CURRICULUM VITAE

Name : **Dr. Milankumar Ramakant Nandgaonkar**
Date of Birth : 10-05-1969
Highest Qualification : Ph.D. Amravati University.
Department : Mechanical Engineering, COEP Tech,
Specialization, areas of interest : Laser Ignition, I.C. Engine, Alternative Fuels, CFD.
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1. ACADEMIC PERFORMANCE

Examination Passed	Board/University/Institute	Year of Passing	Percentage	Class
S.S.C.	Pune Board	1984	78.57	Dist.
D.M.E.	M.S. B.T.E. Bombay	1987	64.0	First
B.E. (Mechanical)	Amravati University	1990	74.3	First
M.E (Thermal Power)	Amravati University	1995	65.0	First
Ph. D.	Amravati University	2002	-	-

2. EXPERIENCE DETAILS

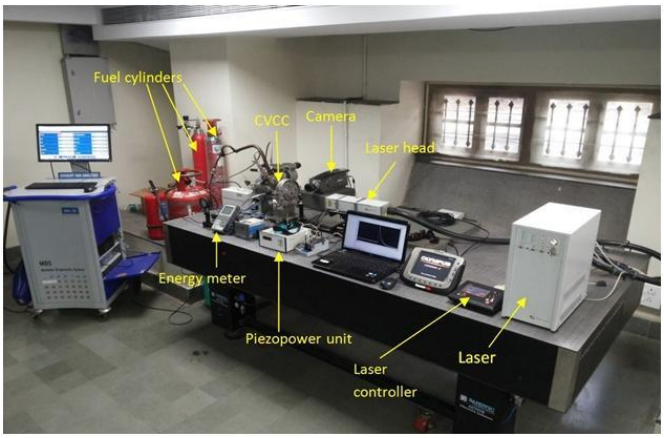
Name of the Employer	Designation and Rank	Period		Length of service
		From	To	
College of Engineering, Pune.	**Professor in Mechanical Engineering**	**21/06/2011**	**Till date**	**12 years 2 months**
College of Engineering, Pune.	Associate Professor in Mechanical Engineering	01/01/2006	20/06/2011	5 years 5 months
College of Engineering, Pune.	Assistant Professor in Mechanical Engineering	04/11/2003	31/12/2005	2 years 2 months
Govt. Polytechnic, Yavatmal.	Selection grade Lecturer in Mechanical Engineering	01/09/2002	03/11/2003	1 year 2 months
Govt. Polytechnic, Yavatmal.	Senior Lecturer in Mechanical Engineering	01/09/1997	31/08/2002	5 years
Govt. Polytechnic, Yavatmal.	Lecturer in Mechanical Engineering	05/10/1995	31/08/1997	1 year 11 months
B. N. College of Engineering, Pusad.	Lecturer in Mechanical Engineering	07/01/1991	04/10/1995	4 year 10 months
			Total	**32 years 7 months**

3. ACHIEVEMENTS

3.1.Development of state of the art laser combustion research lab at COEP

- **Available equipment**
  - Nd: YAG 1064 nm Laser (make: Litron UK)

- i-speed 3
- high speed camera (make: Olympus)
- Control volume combustion chamber
- Lens, Energy meter, and accessories
- related to research



- **R & D work**
  - Study of combustion characteristics and flame development for a methane-air mixture
  - Propane-air mixture ignition using laser spark in a constant volume combustion chamber at different equivalence ratios.

3.2. Developed I.C. Engine laboratory in the department and Laboratory in charge of IC Engine and Fuel Testing Laboratory

- Design and development of twin cylinder dual fueled turbocharged research DI Diesel engine with Li-ion battery assisted test setup
- Design and development of Variable Compression ratio research engine test setup
- Design and development of multi-cylinder petrol engine test setup
- Design and development of waste heat recovery system from exhaust gases
- Design and development of fuel spray analysis
- Analysis of different heat exchangers test setup
- Investigation on single cylinder research engine using biodiesel as an alternative fuel
- Development of CRDI single cylinder diesel engine test facility

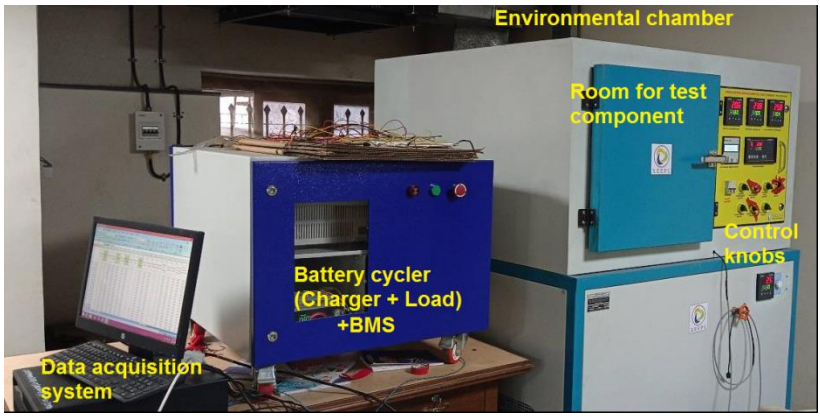
3.3. Development of Mathematical model and its experimental validation for soot and NO_x emissions of DI Diesel engine under transient operating conditions

- A zero-dimensional model to predict below parameters in transient operating cycle with diesel as well as biodiesel fuels
  - fuel consumption
  - Air Handling System parameters
  - NO_x, soot and CO_2 emissions
- The model response has been accessed for a reduction in the intake system restriction under the transient operation.
- Two zone model is used for emission prediction to improve the prediction quality

3.4. Development of state of the art battery test laboratory at the department

- Battery charging discharging with varying rates
- Flexibility in number of cells, voltage, capacity of the battery
- Environmental chamber for battery testing from -20 ℃ to 50 ℃

- Battery heat generation rate measurement
- Continuous automated data logging for battery cycler and environmental chamber



4. RESEARCH PUBLICATIONS

International Journal	Papers Published as Chapter in Books	National Journal	International Conference	National Conference
60	05	05	27	14

4.1. International Journal

1 Combustion Analysis and Performance of Low Heat Rejection Diesel Engine with Different Thermal Insulation Coating. , SAE Paper No 2004-01-16, Jan 2004, ISBN 0768014417, 9780768014419, 59-68.

2 Modeling of In-cabin Climate Condition and Fogging of Windshield, JSAE Journal Paper No 20071072, Origin SAE Paper No 2007-01-0767, April 2007, ISSN 0148-7191, 550-558.

3 Application of CFD Methodology to Air Intake System of CRDI Engine, JSAE Journal Paper No 20073362, Origin SAE Paper No 2007-01-3699, August 2007, ISSN 0148-7191.

4 Cooling System Design –APC (CRDI Engine) Using Simulation Software, JSAE Journal Paper No 20073370, Origin SAE Paper No 2007-01-3708, August 2007, ISSN 0148-7191.

5 Application of CFD Methodology to reduce the pressure drop and water entry in the Air Intake System of Turbocharged Engine, JSAE Journal Paper No 20081642, Origin SAE Paper No 2008-01-1172, April 2008, ISSN 0148-7191.

6 2D Numerical Simulation of Fluid Flow over a CFD Letters, International Journal, ISSN - 21801363, Vol. 1 (1) July 2009, 43-49.

7 Identification of the defects in high Speed Ball Bearing using Vibrational Analysis, International Journal on Mechanical & Automobile Engineering (IJMAE) Vol.3 No. 4, Mar-May 2009, ISSN 0974 -231X, 25- 32.

8 A Model for Study of the Defects in Rolling Element Bearings at Higher Speed by Vibration Signature Analysis, World Academy of Science, Engineering and Technology, Volume 56, Aug 2009, ISSN 2070-3724, 130-136.

9 Harmonic Frequency Analysis of Multi-Cylinder Inline Diesel Engine Genset for Detecting Imbalance, International Journal on Review of Mechanical Engineering – Vol. 3 N.6, Nov 2009, ISSN 1970-8734(Impact Factor- 6.46, Scopus), 782-788.

10 Investigation of Esterified Karanja Oil Biodiesel Fuel For Military Use on a 38.8L Diesel Engine, SAE International, 2009-01-2806, ISSN 0148-7191, Nov 2009.

11 Detecting Power Imbalance in Multi-Cylinder Inline Diesel Engine Genset, International Journal of Electronic Science & Technology, Vol.8 No.2, China, ISSN: 1672-6464, June 2010 and (ICCAE2010) Singapore, Publication by IEEE, ISBN No. 978-1-4244-5585-0, 218-223.
12 Cylinder Imbalance Detection of Six Cylinder DI Diesel Engine Using Pressure Variation, International Journal of Engineering Science and Technology (IJEST) Singapore, Vol. 2, no.4, April.
13 Comparison and Evaluation of Performance, Combustion and Emissions of Diesel, Jatropha and Karanja Oil Methyl Ester Biodiesel in a Military 780 hp CIDI Engine, JSAE Journal Paper No 20107204, Original SAE International, 2010-01-2138, ISSN 0148-7191.
14 Experimental Investigation of the Effect of Esterified Karanja Oil Biodiesel on Lubricating Oil and Wear of a 780 hp Military CIDI Engine, SAE International Journal of Fuels and Lubricants December 2010 vol. 3 no. 2 238-245. ISSN: 1946-3952, 238-245.
15 Performance, Emission and Pump Wear Analysis of JP-8 Fuel for Military Use on a 558 kW, CIDI Diesel Engine, SAE International Journal of Fuels and Lubricants December 2010 vol. 3 no. 2 273-279. ISSN: 1946-3952, SAE International, 2010-01-1518, ISSN 0148-7191, 5 May 2010, 273-279.
16 Experimental study of bearing failure analysis at higher speed by simulating local defect on its Races, International Review of Mechanical Engineering (IREME ISSN-1970-8734), Vol.5, No.3, March2011(Impact Factor- 6.46, Scopus).
17 Response of Various Vibration Parameters to the Condition Monitoring of Ball Bearing Used in Centrifugal Pumps, SAGE Journal, Noise & Vibration Worldwide, Volume: 42 issue: 6, page(s): 34-40, June 1, 2011.
18 Experimental approach for vibrational analysis of deep groove ball bearings with faulty outer ring, International Journal of Emerging Technologies in Science and Engineering (IJETSE ISSN 1923- 9181), Vol-4, No1, April-2011.
19 Performance and Emission Characteristics of a 780 hp CIDI Military Diesel Engine Operated on Karanja Oil Methyl Ester Biodiesel Applying EGR with Supercharging, JSAE Journal Paper No 20110837, Original SAE International, 2011-01-0639, April 2011, ISSN 0148-7191.
20 Wear Assessment in a Karanja Oil Methyl Ester Biodiesel Fueled 38.8 L Military CIDI Engine, JSAE Journal Paper No 20110119, Original SAE International, 2011-01-1192, April 2011ISSN 0148-7191.
21 Study of vibration response characteristics of deep groove Ball Bearings with a localized defect on its races, Journal of Mechanical Engineering, 62, 5-6 -2011ISSN-0039-2472, 311- 317.
22 An efficient approach for optimization of piston bowl shape, Compression Ratio and EGR for DI diesel engine, JSAE Journal Paper No 20113220, Original SAE International, 2011-24- 0013, September 2011ISSN 0148-7191.
23 Identification and Analysis of Engine Speed and Noise in In-line Diesel Engine, Jordan Journal of Mechanical and Industrial Engineering, (JJMIE)Volume 6, Number 1, Feb. 2012 ISSN 1995-6665 , 71-74.
24 Design Optimization of Shell and Tube Heat Exchanger by Vibration Analysis, The Modern Mechanical Engineering (Online at Scientific Research Publishing, www.SciRP.org), USA. Doi:10.4236/mme.2011.11002 Volume 1 No. 1 August 2011, 43262.

25 Fault Detection of Inline Reciprocating Diesel Engine: A Mass & Gas Torque Approach, Hindawi Publishing Corporation, USA. Advances in Acoustics and Vibration, ISSN (Print): 1687-6261, ISSN (Online):1687-627X, Volume 2012, Article I.D. 314706, 41185 doi:10.1155/2012/314706 Indexed in Web of Science.
26 Power Balancing of Inline Multi-cylinder Diesel Engine, Hindawi Publishing Corporation USASAGE Journal, Advances in Mechanical Engineering, Volume 2012, Article ID 937917, Published: January 1, 2012.
27 Simplified Combustion Pressure and NOx Prediction model for D. I. Diesel Engine, SAE 2013-26-131, SAE International, SIAT 2013, ARAI, Pune 9-11 Jan 2013, ISSN 0148-7191.
28 Prediction and Validation of NOx in D.I. Diesel Engine", Published in Global Journal of Mechanical Engineering and Computational Science (GJMECS)" Volume 2. No 2, Jan 2013. ISSN 2277-6664(Online):2249-3468(Print).
29 Comparison and Evaluation of Wear, Performance and Emission of Diesel, Karanja Oil Biodiesel and JP-8 in a Military 585 kW CIDI Engine, JSAE Journal Paper No 20133392, Original SAE International, 2013-01-2658, Oct 2013. ISSN 0148-7191.
30 Comparison and Evaluation of Engine Wear, Combustion and Emissions Performance between Diesel, Karanja and Jatropha Oil Methyl Ester Biodiesel in a 780 hp Military Diesel Engine, JSAE Journal Paper No 20141091, Original SAE International, 2014-01-1395, April 2014. ISSN 0148-7191, 10.
31 Prediction of Soot and NOx Emissions for Common Rail Diesel Engines Operating Under Transient Conditions, International Review of Mechanical Engineering (IREME ISSN-1970-8734), Vol. 8, No. 5, September 2014. (Impact Factor- 6.46, Scopus), 884-892.
32 Development of Oil Mist Separator and Evaluation with Oil Droplet Diameter using Multiphase Simulation for Diesel Engine, International Journal of Research in Engineering & Advanced Technology, (ISSN- 2320-8791), Vol. 2 issue 5 Oct-Nov. 2014 Impact factor 1.479.
33 Heat Transfer Analysis of Medium Duty DI Diesel Engine, International Journal of Informative & Futuristic Research ISSN (Online): 2347-1697, Volume 2, Issue 10 June 2015, Impact factor 4.164.
34 NOx, Soot, and Fuel Consumption Predictions under Transient Operating Cycle for Common Rail High Power Density Diesel Engines, Hindawi Publishing Corporation USA Journal of Combustion Volume March -2016, Article ID 1374768,13 pagesdoi.org/10.1155/2016/1374768.
35 Performance, Combustion and Emission Analysis of Compression Ignition Engine Fuelled with Blends of Tyre Pyrolysis Oil, International Journal of Latest Trends in Engineering and Technology Vol. (7)Issue(4), November 2016, pp.311-317dx.doi.org/10.21172/1.74.043e-ISSN:2278-621X.
36 Experimental Investigation of Single Cylinder Diesel Engine Using Biodiesel Ethanol Blended Fuels, International Advanced Research Journal in Science, Engineering and Technology ISSN (Online) 2393-8021ISSN (Print) 2394-1588DOI 10.17148/IARJSET.2016.31206Vol. 3, Issue 12, December 2016.
37 CFD Analysis of Pressure Control Valve used in ABS using Fluid-Structure Interaction Technique, International Journal of Current Research Vol. 9, Issue, 06, pp.52531-52541, June, 2017ISSN: 0975-833X.

38 Comparison and Evaluation of performance, Combustion, NOx reduction and Nanoparticle emission of Diesel, Jatropha, and Karanja oil Methyl Ester Biodiesel in a Military 38.8L CIDI Engine Applying EGR with Turbo Charging, JSAE Paper Number: 20180961 Original SAE International, 2018-01-0919, April 03, 2018. ISSN 0148-7191Doi:10.4271/2018-01-0919, 8.

39 Experimental Investigation of the Effect of Karanja Oil Biodiesel with Cerium Oxide Nano Particle Fuel Additive on Lubricating Oil Tribology and Engine Wear in a Heavy Duty 38.8L,780 HP Military CIDI Diesel Engine, SAE International, 2018-01-1753, September 10, 2018, ISSN 0148-7191doi:10.4271/2018-01-1753.

40 The Effect of Cerium Oxide Nano Particles Fuel Additive on Performance and Emission of Karanja Biodiesel Fueled Compression Ignition Military 585kW Heavy Duty Diesel Engine, SAE International, 2018-01-1818, September 10, 2018, ISSN 0148-7191 doi:10.4271/2018-01-1818.

41 Design and Development of Intake Ports for 2-Valve & 4-Valve Configurations for Heavy Duty Off-Highway Diesel Engine, SAE International, 2019-28-0042, October 11, 2019, doi:10.4271/2019-28-0042.

42 Optimization of In-Cylinder Flow and Swirl Generation Analysis for a Naturally Aspirated Diesel Genset Engine for Emission Reduction through Intake Port Design, 2019-28-0024, October 11, 2019, doi:10.4271/2019-28-0024.

43 Review: Multipoint laser ignition system and its applications to IC engines, Optics & Laser Technology, Volume 130, May 21, 2020.

44 Comparison and Evaluation of Engine Wear, Performance, NOx Reduction and Nano Particle Emission of Diesel, Karanja and Jatropha Oil Methyl Ester Biodiesel in a Military720 kW, heavy duty CIDI Engine Applying EGR with Turbo Charging, SAE Technical Paper, 2020-01-0618, April 14, 2020

45 Comparison and Evaluation of Engine Wear, Performance, NOx Reduction and Nano Particle Emission of Diesel, Karanja and Jatropha Oil Methyl Ester Biodiesel in a Military720 kW, heavy duty CIDI Engine Applying EGR with Turbo Charging, SAE Technical Paper 2020-01-0618, 2020

46 Comparison and Evaluation of Performance, Combustion and Particle Emissions of Diesel and Gasoline in a Military Heavy Duty 720 kW CIDI Engine Applying EGR, SAE Technical Paper 2020-01-2057, Sept 15, 2020.

47 Comparison and Evaluation of Engine Wear, Performance, NOx Reduction and Nano Particle Emission of Diesel, Karanja and Jatropha Oil Methyl Ester Biodiesel in a Military720 kW, heavy duty CIDI Engine Applying EGR with Turbo Charging, SAE Technical Paper 2020-01-0618, April 14, 2020

48 LASER-Induced flame kernel evolution with LES modeling, International Journal of Mechanical and Production Engineering Research and Development (IJMPERD), ISSN (P): 2249-6890; ISSN (E): 2249-8001, Vol. 10, Issue 1, Feb 2020, 691–700

49 Experimental Study of Spray Behavior and Laser Ignited Combustion Characteristics of a Gasoline-Air Mixture Using the GDI System, Thermal Science and Engineering Progress, 1 December 2020

50 Numerical simulation of combustion characteristics and emission predictions of methane-air and hydrogen-air mixtures in a constant volume combustion chamber using multi-point laser-induced spark ignition, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 11 April 2021

51 An All-Atom Simulation Study of Gas Detonation Forming Technique, Metals, April 2021

52 Experimental Investigation of the Collective Impact of Electric Current and Ambient Temperature on the Thermal and Electrical Parameters of Lithium Iron Phosphate Cells, Energy Technology, September 2021

53 Modeling and Validation of the Impact of Electric Current and Ambient Temperature on the Thermoelectric Performance of Lithium-Ion Batteries, Energy Technology, volume 10, issue 2 February 2022

54 CFD Simulation of Gaseous Fuel Combustion in Constant Volume Combustion Chamber using Multi-Point Laser Ignition SAE Technical Paper 2022-28-0355, 2022,

55 Experimental Investigation of the Effect of Gasoline Fuel on Engine Performance, NOx reduction, and Engine Wear of a 38.8L Military Heavy Duty CIDI Diesel Engine Applying EGR," SAE Technical Paper 2022-01-1027, 2022.

56 Thermal management of catalytic converter with heat pipe embedded in thermal energy storage to reduce cold start emissions, Energy Sources, Part A: Recovery, Utilization and Environmental Effects volume 44, issue 4, November 2022

57 Simulation for flow across heated square cylinders, Heat Transfer, volume 52, issue 3, May 2023

58 Effect of the spacing on forced convection heat transfer for flow around a row of heated square cylinders, Materials Today: Proceedings volume 73, 2023

59 Enhancement of catalytic converter performance to reduce cold start emissions with thermal energy storage – An experimental study, Materials Today: Proceedings volume 73, 2023

60 Comparison and Evaluation of Engine Wear, Engine Performance, NOx Reduction and Nanoparticle Emission by using Gasoline, JP-8, Karanja Oil Methyl Ester Biodiesel, and Diesel in a Military 720 kW, Heavy-Duty CIDI Engine Applying EGR with Turbo Charging, SAE Technical Paper 2023-01-0318, 2023

4.2.National Journals

1 Introducing creativity in organization culture" The Journal of Engineering Education, The Journal of Engineering Education, Vol. XVI No. 4 April 2003, 49 – 52 (4).

2 Literature Review: Modeling of Homogeneous Charge Compression Ignition combustion for future engine application, The IUP Journal of Mechanical Engineering, Vol. II, No. 4, pp. 7-27, Nov 2009, 7-27 (20).
3 Multifuel for CRDI Diesel Engine for Military Use, EME Journal,-4.
4 Performance and Emission Experimentation on use of Esterified Karanja oil Biodiesel Fuel on Military D50 Dozer Engine, Defense Technical Journal (Oonchi sadakein),-4.
5 Estimation of Flue Gas Temperature in various zones in a Pulverized Coal-Fired Utility Boiler, Technical Journal of The Institution of Engineers (I), Vol.36, November 2012, ISBN No. 978-81-924990-0-0, 154-160 (6).

4.3.Chapters in Books

1. Modeling of In-cabin Climate Condition and Fogging of Windshield, SAE Book- Thermal Systems & Management Systems (SP-2132), 2007-01-0767, April 2007, ISBN 978-0-7680-1635-5.
2. Application of CFD Methodology to reduce the pressure drop and water entry in the Air Intake System of Turbocharged Engine, SAE Book- Thermal Systems & Management Systems, (SP-2152) 2008-01-1172, April 2008, ISBN 978-0-7680-1994-0.
3. Performance, emission and wear analysis of esterified Karanja oil biodiesel fuel for military use on a heavy-duty transport diesel engine, Published in Book New Frontiers in Biofuels Edited by P B Sharma and Naveen Kumar, Chapter No 22, January 18-19, 2010.
4. Performance and Emission Characteristics of a 780 hp CIDI Military Diesel Engine Operated on Karanja Oil Methyl Ester Biodiesel Applying EGR with Supercharging, SAE Book- Emissions Measurement and Testing, 2011 (SP-2320), 2011-01-0639, 12 April 2011, ISBN 978-0-7680-1635-5.
5. Mathematical Modeling of Injection and Spray Characteristics of a Diesel Engine: A Review, Book Chapter in Springer Engine Modeling and Simulation, 2022

4.4.Paper Presented in International and National Conferences

1 A model for coal-water mixture combustion in diesel engine, International Conference on Challenges in Coal & Mineral Beneficiation, at Dhanbad, Jharkhand, Dec 7-8, 2001,311 -321.
2 Role of volatiles in simulation of coal-diesel fueled engine , International Conference on Challenges in Coal & Mineral Beneficiation, at Dhanbad, Jharkhand, Dec 7-8 2001,339 – 346.
3 Cycle Simulation of Coal-Diesel fueled Engine, XVI National Conference on I.C. Engine held at Calcutta in Jan 20-22, 2000. , 570-575.
4 The combustion model for coal-water mixture in diesel engine, XVII National Conference on C. Engines & Combustion, at KREC Surathkal, Karnataka, Dec 18-20, 2001. , 241 – 248.
5 Cycle Simulation of Turbocharged Low Heat Rejection Diesel Engine , National Conference on Energy and Fuel Issues of Future, at PIET, Pune, Nov 5-6, 2004 , 113-120.
6 Cycle Simulation of Low Heat Rejection Diesel Engine , National Conference on Energy and Fuel Issues of Future, at PIET, Pune, Nov 5-6, 2004 , 121-128.

7 The effect of insulated combustion chamber surfaces on Diesel engine performance and combustion with and without turbocharger. , Third International conf on energy research and development ICERD-3 at Sheraton Hotel in Kuwait, Nov 21-23, 2005, -6.

8 Coatings for improving Diesel Engine performance using Turbocharger. , 5th Asia-Pacific Conference on Combustion, The University of Adelaide, Adelaide, Australia July 18-20, 2005, Paper No. 22.

9 Cooling Tower- An Energy Conservation Resource, National Conference on Recent Development in Mechanical Engineering at Noorul Islam College of Engineering, Tamilnadu March 23, 2005, TH36- 136-146 (10).

10 Determination of Friction and Heat Transfer Coefficients in a duct off Complex Geometry using CFD , National Conference on Recent Development in Mechanical Engineering at Noorul Islam College of Engineering, Tamilnadu March 23, 2005 , TH42, 108-116 (8).

11 Optimum Temperature of Circulating Water Through Cooling Power Plant Conserves Energy, National Conference on Energy Management in Changing Business Scenario, BITS Pilani, Oct 8-9, 2005.

12 Energy Conservation opportunity in a Cooling Tower of Power Plant , National Conference on Development-Cum-Environment Friendly Future Industrial Fuels, of Technology, Coimbatore-06, Tamilnadu. May-19 2005.

13 Parameter Estimation Procedure in Plate Heat Exchanger- An Approach, National Conference on Development-Cum-Environment Friendly Future Industrial Fuels, of Technology, Coimbatore-06, Tamilnadu. May-19, 2005, 64-67.

14 Study and Development of Refuse Derived Fuel (RDF) Of Municipal Solid Waste (Msw) Fired Boiler, National Conference on Application of Advanced Quality Methods in Engineering and Technology AAQMENT 2006- Erode (Tamilnadu) Feb 23-24, 2006.

15 Performance Emission And Wear Analysis of Aviation Turbine Fuel (ATF) For Military Use on A Heavy Duty 558 kW Diesel Engine , 21st National Conference on I.C. Engine & Combustion, Bapuji Institute of Engineering & Technology, Davangere, Dec 10-12, 2009. , 95- 102.

16 Design Improvement and Comparative Analysis of Intake Manifold For Uniform EGR Distribution in IDI Diesel Engine , International Conference on Advances in Mechanical and Building Sciences in the 3rd Millennium, VIT, Vellore, TN, 14-16 December 2009.

17 Prediction of Boiler Tube Failure, 3rd International Conference on Advances in Mechanical Engineering, January 4-6, 2010, S.V. N.I.T., Surat, 264-268.

18 Torsional Frequency Analysis of Multi-Cylinder Inline Diesel Engine Generator System, ASME Press – International Conference on (MIMT 2010) in Sanya, China, January 22-24, 2010, ISBN: 9780791859544, DOI: 10.1115/1.859544. paper81, 519-524.

19 Combustion Characterization in DI Diesel Engine Using Single zone Heat Release Modeling, National Conference on Recent Trends in I. C. Engines and Automobiles (RICA 2010), Sangamner, March 3-4, 2010.

20 Effect of Arresters on Erosion in Economizer Zone and its Analysis, International Conference on Advances in Mechanical Engineering, 2010 (AMAE), ISBN: 978-1-62993-396-2, DOI: 01.UIPE.01.01.21.22, 23-27.

21 Experimental Investigation of the Effect of Esterified Karanja Oil Biodiesel on Performance, emission and Engine Wear of a Military 160hp Turbocharged CIDI Engine. , World Congress on Engineers, International Conference of Mechanical Engineering, ICME-301, London 6-8 July 2011, ISBN: 978-988192515-2.

22 Use of Cold Air Velocity Test (CAVT) to Locate, World Congress on Engineers, International Conference of Mechanical Engineering, ICME-214, London 6-8 July 2011, ISBN:978-988192515-2.

23 Prediction of Flue Gases Velocity in the Utility Boiler , 11th Asian International Conference on Fluid Machinery, 11-AICFM, IIT Madras, Chennai, held on dated 21-23 November 2011.

24 A Coupled Field Fluid Flow And Structural Analysis Of A Nozzle Used In A Supersonic Artillery Rocket , "21st National Conference on Heat and Mass Transfer at IIT Madras (ISHMT-ASME 2011) held on dated 27-30 December 2011.

25 Power Balancing of Inline Multi-cylinder Diesel Engine, ASME 2012, International Mechanical Engineering Congress and Exposition [IMECE], Houston, USA.

26 Comparison and Evaluation of Performance, Emission and Wear analysis of Diesel, JP-8 and Pure Karanja biodiesel in a military 780 hp CIDI engine , ASME 2013, International Mechanical Engineering Congress& Exposition, IMECE2013, November 13-21, 2013, San Diego, California, USA. ISBN: 978-0-7918-5634-5, doi: 10.1115/IMECE2013-63244.

27 Prediction of Combustion Pressure, NOx and Soot for D.I. Diesel Engine by Simplified Model , ASME 2013, International Mechanical Engineering Congress& Exposition, IMECE2013, November 13-21, 2013, San Diego, California, USA. ISBN: 978-0-7918-5642-0, doi: 10.1115/IMECE2013-62067.

28 Design& Computational Validation of In-line Bare Tube Economizer for 210 MW Pulverized Coal Fired Boiler , ASME 2013, International Mechanical Engineering Congress& Exposition, IMECE2013, November 13-21, 2013, San Diego, California, USA. ISBN: 978-0-7918-5628-4, doi: 10.1115/IMECE2013-62073.

29 Analysis in a Piston Bowl of DI Diesel Engine using CFD , Advanced Simulation Technologies Indian User Conference 2014 Pune, 12th November.

30 Performance, combustion and emission analysis of compression ignition engine fuelled with blends of fish oil biodiesel, 1st International and 18th ISME conference on Enabling Sustainable Development in Mechanical Engineering, NIT, Warangal, 23-25 February, 2017.

31 Comparison and Evaluation of Engine Performance, Emission, Noise and Wear of Diesel and Karanja Oil Methyl Ester Biodiesel in a 980HP Military Turbo Charged CIDI Engine , ASME 2017, International Mechanical Engineering Congress& Exposition, IMECE2017, November 3-9, 2017, Tampa, Florida, USA. ISBN: 978-0-7918-5841-7, doi: 10.1115/IMECE2017-70067.

32 Combustion characterization of laser ignition of methane-air mixture in a constant volume combustion chamber. , 24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2017), December 27-30, 2017, BITS Pilani, Hyderabad, India.

33 Laser Ignition with Internal Combustion Engine: Review, International conference on sustainable energy and environmental challenges (SEEC-2018) Indian Institute of Science Bangalore.

34 Review: Laser Ignition with Liquid Fuels, International conference on sustainable energy and environmental challenges (SEEC-2018) Indian Institute of Science Bangalore.

35 Numerical Analysis of Gasoline Fuel with Laser Ignited Spark Ignition, 2nd International Conference on new frontiers in engineering , science & technology (NFEST 2019), NIT Kurukshetra.

36 Placement of Heated Blocks Under Forced Convection for Enhanced Heat Transfer, Advances in Mechanical Engineering, pp 59-65, Part of Lecture Notes in Mechanical Engineering book series, June 30,2020.

37 Review of the approaches and modeling methodology for lithium-ion battery thermal management systems in electric vehicles, Lecture Notes in Mechanical Engineering (Springer Nature) book series, Nov 6, 2020

38 Spray Behavior Analysis of Ethanol, Mathematical Modeling, Computational Intelligence Techniques and Renewable Energy, Proceedings of the First International Conference, MMCITRE 2020

39 Laser-Induced Spark Ignition of Methane-Air Mixtures in Constant Volume Combustion Chamber, Lecture Notes in Mechanical Engineering (Springer Nature) book series, International Conference on Recent Advances in Materials, Manufacturing and Thermal Engineering RAMMTE, 2022

40 Accurate velocity profile prediction in blower simulation: A methodology utilizing interpolation approach,3rd International Conference on Mathematical Modelling and Simulation in Physical Science (MMSPS 2023) SVNIT Surat, 23-24 June 2023.

41 CFD Simulation for Hydrogen Gas Injector Orientation Optimization in Dual Fuel CRDI Engine, 3rd International Conference on Intelligent Robotics, Mechatronics, and Automation Systems (IRMAS 2023), Vellore Institute of Technology, Chennai association with Asia Pacific University in Technology & Innovation Malaysia 4 -5 May 2023.

4.5.Patents: Published

1. **Title:** AN INTAKE SYSTEM FOR A TURBOCHARGED ENGINE, Patent Application No.: 201921010780 dt. 20.03.2019.
2. **Title:** AN AGRICULTURAL HARVESTING MACHINE, Patent Application No.: 202121037375 dt. 18.08.2021

Filed

3. Title: A BATTERY PACK WITH AN IN-BUILT REFRIGERANT BASED THERMAL MANAGEMENT SYSTEM, Patent Application No.: 202221035674 dt. 22.06.2022
4. Title: WIND TURBINE SYSTEM FOR POWER GENERATION IN LOCOMOTIVES, Patent Application No.: 202221024366 dt. 25.04.2022
5. AN APPARATUS TO DETERMINE THERMAL CONDUCTIVITY OF VOLATILE LIQUIDS Patent Application No.: 202221042325 dt. 24.07.2022
6. Title: A MULTIPLE DEGREES-OF-FREEDOM, TENDON-ACTUATED, ROBOTIC TENTACLE ARM SYSTEM Patent Application No.: 202321006687 dt. 02.02.2023

5. RESEARCH SCHOLARS

5.1. Research Scholars completed their PhD

i. "Experimental Investigation of High Speed Bearing Using Acoustic Emission & Vibrational Analysis for Identification and Estimation of Defects", A. A. Utpat in Pune University, on June 8th, 2012.

ii. "Development of Methodology & Experimental Setup for Balancing of Inline Diesel Engines Vibration Analysis for Improving Performance", S. H. Gawande in Pune University, on September 12th, 2012.

iii. "Investigation on DI diesel engine for Military and disaster management vehicles using different alternative fuels", Lt. Col. Anandkumar Pandey, Pune University on February 13th, 2013.

iv. "To Develop a predictive tool for Boiler Tube Failure", P R Dhamangaonkar in Pune University on 25th September 2013.

v. "Development and Experimental Validation of Soot and Nox Model for DI Diesel Engine under Transient Operating Conditions", N H Walke in S. P. Pune University on 10th April 2017.

vi. "Investigations of laser induced combustion of gaseous mixtures", C. D. Koshti, in S. P. Pune University on 20th December 2021.

vii. "Investigation of Engine Intake Flow through Development of Intake Port Design for DI Diesel Engines", Sameer S Tikar in S. P. Pune University on 8th June 2022.

viii. "Investigation of combustion characteristics of liquid fuels with laser ignition", Ms. S. S. Patil in S. P. Pune University on 2nd August 2022.

5.2. Research Scholar Submitted their PhD thesis

5.3. Ongoing PhD Candidates

Registered PhD Research Scholars: 05

i. "Experimental Analysis of combustion characteristics of multipoint laser ignition in constant volume chamber, Mr. P. M. Patane, S. P. Pune University (Pre-synopsis submitted)

ii. "Enhancement of catalytic converter efficiency for IC engines using heat pipe and TES", Ms. G. A. Pise, S. P. Pune University (Thesis submitted)

iii. "Design and development of Battery Thermal Management system for EVs and HEVs", Mr. I. C. Naik, S. P. Pune University (Pre-synopsis submitted)

iv. "Design and development of cooling system for fuel cell". Ms. M. V. Patil, S. P. Pune University

v. " Development of AI based model for vehicle performance and emission at city road drive cycle", Ms. R. R. Gujar, S. P. Pune University

5.4. Postgraduate dissertations

1 Optimization of the cooling tower, Thermal Power Station, Parali

2 Design and simulation of room A/C using R-104A, In house

3 Study of firing refuse-derived fuel from municipal solid waste on the special grate, Thermax

4 Modeling of in-cabin climate and fogging of windshields , NCL Pune

5 Design Improvement & Comparative Analysis of Intake Manifold for Uniform EGR Distribution in IDI Diesel Engine, Tata Motors Pune
6 Eulerian-Eulerian Modeling of Circulating Fluidized Bed using CFD Technique and its Validation, Thermax Ltd Pune
7 Study of Boiler Tube Leakages and CFD Analysis of Reheater Tube, Thermal Power Station, Ekalare Nasik
8 Development of Intake Manifold for EGR Distribution in Diesel Engine. , ARAI Pune
9 Development of 4 strokes 4 cylinder Petrol Engine, Greaves Cotton Pune
10 Computational Simulation of Air-EGR Mixing Effects on Nox Emissions in a DI-Diesel Engine, Greaves Cotton Pune
11 Determination of Air Flow and Temperature Distribution inside Passenger Compartment by Using CFD, Tata Motors Pune
12 CFD Analysis and Experimental Validation of 42.5 Kva Alternator, Cummins Generator
13 Design, Analysis, and Optimization of Pump Inlet Elbows for Centrifugal Inline Pumps, WILO-Mather Platt Pumps, Pune
14 Efficient optimization of piston bowl, Compression Ratio and EGR for DI diesel engine, Kirloskar Oil Engine Ltd Pune
15 Prediction and Validation of NOx Emission in Di Diesel Engine, ARAI, Pune
16 Analysis of the Effect of Combustion Chamber Geometry on Combustion Process and Emission Formation in DI Diesel Engine, ARAI, Pune
17 Flow around Row of Four Circular Cylinders, In House
18 Conversion of IDI VCR diesel engine to DI VCR diesel Engine, In House
19 Vehicle engine cooling system simulation for high HP TIGER-4, Cummins India Ltd
20 Development of a single cylinder variable compression ratio Ricardo research diesel engine from indirect injection to common rail direct injection and it's a simulation with AVL -BOOST". , In house
21 Development of an Oil Mist Separation System for a 4 cylinder CRDi BS-IV Engine to reduce the Oil Carry Over, Force Motors
22 Two Dimensional Pressure Iterative Navier Stokes Equation using Nodal Integral Method For Lid-Driven Cavity and Square Cylinder, In house
23 Conversion Ricardo E-6 to CRDI and parametric analysis by using G T Power. , In house
24 Numerical and experimental analysis of onion weight loss, in house
25 Heat Transfer Analysis of medium-duty DI Diesel Engine, Kirloskar Oil Engine Ltd
26 Analysis of Constant Volume Combustion Chamber for Mixing Of Gaseous Fuel. , In house
27 Experimental And Numerical Modelling of Dipping-In and Dipping –Out Stages of E-coat Paint Process. , John Deere
28 Computational Fluid Dynamics Analysis of Pressure Control Valve Used In Antilock Braking System Using Fluid-Structure Interaction Technique. , Knorr-Bremse India Pvt.Ltd.
29 Numerical And Experimental Analysis of Combustion of Gaseous Fuels in Constant Volume Combustion Chamber Using Laser Ignition, in house
30 Numerical and Experimental Analysis of Laser Induced Ignition of Methane-Air Mixture in a Constant Volume Combustion Chamber. , In house

31 Numerical investigation of mixture formation and combustion in EDI+GPI engines, in house
32 Experimental investigation on laser-induced combustion of propane-air mixtures in a constant volume combustion chamber, in house
33 Experimental analysis of laser-induced combustion of methane-air mixture in a constant volume combustion chamber, in house
34 Numerical and Experimental analysis of ethanol fuel combustion in constant volume chamber, in house
35 Numerical investigation of laser induced spark ignition and combustion characteristics in a constant volume chamber, in house
36 Numerical analysis and experimental validation of spray behavior analysis of liquid fuel, in house
37 Flame visualization of laser ignited liquid fuels using schliern setup, in house
38 Heat sink design and analysis for 3kW motor controller, in house
39 Thermal analysis of metal additive manufacturing: Modeling and simulation of Renishaw AM machine, in Renishaw
40 Numerical simulation of gaseous fuel combustion in constant volume chamber using multipoint laser ignition, in house
41 Emission Analysis through Numerical Simulation of Three-Way Catalytic Converter with Thermal Energy Storage, in house
42 The modelling of phase change material as a thermal management system for Li-ion battery, in house
43 Methanol fuel utilization in dual fuel Compression Ignition (CI) Engine, in house
44 Analysis of Phase change Material used as Thermal Energy Storage Unit of Catalytic Converter, in house
45 Characterization of laser ignition of gaseous fuel, in house
46 Thermal analysis of induction cooktop using CFD, in Whirlpool
47 Investigation on combustion performance and emission characteristics of an alcohol fuel CRDI diesel engine, in house
48 Investigation of Performance, Combustion and Emission characteristics of Hydrogen Fuel in BS6 CRDI Twin cylinder Turbocharged Engine, in house
49 Investigation of Combustion, Performance and Emission Characteristics of Gaseous Fuel (CNG) in a BS6 CRDI Twin cylinder Turbocharged Flex fuel Engine, in house

6. LIST OF CONFERENCES, SHORT TERM COURSES ORGANIZED/ PARTICIPATED

6.1. Organized:

S.N.	Name of Topic	Duration	Venue	Attendee
01	National Conference on Energy and Fuel Issues of Future (NCEFIF-2004) – (Joint Organizing Secretary)	Nov 5-6, 2004.	COEP, Pune	100
02	"International Conference on Advances in Machine Design and Industry Automation" (ICAMDIA 2007) - (Treasure)	Jan 10-12, 2007	COEP, Pune	300
03	National Conference on Fluid Mechanics and Fluid Power (FMFP 2009) -(Treasure)	Dec 17-19, 2009	COEP, Pune	100

04	International Conference on Advances in Mechanical Engineering (ICAME) -(Treasure)	May 29-31, 2013	COEP, Pune	100
05	Computational Fluid Dynamics for Beginners- Program coordinator	Nov 20-24, 2017	COEP, Pune	30
06	Design and Development of electric and hybrid-electric Vehicle Technology 24 th February 2020 to 28th February 2020- Program coordinator	February 24-28 2020	COEP, Pune	36
07	ICAME 2022 ,International Conference & Exposition on Advances in Mechanical Engineering, of Engineering Pune (Convener)	June 23-25, 2022	COEP, Pune	300
08	Advances in Heating, Ventilation, Air-Conditioning, and Refrigeration- Program coordinator	February 13-24 2023	COEP, Pune	36

6.2. Participated

S.N.	Name of Topic	Duration (Days/Weeks)	Venue	Attendee
1	Challenges in Coal & Mineral Beneficiation	Dec 7-8, 2001 (2 Days)	ISM, Dhanbad, Jharkhand.	100
2	XVI National Conference on I.C. Engine & combustion	Jan 20-22, 2000 (3 Days)		100
3	XVII National Conference on C. Engines & Combustion	Dec 18-20, 2001 (3 Days)	KREC Surathkal, Karnataka.	100
4	SAE World Congress 2007	April 16-19, 2007 (4 days)	Detroit, USA	1000
5	World Congress on Engineering 2011 Also Chaired the Session	July 6-8, 2011 3 days	London, UK	500
6	2006 IEEE Conference on Electric & Hybrid Vehicles	Dec 18-20, 2006	Pune	30
7	Induction Training Programme Phase I	17 Jun -12 July 96 (4 Weeks)	Govt. Polytechnic,	30
8	Induction Training Programme Phase II	Nov 18 to Dec 06, 1996 (3 Weeks)	Govt. Polytechnic, Pune.	30
9	ISTE – STTP in VC++ Programming	July 31to Aug 11, 2000 (2 Weeks)	Govt. Polytechnic, Yavatmal.	30
10	ISTE – STTP in Biomedical Equipment Technology	Jun 16- 20, 2003 (1 Week)	College of Engineering	30
11	ISTE – STTP in Computational Fluid flow and Heat Transfer	Jan 03- 15, 2005 (2 Weeks)	College of Engineering Pune	30
12	CEP Advanced Heat Transfer	May 27- June 1, 2006 (1 week)	Conducted by IIT B, at G COE Pune	30
13	One week STTP Cooling Load Estimation & Duct Design of Air Conditioning System	June 2005 (1week)	G COE Pune	30
14	TWO week STTP on Computational Fluid Dynamics	16-26 October 2007 (2 week)	Sinhagad COE Pune	30
15	Advances in Refrigeration And Cryogenic Air Separation	17-22 November 2008 (1 week)	College of Engineering, Pune	30
16	Diesel Engine Management	16-22 March 2009 (1 week)	IIT Kanpur	30
17	Proficiency Improvement Programme on Automotive Testing & Certification	20-24 July 2010 (1 week)	ARAI- Pune	30
18	SERC School on Combustion in Energy Sector	7-11 June 2011 (1 week)	IITB, Mumbai	30
19	ISTE- Workshop on Thermodynamics in Mechanical Engineering	14-24 June 2011 (2 weeks)	Govt. COE, Pune	35
20	Resource Person CFD: Fundamentals and Practical Approaches	14-16 Jan 2011	SITE & S, Narhe, Pune	30
21	2 week ISTE workshop on Heat Transfer (IITB)	29 November to 10 December 2011	Cummins COE, Pune	40

22	"21st National Conference on Heat and Mass Transfer (ISHMT-ASME 2011)	27-30 December 2011	IIT Madras, Chennai	100
23	2-week ISTE workshop on Computational Fluid Dynamics and Heat Transfer (IITB)	12 June to 22 June 2012	Govt. COE, Pune	40
24	One week TEQIP, STTP on FINITE ELEMENTS IN ENGINEERING	09 July to 13 July 2012	Govt. COE, Pune	40
25	One week ISTE workshop on Engineering Thermodynamics	21-24 November 2012.	IIT Powai, Mumbai	160
26	2 week ISTE workshop on Engineering Thermodynamics	11-21 Dec 2012	Co-ordinator at COEP	4
27	ASME 2013, International Mechanical Engineering Congress& Exposition, IMECE2013	November 13-21, 2013,	San Diego, California, USA.	500
28	Resource Person Introduction to CFD	7th December 2016	D Y Patil Institute of Engineering Akurdi, Pune	40
29	One week QIP STTP Computational Fluid Dynamics	29th May to 2 June 2017	(IITB)	60
30	Training on Procurement in e-Governance	Nov 2-4, 2017	Yashada, Pune	60
31	FDP on Outcome based Education and Accreditation	July 2-6, 2018	COEP	60
32	Two day Anandshala Academic Leadership Alignment Program on NEP implementation Pathway Services for Leadership of University	February 3-4, 2023	COEP Tech	200

7. SPONSORED RESEARCH PROJECTS

S.N	Title of Project	Name of Funding Agency	Amount Sanctioned
01	Design and development of battery thermal management system for electric vehicles	RPS-NDF (AICTE) (2019-2022)	INR 24 Lakh
02	Investigations of Laser Induced Combustion of Gaseous Fuels	RPS (AICTE) (2014-15)	INR 18.82 Lakh
03	Development of Combustion Chamber	TEQIP (2013-14)	INR 1.25 Lakh
04	Development of Modular Parabolic Trough Collector For Commercial & Industrial Application	RPS (AICTE) (2008-09)	INR 3.85 Lakh
05	Piezoelectric pressure sensor with combustion chamber	TEQIP III	INR 3.54 Lakh
06	Dyno controller	TEQIP III	INR 2.34 Lakh
07	Battery Tester for battery internal resistance measurement	TEQIP III	INR 1.89 Lakh
08	Investigation of combustion performance & emission characteristics of an alcohol fueled (ethanol & methanol)CRDI diesel engine	Vasantdada Sugar Institute Fund 2022	INR 9.88 Lakh

7.1. Consultancies

S.N	Title of Project	Amount Sanctioned
01	Boiler Tube Leakage	Rs. 10 Lakhs
02	Design and Development of AIR Filter Test Setup for Air Conditioner	Rs. 2.00 Lakh
03	Development of Air Filter Test Rig	Rs 20 Thousand
04	Design and testing of fire extinguisher setup	Rs 10 Thousand
05	Calibration of Radiator Fan	Rs. 1.5 Lakhs

06	Design and Testing of a Fog machine	Rs. 10 Thousand
07	Design and Development of Gas Flow Meter test Setup	Rs. 50 Thousands
08	Design of testing setup of portable water monitor	Rs. 10 Thousand
09	Testing of Calorific Value, Ash Content, Viscosity Pressure Gauges, water Flowmeter	About Rs 4 Lakhs
10	Approval of raw water pane water pumping machinery conceptual design	Rs. 2.065 Lakhs
11	Preparation of technical report for the additives in diesel generators	Rs. 0.472 Lakhs
12	Checking of fabrication quality of vehicle	Rs. 2.3 Lakh
13	Design and preparation of specification & Dimension of gas fixed cremator with estimate	Rs. 7 lakhs

8. SIGNIFICANT CONTRIBUTION TO TEACHING/ACADEMIC EDUCATION ENVIRONMENT/INSTITUTIONAL CORPORATE LIFE

Sr. No.	Description	Programme/Conference/Event	Date/ Year
1	Joint organizing Secretary & session chair	National conference on Energy and Fuel Issues of Future	5 Nov. 2004
2	Project Guide Best project award	Completed project " Numerical Simulation and Experimental Validation of Performance of Regenerative Air Pre-heaters" at Forbes Marshall, Pune	2007-08 (22 Sept. 2008)
3	Project Guide	DIPEX2003: Prototype making competition in Refrigeration Engg.(Centrifugal Pump on /off timer)	2002-2003 (17-2-.2003)
4	Co-Principal Investigator	AICTE RPS Grant of Rs. 3.85 Lakhs for "Development of Modular Parabolic Trough Collector for Commercial And Industrial Application"	2008-2010 (5 March 2008)
5	Principal Investigator	AICTE RPS Grant of Rs. 18,82,353/- for "Investigation of Laser Induced Combustion of Gaseous Fuels"	19-3- 2015
6	Principal Investigator	TEQIP-II Grant Rs. 1.25 Lacs "Investigation of Laser-Induced Combustion of Gaseous Fuels"	05 Feb. 2014
7	Treasurer & session chair	International conference on " Advances in Machine Design and Industry Automation	10-12 Jan. 2007
8	Treasurer and Session Chair	International Conference on Advances in Mechanical Engineering at COEP	29-31 May 2013
9	CTA	First Year MBA/MMS/PGDBAM/PGDAM Post degree course Admissions CET	A.Y.2011-12
10	Session chair & Organizing Committee Member	36th National Conference on "Fluid Mechanics and Fluid Power" at COEP	17-19 Dec. 2009
11	Member of Project Review Committee (PRC)	Project Titled "Innovative Electronic Control Systems for PNG (Pipelined Natural Gas) Fuelled Stationary Engine" a proposal at Ministry of Science and Technology, Govt. of India	01.09.2011
12	Appreciation as Organizer	Third International Conference on Transformation in Engineering Education at COE, Pune	8-12 Jan 2016
13	Nodal officer - Finance	TEQIP III	Since April 2017 to Sept 2022
14	Convener	ICAME 2022 ,International Conference & Exposition on Advances in Mechanical Engineering, of Engineering Pune	23-25 June 2022
15	BOS Member	Govt. College of Engineering Amravati, SGS Institute of Technology and Science Indore, Vishwakarma	From 2019 onwards

		Institute of Technology Pune, Symbiosis Institute of Technology Pune	
16	Academic Auditor	Solapur, GCOE Karad	
17	PhD Examiners and Progress Committee members	I have worked as PhD external Examiners for various candidates of Kolhapur University, Nagpur University, Symbiosis International University Pune, Jawaharlal Nehru Technological University, Hyderabad, Osmania University,Hyderabad, PhD Progress Committee member of DIAT, SIT, VIT, Sinhgad College, COEP Mechanical Department and other department	From 2007 onwards
18	Head of Mechanical Engineering Department	COEP College, COEP Tech University	From April 2019 to February 2023
	Academic Council Member	COEP College and COEP University	From April 2019 onwards
19	National Education Policy – NEP- 2020	Coordinator COEP Tech University	From February 2023
20	Chairman NEP 2020 Mechanical	Worked as Chairman Mechanical for NEP- 2020 order by DTE Mumbai and member of Committee NEP implementation form by DTE Mumbai	From May 2023

9. COURSE DEVELOPMENT & PROCUREMENT OF EQUIPMENT

- Developed the curriculum and course materials various courses of Thermal Engineering Post Graduate Program such as Fluid Dynamics, Design of Heat Exchanger Design, Modelling of I.C. Engine, and Computational Fluid Dynamics.
- Procurement new equipment for undergraduate and Postgraduate student Lab Practices
  - Computerized Heat Exchanger Test Setup
  - Computerized Single Cylinder Variable Compression Ratio Research Engine test setup
  - Bomb Calorimeter
  - Redwood Viscosity meter
  - D.C. Dynamometer
  - Eddy Current Dynamometer
  - Diesel Gen Set for the institute
  - Exhaust Gas Analyser
  - Smoke meter
  - Flash Point and Fire Point test setup
  - Multi-cylinder Petrol Engine
  - Pressure sensor and Crank angle encoder

10. CONTRIBUTION TO CONTINUING EDUCATION PROGRAMME (CEP)

Sr. No.	Role	Conference/Exhibition/Participation	Date/ Year
1	Organizing Committee Member	Two-Day Workshop on "Environment-Friendly Refrigeration and Cryogenics"	13-14 Jan 2006
2	Coordinator	Continuing Education Programme (CEP) Course for Make-up Lectures for Students of B.E. Mech from Engineering College NITS, Mirza, Assam.	02-20 July 2012
3	Coordinator	For Two -Week ISTE Workshop on "Engineering Thermodynamics" at IIT Bombay	11-21 Dec 2012

4	Organizer	Guest Lecture on Modelling of IC Engine by Dr. Yogesh Aghav, KOEL Pune	Appro.20
5	Organizer	Talk on Modelling of I.C.E. by Mr. Walke N H, ARAI, Pune	Appro.20
6	Organizer	Workshop on Engine cycle simulation Software G T Power by Mr. Mahesh Bhoopathi, Mr.Hemant Khalne	Appro.20
7	Organizer	Workshop on Ricardo Software- WAVE by Mr. Yogesh Umbratkar, Ricardo, Pune	Appro.20
8	Organizer	Lecture on AVL-Software BOOST by Mr. Trimbakhe,	Appro.20
9	Organizer	Talk on Value Engineering by S S Sathe	Appro.20
10	Organizer	CEP course for John Deere TCL Engineers	Appro.20

CEP courses conducted

i. Bharat Forges Engineers
ii. Kirloskar Brothers Engineers
iii. Assam NS College students
iv. GATE appearing Engineers
v. John Deere TCL Engineers
vi. ME students of Modern College of Engineering- Computational Fluid Dynamics, Design of Heat Exchangers,
vii. ME students of Sinhgad College of Engineering- Computational Fluid Dynamics, Design of Heat Exchangers,
viii. ME students of Govt Karad College of Engineering- Computational Fluid Dynamics, Advance Fluid Mechanics

11. ADEQUATE EXTENSION AND FIELD OUTREACH ACTIVITIES

Sr. No.	Role	Programme/Conference/Event	Date/ Year
1	Judge	For POWER GEN in "Instru-Fiesta" at College of Engg.,Pune	15 Sept. 2006
2	Judge	For State Level Technical Paper Presentation Competition in "MECH-FEST-06" at Govt. COE, Amarawati	24 Feb 2006
3	Judge	" FERVOR-2006" in Techxaust event	11 Mar 06
4	Judge	For Paper Presentation Competition in "MECH-FEST-07" at JSPM's JSCOE,Handewadi,Pune	28 Sept 07
5	Judge	For Project Competition in "National Level Tech. Symposium Arghya-2009" at College of Engg.,Ambejogai	07-03-2009
6	Resource Person	Short Term Training Course on "CFD- Fundamental and practical Approaches" Sponsored by UOP	14-16 Jan. 2011
7	Judge	Symposium on International Automotive Technology, 2013 (SIAT 2013) at ARAI, Pune.	9th to 12th Jan 2013
8	Judge	Symposium on International Automotive Technology, 2015 (SIAT 2015) at ARAI, Pune.	21st to 24th Jan 2015
9	Session Chair	Third International Conference on Transformation in Engineering Education at COE, Pune	8-12 Jan 2016
10	External Examiner	For Ph.D. defense at Jawaharlal Nehru Technological University, Hyderabad	03.10.2008
11	External Examiner	For Ph.D. defence at Osmania University,Hyderabad	15.10.2009

12	Member of Research Committee	For the Ph.D. program at Vishwakarma Institute of Technology, Pune	28-01-2008
13	Refree	For Ph.D.pre-registration seminar at Sinhgad College of Engineeing, Vadgaon,Pune	27.01.2009
14	External Examiner	For M.E. Dissertation at Govt. COE,Amarawati	7-02-2004
15	External Examiner	For M.Tech. The project at Dr.Babasaheb Ambedkar Technological University, Lonere	01-02-2012
16	External Senior Supervisor	At Vishwakarma Institute of Technology, Pune For UOP examination.	10.12.2010
17	External Examiner	M.Tech Dissertation Viva-Voce at Shri.Guru Gobind Singhji Inst. of Engg. and Tech.,Nanded	23.07.2011
18	Guest Lecturer	Lecture Deliverd on "Computational Fluid Dynamics" at Modern COE,Shivajinagar,Pune	10.02.2012
19	Visiting Lecturer	At Govt.College of Engineering,Karad	10.10.2012
20	Session Chair	International Symposium on Engineering and Technology at KJEI's Trinity COER, Pune	9-10 Jan 2014
21	Session chair & reviewer	International Conference -, Organized by Civil and Mechanical Department Govt. College of Engineering Amravati	Dec 2015
22	Session Chair	Symposium SIAT	2009, 2011, 2013

12. OTHER CONTRIBUTIONS

Sr. No.	Description	Programme/Conference/Event	Date/ Year
1	Participation in Training course	Personal Effectiveness for Institutional Developments	27-29 Jan 2006
2	Participation in Training Course	Effective Energy Generation and Conversion System	29 Nov 2006
3	Appreciation for Participation	SAE 2007 World Congress, Detroit, USA	16-19 April 2007
4	Expert Professor	For Inspecting materials according to Specification for "Rashtrakul Krida Spardha 2008"	21-08-2008
5	Faculty Advisor	PPT Mech/ Prod in MindSpark 2010	8-10 Oct. 2010
6	Participation in Proficiency Improvement Programme	Five Day's Programme on "Automotive Testing and Certification (Including Gensets and Off-Highway Vehicles)" at ARAI Pune	20-24 July 2010
7	Paper Evaluator	Appointed as Evaluator for the paper titled "Analysis and Removal of Gaussian Noise in Artificial Silicon Retinal System" for seeking financial assistance for presentation in International conference.	30 March 2011
8	Participation and Paper Presenter	"A Coupled Field Fluid Flow and Structural Analysis of a Nozzle used in a Supersonic Artillery Rocket" In 21st National and 10th ISHMT-ASME Heat and Mass Transfer Conference at IIT Chennai	28-30 Dec. 2011
9	Member	Complaints and Grievances committee of Class A to Class D employees at COEP	20-7-2012
10	Attended	One Week Short Term Course on "Finite Elements in Engineering" at COEP	09-13 July 2012
11	Participated	Two -Week ISTE Workshop on "Computational Fluid Dynamics" at IIT Bombay	12-22 June 2012
12	Member	Scrap Material Auction committee	2 Feb. 2013

13	Participation and Paper Presenter	"Design and Computational Validation of In-Line Bare Tube Economizer for 210MW Pulverised Coal Fired Boiler" ASME International Mechanical Engg. Congress and Exposition at Manchester Grand Hyatt, San Diego, CA.	15-21 Nov. 2013
14	Participation and Paper Presenter	"Prediction of Combustion Pressure, NOx and Soot for DI Diesel by Simplified Model" ASME International Mechanical Engg. Congress and Exposition at Manchester Grand Hyatt, San Diego, CA.	15-21Nov. 2013
15	Participation in Professional Development Training	Participated in Professional Development Training under TEQIP - III at Indian Institute of Management Indore on	28th Jan to 01st Feb 2019

Worked as Head of Mechanical Engineering Department from 16th April 2019 to 20th February 2023.

Worked as an Examiner for Master of Engineering Programs

- College of Engineering Pune
- Govt College of Engineering Amravati
- Govt. College of Engineering Karad
- Modern College of Engineering Pune
- MIT College of Engineering, Pune
- Somaiya Vidyavihar
- Sinhgad College of Engineering Pune
- Walchand College of Engineering Sangli
- J.S.P.M. College of Engineering Hadpsar, Pune
- University of Kolhapur

- Worked as an Examiner and chairman for Ph.D. Thesis of various Research Scholar from College of Engineering Pune, VIT Pune, Hyderabad University Nagpur University, Amravati University, Kolhapur University
- Worked as Research Monitoring Committee member from 2007 onwards for various research scholars in Mech. Engg. Dept., Production Engg. Dept., Elect. Engg. Dept. at College of Engineering Pune, VIT Pune, Sinhgad College of Engineering Pune, University of Kolhapur
- Worked as Paper setter for various entrance examinations and Under Graduate and Post Graduate Engineering Programs at COEP, University of Pune, Kolhapur University, Amravati University
- Worked as external academic auditor for 'External Academic Audit 2017-18' of mechanical engineering department GCE, Karad.
- Worked as subject expert in selection of Professor and Associate professor for Mechanical Engineering department in 2019, Amrutvahini Engineering college, Sangamner.
- Worked as external examiner for oral examination in Industrial Instrumentation lab at Government college of Engineering, Karad, in 2018
- Started an Energy Forum group. These help students to go through the latest technology in the field of Energy which is useful for undertaking projects, review of literature.

- In most of Senates meeting actively participated for various issues of students, presentations of Structures and curriculum of undergraduate and Postgraduate programs.
- Worked as a Ph.D. coordinator (2010-17) and PG coordinator (Thermal Engineering) (2017-Till date)
- Appointed as a CTA for MBA-CET 2012
- Appointed in the LIC
  - Anantrao Pawar College Of Engineering And Research, Pune
  - Shri. Someshwar Shikshan Prasarak Mandal's Someshwar Engineering College.

13. STUDENT GUIDANCE

i. Technical Paper Presentations
ii. DIPEX Project Competitions
iii. AVISKAR Project Competitions
iv. Forbes Marshal Project Awards
v. SAE BAJA Competition
vi. FERVER - Technical Activities
vii. MIND SPARK – Technical Activities
viii. M Tech and Ph.D. Admission at various IITs
ix. Guided and recommended nearly 30 students for their MS and Ph.D. Programs at various Foreign University at USA, UK, and Germany. Many students have completed their MS and Ph.D.

13.1. MESA Coordinator

i. Expert Lecturers
ii. GATE/CAT classes
iii. Various Sports activities
iv. Project Competitions, Seminars, Workshop such as Two wheeler Maintenance
v. Department Magazines
vi. Students Links
vii. Farewell Functions

13.2. Research Projects and Industrial visits organized

i. Tata Motors, Pune.
ii. Kirloskar Oil Engine Ltd, Pune.
iii. Cummins India Ltd, Pune.
iv. Thermax, Pune
v. Forbes Marshall, Pune
vi. John Deere, Pune.
vii. Automotive Research Association of India, Pune.
viii. Greave Diesel Engine Unit, Pune.
ix. 512 Army Base Workshop Pune.
x. Vasant Dada Sugar Industry.
xi. National Thermal Power Station Ekalare Nashik.
xii. Atlas Copco, Pune.