

RESUME

Dr. Sonara Vimalkumar D
Assistant Professor of Mechanical Engineering
Government engineering college Valsad
Phone: (M) 91 951 245 0033
Permeant Residential address: 89, The Meadows, Gokuldharm, Near
Shantipura circle, Sanathal
Ahmedabad, 382210
Email: vdsonara@gecv.ac.in



Educational Qualification:

- **PhD** from Gujarat Technological University in the year 2022
 - **M Tech** from Gujarat Technological University completed in July 2014 with **CPI** of **9.30** in Automobile Engineering
 - **BE** from Saurashtra University completed in September 2000 with 64.5% in Mechanical Engineering
-

Title of PhD work:

Droplet Ignition of Biodiesel with Nano additives CNT, Alumina and CNT-Alumina

Title of M Tech project:

Experimental Investigation of Droplet Ignition of Biodiesel and its Blends

Experience:

1. Associate Professor of Mechanical Engineering, Government Engineering college Valsad, from 24th April 2025 to till date
 2. Assistant Professor of Mechanical Engineering, L D College of Engineering Ahmedabad from 29th July 2016 to 23th April 2025
 3. Assistant Professor of Mechanical Engineering, Government Engineering College Bhuj from 08th April 2010 to 28th July 2016
 4. Lecture of Mechanical Engineering at Government Polytechnic Porbandar from 09th March 2001 to 07th April 2010
-

Field of specialization:

- (a) Internal Combustion Engine
- (b) Alternate Fuel
- (c) Automobile Engineering

Subjects Taught:

Post graduate: (1) Alternate Fuels and Energy (2) High speed Diesel Engine (3) Automotive Aerodynamics and Safety (4) Automobile maintenance and pollution control (5) IC Engine and Automobile Technology

Under graduate: (1) Engineering Thermodynamics (2) Internal Combustion Engine (3) Applied Thermodynamics (4) Engineering Graphics and (5) Thermal Engineering

Publications:

International Journals:

1. **V. D. Sonara**, Dr. Pravin P. Rathod, "A Review study on Bio diesel Droplet Ignition", International Journal of Engineering Research and Technology (IJERT) Volume 2, Issue 12, December 2013, ISSN: 2278 - 0181 , Website: <http://www.ijert.org> , PP:2158-2170.
2. **V. D. Sonara**, Dr. Pravin P. Rathod, "An Experimental Investigation on Droplet Ignition of Bio-Diesel and its Blends", International Journal of Advance Engineering and Research Development (IJAERD) Volume 1, Issue 5, May 2014, e-ISSN: 2348 - 4470 , print-ISSN:2348-6406, Website: <http://www.ijaerd.com/> , PP:1-14.
3. Gohil Milap M, Prof. (Dr.) Pravin P Rathod, Prof. Jay K Pandya, Prof. **Sonara Vimal**, "Cubic Bézier Surface Machining: A State of an Art Review," International Journal of Advance Engineering and Research Development, Volume 1, Issue 12, December -2014, Scientific Journal of Impact Factor(SJIF): 3.134, e-ISSN(O): 2348-4470, p-ISSN(P): 2348-6406, PP: 301-305.
4. Haresh K. Vaniya, **V. D. Sonara**, Arvind. S. Sorthiya, "Analysis of Backhoe Loader Chassis for Weight & Cost Reduction using FEA - A Review Paper" IJIRST – International Journal for Innovative Research in Science & Technology| Volume 1 | Issue 8 | January 2015 ISSN (online): 2349-6010 PP:1-8.
5. Piyush.C.Chaudhari, **Vimal.D.Sonara**, Dr.Pravin.P.Rathod, "Analysis and Design of Tractor Rear Axle using Finite Element Method- A review" International Journal of Advance Engineering and Research Development (IJAERD) Volume 02, Issue 03, March - 2015, e-ISSN: 2348 - 4470 , print-ISSN:2348-6406, Website: <http://www.ijaerd.com/> , PP:105-109.
6. Ambalal R Thakor, **Vimal D Sonara** "Investigation of ignition characteristics of biodiesel and nano particles blends on engine performance and emission in 4-Stroke C.I. Engine - A Review Paper" Journal of Emerging Technologies and Innovative Research (JETIR), March 2019, Volume 6, Issue 3, ISSN-2349-5162
7. Monika Vyas, **V. D. Sonara** "Impacts of Blending Feed Stock Generated Biodiesel on Performance and Emission Parameters of Diesel Engine-Review" International Journal for Research in Engineering Application & Management (IJREAM) ISSN : 2454-9150 Vol-06, Issue-01, Apr 2020
8. Bhavikkumar H. Kadiya , Prof. Mit Patel **Prof. V.D.Sonara** , Prof. Vimal R. Patel "Impact on Performance and Emission Analysis of Waste Cooking Derived Biodiesel Considering Compression Ratio, Blend Ratio, Injection Pressure and Load on Single Cylinder VCR Engine with Comparison of RSM and MLR Model" Journal of Science

- and Technology ISSN: 2456-5660 Volume 5, Issue 3, May-June 2020 DOI: <https://doi.org/10.46243/jst.2020.v5.i3.pp25-40>
9. Krunal Patel , Prof. Mit Patel , **Prof.V.D.Sonara** , Prof. Mazhar A. Shaikh “Parametric Optimization of Brake Power and Specific Fuel Consumption on A Single Cylinder VCR Engine By Taguchi Method Using Jatropha Biodiesel Derived From Jatropha Curcas Oil Conducting Experiments As Per IS 10000 Approach” Journal of Science and Technology ISSN: 2456-5660 Volume 5, Issue 3, May-June 2020 DOI: <https://doi.org/10.46243/jst.2020.v5.i3.pp62-71>
 10. **Sonara Vimalkumar Dahyabhai** & Dr. Pravin P Rathod “Role of nanoparticles additives with biodiesel blend as an engine fuel: Combustion and Ignition characteristics of engine performance and emissions” International Journal of Mechanical and Production Engineering Research and Development (IJMPERD) ISSN (P): 2249–6890; ISSN (E): 2249–8001 Vol. 10, Issue 2, Apr 2020, 555-570.
 11. Keyur P Hirpara , Ankit C Pambhar , **Vimal D Sonara** , Pratik R Parekh, Nirav J Prajapati , Sulay N Patel “FINITE ELEMENT ANALYSIS OF RESIDUAL STRESS AND HEAT DISTRIBUTION IN PLASMA-TRANSFERRED ARC HARDFACING OF SS304” YUGATO, Accepted: June 13, 2024 Published: June 30, 2024" ISSN: 0387-5695, e ISSN: 0387-5695 Vol. 76 No. 1 (2024) Web of Science INTERNATIONAL JOURNAL.
 12. Dhaval Patel, **Vimalkumar Dahyabhai Sonara**, Ankitkumar Chhaganlal Pambhar, Mayurkumar M. Makwana, Dheeraj M Chandra, Harsh Rajnikant Patel "Surface Engineering and Thermal Spray Coatings: Processes, Benefits, and Applications on SS304 Substrate" Afr. J. Biomed. Res. Vol. 27 (May 2024); 437-44903 May 2024 (May 2024); 437-449 ISSN: 1119-5096 Journal Scopus INTERNATIONAL JOURNAL. <https://africanjournalofbiomedicalresearch.com/index.php/AJBR/article/view/7374>

International Conference:

1. **Sonara Vimalkumar D** and Pravin P Rathod, Influence of Alumina and CNT Nano Particles on Biodiesel Blend as an Engine Fuel: Combustion Characteristics, Performance and Emission” AIP Conference Proceedings 2297, 020007 (2020); Published Online: 10 December 2020 (Scopus indexed) <https://doi.org/10.1063/5.0029794>
2. **Vimalkumar D. Sonara**, Pravin P. Rathod , “Droplet combustion and ignition analysis of carbon multiwall nanotube and alumina blended jatropha biodiesel” Materials Today: Proceedings Volume 59, Part 1, 2022, Pages 101-106 Online ISSN: 2214-7853(Scopus indexed) <https://doi.org/10.1016/j.matpr.2021.10.210>

Patents:

Title of the invention: AN INVESTIGATION ON VARIOUS INSULATING MATERIALS AND THICKNESS FOR VAPOUR COMPRESSION REFRIGERATION SYSTEM. (Date of filing of Application: 13/05/2021 and Publication Date: 18/06/2021)

ME / M Tech Guidance:

1. 'Experimental investigation of performance and emission of the edible and non-edible hybrid blends with diesel', Name of research scholar: Piyush Lukhi, Gujarat Technological University, July 2021
2. 'Combined effect of orifice plate diameter and injection pressure on performance of C I Engine fueled with mixture of various biodiesel and diesel blends using response surface method.' Name of research scholar: M K Vyas Gujarat Technological University, July 2020
3. "Analysis of Backhoe Loader Chassis for Weight & Cost Reduction using FEA", Name of research scholar: Haresh K. Vaniya, Gujarat Technological University, 2015
4. "Analysis and Design of Tractor Rear Axle using Finite Element Method", Name of research scholar: Piyush.C.Chaudhari , Gujarat Technological University, 2015
5. "Investigation of ignition characteristics of biodiesel and nano particles blends on engine performance and emission in 4-Stroke C.I. Engine", Name of research scholar: Ambalal R Thakor, Gujarat Technological University, 2019
6. "Performance and Emission Characteristics Investigation of Waste Plastic Biodiesel Blend with Diesel" Name of research scholar: Tomar Punitsingh Pratapsingh, Gujarat Technological University, 2022
7. "Experimental Investigation On Performance And Emission Characteristics Of Grape Seed Oil Blend With Biodiesel Fuel" Name of research scholar: Chirag Panchal, Gujarat Technological University, 2022
8. "Experimental Investigation on Performance and Emission of Neem Mahua hybrid bio-diesel for CI-Engine" Name of research scholar: Priyaknat Charpot, Gujarat Technological University, 2022
9. "Performance and emission analysis of single cylinder diesel engine with waste cooking oil and Mahua oil blend with Al₂O₃ additives using response surface methodology", Name of research scholar: Laxman P Nibel, Gujarat Technological University, 2023.
10. "Investigation on Dual axis steering mechanism for the enhancement of vehicle control and maneuverability", Gujarat Technological University Karan Prajapati 2025 (Pursing).

Short term training program/Seminar/Workshop/FDP attended:

Sr. No.	Name of the program	Organizing institute	Duration	
			From	To
1	Advances in Mechanical Engineering & Allied Disciplines	NITTTR Extension centre Ahmedabad	24 Nov 2014	5 Dec 2014
2	Recent Trends in Mechanical Engineering GEC – BHAVNAGAR	GEC- Bhavnagar (DTE sponsored)	22 June 2015	26 June 2015
3	Developing Employable Skills	NITTTR Bhopal	07 Dec 2015	11 Dec 2015
4	Environmental Pollution & E-Waste management	NITTTR Bhopal	13 June 2016	17 June 2016
5	Climate Change, Scenario, Development for Policy Analysis	NITTTR Bhopal	02 Oct 2017	13 Oct 2017
6	Two-Wheeler Technology	L D College of Engineering Ahmedabad (DTE sponsored)	26 Dec 2017	05 Jan 2018
7	FDP " Beyond the classroom towards excellence"	Organized by DTE and IIITE-Gandhinagar	23 Sept 2018	28 Sept 2018
8	Advances in Automobile Engineering	NITTTR -Bhopal	25 March 2019	29 March 2019
9	Promoting Excellence through Industry Institute Partnership (ID-43)	NITTTR, Bhopal	17 Feb 2020	21 Feb 2020
10	Comprehensive Online Intellectual Property Rights (IPR)	i-Hub Edu Department (DTE)	06 July 2020	14 Sept 2020
11	BIO FUELS A CLEAN GREEN ALTERNATIVE FUEL FOR IC ENGINES	NITTTR, Bhopal (Online)	12 July 2021	16 July 2021
12	IR 4.0 and DIGITAL MANUFACTURING	NITTTR, Bhopal	12 Sept 2022	16 Sept 2022
13	Welding using Industrial Robot	NITTTR, Bhopal	24 July 2023	28 July 2023
14	Solid works and Autocad	NITTTR, Bhopal	02 September 2024	06 September 2024

Award and Appreciation:

ME IC-Auto GTU gold medalist Year 2014