

## Bio-data



**Name & Designation** Dr Purnanand V Bhale

**And Affiliation:** Associate Professor,  
Dept. of Mechanical Engineering,  
S V National Institute of Technology, Surat (NIT Surat; Under MHRD Govt. of India)

**Areas of Research and Consultation :** Solar Thermal Systems, Solar PV/T, Waste to Energy, Biogas for institutes/canteens , biodiesel for transportation, Biogas reformation to Hydrogen rich Syngas, Alternate fuels for I C Engines, Energy Conservation and Management, Internal Combustion Engines, Engine Tribology, Fuel Processing Tech, Refused Derived Fuels for furnaces, Energy Storage, Electric Vehicles, Energy and Buildings.

**Mailing Address** Dr. Purnanand V. Bhale

**Address:** Mechanical Engineering Department  
Sardar Vallabhbhai National Institute of Technology,  
Ichchhanath, Dumas Road, Surat-395007, India

**Telephone:** 91-9974751060; 0261 2201354

**Email:** [pvbhale@med.svnit.ac.in](mailto:pvbhale@med.svnit.ac.in), [pvbhale@rediffmail.com](mailto:pvbhale@rediffmail.com)

**Date of Birth:** 25 April 1976

### **Educational Qualification (Starting from Graduation Onwards)**

<b>SN</b>	<b>Degree</b>	<b>University/Institute</b>	<b>Year of Passing</b>	<b>Specialization</b>	<b>Grade</b>
<b>1</b>	B E	Amravati University	1997	Mechanical Engineering	First Class
<b>2</b>	M E	M S University of Baroda	2000	Mechanical Engineering	First Class
<b>3</b>	Ph D	V National Institute of Technology, Nagpur	2009	Mechanical Engineering	-

### **Details of Employment**

<b>S N</b>	<b>Position</b>	<b>Department</b>	<b>Institution</b>	<b>Period</b>
<b>1</b>	Lecturer	Mechanical Engineering	SSGM College of Engineering, Shegaon (MS)	July 2000-March 2009
<b>2</b>	Assistant Professor	Mechanical Engineering	SV National Institute of Technology, Surat	Mar 2009-27 Jan 2019
<b>3</b>	Associate Professor	Mechanical Engineering	SV National Institute of Technology, Surat	28 Jan 2019- Till Today

### **List of publications (Corresponding author in all publications)**

#### **Journals :**

1. 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
2. Sorate KA, Bhale PV. 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).

3. 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
4. Sorate KA, Bhale PV. Biodiesel properties and automotive system compatibility issues. Renewable and Sustainable Energy Reviews. 2015 Jan 1;41:777-98. Elsevier
5. Sorate KA, Bhale PV. Impact of biodiesel on fuel system materials durability. Journal of Scientific and Industrial Research. Vol 72 (2013).
6. 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
7. Bhale PV, Deshpande NV, Thombre SB. Improving the low temperature properties of biodiesel fuel. Renewable energy. 2009 Mar 1;34(3):794-800. Elsevier
8. 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 (available at [www.sciencedirect.com](http://www.sciencedirect.com)) Vol 75 (2015) 2157-2162
9. 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](http://www.sciencedirect.com))
10. 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](http://www.sciencedirect.com))
11. 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](http://www.sciencedirect.com))

12. 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](http://www.sciencedirect.com))
13. 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 (Selective) :**

1. Vaishak S, P V Bhale, Investigation on comparative performance analysis of cooled and uncooled PV Panel, 12<sup>th</sup> International Conference on Thermal Engineering : Theory and Application, Organised at PDPU Gandhinagarm Feb 2019
2. P V Bhale, M K Rathod, S K Sahoo, Thermal analysis of a solar concentrating system integrated with sensible and latent heat storage, 7<sup>th</sup> international conference on *Applied Energy* at Abu Dhabi, UAE, April 2015.
3. V P Rathod, P V Bhale, Experimental Investigation on Biogas reforming for Syngas, 4<sup>th</sup> International conference on Energy Reaserch, 10-12 Dec 2014 Organized by IIT Bombay Powai Mumbai.
4. P V Bhale, Paresh Vyas, Experimental Investigation on Energy Efficiency of Electrical Utilities in Process Industries through Standard Energy Conservation Practices. 4<sup>th</sup> International conference on Energy Reaserch, 10-12 Dec 2014 Organized by IIT Bombay Powai Mumbai.
5. K A Sorate, P V Bhale Experimental Studies on Low Temperature Operability of High FFA Oil Biodiesel 4<sup>th</sup> International conference on Energy Reaserch, 10-12 Dec 2014 Organized by IIT Bombay Powai Mumbai.

6. K A Sorate, P V Bhale, Combustion characteristics of CI engine fuelled with high free fatty acid oil biodiesel, 23<sup>rd</sup> National Conference on I C Engines and Combustion. Organized by S V National Institute of Technology, Surat 13-16 Dec 2013
7. 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
8. 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 Switzerland
9. 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
10. P V Bhale, N V Deshpande, S B Thombre, Simulation of Wear Characteristics of Cylinder liner ring combination with diesel and biodiesel. 6<sup>th</sup> 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
11. P V Bhale, N V Deshpande, Wear Characteristics of Plunger & Barrel of CI Engine Fuel Pump using Diesel and Biodiesel, 2<sup>nd</sup> International conference on Energy Research, 10-12 Dec 2007 Organized by IIT Bombay Powai Mumbai.
12. 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
GUJCOST Gandhinagar Govt of Gujarat	Towards higher generation biofuel : Characterization, Material Compatibility, Storage Stability and Engine Performance	4.00 Lakhs	2014-2016	Completed (As a PI)
National Mission Project on Education through ICT, Government of India and IIT KGP	Development of Course in Pedagogy Framework on Energy Conservation and Management	5.00 Lakh	2014-17	Completed as PI
KVIC (Khadi Vikas Industries Commission)	Long term acceptability of biodiesel as a fuel for CI Engines	4.00 Lakhs	03 Yrs 2005-2008	Completed. As a Co-investigator P I : Dr N V Deshpande, Professor, VNIT Nagpur
KVIC	Design and Development of Biodiesel Pilot Plant	1.25 Lakhs	2007-08 06 months	Completed (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	1.50 Lakhs	03 Yrs (2002-2005)	Completed As a Principal Investigator

### Thrust area & 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	Completed As a Principal Investigator
AICTE, New Delhi (Category : RPS)	Center for Advanced Fluid Flow Computing	8.00 Lakhs	2002 2005	Completed As a Co- Investigator

### Testing & Consultancy Work

Title	Organization	Month & Year of Completion	Amount
(This is with Dr H B Naik) Technical Scrutiny and Technical Inspection of Cold Storage Units for energy efficiency	National Horticultural Board, Gurgaon	2012-14	Rs. 176480 (Last two years)
Expert Lectures on Energy Conservation for Mgt Trainees	Essar Energy Services	NOV-Dec 2011	50600
Advisory services for recommendation of 32 seater buses (Associated Faculty : Prof S A Channiwala)	Omnibus Industrial Development Corporation Daman	April 2014	28,000

Advisory services for finalizing specifications/ recommendation of 150 Chauff Cutter/ Milking Set	Tapi Panchayat Animal Husbandary	Zilha	2015-16	50000
Fire Safety Audit of AC buses	Surat Municipal Corporation		Jan 2018	300000
Technical Inspection of 50 Midi AC BRTS Buses	Surat Municipal Corporation		April 2018	450000
Technical Inspection of 300 Non AC Midi Buses (Chassis)	Surat Municipal Corporation		2017-19	0900000
Technical Inspection of 300 Non AC Midi Buses (Chassis)	Surat Municipal Corporation		2017-19	600000
Technical Inspection of Aquatic De-weeder Machine	Surat Municipal Corporation		2019-20	800000
Noise Reduction Blower	Surat Municipal Corporation		2017-19	1000000
Technical inspection of 60 biogas plants	Govt. of Gujarat		Jan 2018	60000



**Professional Recognition, Awards, Fellowship Received, Project guidance, administrative Responsibilities handled etc**

- Associate Dean (R & C) at S V National Institute of Technology Surat during 2005-17
- Member of Technical Advisory Committee of Gujarat Council on Science and Technology, Govt. of Gujarat through a Government Resolution for the year 2019-2022
- 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)
- On the panel of consultant to National Horticulture Board (Ministry of Agriculture) for technical inspection of cold storages
- Nodal Officer: National Institutional Ranking Framework (NIRF Ranking 2017)
- 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.
- Outstanding Reviewer (2015) for the Journal of Renewable and Sustainable Energy Reviews by Elsevier for reviewing highest number of articles in last two years (Top 10 percentile)
- Member of the editorial board committee, Journal of Biofuels and Bioenergy published by National Institute of Renewable Energy, Ministry of New and Renewable Energy Govt of India.
- Reviewer of various reputed journals of Elsevier, Taylor Francis, American Institute of

Physics, ASME etc.

- Reviewer: Books by Tata McGraw Hill
- Reviewer/Examiner : Ph D Theses of Nagpur University/ Amravati University/ BITS Pillani/ Nanded University/ (Total 08 theses)
- Member - ASME, SAE, TSI and ISTE
- Reviewer: Internal Committee: Financial Assistant towards technical paper presentation in India and abroad for SVNIT Students
- Lectures Delivered outside SVNIT at various STTP, Workshops : 80 +
- Reviewer/ Member of the organizing committee of 23rd National Conference on I C Engines and Combustion jointly organised by Combustion Institute India and SVNIT Surat in Dec 2013
- Member of the National Advisory Committee for the International Conference on Recent Advances in Bioenergy Research to be organised by National Institute of Renewable Energy under the Ministry of New and Renewable Energy at Kapurthala Punjab during 25-27 Feb 2016
- Member Secretary of the Institute Investment Committee wef Jan 2016
- On the panel of reviewer of R & D proposals to the R & D Management Division, Central Power Research Institute Bangalore (Under Ministry of Power, Govt. of India)
- Coordinator – IPR Cell, SVNIT Surat under Industry Institute Interaction Cell (From 2015 onwards)
- Core Member of the Institute level committee for the smooth conduct of student council Election at SVNIT Surat 2015-16

- Member – Internal Complaints Committee (ICC) –An institute level committee formed in accordance with the Govt of India Gazzette, The Sexual Harassement of the Women at
- Member – Medical Advisory Committee, SVNIT Surat 2019-21
- Workplace (Prevention, Prohibition, Redressal) act 2013
  - Lab Incharge : Internal Combustion Engine Lab
  - Lab Incharge – Alternate Sources of Energy Lab

**Subjects taught :**

- i) Energy Conversion
- ii) Non Conventional Energy Sources (Solar, Wind, Biomass)
- iii) Internal Combustion Engines
- iv) Energy Conservation, Management and Audit
- v) Thermodynamics
- vi) Analysis and Design of I C Engines
- vii) Energy Systems

**M.Tech. / Ph.D. guided dissertation / thesis**

**M.Tech. : 38 (Completed)**

**Ph.D. : 02 + 01 Ongoing**

**Dr Purnanand V Bhale**