Thermo-Gravimetric Analysis (TGA)
- Comparative assessment of three cookstove testing protocols by conducting experimentson commercial forced draft gasifier cookstove

Master of Technology in Thermal & Fluids Engineering: *2006-2008, Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad, Maharashtra, Department of Mechanical Engineering with* ***9.08 CGPA***

Bachelor of Mechanical Engineering: *1994-1998, R.I.T. Sakharale, Rajaramnagar, Maharashtra, Department of Mechanical Engineering with* ***67.34%.***

H.S.C. Science Technical: *1994, L. K. Jr. College, Palus, Sangli, Maharashtra with* ***82.5%.***

S.S.C.: *1992, Borgaon High School, Borgaon, Sangli, Maharashtra with* ***90%.***

Teaching & Research Experience

S. No.	Name of Institute	From	To	Designation
1	Bharati Vidyapeeth (Deemed to be University) College of Engineering, Pune	15/09/2021	Till Date	Professor & Head of Mechanical Engineering Department
		14/01/2016	22/11/2021	Associate Professor & Head of Mechanical Engineering Department
		07/04/2015	14/01/2016	Associate Professor
2	Indian Institute of Technology Delhi, New Delhi	02/01/2010	31/12/2014	Research Scholar
3	J.S.P.M.'s College of Engineering, Wagholi, Pune	01/09/2006	29/12/2009	Senior Lecturer
4	Government Polytechnic, Pen, Raigad, Maharashtra	19/01/2004	01/09/2006	Lecturer
5	R.I.T. Polytechnic, Rajaramnagar, Sangli, Maharashtra.	01/07/1999	01/10/2003	Lecturer

Awards and Achievements

- Awarded with *Level 5 Certificate in Management & Leadership* by CMI (Chartered Management Institute) UK on 26th Nov. 2019.
- Selected for *Technical Leadership Development Programme* under AICTE-UK India Education Research Initiative (UKIERI) in academic year 2018-19.
- *Best Researcher Award* of Bharati Vidyapeeth Deemed University, Pune on 26th April, 2017.
- *Academic Excellence Award* of Bharati Vidyapeeth University, Pune on 10th May, 2016
- *MHRD Scholarship for Research Scholars*: at IIT Delhi from 2nd Jan. 2010 to 31st Dec. 2014
- *National Merit Scholarship* from 1993-1998.
- *Qualified for GATE-2006, 2001, 1999 in Mechanical Engineering*

Publications in Refereed Journals

- Kailasnath B. Sutar, Hitesh Karakoti, Jahan Zeb Khan, Mujahid Momin and Himanshu Rohaj. Laboratory & Field Performance of Two In-House Developed Metal Biomass Cookstoves. ***Advanced Engineering Forum*** (UGC Approved Free Journal). Accepted for Publication on 31st March, 2022.
- Surve M. L., Unde S. S., Dhurpate S. A., Sutar K. B., Kumbhar D.G. (2021) Computational Studies on Airfoil for Micro-Capacity Horizontal Axis Wind Turbine. ***Indian Journal of Science and Technology*** 14(29), 2427-2438. DOI: 10.17485/IJST/v14i29.824
- Rai A., Kumbhar D. G., Sutar K. B. (2021) Computational Investigation on Natural Convection Heat Transfer in Vertical Plate Fin Arrays. ***Indian Journal of Science and Technology*** 14(24): 2069-2080. DOI: 10.17485/IJST/v14i24.863
- Kailasnath B. Sutar, Munna Kumar, Manish Kumar Patel, Arvind Kumar, Shardul R Mokashi. Experimental investigation on pot design and efficiency of LPG utilization for some domestic cooking processes. ***Energy for Sustainable Development***, 56 (2020): 67-72. DOI:10.1016/j.esd.2020.04.006
- Kailasnath B. Sutar, Rohit Singh, Abhiram Karmarka, Ajeet Sharma, Vedant Rathore Experimental Investigation on Thermal Performance of Three Natural Draft Biomass Cookstoves.***Energy Efficiency***, (2018): 1-7. DOI: 10.1007/s12053-018-9705-x

- Kailasnath B. Sutar, Sangeeta Kohli, M. R. Ravi. Design, Development and Testing of Small Downdraft Gasifiers for Domestic Cookstoves. ***Energy,*** 124 (2017) 447-460. DOI: 10.1016/j.energy.2017.02.076
- Kailasnath B. Sutar, M. R. Ravi, and Sangeeta Kohli. Design of a partially aerated naturally aspirated burner for producer gas. ***Energy,*** 116 (2016): 773-785. DOI: 10.1016/j.energy.2016.10.019
- Kailasnath B. Sutar, Sangeeta Kohli, M. R. Ravi, Anjan Ray. Biomass cookstoves: a review of technical aspects. ***Renewable and Sustainable Energy Reviews***, 41(2015): 1128–1166. DOI: 10.1016/j.rser.2014.09.003
- Dhurpate, Priyanka R., Kailasnath B. Sutar, and Sandip A. Kale. Numerical analysisof different airfoils using QBlade software. ***Imperial Journal of Interdisciplinary Research***. 2(6): (2016): 1426-30.
- Mokashi, S. and Kailasnath B. Sutar. Survey for Analyzing Domestic LPG Utilization Trends in Households of Pune Region. ***Imperial Journal of Interdisciplinary Research***. 2(7): (2016): 1344-46.
- Kodare R. and Kailasnath B. Sutar. Computational Study on Blade of Micro-capacity Wind Turbine. ***International Journal of Scientific & Technology Research***. 8(9): (2019): 2273-77.

Publications in Conference Proceedings

International Conferences/Workshops:

- Amit Shelake, Dnyaneshwar Kumbhar and Kailasnath Sutar. A Comprehensive Review of Methods for Analysis of Solar Still. *International Conference on Innovations in Energy Management and Renewable Resources (IEMRE) 2022*, organized by Institute of Engineering & Management, Kolkata on 25th -27th February, 2022.
- Kailasnath B. Sutar, Sangeeta Kohli, M. R. Ravi. Some issues in testing of biomass cookstoves. *Proceedings of the 24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference* (IHMTC-2017) BITS Pilani, Hyderabad, India. 27th-30th Dec. 2017.
- Kailasnath B. Sutar, Sangeeta Kohli, M. R. Ravi. Some issues in testing of biomass cookstoves.
- *2014 ETHOS Conference, Kirkland*, Washington, USA, 24-26th Jan. 2014.
- Kailasnath B. Sutar, Sangeeta Kohli, M. R. Ravi. Development of a laboratory model of a domestic downdraft gasifier cookstove. *IV th International Conference on Advances in Energy Research*, Indian Institute of Technology Bombay, Mumbai, 10-12th Dec. 2013, pp. 611-618.
- Kailasnath B. Sutar, Sangeeta Kohli, M. R. Ravi. Poster Presentation on: Issues in laboratory testing of biomass cookstoves. *Indo-US Workshop on Biofuel Combustion and Sprays,* Indian Institute of Science Bangalore, 22nd-23rd June, 2011.

National Conferences/Workshops:

1. Adarsh Maddheshiya, Aditya Aggarwal, Aryan Mishra, Anshul Yadav, K. B. Sutar, D.G. Kumbhar Survey for analyzing the use of Biomass cook stove for cooking purpose in rural areas. *9th National Conference [Virtual] on Recent Development in Mechanical Engineering (RDME-2021).* Modern Education Society's College of Engineering, Pune-01 on 18th Aug. 2021.
2. Hitesh Karakoti, Jahan Zeb Khan, Mujahid Momin, Himanshu Rohaj, Kailasnath B. Sutar. Improvement in Performance of Natural and Forced Draft Metal Biomass Cookstoves. *3rd National Conference on Recent Trends in Mechanical Engineering*. Walchand College of Engineering, Sangli, Maharashtra. 21st and 22nd June, 2018.
3. Kailasnath B. Sutar, Ninad Ghormade et al. Development of Two Natural Draft Biomass Cookstoves for Rural Application. *2nd National Conference on Recent Trends in Mechanical Engineering*. Walchand College of Engineering, Sangli, Maharashtra. 29th and 30th June, 2017.

4. Kailasnath B. Sutar, Rohit Singh, Abhiram Karmarka, Ajeet Sharma, Vedant Rathore. Experimental Investigation on Thermal Performance of Three Natural Draft Biomass Cookstoves. *1st National Conference on Recent Trends in Mechanical Engineering*. Walchand College of Engineering, Sangli, Maharashtra. 5th and 6th July, 2016.
5. Kailasnath B. Sutar, Sangeeta Kohli, M. R. Ravi. Poster Presentation on: Development of a domestic downdraft gasifier cookstove. *Research Scholars Day 2014*, Indian Institute of Technology Delhi, 12th April 2014.

Publication of a Book Chapter:

Kailasnath B. Sutar "Energy Efficiency and Adoption of Domestic Cookstoves", accepted for publication in a book: *Energy Efficiency*. Publisher: IntechOpen Limited, United Kingdom, Nov. 2021 (Indexed in Web of Science)

Workshop/ Seminar/Conference Organized

- Online faculty development programme on "*Recent Advances in Mechanical Engineering Design*" from 20th July. to 24th July, 2021. The FDP was sponsored by AICTE Training And Learning (ATAL) Academy with a grant of Rs. 93,000/-.
- Online faculty development programme on "*Research Opportunities in Robotics and Automation*" from 24th Nov. to 28th Nov, 2020. The FDP was sponsored by AICTE Training And Learning (ATAL) Academy with a grant of Rs. 93,000/-.
- Online faculty development programme on "*Research in Energy Technologies*" from 6th July to 11th July, 2020.
- Online faculty development programme on "*Research Opportunities in AdvanceManufacturing Processes*" from 22nd June to 28th June, 2020.
- Online faculty development on "*Future materials: nano-composites*" from 22nd June, 2020 to 28th June, 2020.
- Conducted a three days "*Leadership Training Programme*" for faculty members in BV (DU)COEP on 16th, 17th July, 2019 and 30th Aug. 2019.
- National Level *"Paper Presentation Competition"* on 26th & 27th March, 2019
- Workshop on *3D Printing & its Applications* on 24th and 25th Jan. 2019
- Core team member for "*NANOCON-018"* organised by BVDUCOEP on 25th and 26th Oct. 2018
- National Seminar on "*Research in Renewable Energy*" from 21st to 25th Feb. 2017 in the Department of Mechanical Engineering, BVDUCOE, Pune
- Workshop on "*Welding and NDT Techniques*" from 5th to 9th Sept. 2016 in the Department of Mechanical and Production Engineering, BVDUCOE, Pune

Workshop/ Seminar/Conference Attended

- Participated in five days online workshop on "*Machine Learning Applications In Mechanical Engineering*", from 14th Feb. to 18th Feb. 2022 organised by Dr. J. J. Magdum College of Engineering, Jaysingpur
- Participated in five days online workshop on "*Entrepreneurship Awareness Programme*" from 14th Sept. to 18th Sept. 2021 organised by Nagpur Institute of Technology Nagpur.
- Participated in five days online workshop on "*Basics of Intellectual Property Rights*" from 6th Sept. to

11th Sept. 2021 organised by Nagpur Institute of Technology Nagpur.

- Completed a course on "*Advanced Computational Fluid Dynamics*" from 15th May, 2021 to 14th Aug. 2021 organised by CFD Flow Engineering
- Online Faculty Development Program on "Renewable Energy Sources: a way ahead" organisedby Cummins College of Engineering for Women, Nagpur from 15th - 21st May, 2020.
- Online Faculty Development Program on "Outcome Based Education: a step towards excellence" organised by Government College of Engineering, Karad from 11th -15th May, 2020.
- Seventeen online Sessions on "Innovation, IPR, Entrepreneurship, and Start-ups" organized by Institution's Innovation Council (IIC), MHRD's Innovation Cell, New Delhi from 28th April to 22nd May, 2020.
- Third workshop on "AICTE-UKIERI Technical Leadership Development" from 11th -13th June, 2019 at North Ease Hill University, Shillong, Meghalaya
- Second workshop on "AICTE-UKIERI Technical Leadership Development" from 20th -23rd Feb. 2019 at Acharya Institute of Technology, Bengaluru.
- First workshop on "AICTE-UKIERI Technical Leadership Development" from 13th -16th Nov. 2018 at AICTE Main Auditorium, New Delhi.
- Advanced Training programme on "Energy Efficiency" organised by CII Pune on 24th and 25th Jan. 2018.
- Faculty Development Program on "Automation Studio, Pro-simulator (Power Plant Simulator), DelCam (CAD/CAM Simulator), Witness Simulation and CNC Simulator" at Department of Mechanical Engineering, BVDUCOE, Pune in association with IndiaSoft Technologies (P) Ltd.Pune 29th June to 3rd July, 2016.
- Faculty Development Program on *"Industrial Automation".* PVG College of Engineering, Pune, 18th-19th Sept. 2015.
- Indo-US Workshop on *"Biofuel Combustion and Sprays".* Indian Institute of ScienceBangalore, 22nd-23rd June, 2011.
- British Council/ IIT Delhi "*Intensive English Summer Camp*". Indian Institute of TechnologyDelhi. 12th -24th July 2010.
- Continuing Education Programme on "*Computational Fluid Dynamics*". Dr. Babasaheb Ambedkar Technological University Lonere, Raigad, 11th- 16th December, 2006.

NPTEL/ SWAYAM Online Courses Completed

Sr. No.	Course Title	Course Duration	% Score Secured
01	Renewable Energy Engineering: Solar, Wind and Biomass Energy Systems	8 Weeks AICTE Approved FDP Courses	80% Among top 2% students
02	Waste to Energy Conversion		60%

Research Activity

Research Project Completed

Research grant of Rs. 3.00 lakes has been sanctioned through Institutionally Funded Research Project (IFRP) under TEQIP-II for the research project entitled "*Experimental Investigation on Thermal and Emission Performance of Four BiomassCookstoves*"

Start Date: 18.05.2016 & End Date: 17.05.2018
Principle Investigator: Dr. Kailasnath B Sutar
Project Outcomes: 1. Development of Biomass Cookstove Research Laboratory
2. One publication in Springer Journal: Energy Efficiency

Ongoing/Proposed Research Activities

- Development of natural draft and forced draft cookstoves for domestic applications
- Efficient utilization of domestic LPG by improving burner-pot interaction
- Development of a down-draft gasifier of 15 kW_{th} capacity for agricultural application using crop residues
- Development of micro-capacity wind turbine for domestic application
- Development of a small biogas plant using kitchen waste

Research Metrics	*Google Scholar Citations*: 182 *H Index*: 06 & *I-10 Index*: 03	*SCOPUS Citations*: 105 *H Index*: 04	*Web of Science citations*: 80 *H Index*: 04
	Google Scholar Profile Link: https://scholar.google.com/citations?user=izLaYlwAAAAJ&hl=en		
	Scopus Profile Link: https://www.scopus.com/authid/detail.uri?authorId=57188740403		
	Publons/ Web of Science Profile Link: https://publons.com/researcher/3113024/kailasnath-bhimrao-sutar/ Web of Science Researcher ID: AAE-9298-2021		
	Orcid ID: https://orcid.org/0000-0003-4697-3345		
Patent Filed/ Published/ Granted	*Title*: An Airfoil for a Blade of a Wind Turbine *Patent Application No*. 201621025413 dated 25.07.2016 *Inventors*: Dhurpate Priyanka R. & Sutar Kailasnath B. *Applicant*: Bharati Vidyapeeth Deemed University College of Engineering Pune *Status*: Published and is now under Examination		
Professional Memberships	*Life Member*: ISTE. Membership No. LM27809 dated 15th Oct. 1999		

My Contribution @Bharati Vidyapeeth Deemed Universities' COE since April, 2015

- HOD Mechanical Engg.: From 14th Jan. 2016 till date
- Institute coordinator for University Theory Examinations (Online) Summer 2020, Winter 2020
- Institute Coordinator for ARIIA activities: ARIIA 2019, 2020, 2021, 2022
- Institute coordinator for Skill development activities: Have run courses such as Auto Component Assembly Fitter, Draftsman Mechanical etc. under PMKVY in 2017 and 2018
- Was part of process of collaborations with Parker Hannifin India Ltd. and Intelletics Innovations Pvt. Ltd. for the new B Tech programme in Robotics & Automation
- Member of admission committee for: B. Tech. First year, B. Tech. Mechanical Direct Second Year, M. Tech. First Year: June, 2017, 2018, 2019, 2020, 2021
- Member of committee for Change of Branch for B. Tech First Year: June, 2017, 2018, 2019, 2020, 2021
- Member of Institute Purchase Committee: 2017-2019
- Member of Internal Inspection team for NBA preparations in December 2018
- Internal examiner for PhD CET Examination: 2017, 2018

- Senior Supervisor for University Examinations: Summer/Winter
- Chairman Vigilance Squad for BVDU Kothrud Campus: Summer 2019, Winter 2018, Winter 2021
- Member BHARTIYAM organizing team: BHARTIYAM2k17, 18, 19
- Course chairman for B. Tech. & M. Tech. level courses: Fluid Mechanics, Heat Transfer, Power Plant Engineering, Computational Fluid Dynamics, Mechanical Measurement & Metrology
- Has undertaken research activities in renewable energy, Biomass gasification, Biomass cookstoves and micro-capacity wind turbines
- Developed a research laboratory: "Biomass Cookstove Testing Lab." in which B. Tech., M. Tech. as well as PhD students perform their project and research activities.
- Research grant of Rs. 3.00 lakes has been sanctioned through Institutionally Funded Research Project (IFRP) under TEQIP-II for the research project entitled "Experimental Investigation on Thermal and Emission Performance of Four Biomass Cookstoves"
- Guided 06 M Tech students. Presently, 5 PhD students and 3 M Tech students are working
- Chairman Board of Studies in Mechanical & Production Engineering (2017 to 2021):
    - Framing of syllabus for B. Tech. Sem. VII & VIII (CBCS 2014 Course)
    - Framing of syllabus PhD CET and Pre PhD Course work in Mechanical Engg. (2017).
    - Organised syllabus framing workshops
    - Preparation of proposed course structure for B. Tech. Mech. & Prod. 2020 Course
    - Preparation of proposed course structure for B. Tech. Robotics & Automation 2020 Course
    - Preparation of proposed course structure for B. Tech. Mech. 2021 Course and syllabus for Sem. I, II, III, IV
    - Preparation of proposed course structure for B. Tech. Robotics & Automation 2021 Course and syllabus for Sem. I, II, III, IV
- Member of Board of Studies in Mechanical & Production Engineering
    - Framing of syllabus for B. Tech. Sem. VI & VII (CBCS 2021 Course)
    - Framing of syllabus PhD CET and Pre PhD Course work in Nanotechnology (2022).
    - Organised syllabus framing workshop
- Core team member for "NANOCON-018" organised by BVDUCOEP on 25th and 26th Oct. 2018- contribution in preparation of proceedings, association of journals with NANOCON and communication of papers to associated journals
- Organisation of workshops/seminars in department:
    - Online faculty development programme on "Research in Energy Technologies" from 6th July to 11th July, 2020.
    - Online faculty development programme on "Research Opportunities in Advance Manufacturing Processes" from 22nd June to 28th June, 2020.
    - Online faculty development on "Future materials: Nano-composites" from 22nd June, 2020 to 28th June, 2020.
    - Conducted a three days "Leadership Training Programme" for faculty members in BV (DU) COEP on 16th, 17th July, 2019 and 30th Aug. 2019.
    - National Level "Paper Presentation Competition" on 26th & 27th March, 2019

- Workshop on 3D Printing & its Applications on 24th and 25th Jan. 2019
- National Seminar on "Research in Renewable Energy" from 21st to 25th Feb. 2017 in the Department of Mechanical Engineering, BVDUCOE, Pune
- Workshop on "Welding and NDT Techniques" from 5th to 9th Sept. 2016 in the Department of Mechanical and Production Engineering, BVDUCOE, Pune

- Guardian Faculty Member B. Tech Sem. VII: Term-I 2016-17
- B. Tech. Project coordinator: Term-I 2016-17
- Laboratory incharge: Heat transfer Lab. (conducted maintenance of whole laboratory first time since inception, total expenses Rs. 40,000/-)

References Contact Information

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Undertaking

I, the undersigned, Dr. Kailasnath B. Sutar, hereby declare that the information furnished above is true to the best of my knowledge.

Date: 18.03.2022

Place: Pune

Signature