

Bio-data



Name & Designation: : **Dr Purnanand V Bhale, Professor & Head**

Mailing Address: : **Renewable and Sustainable Energy Lab.,**
Department of Mechanical Engineering
Sardar Vallabhbhai National Institute of Technology (SV
NIT), Ichchanath, Surat-395 007, Gujarat State, INDIA
{An Institute of National Importance of Government of India}

Telephone: : 91-9974751060; 0261 2201354

Email: : pvbhale@med.svnit.ac.in, pvbhale@rediffmail.com;

Homepage : <https://www.svnit.ac.in/facup/pvb.pdf>

Google Scholar Citation Page : https://scholar.google.com/citations?hl=en&user=TNmNIFcAAAAJ&view_op=list_works&sortby=pubdate

Scopus Citation Page : <https://www.scopus.com/authid/detail.uri?authorId=9232898600>

Scopus Author Id : 9232898600

ORCID ID : 0000-0003-2051-8483

Educational Qualification:

SN	Degree	University/Institute	Year of Passing	Specialization	Grade
1	Bachelor of Engg.	Amravati University	1997	Mechanical Engineering	First Class
2	Master of Engg.	M S University of Baroda	2000	Mechanical Engineering	First Class
3	Ph D (Engg)	Visvesvaraya National Institute of Technology (V NIT), Nagpur	2009	Mechanical Engineering	-

Areas of Research and Consultancy:

Specialization: Alternative Fuels; I.C. Engines; Energy Conservation; Management and audit; Non-Conventional Energy Systems, Thermal Based Water Desalination Technology, Simultaneous Heating and Cooling Systems.

Research and Consultancy Problems Handled: Design and Development of Solar Assisted Heat Pump based PV/T system; Design and Development of Solar Assisted Biogas Reformer Unit; Installation of Scheffler Solar System of 16 Sq.Mt for Cryogenics Applications; Engine Testing on Variable Compression Ratio Engine for alternate Fuels for combustion characteristics; Engine Endurance Testing with alternate fuels; Consultation to civic body related Municipal Solid Waste Management sites for Manure and RDF; Consultation for HVAC Systems for Energy Efficiency and Performance Analysis of Cold Storages and Auditoriums, Specific Buildings (Energy &, Buildings); Development of Biodiesel Plants of small to Large Size; Design and Development of Large size Biogas plant for bottling Purpose based on rice husk, maize straw, kitchen waste and agro residues (Environment Section of Civil Dept); Sewage based Biogas Power Plant (with civil Department); Energy efficient Cook Stoves; Use of aquatic biomass for material and energy applications; Use of Alternate fuels in cook stoves; Material Compatibility of Metals, Non Metals and Elastomers components of Engine System with alternate fuels from long term compatibility point of view; Consultation for use of Refused Derived Fuels Pallets for Coal fired boilers and Cement kilns; Design and Development of Low cost onion storage for farmers with hybrid cooling; Low Cost Solar PV Panels Cleaning Mechanisms; Fire safety audits of Public Transport Utilities; Energy Audits of Industrial Utilities (As a BEE Certified Auditor); Characterization of all types of solid, liquid and gaseous fuels for engine and furnace applications; Thermoelectric Generators; Technology Transfer for Small size kitchen waste/ Cow Dung based biogas plant for canteen or hostel mess up to 10 Cubic Meter with Modular FRP design for hotels and educational institutions; Energy Storage; Consultation for Electric Buses for public Transport; Life Cycle Assessment of Power Plant (Energy System) with cradle to grave approach (With Environment Section of Civil Dept); Innovative Hot Water Solutions using energy integration and renewable energy for process industry; Consultation for AC and Non AC MIDI Buses for Civic Body; Consultation for Engine Powered Aquatic De-Weeders for Rivers; Consultation for Engineering aspects of Vehicle Mounted Suction; Jetting and Recycle Facility for cleaning choked Sewer Lines (with Environment Section of Civil Dept); Steam Lines and Boilers Utilities; consultation and Technical inspection for various vehicles like tipper truck, water tankers, dual cabin truck, vehicle mounted aerial work platform etc.

Teaching/Research and Consultation Experience: 25 + years

Details of Employment:

SN	Position	Department	Institution	Period
1	Lecturer	Mechanical Engineering	SSGM College of Engineering, Shegaon (MS)	July 2000-March 2009
2	Assistant Professor	Mechanical Engineering	SV National Institute of Technology, Surat	Mar 2009-27 Jan 2019
3	Associate Professor	Mechanical Engineering	SV National Institute of Technology, Surat	28 Jan 2019- 19 Dec 2026
4	Professor	Mechanical Engineeringg	S V National Institute of Technology, Surat	20 Dec 2023- Till Today
5	Professor & Head	Mechanical Engineering	S V National Institute of Technology Surat	17 April 2025 onwards

Details of Ph.D. students (Awarded):

No.	Name of Student	Title of Thesis	Year of degree Awarded
01	Kamalesh. A. Sorate	Experimental investigation on biodiesel: Adverse properties and automotive systems compatibility	Dec 2015
02	Vikram P. Rathod	Investigations on Solar Assisted Catalytic Upgradation of Biogas to reformer product gas and its application in variable compression ratio Engines	May 2019
03	Vaishak S	Development and Performance Analysis of a Heat Pump Based Solar Photovoltaic/ Thermal (PV/T) System	April 2021

Details of Ph.D students (Ongoing-Full time):

No.	Name of Student	Area of Research	Thesis Supervisor
01	Ankit Dekhtawala	Porous Burner for efficient combustion	R D Shah/ Purnanand V Bhale <i>(Thesis Submitted)</i>
02	Deepak Sharma	Solar Heat Pump for water heating	Purnanand V Bhale/

			Manish K Rathod <i>(Thesis Submitted)</i>
03	Moh. Zeeshan	RDF Gasification	Rohan Pande/ Purnanand V Bhale <i>(Synopsis Submitted)</i>
04	Nilesh S Wakchaure	Solar Assisted Water Desalination	Purnanand V Bhale / Rohan Pande
05	Nitin Kumar Soni	Sewage sludge to Energy and Material Conversion	Prabhansu/ Purnanand V Bhale
06	Mukesh Kumar	Solar assisted combined cold storage and drying system	Prabhansu/ Purnanand V Bhale
07	Raahul Krishna	Modernizing Jaggery Production: Innovations and Sustainability in jaggery Making Plants	Rohan R Pande/ Purnanand V Bhale

No. of M.Tech Dissertations Guided Reently (2018 Onwards): **Total 50+**

Sr. No.	Student Name	Title of the dissertation	Year
1.	Sanket Jeur (P23TD003)	A comparative assessment of advanced biofuel production techniques	2025
2.	Kevinbhai J Gajera (P22ME003)	Feasibility study on latching mechanism for high voltage circuit breaker	2024
3.	Karthic Raja M (P21TD019)	Experimental investigation and performance assessment of different biodiesel production techniques	2023
4.	Amith S J (P21TD013)	Thermal Performance Enhancement and emission reduction of jaggery processing furnace: A Numerical Approach	2023
5.	Chirag Vaghela (P21ME010)	Noise reduction in Heat Pump using a muffler	2023
6.	Smitkumar Rajendrabhai Patel (P21TD002)	Performance enhancement of solar water heating system using phase change material	2023
7.	Abhinav Dafade (P20TD013)	Thermal Performance of jaggery processing furnace: Assessment for higher energy efficiency and emission reduction	2022

8.	Sudheer Kumar Yadav (P20ME021)	Investigation on performance analysis of sewage sludge for waste-to-energy conversion through fixed bed pyrolysis process	2022
9.	Sujeet Kumar (P19TD006)	Investigation on performance analysis of sewage sludge for waste to energy conversion	2021
10.	Shekh irfan mansuri (P19TD007)	Performance evaluation of large scale sewage based biogas plant	2021
11.	Shivam Mishra (P19TD008)	Experimental investigation of solar thermal storage using combined sand and edible oil as medium for domestic applications	2021
12.	Nagle Rahul Khushal (P19TD012)	Thermodynamic Analysis of evaporative and desiccant based air conditioning sysem for human thermal comfort	2021
13.	Vishal V Ghatbandhe (P19TD014)	Design and simulations of Syngas fired porous media Burner for Thermoelectric energy generation system	2021
14.	Poojan Patel (P18TD005)	Numerical Analysis of indirect Photovoltaic thermal systems	2020
15.	Vaibhav Kumar Singh (P18TD010)	Numerical analysis of waste heat driven vapor absorption refrigeration system for vehicle cooling application	2020
16.	Sumeet Patil (P18TD008)	Development of biogas scrubbing system for enhanced Engine Performance	2020
17.	Dharmendra J. Tailor (P17TD007)	Experimental Investigation of Thermal Contact Conductance Between Kovar Carrier Plate and Aluminum 6061-T6	2019
18.	Ajay Sharma (P17TD008)	Performance Evaluation of Water Based Photovoltaic/Thermal System with Double Glass Photovoltaic Collector	2019
19.	Shardul Amin (P17TD013)	Production, Characterization and Application of Refuse Derived Fuel From MSW	2019
20.	Zala Mayank P (P17TD003)	Performance Analysis of BOM3 Pilot Scale FRP based biogas Plant with Pre Treated Food Waste	2019

21.	Ravi Solanki (P16TD017)	Design, development and experimental investigation on pilot scale fibre reinforced plastic (FRP) based biogas plant using anaerobic co-digestion of water hyacinth with kitchen waste	2018
22.	Ankit Khansingbhai Chaudhari (P16TD015)	Performance Analysis of water based solar photovoltaic/thermal system integrated with biogas plant	2018
23.	Harsh Patel (P16TD018)	Experimental investigation on gasification of water Hyacinth (Eichhornia Crassipes) based biomass	2018

Research Publications (International/National Journal):

1. K A Sorate, S Jeur, Bhale PV (2026) Energy-efficient biodiesel production via hydrodynamic cavitation: Comparative study of soybean and waste cooking oil, Energy Conversion and Management (348) 120577. **Elsevier**
2. Zeeshan, M., Pande, R. R., & **Bhale, P. V.** (2025). Investigation on gasification of waste textile using advanced thermodynamic equilibrium model to address textile waste pollution. Journal of Thermal Engineering, 11(3), 659-674.
3. Wakchaure, N.S., **Bhale, P.V.** & Pande, R.R. (2025) Desalination of RO reject from textile industry: development and 4 E analysis of humidification dehumidification system using solar-assisted air heating. Heat & Mass Transfer 61, 40 (2025).
<https://doi.org/10.1007/s00231-025-03564-6> **Springer Nature**
4. Nilesh S Wakchaure, **Purnanand V Bhale**, Rohan R Pande, (2025) Experimental investigation on the effect of water heating on performance augmentation of a pilot-scale humidification dehumidification desalination system, Journal of Thermal Engineering (In press)
5. Mukesh Kumar, Prabhansu, **Purnanand V. Bhale**, Experimental investigation on dual-shaped solar greenhouse dryer: Performance and technoeconomic analysis, Journal of Stored Products Research, Volume 112, 2025, 102621, ISSN 0022-474X,
<https://doi.org/10.1016/j.jspr.2025.102621>. **Elsevier**

6. Zeeshan, M., Pande, R. R., & **Bhale, P. V.** (2025). Experimental and kinetic investigation of textile-based refuse derived fuel (t-RDF) pyrolysis: analysing the valorisation of textile waste. *Environmental Technology*, 1–14. <https://doi.org/10.1080/09593330.2025.2482964>
7. Soni, N.K., Yadav, K., Prabhansu, **Purnanand V Bhale**, Synthesis and characterization of sewage sludge biochar toward adsorptive removal of pollutants for sustainability: a review. *J Therm Anal Calorim* (2025). <https://doi.org/10.1007/s10973-025-14065-3>
8. Mohd Zeeshan, Rohan R. Pande, **Purnanand V. Bhale**, Assessment of pyrolysis product characteristics for valorisation of Refuse Derived Fuel (RDF), *Bioresource Technology Reports*, Volume 28, 2024, 101996, ISSN 2589-014X, <https://doi.org/10.1016/j.biteb.2024.101996> **Elsevier**
9. Deepak Kumar Sharma, Vaishak S., **Purnanand V. Bhale**, Manish K. Rathod, Analysis of water and refrigerant-based PV/T systems with double glass PV modules: An experimental and computational approach, **Solar Energy**, Volume 268, 2024, 112296, ISSN 0038-092X, <https://doi.org/10.1016/j.solener.2023.112296> **Elsevier**.
10. Nitin Kumar Soni, Prabhansu, **Purnanand V. Bhale**, Chemical insight into thermal degradation, chemical kinetics, and thermodynamics behavior of sewage sludge through thermogravimetry and Fourier transform infrared analysis, *Thermal Science and Engineering Progress*, Volume 51, 2024, 102617, ISSN 2451-9049, <https://doi.org/10.1016/j.tsep.2024.102617>
11. A Dekhatawala, **P V Bhale**, R Shah, Effect of Equivalence Ratio on Flame Morphology, Thermal and Emissions Characteristics of Inverse Diffusion Porous Burner, *Journal of Applied Fluid Mechanics*, vol 17, Issue: 6 pp. 1217-1229
12. Deepak Kumar Sharma, Manish K Rathod, **Purnanand V Bhale** (2023), Phase change material as a heat sink for solar photovoltaic: A numerical study on the thermo-physical properties and thickness effects under actual weather conditions, **Energy Storage**, <https://doi.org/10.1002/est2.539> **Wiley**
13. Karthic Raja M., Kamalesh A Sorate, **Purnanand V Bhale** (2023), Experimental investigations on tribological assessment and Nox emissions of palm biodiesel blended with oleic acid and ethanol, **Journal of Palm oil Research (SCI)**
14. Deepak Kumar Sharma, Manish K Rathod, **Purnanand V Bhale** (2023), Enhancement in Thermal and Electrical Characteristics of Solar Photovoltaic

Module through a Direct Contact Water Jacketed Cooling System, Journal of Thermal Engineering.

15. Ankit Dekhtawala, R.D.Shah, **Purnanand V Bahle** (2023), Experimental Investigation on Effect of Height and Pore Density of Porous Medium on Flame and Emission Characteristics of Inverse Diffusion Combustor, Thermal Engineering.
16. Zeeshan, M., Pande, R.R. & **Bhale, P.V.** A modeling study for the gasification of refuse-derived fuel as an alternative to waste disposal. Environ Dev Sustain (2023). <https://doi.org/10.1007/s10668-023-03631-0>
17. Kamalesh A. Sorate & **Purnanand V. Bhale** (2023) Experimental investigation of elastomer compatibility and engine performance of biodiesel derived from deodorizer distillate, Biofuels, <https://doi.org/10.1080/17597269.2023.2175481>
18. S Vaishak, **P V Bhale**, Investigation on the effect of different backsheet materials on performance characteristics of a photovoltaic/thermal (PV/T) system, Renewable Energy 168, 160-169, 2021. **Elsevier**.
19. S Vaishak, **P V Bhale**, Performance analysis of a heat pump-based Photovoltaic/Thermal (PV/T) system, Clean Technologies and Environmental Policy 23 (4), 1121-1133, 2021. **Springer**
20. M Zala, R Solanki, **P V Bhale**, Experimental investigation on anaerobic co-digestion of food waste and water hyacinth in batch type reactor under mesophilic condition, Biomass Conversion and Biorefinery 10 (3), 707-714, 2020. **Springer**
21. Vaishak S, **Bhale P V**. Effect of dust deposition on performance characteristics of a refrigerant based photovoltaic/thermal system, Sustainable Energy Technologies and Assessment, Vol 36 **Elsevier**.
22. Vaishak S, **Bhale P V**. Photovoltaic/Thermal- Solar Assisted Heat Pump System: Current Status and Future Prospects, Solar Energy, Vol 189, P 268-284 Sept 2019, **Elsevier**
23. Vaishak S **Bhale P V**. Performance analysis of a heat pump-based photovoltaic/thermal (PV/T) system. Clean Technologies and Environmental Policies, April 2020 **Springer Verlag**.
24. Vaishak S, Zala M, **Bhale P V**. Experimental investigation on anaerobic co-digestion of food waste and water hyacinth in batch type reactor under

- mesophilic condition. Biomass Conversion and Biorefinery. **Springer**. (2019)
25. Sorate KA, **Bhale P V**. Corrosion Behavior of Automotive Materials with Biodiesel: A Different Approach. **SAE International Journal of Fuels and Lubricants**. 2018 May 7;11(04- 11-02-0007).
26. Rathod VP, Shete J, **Bhale PV**. Experimental investigation on biogas reforming to hydrogen rich syngas production using solar energy. *International Journal of Hydrogen Energy*. 2016 Jan 5;41(1):132-8. **Elsevier**. (available at www.sciencedirect.com)
27. Sorate KA, **Bhale PV**. Biodiesel properties and automotive system compatibility issues. *Renewable and Sustainable Energy Reviews*. 2015 Jan 1;41:777-98. **Elsevier**. (available at www.sciencedirect.com)
28. Sorate KA, **Bhale PV**. Impact of biodiesel on fuel system materials durability. *Journal of Scientific and Industrial Research*. **CSIR** Vol 72 (2013).
29. Sorate KA, **Bhale PV**, Meena RN. Oxidation stability of biodiesel derived from high free fatty acid feedstock. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*. 2016 May 18;38(10):1410-8. **Taylor & Francis**
30. **Bhale PV**, Deshpande NV, Thombre SB. Improving the low temperature properties of biodiesel fuel. *Renewable energy*. 2009 Mar 1;34(3):794-800. **Elsevier**. (available at www.sciencedirect.com)
31. **P V Bhale**, M K Rathod, S K Sahoo, Thermal analysis of a solar concentrating system integrated with sensible and latent heat storage, *Energy Procedia* by **Elsevier**. Vol 75 (2015) 2157-2162. (available at www.sciencedirect.com)
32. V P Rathod, P V Bhale, Experimental Investigation on Biogas reforming for Syngas production over alumina based nickel catalyst. *Energy Procedia* by Elsevier, Vol 54 (2014) pages 236-245 (available at www.sciencedirect.com)
33. **P V Bhale**, Paresh Vyas, Experimental Investigation on Energy Efficiency of Electrical Utilities in Process Industries through Standard Energy Conservation Practices. *Energy Procedia* by **Elsevier**, Vol 54, 2014, pages 199-210 (available at www.sciencedirect.com)

34. K A Sorate, **P V Bhale**, A Material Compatibility Study of Automotive Elastomers with high FFA based Biodiesel. Energy Procedia by Elsevier Vol 75 (2015) 105-110 (available at www.sciencedirect.com)
35. V P Rathod, **P V Bhale** Analytical and Experimental Investigations for Hydrogen Rich Syngas Production by Biogas Reforming Processes Energy Procedia by Elsevier Vol 75 (2015) 728-733 (available at www.sciencedirect.com)
36. **P V Bhale**, N V Deshpande, S B Thombre, Simulation of Wear Characteristics of Cylinder liner ring combination with diesel and biodiesel. SAE Publication. SAE Number 2008- 28-0107

Conferences (International/ National-Selective) Publications:

1. Nilesh Wakchaure, **Purnanand Bhale**, Rohan Pande (2025), Experimental analysis of humidification dehumidification desalination system using various packing materials, 2nd Global Conference on Decarbonizing India (GCDI'25) held at **NIT, Calicut** during March 06-08, 2025. *(Selected as Best Oral Presentation Award)*
2. Deepak K Sharma, Vaishak S, Nilesh S Wakchaure, **Purnanand Bhale**, Manish Rathod (2025), "Performance analysis of photovoltaic panel under influencing factors" 2nd Global Conference on Decarbonizing India (GCDI'25) held at **NIT, Calicut** during March 06-08, 2025.
3. M. B. Hasani, K. Inamdar and **P. V. Bhale**, "Effect of Thickness and Conductivity on Electromagnetic Interference Shielding Effectiveness of Bio Composite Shields," 2024 Second International Conference on Microwave, Antenna and Communication (MAC), Dehradun, India, 2024, pp. 1-6, doi: [10.1109/MAC61551.2024.10837539](https://doi.org/10.1109/MAC61551.2024.10837539)
4. Wakchaure, N.S., Sharma, D.K., **Bhale, P.V.**, Pande, R.R. (2024). Energy and Exergy Analysis of Evacuated Tube Solar Air Heater for Air Heating Applications. In: Tatiparti, S.S.V., Seethamraju, S. (eds) Advances in Clean Energy and Sustainability, Volume 2. ICAER 2023 (*IIT Bombay*). Green Energy and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-97-5419-9_30 (First Online: 27 September 2024)
5. Sharma, D.K., Wakchaure, N.S., **Bhale, P.V.**, Rathod, M.K. (2024). Experimental Investigation on Performance Analysis of Air Source Heat Pump System. In: Tatiparti, S.S.V., Seethamraju, S. (eds) Advances in Clean Energy and Sustainability, Volume 2. ICAER 2023 (*IIT Bombay*). Green Energy and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-97-5419-9_29 (First Online: 27 September 2024)
6. Ajay Sharma, S Vaishak, **Purnanand V Bhale**, Performance Analysis of Double Glass

Water Based Photovoltaic/Thermal System, Proceedings of the 7th International Conference on Advances in Energy Research, pp -757-766, Springer, Singapore

7. S Vaishak, **P V Bhale**, Thermal Performance Analysis of a Heat Pump-Based Photovoltaic/Thermal System, ICAER 2017, IIT Bombay, Part of Springer Proceedings in Energy book series, This paper has been accepted by ICAER 2017 for publication in Advances in Energy Research, Vol. 2, Springer, Singapore
8. Vaishak S, **P V Bhale**, Investigation on comparative performance analysis of cooled and uncooled PV Panel, 12th International Conference on Thermal Engineering : Theory and Application, Organised at PDPU Gandhinagarm Feb 2019
9. **P V Bhale**, M K Rathod, S K Sahoo, Thermal analysis of a solar concentrating system integrated with sensible and latent heat storage, 7th international conference on *Applied Energy* at Abu Dhabi, UAE, April 2015.
10. V P Rathod, **P V Bhale**, Experimental Investigation on Biogas reforming for Syngas, 4th International conference on Energy Reaserch, 10-12 Dec 2014 Organized *by IIT Bombay*.
11. **P V Bhale**, Paresh Vyas, Experimental Investigation on Energy Efficiency of Electrical Utilities in Process Industries through Standard Energy Conservation Practices. 4th International conference on Energy Reaserch, 10-12 Dec 2014 Organized by *IIT Bombay*.
12. K A Sorate, **P V Bhale** Experimental Studies on Low Temperature Operability of High FFA Oil Biodiesel 4th International conference on Energy Reaserch, 10-12 Dec 2014 Organized by IIT Bombay Powai Mumbai.
13. A Sorate, **P V Bhale**, Combustion characteristics of CI engine fuelled with high free fatty acid oil biodiesel, 23rd National Conference on I C Engines and Combustion. Organized by S V National Institute of Technology, Surat 13-16 Dec 2013
14. Ashish Patel, **P V Bhale**, Experimental Investigations on Plant Oil as a fuel for Cooking Stove, International Conference on Thermal Energy and Environment, 24-26 March 2011
15. **P V Bhale**, N V Deshpande, S B Thombre, Experimental investigations on the effect of long term biodiesel usage on thermal decomposition of CI engine crankcase oil. Organized by ASME Internal Combustion Engine Division 2009 Fall Technical Conference, Sept 2009 Swithzerland
16. **P V Bhale**, N V Deshpande, S B Thombre, Experimental Investigations on Lubricity and Cold Flow Properties of Biodiesel. ASME 2008 Internal Combustion Engine

Spring Technical Conference, Chicago, USA

17. **P V Bhale**, N V Deshpande, S B Thombre, Simulation of Wear Characteristics of Cylinder liner ring combination with diesel and biodiesel. 6th International Symposium on Fuels and Lubricants Organized by Indian Oil (R & D) Division at New Delhi. This paper has been accepted by SAE India for publication. March 2008
18. **P V Bhale**, N V Deshpande, Wear Characteristics of Plunger & Barrel of CI Engine Fuel Pump using Diesel and Biodiesel, 2nd International conference on Energy Research, 10-12 Dec 2007 Organized by IIT Bombay Powai Mumbai.
19. **P V Bhale**, N V Deshpande, P M Ardhapurkar, Experimental investigations to study the comparative effects of LPG and Gasoline on Performance of Engine. ASME 2005 Internal Combustion Engine Spring Technical Conference, Chicago, USA

Sponsored Research Projects Undertaken:

Sponsoring Agency	Title of project	Fund Sanctioned	Duration	Remark
CRG, SERB	Design and Development of Sustainable, Light-Weight, Cost-Effective Biochar-Polymer based Composites as Electromagnetic Shields for preventing the hazardous EMI Effects in Different Electromagnetic Environments (CRG/2023/007476)	26,22,818.00	3 years	Sanctioned as a Co-PI (Ongoing)
CRG, SERB	Design, Development and techno-economic evaluation of humidification dehumidification desalination system assisted by solar driven heat pump for sustainable water recovery from RO reject of textile industry in land-lock region of Surat city. (File. No. CRG/2022/006460)	Rs. 24,94,800.00	3 Years (2023-2026)	Principal Investigator (Ongoing)
CRG, SERB	Technology upgradation of a traditional jaggery making plant through porous media combustion for emission reduction and waste heat	Rs. 22,19,800.00	3 Years (2023-2026)	Co-PI (Ongoing)

	recovery			
GUJCOST Gandhinagar Govt. of Gujarat	Towards higher generation biofuel: Characterization, Material Compatibility, Storage Stability and Engine Performance	Rs.4,00,000.00	2014-2016	Principal Investigator <i>(Completed)</i>
National Mission Project on Education through ICT, Government of India and IIT KGP	Development of Course in Pedagogy Framework on Energy Conservation and Management	Rs. 5,00,000.00	2014-17	Principal Investigator <i>(Completed)</i>
KVIC (Khadi Vikas Industries Commission)	Long term acceptability of biodiesel as a fuel for CI Engines (P I : Dr N V Deshpande, Professor, VNIT Nagpur)	Rs. 4,00,000.00	03 Yrs 2005-2008	Co-investigator <i>(Completed)</i>
KVIC	Design and Development of Biodiesel Pilot Plant	Rs. 1,25,000.00	2007-08 06 months	<i>(Completed)</i> (I assisted in this project to PI Dr N V Deshpande)
SARMET A Mumbai based NGO	Development and Testing of 09 Sq. Mt. Solar Concentrating System	Rs. 1,50,000.00	03 Yrs (2002-2005)	Principal Investigator <i>(Completed)</i>

Modernization Projects Undertaken

Sponsoring Agency	Title of project	Fund Sanctioned	Duration	Status
MNES, New Delhi	Setting of Renewable Energy Park Under Special Demonstration Scheme	7.29 Lakhs	03 Years 2001-2004	<i>Completed</i> As a Principal Investigator

AICTE, New Delhi	Center for Advanced Fluid Flow Computing	8.00 Lakhs	2002 2005	Completed As a Co-Investigator
------------------	--	------------	--------------	--

Consultancy Work (Selected Work only):

Sr.No.	Title	Organization	Year
1.	Technical Scrutiny and Technical Inspection of Cold Storage Units for energy efficiency	National Horticultural Board, Gurgaon	2012-14
2.	Expert Lecture on Energy Conservation for Mgt Trainees	Essar Energy Services	NOV-Dec 2011
3.	Advisory services for recommendation of 32 seater buses (Associated Faculty: Prof S A Channiwala)	Omnibus Industrial Development Corporation Daman	April 2014
4.	Advisory services for finalizing specifications/ recommendation of 150 Chauff Cutter/ Milking Set (With Prof KP Desai)	TapiZilha Panchayat Animal Husbandar	2015-16
5.	Fire Safety Audit of AC buses (With Prof Channiwala)	Surat Municipal Corporation	Jan 2018
6.	Technical Inspection of 50 Midi AC BRTS Buses	Surat Municipal Corporation	April 2018
7.	Technical Inspection of 238 Non AC Midi Buses Chassis (with Dr K P Desai/R D Shah)	Surat Municipal Corporation	2017-19
8.	Use of Refused Derived Fuel from MSW at Khajod Site Surat (With Dr K D Yadav)	Saurashtra Enviro. Surat	2018-20
9.	Technical Inspection of 300 Non AC Midi Buses (Bodies) with Dr R D Shah	Surat Municipal Corporation	2017-19
10.	Design proof check and Technical Inspection of Aquatic De-weeder Machine (With Dr R D Shah)	Surat Municipal Corporation	2019-20
11.	Noise reduction and Smooth Operation of Blower	Surat Municipal Corporation	2017-19

	(With Dr Channiwala/ Dr K D Yadav)		
12.	Finalization of Specifications and Technical inspection of 60 biogas plants under tribal development program	Govt. of Gujarat	Jan 2018
13.	HVAC (Heating Ventilation and Air Conditioning) Design and Drawing Proof Check and DPR Vetting of Cinema Hall cum Auditorium/ various Storage Sections/ Units for specific purpose of Defense/Commando hospitals (With Dr A D Parekh)	Geo Pvt Ltd Baroda (For Ministry of Defense)	June- 2020 To Jan 2022
14.	Performance Assessment of Biomass Chulha (With Dr KD Yadav)	Green Tech Envi. Bharuch	July 2020
15.	Performance Improvement of Sewage Based Biogas Plant (With Prof A A Shaikh/Dr Channiwala)	Surat Municipal Corporation	Jan 2020
16.	Technical Inspection of Compactor (With Dr Kalyankar, Prof Shaikh)	Suart Urban Development Agency Surat	Feb 2020-Oct 2020
17.	Technical Inspection of Vehicle Mounted Suction Cum Jetting and Recycle Facility for Cleaning Disilting of Sewer Drain Lines of Surat Municipal Corporation (With Dr Yadav and Dr R D Shah)	Surat Municipal Corporation	Jan 2021-Jan 2025
18.	Feasibility report on establishment of two new petrol pumps for Surat Municipal Corporation vehicles	M/s. Surat Municipal Corporation	Jully 2022
19.	TPI work for central air conditioning System of chariot Hanger of INS Abhimanyu at Naval Station Karanja	M/s. Geo Design and Research Private Limited	May, 2022

20.	Professional Advice and guidance, viz Third-party Vetting and Approval of the detailed report for air conditioning with emphasis on minimizing consumption of energy for prov of Tech infra of 451 Army AVN SQN (AH) under HQ CE Jodhpur zone.	M/s. Geo Design and Research Private Limited	May, 2022
21.	Professional Advice and guidance, viz Third-party Vetting and Approval of energy efficient Central air conditioning plant having capacity of 150 TR at Naval station Karanja for Storage of Indigenous Heavy weight Torpedo at Nad Karanja.	M/s. Geo Design and Research Private Limited	May, 2022
22.	Professional advice and guidance, viz third-party vetting and approval of the DPR (Detailed Project Report) for heat load calculations while considering minimization of energy consumption of Central Air Conditioning plant at 100 bedded building of command hospital (EC) under GE Alipore	M/s. Geo Design and Research Private Limited	March, 2022
23.	Professional Advice and guidance, viz Third-party Vetting and Approval of the detailed report for air conditioning with emphasis on minimizing consumption of energy for Helo Hanger of INS Abhimanyu at Naval Station Karanja	M/s. Geo Design and Research Private Limited	Jul, 2021
24.	Third Party Inspection (TPI) service for work of verifying technical specification of 06 Nos. Midi buses for Vapi Nagarpalika	M/s. Vapi Municipality	November, 2021
25.	Professional Advice and guidance, viz Third-party Vetting and Approval of the detailed report for air	M/s. Inertia Engineering Solutions,	November, 2021

	conditioning for specific purpose at Bhuj military station.	Vadodara	
26.	Vetting of Heat load for Central Air conditioning of Officer's Mess at Port Blair	M/s. Pasci Infra Consultants Private Limited	October, 2021
27.	Professional Advice and guidance, viz Third-party Vetting and Approval of the detailed report for air conditioning with emphasis on minimizing consumption of energy for Workshop at Nad Trombay Mumbai having capacity of 85 TR.	M/s. Inertia Engineering Solutions, Vadodara	November, 2021
28.	Air Force Station Jodhpur (With Electrical Engg. Dept.)	M/s. Geo Design and Research Private Limited	May, 2022
29.	NABARD Electrical safety audit with thermography (With Electrical Engineering Department)	NABARB	May, 2022
30.	Consultancy and TPI work for the purchase of various vehicles of Surat Municipal Corporation	Surat Municipal Corporation	Nov. 2022
31.	Root Cause Analysis of Road Roller No.GJ05GV0242	Surat Municipal Corporation	Nov. 2022
32.	Performance assessment of HHO carbon cleaning machine for vehicles	M/s Uniko India Surat Gujrat	May 2023-ongoing
33.	Procurement, operation and maintenance of 150 Nos. 12 mtr. Standard height AC pure electric buses on gross cost contract basis for SMC under the National E-bus program (NEBP), Surat Municipal Corporation (SMC) Surat,	Surat Municipal Corporation (SMC), Surat	Oct 2023 – ongoing

34.	Third party Vetting and approval of DPR of "Consultancy of Air conditioning work of deal complex under GE (I) R & D Dehradun having capacity of roughly 180 TR"	M/s. GEO Test House, Vdodara	Oct 2023- Nov 2023
35.	Third party Vetting and approval of DPR of "Consultancy of Air conditioning at Gwalior under GE (I) R&D Delhi"	M/s. GEO Test House, Vdodara	Oct 2023- Nov 2023
36.	Third Party vetting and approval of DPR of consultancy of air conditioning work against special repair and replacement of BER DG sets trabsformers central AC plants, submersible pumps, Splits Acs, water cooler and passenger lift ETC at Technical area pump house ETC of Deal complex under GE (I) R &D Dehradun	M/s. GEO Test House, Vdodara	Oct 2023- Nov 2023
37.	To assess and certify the manufacturing capacity of E-Bus Plant	M/s. EKA Mobility, Pune	2024-25
38.	Professional Advice & Guidance, viz. Third Party Vetting and approval of the detailed project report of "Consultancy services for replacement of old Vintage MSL central AC plant with new AC plant, stand by DG GEN connected accessories at 18 FAD UNCHI BASSI under GE (South) Pathankot"	M/s. GEO Designs and Research Pvt. Ltd., Vadodara	2024-25
39.	Preparation of Techno-Economic viability (TEV) Study Report for Multi-Feed-Bio-CNG & Premium Bio-Fertilizer plant	M/s. Biofics Pvt. Ltd., Surat	2024-25
40.	TPI and Design proof checking for the procurement of 41 new drainage cleaning machines for the various zones of Surat Muncipal Corporation, Surat	Surat Municipal Corporation, Surat	2024-25

Administrative Positions / Member/ Member secretary of key committees Held at SVNIT, Surat

- Head- Department of Mechanical Engineering (April 2025- Till Date)
- Member- AMRUT Funded Centre of Urban Planning for Capacity Building by the Ministry of Housing and Urban Affairs (2024-2028)
- Coordinator- Multidisciplinary Education and Research Improvement in Technical Education (MERITE)
- Centre In-charge: CCMT 2024
- Member – Committee for Revising existing Annual Performance Appraisal System
- Member Secretary -IP (Intellectual property-SAAMIP)
- Co-Chairman – SPICMACAY (Student activities)
- Member- Committee for Review Progress for Seed Money/ Research Grant
- Member – Board of Governors (BOG) – Senate Nominee: 2020-2022
- Member- Finance Committee (FC): 2020-22
- Member – Internal Complaints Committee (ICC): 2016-2019.
- Member Secretary- IPR Policy Committee: (2019-22)
- Member Secretary- Medical Advisory Committee: (2019-2022).
- Member- Task force committee for COVID-19 : (2020-2021)
- Associate Dean (R & C): 2015-17
- Member- Institute Level Perspective Plan (Research and Consultancy): 2020-2022.
- Member-Centre for Interdisciplinary Research Proposal Committee: 2020-2022.
- Member- Review of MoU draft to be executed by the institute: 2021-2023.
- Member- Post Doctoral Fellowship review Committee: 2021.
- Member- Framing of modified guidelines for utilization of CPDA at SVNIT, Surat.
- Member- Implementation of CIDER framework: 2020-2022
- Member/Member secretary of key committees during 2019-2020: Committee for Review of NIRF Rankings,
- Member: Committee for Reforms in Research and Consultancy,

- Member : Committee to decide Financial/ Administrative and Academic power at Institute Level
- Member : Institute Health Policy
- Member : Committee for framing guidelines to use Director Discretionary Fund
- Member : Committee for framing Rules and Regulations of Ph D Programme.
- Warden Hostel: (2012-14)
- Nodal Officer- For NIRF Ranking (2017)
- Faculty Coordinator for the Project (2009-12) on Anchor Institute in Engineering and Auto promoted by Government of Gujarat for imparting training to Industry. Approx Cost of Project **Rs 10 Crore** (\$1619302): Department of Industries Commissionerate **Govt. of Gujarat.**
- On the panel of consultant to National Horticulture Board (Ministry of Agriculture) for technical inspection of cold storages 2012-15 (With Prof H B Naik)
- Member- committee for processing tender document and performing Techno-commercial evaluation for opening of general store in SVNIT campus.
- Reviewer: Internal Committee: Financial Assistant towards technical paper presentation in India and abroad for SVNIT Students
- Core Member of the Institute level committee for the smooth conduct of student council Election at SVNIT Surat 2015-16.

Department Level:

- Head- Department of Mechanical Engineering (April 2025- Till Date)
- DRCC Member for the period of one-year w.e.f. 15th February 2022.
- Member- Ph.D. Interview Committee.
- PG Incharge-General Mechanical Engineering: 2020-2022.
- Chairman-committee for readiness of laboratories of Department of Mechanical Engineering for the purpose of NBA Accreditation.
- Reviewer/ Member of the organizing committee of 23rd National Conference on I C

Engines and Combustion jointly organized by Combustion Institute India and SVNIT Surat in Dec 2013

- Lab Incharge- Internal combustion Engine and Automobile Engineering (including Fuel & lubricants) Lab
- Lab Incharge: Renewable and Sustainable Energy Lab
- Member- B.Tech Syllabus Preparation as per NEP
- Member - FIST Project implementation group

Outside SVNIT (External Examiner/Member of National Panel etc.)

- Member of Technical Advisory Committee of Gujarat Council on Science and Technology, Govt. of Gujarat through a Government Resolution for the year 2019-2025.
- External Member Research Advisory Committee (RAC) for the Ph.D. evaluations at Lovely Professional University Punjab.
- External Examiner for Doctoral Committee review meeting at PDPE University Gandhinagar (w.e.f. 2021)
- Instructor: Essar Steel and Essar Refinery for Management Trainees in the area of Energy Conservation, Management and Audit (2011-12)
- Certified *Energy Auditor* by Bureau of Energy Efficiency, Ministry of Power, Govt. of India.
- Member of the National Advisory Committee for the International Conference on Recent Advances in Bioenergy Research to be organized by National Institute of Renewable Energy under the Ministry of New and Renewable Energy at Kapurthala Punjab during 25- 27 Feb 2016.
- Attended 8th National Convention on NEP 2020 (11-13/11/2022).
- Reviewed 50 plus R & D Proposals received under GUJCOST (Year: 2019-2025)
- VNIT, Nagpur (Thesis Reviewer/Examiner)
- ICT Mumbai (Thesis Reviewer/Examiner)

- Nagpur University (Thesis Reviewer/Examiner)
- Amravati University (Thesis Reviewer/Examiner)
- BITS Pillani (Thesis Reviewer/Examiner)
- Nanded University (Thesis Reviewer/Examiner)
- Nirma University (Thesis Reviewer/Examiner)
- COCHIN University of Science And Technology, (Thesis Reviewer/Examiner)
- Ganpat University, (Thesis Reviewer/Examiner)
- Andra University, (Thesis Reviewer/Examiner)

Reviewer of International Journals/Books:

1. Member- Editorial board committee, Journal of Biofuels and Bioenergy published by National Institute of Renewable Energy, Ministry of New and Renewable Energy Govt of India.
2. Journal of Bioresource Technology Reports
3. Journal of Energy, Elsevier
4. Energy Engineering, Tech Science Press
5. Journal of Clean technology and Environmental Policy
6. Journal of Renewable Energy
7. Journal of Applied Energy, Elsevier
8. Journal of Applied Thermal Engineering
9. Journal of Energy and Buildings
10. Environmental Progress & Sustainable Energy
11. Computational Fluid Flow, Sadhana, Springer
12. Solar Energy
13. Combustion Science and Technology
14. Journal of Thermal Engineering
15. Renewable Energy Focus
16. Internatioanl Journal of Energy for a Clean Environment
17. Journal of Applied Fluid Mechanics

18. Journal of Institution of Engineers (India):Series C

19. Case Studies in thermal Engineering

20. Renewable and Sustainable Energy Reviews

Expert Lecture/Talk Delivered Outside SVNIT: 90 +

Subjects taught at UG/PG level:

1. Energy Conversion
2. Non-Conventional Energy Sources (Solar, Wind, Biomass)
3. Internal Combustion Engines
4. Energy Conservation, Management and Audit
5. Thermodynamics
6. Analysis and Design of I C Engines
7. Energy Systems
8. Energy and Environment
9. Applied Thermal Engineering
10. Electric Vehicle and Advanced IC Engines
11. Automobile Engineering

Dr Purnanand V Bhale

P S : Sincere, dedicated, and research-oriented candidates are most welcome to join my research team as **Ph.D. scholars (full-time)** in the Renewable and Sustainable Energy Lab/ I C Engines & Auto Engg Lab.