

# Curriculum Vitae

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**Name:** Prof. (Dr.) HIRALAL S. PATIL

**Designation:** Professor & Head in Mechanical Engineering Department

**Institute:** GIDC Degree Engineering College, Abrama, Navsari

## Mailing Address:

“Abhipujam” 12/ Ankur Park Society, Near Naranlala Colleges, Eru Char Rasta  
Tal. - Jalalpure, Dist. - Navsari, Pin-396450 (GUJARAT)

**Email:** hspatil12@rediffmail.com, hspatil28@gmail.com

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## Academic Qualifications:

- Ph. D. - (Mechanical Engineering), Faculty of Technology including Engineering, Veer Narmad South Gujarat University, Surat Gujarat (India,) 2013
- M. E. (General Mechanical) – S.V. Regional College of Engineering & Technology, South Gujarat University, Surat, Gujarat (India,) 2002
- B. E. (Mechanical Engineering) – S.S.V.P.S. College of Engineering (Dhule), North Maharashtra University, Jalgaon, Maharashtra(India,) 1997

## Academic Experience: 25 Years

- 02/01/20017 – Continue Professor and Head MED, GIDC Degree Engineering College, Abrama, Navsari (Gujarat)
- 01/07/2013 – 01/01/2017 Associate Professor & Head MED, GIDC Degree Engineering College, Abrama, Navsari (Gujarat)
- 14/08/2012 – 29/06/2013 Asso. Professor and Academic In-charge Pacific School of Engineering, Palsana, Surat (Gujarat)
- 01/08/2011 – 13/08/2012 Asso. Professor & Head MED Vadodara Institute of Engineering, Kotambi, Vadodara (Gujarat)
- 01/04/2009 – 30/07/2011 Asso. Professor & Vice Principal, Mahatma Gandhi Institute, Eru, Bhanunagar, Navsari (Gujarat)
- 29/03/2005 – 31/03/2009 Asstt. Professor & Head MED, Mahatma Gandhi Institute, Eru, Bhanunagar, Navsari (Gujarat)
- 22/03/2004 – 28/03/2005 Assistant Professor, D.N. PATEL C.O.E. Shahada Dist Nandurbar (Maharashtra)
- 12/01/1998 – 21/03/2004 Lecturer, D. N. PATEL C.O.E., Shahada, Dist.: Nandurbar (Maharashtra)

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**Fields of Interest:** Design, Tribology and Materials Processing & Characterisation

**Subject Taught:** Machine Design, Kinematics of Machines, Dynamics of Machinery, Tribology, Non-Destructive Testing, Surface Engineering, Product Design etc.

**Ph.D. Supervising Research Work:**

- Tribological Experimentation & Elucidation of Mixed & Blended Lubrications Effects on PRA (Piston Ring Assembly) of an I. C. Engine (PhD Research Scholar: **Ashish Jain, 2017**)
- Investigation On Tribological and Mechanical Behavior of Ceramic Composites for Cutting Tools [PhD Research Scholar: **Hariketan B. Patel, 2018**]
- Experimental Investigations on Fracture Characteristic of Natural Fibre Metal Laminates PhD Research Scholar: [**Hitesh R. Raiyani , 2018**]
- Development of stress field around inclusion in large rectangular strip using analytical approach [ PhD Research Scholar: **Bharat H. Gajera, 2019**]
- Tribological Characteristics of Combine Effect of Surface Texturing and Composite Coating on Functional Performance Of I.C Engine [ PhD Research Scholar: **Mayur J. Jalanapurkar, 2019**]
- Experimental analysis and mathematical model development of vacuum evaporated and pressurized condensate type solar still [ PhD Research Scholar: **Kamlesh C. Patel, 2019**]
- Development of TPM model for small-medium scale Indian manufacturing industries using Industry 4.0 technologies [ PhD Research Scholar: **Jainish Modi, 2021**]
- Numerical and Experimental Simulation of Material Flow During Friction Stir Welding of non-ferrous alloys [PhD Research Scholar: **Dhaval Chaudhri, 2021**]

**Post Graduates Dissertation:**

- Guided 4 post graduate dissertations as external supervisor

**Under Graduates Projects:**

- Guided more than 100 under graduate projects

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## **Academic Honors and Achievements:**

- **Ph.D. Referee** for evolution of Ph.D. Thesis for R.T.M. Nagpur University, Nagpur (MS) in 2016, 2018 and 2019 and for North Maharashtra University, Jalgaon (MS), 2016
- **Ph.D. Examiner** to conduct Open Viva-Voce for Ph.D. Candidate from R.T.M. Nagpur University, Nagpur (MS) in OCT.-2018
- **Doctoral Progress Committee** member for Ph.D. Research Scholar at Gujarat Technological University affiliated engineering colleges
- **External examiner** in PG Dissertation Viva at North Maharashtra University, JALGAON and Savitribai Phule Pune University, Pune
- **Examiners/Setters** in Mechanical Engineering, Gujarat Technological University
- **Coordinators** of Gujarat Technological University **Practical Examination, Zone-5** in Mechanical & Automobile Engineering since from Winter examination 2016 to May 2018.
- **Convenor and committee member** in academic inspection of Gujarat Technological University affiliated engineering colleges
- **VC Nominee and Subject Expert** on interview panel of Gujarat Technological University affiliated engineering colleges
- **Session chair** in National Conference on Emerging Trends In Engineering & Technology for Mechanical & Automobile Stream at Laxmi Vidyapeeth, Laxmi Institute of Technology, Sarigam Gujarat

## **Funded Projects:**

- Research Work on “Design and Development of Low-Cost Coriolis Meter” Under the Scheme for Supporting R & D in Emerging Fields of S & T on State Priority Areas under STI Fund from Gujarat Council on Science and Technology (GUJCOST), Department of Science Technology, Gandhinagar for 2 Years from April 2021, received grant of Rs. 5,04,900/

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## Research Publications (In Journals & Conferences):35

### A] Publication in International Journal: 24

1. **H. S. Patil**, D. C. Patel, Age hardening heat treatment behavior of as-cast Mg–Zn–Al alloys, *Journal Fratturaed Integrità Strutturale (Fracture and Structural Integrity)*, Vol. 15 No. 57,350-358;( 2021)
2. **H. S. Patil**, D. C. Patel, The effect of surface texturing in the sliding surface on tribological characteristics of alloy steel under wet condition , *Journal Fratturaed Integrità Strutturale (Fracture and Structural Integrity)*, Vol. 15 No. 57,1-13; (2021)
3. **H. S. Patil**, D. C. Patel, C. S. Patil, Characterizations of TIG welded joints of unalloyed commercially pure Titanium Gr-2 for weld process parameters, *Journal Fratturaed Integrità Strutturale (Fracture and Structural Integrity)*, Vol.12 No.48, 377-384; (2019)
4. **H. S. Patil**, D. C. Patel, C. S. Patil, Experimental Analysis of Oil Film Pressure and Temperature on EN31 Alloy Steel Journal Bearing, *American Journal of Materials Engineering and Technology* ,Vol. 7, No. 1, 7-11,(2019)
5. **H. S. Patil**, D. C. Patel, C. S. Patil, Investigation on Effect of Machining Process Parameter on Surface Roughness and Material Removal Rate in Plano Miller for Alloy Steel SA-387; *International Journal of Creative Research Thoughts*, Vol. 5, Issue-4. 966-972;(2017)
6. **H. S. Patil**, D. C. Patel, C. S. Patil, Effect of Piston Crown Thermal Barrier Coating on Performance and Emission Characteristics *International Journal of Recent Trends in Engineering & Research*, Vol 03, Issue 11;74-81;(2017)
7. **H. S. Patil**, D. C. Patel, C. S. Patil, Experimental Investigation on Process Parameters for Optimization of Surface Roughness and Material Removal Rate in Plano Miller Machine on Carbon Steel IS-2062 Material, *International Journal of Emerging Technologies in Engineering Research*; Vol 5, Issue 11,115-119;(2017)
8. D. C. Patel, **H. S. Patil**, Development of Arduino Programme Code for Autonomous Smart Vacuum Robot; *International Journal of Emerging Technologies in Engineering Research*, Vol 5, Issue 11,120-126;(2017)
9. D. C. Patel, **H. S. Patil**, Design and Development of Low-Cost Artificial Intelligence Vacuum Cleaner; *International Journal of Recent Trends in Engineering & Research*; *International Journal of Recent Trends in Engineering & Research*, Vo 03, Issue 11; 59-67 (2017)
10. **H.S.Patil** , Chetan Patil, Effect of Processing Parameters on Properties of Friction Stir Welded Joints of Aluminium Alloys AA7075\_T651 and AA6061\_T6; *International Journal of Advanced Design and Manufacturing Technology* , Vol. 10 No. 2, 93-99; (2017)
11. C.S.Patil, H.G.Patil , **H. S. Patil**, Experimental Investigation of Hardness of FSW and TIG joints of Aluminium Alloys of AA7075 and AA6061; *Journal Fratturaed Integrità Strutturale (Fracture and Structural Integrity)*, Vol 37,325-332; (2016)
12. C.S.Patil H.G.Patil **H. S. Patil** Investigation of weld defects in similar and dissimilar friction stir welded joints of aluminium alloys of AA7075 and AA6061 by X-ray Radiography *American Journal of Materials Engineering and Technology* , Vol. 4, No. 1, 11-15 (2016)

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13. **H. S. Patil**, S.N. Soman, Effect of tool geometry and welding speed on mechanical properties and microstructure of friction stir welded joints of aluminium alloys AA6082-T6, Archive of Mechanical Engineering, The Journal of Committee of Machine Design of Polish Academy of Science, VOL. LXI No 3 (2014)
  14. **H. S. Patil**, S. N. Soman, Corrosion Behaviour of Friction Stir Welded Aluminium Alloys AA6082-T6, American Journal of Materials Engineering and Technology, Vol. 2, No. 3, 29-33;(2014)
  15. **H.S. Patil**, Jamin Patel Simulation of Peak Temperature & Flow Stress during FSW of Aluminium Alloy AA6061 for Various Tool Pin Profiles, International Journal of Materials Science and Engineering Vol. 2, No.1,67-71 (2014)
  16. Chintan Patel, **H. S. Patil**, Jubil Joy, Stress Analysis of Half Toroidal Continuously Variable Transmission System, International Journal for Scientific Research & Development, Vol. 2, Issue 03, 939-942, (2014)
  17. **H.S. Patil**, S. N. Soman, Influence of weld process parameters on material characterization of friction stir welded joints of aluminium alloy AA6061-T6, Journal Materiali in Tehnologije / Materials and Technology Vol.47 (2013)
  18. **H.S. Patil**, S.N.Soman, Effect of weld parameter on mechanical and metallurgical properties of dissimilar joints AA6082–AA6061 in T6 condition produced by FSW, Journal Fratturaed Integrità Strutturale (Fracture and Structural Integrity Vol.24, 151-160,(2013)
  19. **H.S.Patil**, Experimental work on horizontal axis PVC turbine blade of power wind mill Vol-2 Issue- 2,International Journal of Mechanical Engineering (2011)
  20. **H.S.Patil**, An experimental study on full toroidal continuously variable transmission system, International Journal of Advanced Design and Manufacturing Technology ; Vol. 5/ No. 1, (2011)
  21. **H. S. Patil**, S.N. Soman, Structural stress analysis of friction stir welding tool pin profiles, International Journal of Mechanical Engineering and Materials Sciences Vol.-4 No.1, (2011)
  22. **H.S.Patil**, P.D.Ahir, S.N. Soman, Influence of process parameter on tensile properties of friction stir welded butt joints in 6082 aluminium alloy Elixir International Journal Vol 30,1823-1825;(2010)
  23. **H.S.Patil**, S.N. Soman, Experimental study on the effect of welding speed and tool pin profiles on AA6082-O aluminium friction stir welded butt joints, International Journal of Engineering, Science and Technology , Vol. 2, No. 5, 268-275; (2010)
  24. **H. S. Patil** P. D. Ahir, S.N. Soman Effect of tool pin profile and friction stir welding speed on tensile properties of friction stir welded joints of AA6082 aluminium alloy, International Journal of Emerging Technologies and Application in Engineering, Technology and Sciences Volume 3, No 1, 203-206 ;(2010)

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## **B) Publication in International/National Conference Proceedings: 11**

25. M. J. Jalanapurkar, **H. S. Patil**, An effect of surface texturing and composite coating on tribological characteristics of I.C engine components: A Review International e-Conference on Recent Advancement in Mechanical Engineering and Technology, Department of Mechanical Engineering, AVIT, Kancheepuram, June (2021)
26. D. C. Patel, **H. S. Patil**, Raj Dabholkar, An Investigation on Effect of Coriolis Flow Meter Tube Shape and Size on Oscillation Modes Using a Parametric Finite Element Model, Fluid Power Technical Seminar, Organized by Fluid Power Society of India Bangalore, (2021)
27. **H. S. Patil**, S. N. Soman Metal-Cored Wire - A Viable Option for Robotic Welding, International Conference on Advances in Mechanical Engineering (ICAME-2008) SVNIT, Surat, (2008)
28. **H.S. Patil**, Suresh Vaghasiya, Development of Automated Welding Fixture for Gapless Tube to Tube sheet Joints, National Conference, Mechanical Department, SVNIT, Surat, (2007)
29. **H.S. Patil**, Suresh Vaghasiya, Nilesh Seth, Development of Mathematical Model to Predict the Minimum Leak Path in Gapless Tube to Tube sheet Joints, National Conference, Department of Mechanical Engineering, SVNIT, Surat, (2007)
30. **H.S.Patil**, N.R.Sheth, B.K.Patel Generation, Simulation and Verification of CNC code for contour tool path from AutoCAD drawing, National Conference, Mechanical Department Erode Sengunthar Engineering College Thudupathi, Erode, (2006)
31. **H.S.Patil**, N.R.Sheth, B.K.Patel Advances in Materials - Intelligent Materials, National Conference, Mechanical Department, Erode Sengunthar Engineering College Thudupathi, Erode, (2006)
32. **H.S.Patil**, D.P.More, H.G.Patil, Improve Producability of New Product through Concurrent Engineering, National Conference on Advances in Mechanical Engineering, Vasavi Engineering, Hyderabad, (2005)
33. **H.S.Patil** H.G.Patil, D.P.More ,The Wheel Robot, National Conference on Advances in Mechanical Engineering ,Vasavi Engineering, Hyderabad (2005)
34. **H.S.Patil** D.P.More H.G.Patil Implementation of Tribology In Power Sector ,National Conference on Advances in Mechanical Engineering, Vasavi Engineering, Hyderabad,(2005)
35. **H.S.Patil**, H.G.Patil, P.D.Patil D.P.More, Micro Electro Mechanical System, National Conference on Emerging trends in Mechatronics, Marathwada Institute of Technology, Aurangabad,(2004)

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## **BOOKS PUBLICATIONS: 10 National/International Publications**

### **(i). Tech-Neo Publication, Pune**

1. Mechanical Vibration, (University of Mumbai), ISBN/ISSN No.:978-93-89460-37-7
2. Fundamentals of Machine Design (Gujarat Technological University), ISBN/ISSN No.:978-93-89835-92-2
3. Dynamics of Machinery, (Gujarat Technological University), ISBN/ISSN No.:978-93-89926-42-2
4. Dynamics of Machinery, (University of Mumbai), ISBN/ISSN No.:978-93-90376-68-1
5. Dynamics of Machinery (Gujarat Technological University), ISBN/ISSN No.:978-93-90904-93-8
6. Design of Machine Elements (Gujarat Technological University), ISBN/ISSN No.:978-93-90904-90-7
7. Machine Design – I (Dr. BAT University), Under Process

### **(ii). Nirali Prakashan, Pune**

1. Machine Design & Industrial Drafting, (Gujarat Technological University), ISBN/ISSN No.:978-93-89460-37-7

### **(iii). LAMBERT Academic Publishing,**

1. Welds Characterization of Al Alloys 6xxx-7xxx for FSW and TIG Welding ISBN/ISSN No.:978-613-4-97393-9
2. Design and Structural Analysis of Multi-Speed Helical Gear Box, ISBN/ISSN No.:978-613-8-33413-2

### **Peer Reviewed Books:**

1. Engineering Thermodynamics, P K Nag, McGraw Hill Publications ISBN-13: 978-1259062568
2. Friction Stir Welding and Processing, Rajiv Mishra, Partha Sarathi De, Nilesh Kumar, Springer International Publishing, eBook ISBN:978-3-319-07043-8

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## **STTP/Workshops/Seminars/Conference Organized:**

1. FDP organised on “Metallurgical Testing and Failure Analysis of Metals”; 13<sup>th</sup> – 17<sup>th</sup> September 2021, Sponsored by ATAL Academy, Bhopal
2. STTP Organised on “Pressure vessel Design, Drafting and Analysis with ASME BPVC Sec VIII, Div 1 & 2”; April 30<sup>th</sup> - May 4<sup>th</sup>, 2018, Sponsored by Council on Science & Technology, DST Gandhinagar
3. STTP Organised on “Modelling & Simulation of Mechanical Systems Using SolidWorks”; 19<sup>th</sup> – 23<sup>rd</sup> December 2016, Sponsored by Council on Science & Technology, DST Gandhinagar and Khodiyar CAD Pvt. Ltd., Ahmedabad
4. One day workshop Organised on “Start-Up & Innovation Protothon”; 24<sup>th</sup> November 2017, Sponsored by Gujarat Council on Science & Technology, DST Gandhinagar & Gujarat Informatics Ltd., Ahmedabad
5. Workshop Organised on “Energy Conservation Awareness”; 21<sup>st</sup> July 2017, Sponsored by Gujarat Energy Development Agency, Gandhinagar
6. Seminar Organised on “Fundamentals of Tribology” 4<sup>th</sup> October 2013 Sponsored by Gujarat Technological University, Ahmedabad

## **STTP/Workshops/Seminars/Conference Attended:**

1. Online Course on “Examination Reforms” organised and Sponsored by ALL INDIA COUNCIL FOR TECHNICAL EDUCATION, 29<sup>th</sup> April -2<sup>nd</sup> May 2020
2. Online FDP on "Additive Manufacturing" organised by Vasireddy Venkatadri Institute of Technology and Sponsored by ATAL 21<sup>st</sup>-25<sup>th</sup> September 2020
3. Tribology in Design and Manufacturing, organised by MED, Indian Institute of Technology Jammu and sponsored by ATAL, 23<sup>rd</sup> -27<sup>th</sup> November 2020
4. Control Systems & Sensors, Technology organised by EED, Government Engineering College Thrissur and Sponsored by ATAL, 4<sup>th</sup> -8<sup>th</sup> January 2020
5. Metallurgical Failures organised by Metallurgical Engineering Department; Indian Institute of Technology (BHU), Varanasi and Sponsored by QIP and CEP, 18<sup>th</sup> -23<sup>rd</sup> February 2019
6. Analysis of Modern Manufacturing Processes, organised by MED, IIT Bombay, and Sponsored by QIP, 20<sup>th</sup> -24<sup>th</sup> February 2012
7. Bearing Maintenance Technology, organised Anchor Cell with S. K. F. Bearing, S.V.N.I.T SURAT, and sponsored by QIP, 13<sup>th</sup> -17<sup>th</sup> December 2011
8. Modern Design Practices in Mechanical Engineering organised by MED, Institute of Technology, Nirma University, Ahmedabad, and sponsored by AICTE 22<sup>nd</sup> Nov– 3<sup>rd</sup> Dec 2004
9. Machine Design Practices organised by MED, IIT Delhi and Sponsored by AICTE, 16<sup>th</sup>–28<sup>th</sup> June 2003
10. Emerging Trend in Mathematical Modelling for Engineering Research, organised by ASHD Vadodara Institute of Engineering Kotambi and Sponsored by Gujarat Council on Science & Technology, DST Gandhinagar, 7<sup>th</sup> January 2012,



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## **Membership of Professional Bodies:**

1. Ex. Member, Research & Recognition Committee in Mechanical Engineering under the Faculty of Engineering & Technology, North Maharashtra University, Jalgaon (Maharashtra)
2. Member, Institution of Engineers (India)
3. Member, Indian society of Technical Education (India)
4. Ex. Member, Board of Studies in Mechanical Engineering, Veer Narmad South Gujarat University, Surat

## **Editorship of Journals and Editorial Boards:**

1. Editorial Committee Member, Journal Fratturaed Integrità Strutturale (Fracture and Structural Integrity) ISSN 1971-8993
2. Editorial Committee Member, Current Mechanics and Advanced Materials
3. Advisory Board Members Cambridge Scholars Publishing (Physical Sciences-Mechanical Engineering)
4. Editorial Committee Member, SCIREA Journal of Materials -Science Research Association
5. Editorial Committee Member, SCIREA Journal of Mechanical Engineering, Science Research Association - a global academic organization
6. Editorial Committee Member, International Journal of Research and Scientific Innovation (IJRSI) ISSN No. 2321-2705
7. Editorial Committee Member, International Scientific Research Organizations Journal,
8. Editorial Committee Member, American Journal of Materials Engineering and Technology ISSN:2333-8911
9. Editorial Committee Member International Journal of Mechanical Engineering ISSN: 2277-7059
10. Technical Program Committee Member 2nd International Conference on Mechanical Design, Manufacture and Automation Engineering (MDMAE2018) June 24-25, 2018 in Xi'an, China, <http://www.mdmae2018.org/>
11. Technical Program Committee Member The Second International Conference on New Material and Chemical Industry (NMCI2017) will be held in Sanya, China during November 18-20, 2017, - <http://www.icnmci.or>
12. Technical Program Committee Member International Conference on Mechanical, Electric and Industrial Engineering; --- Hangzhou, China, May 12-14, 2018; <http://www.icmeie.com/Committee.aspx>

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## **Reviewer of Journal/Conferences:**

1. ELSEVIER- Material Characterisation, Netherland
2. ELSEVIER- Vacuum, Netherland
3. ELSEVIER- Solar Energy , Netherland
4. Taylor and Francis - Journal of Adhesion Science and Technology, UK
5. Transactions of the Canadian Society for Mechanical Engineering, Canadian
6. Iranian Journal of Materials Science and Engineering, Iran
7. Frattura ed Integrità Strutturale (Fractureand Structural Integrity), Italy
8. Journal of Advanced Design and Manufacturing Technology (ADMT), Iran
9. American Association for Science and Technology (AASCIT), USA
10. International Conference on Advancements in Design and Tribology NIT Surat
11. A National Conference on Progress, Research and Innovation in Mechanical Engineering SCET Surat

## **Engineering Consultation:**

- Consultation for NARAN LALA PVT. LTD. Navsari on Pre-fabricated steel structure design as per ISB00 in STAAD PRO dated 29/08/2021(Rs.50, 000).

## **Revenue Generated through Value added Coursers**

1. Train the under graduating engineering youth in design skills through course on 'Value Adding Course on Solidworks Training', 5<sup>th</sup>-17<sup>th</sup> December 2016 and generated revenue of Rs.1,00,000/-
2. Train the under graduating engineering youth in design skills through course on 'Value Adding Course on Solidworks Training', 28<sup>th</sup> December 2017 to 12<sup>th</sup> January 2018 and generated revenue of Rs.1,00,000/-
3. Train the unemployed youth in Engineering skills through course on "CNC Operator-Vertical Machining Centre" through PMKVY, January 2018 to June 2018 and generated revenue of Rs.3,00,000/-
4. Train the unemployed youth in Engineering skills through course on "CNC Programmer" through PMKVY, January 2019 to July 2019 and generated revenue of Rs.4,78,125/-

## **Prof. Dr. HIRALAL S. PATIL**

Professor and Head in Mechanical Department,  
GIDC Degree Engineering College, Abrama, Navsari (Gujarat)