Curriculum Vitae

Dr. Hemant Jayantilal Nagarsheth (B.E., M.Tech, Ph.D.) Professor, Mechanical Engineering Department, Sardar Vallabhbhai National Institute of Technology (SV NIT), Surat, Gujarat – 395007, India. E-mails: hemantnagarsheth@gmail.com, hjn@med.svnit.ac.in DoB: 24-02-1956. Contact no.: +91 9824117447



Educational Qualifications

Degree	Year	Institute / University
Ph.D. (Mechanical Engineering)	2006	SVNIT, Surat
M. Tech. (Mechanical Engineering)	1987	SVNIT, Surat
B. E. (Mechanical Engineering)	1978	Bombay University

Experience

Total experience:45 yearsIndustrial experience:5 yearsAcademic experience:40 years and ongoingAdministrative
experience8 years
*(5 years : Dean (Faculty Welfare), 3 years: Head of the
Department – Mechanical and I/C Director, I/C Registrar)

Details of experience

Organization		Location	Post held/ Functioning	Nature Of Work
1.	New Standard Engineering	Goregaon, Mumbai	Sales Executive	Sales of Printing Machineries Shot Blasting & Shot Peening Machines Export and Import of Items.
2.	Crompton Greaves Ltd.	Kanjur Marg, Mumbai	Maintenance Engineer	Maintenance of large motors, Stators and Rotors, Winding Machines, Pumps, Compressors, Fork Lifts, EOT's, Electrostatic Spray Painting Plant, Boring Machines, Special Purpose Machines etc.
3.	Premier Automobiles Ltd.	Kurla, Mumbai	Design Engineer	Design and Development of Gear Shifting Arrangement for 118 NE car.
4.	Himson Textile Engg. Ltd	Surat, Gujarat	Sales Executive	Sales of Spares for Texturising Crimping and Twisting Machines along with maintenance.
5.	Govt. Engg. College	Majura Gate, Surat, Gujarat	Lecturer	Teaching
6.	SVR CET (now SVNIT)	Ichchhanath, Surat, Gujarat.	Asst. Professor	Teaching and Research
7.	SVNIT	Ichchhanath, Surat, Gujarat.	Asso. Professor	Teaching and Research
8.	SVNIT	Ichchhanath, Surat, Gujarat.	Professor	Teaching and Research

Academic & Administrative Positions Held:

- 1. **I/C Director**, Sardar Vallabhbhai National Institute of Technology (SVNIT) Tenure: 12 times with a total period of 43 days officially.
- 2. **I/C Registrar**, Sardar Vallabhbhai National Institute of Technology (SVNIT) Tenure: 20 times with total period of 2 months officially.
- DEAN (Faculty Welfare) SVNIT
 Tenure 1st: 2011 2014 (3 years 20 days)
 Tenure 2nd: 2017 2019 (1 year 9 months)
- Head of the Department (Mechanical Engineering)
 Tenure: 2014 2017 (3 years)
- 5. **I/C HOD** 4 months (1/2008 to 5/2008)
- 6. Professor, Mechanical Engineering SVNIT
 Tenure: From 2006 Till Date (14 years till date and ongoing)

Institute & Departmental Positions Held:

- 1. Chairman, Recruitment Committee (Asst. Prof., Asso. Prof., Prof.)
- 2. Chairman, Unnat Bharat Abhiyan (UBA)
- 3. Chairman, Medical Advisory Committee, SVNIT (2011 2019)
- 4. Chairman, Scrutiny Committee (Teaching posts)
- 5. Chairman, Institute level Cadre wise seniority list Committee
- 6. Chairman, Recruitment Committee (Teaching Assistants)
- 7. Co-ordinator, Examinations (SVNIT as well as during REC period) (6 years)
- 8. PG In charge (Mechanical Engineering Department)
- 9. Section In charge Design and Dynamics
- 10. Laboratory In charge Robotics lab, ICAE lab.
- 11. Carried out Accreditation thrice, Academic Audit, Exam co-ordinator, CAD lab development, Automobile lab development.

Areas of interest:

Automobile Engineering

- Developed Exhaust Based Car Air- Conditioning System
- Production and Application of biogas to Automobiles and have successfully run a Maruti 800 cc car on bio gas.

Robotics and Bio-Mechanics

- Developed Anthropomorphic Upper Limb for Work Physiology Application with Govt. Medical College Surat.
- Developed Low- Cost Upper Limb (Wrist, Elbow and Shoulder) as retrofit to the physically Impaired
- Developed Software that can Design Tailor made Knee Implants (accepted by a practising Doctor in Vadodara)
- Presently Working on TSF (Tailor Spatial Frame) with application to Ilizarov Technique for Bone Fracture and filed a patent.

Publications: (See <u>Annexure I</u>)

- Journal Publications: 14
- Conference Publications: 32
- Book Chapters: 3

Memberships:

- ISTE-Indian Society For Technical Education
- IBA- Indian Biogas Association

Consultancy & Projects:

Consultancy:

- Shriram Paper Mills (Kadodra, Gujarat) Increasing the capacity of paper roll holder and improving its braking Capacity
- Gujarat Samachar Newspaper Surat Redesigning Paper Folding Mechanism

- Alidara Textiles Manufacturers
 Redesigning Gearbox for Twisting Machines
- SUDA (Surat Urban Development Agency)
 Waste Handling Equipments Inspection Design and Testing
- Daman Underground Sewerage Project
 Third Party Inspection & Monitoring
- Sewage Treament Plant Bhatar Third Party Inspection & Monitoring

Projects:

- Title: Development of all season Biogas Digester
 Funding agency: SVNIT, Investigator: Dr. H. J. Nagarsheth.
 Outcome: 1 PhD thesis completed, 1- Patent filled (at advance stage of grant), 1

 international journal paper and 2 international conference papers. They are listed below:
 - (i) Name of Inventors: Rishi Pareek, Hemant J. Nagarsheth, Topic: The Unique Process for Efficient Biogas Production in All Season at IPR Head Office, Mumabi; Docket No. 23466, Application No. 4209/MUM/2015
 - (ii) Rishi Pareek, Hemant J. Nagarsheth, "Parametric Comparison and Performance Evaluation of FRP and HDPE type Biogas Digesters", Journal of Clean Energy Technologies; Vol. 4, No. 5; - ISSN: 1793-821X, 2015.
 - (iii) "Biogas Technology: A case study on status, prospects and constraints", International Conference on Industrial Engineering (ICIE-2013) on 22-23 November, SVNIT Surat, Gujarat, 2013.
 - (iv) "Experimental Study on C.I. Engine using Raw Biogas", International Conference on Alternative Fuels for I. C. Engines (ICAFICE) on 6-8 February; MNIT, Jaipur, Rajasthan, 2013.
- Title: Development of Solar Powered Electrical Vehicles
 Funding agency: SEERS, Amount: 2.50 lacs,
 Investigators: Dr. Salim Channiwala & Dr. H. J. Nagarsheth.
 *First attempt in the institute to develop solar powered electric vehicle.
- 3. **Title:** Centre for Robotics & Artifical Intelligence **Funding agency:** AICTE, **Amount:** 10 lacs,

Investigators: Dr. Salim Channiwala & Dr. H. J. Nagarsheth. *Robotics lab developed under COE Outcome: Utilized by P.G. and PhD as well as project students.

- Title: Development of Robotic Arm Funding agency: SVNIT, Investigator: Dr. H. J. Nagarsheth Outcome: 1 – PhD Thesis completed, several M. Tech Thesis completed, 4- papers published.
 - Anil Gillawat, H. J. Nagarsheth, "Development & Control of Human Upper Limb 10 DOF R-Type Kinematic Model Using Matrix Approach", Journal of Physics 1240, 012025-1 to 012025-10, 2019.
 - (ii) Anil Kumar Gillawat, Hemant J. Nagarsheth, Mansi Nagarsheth, and H.D. Desai, "Development of RRR Type Anthropomorphic Shoulder Joint Model and its Dynamics", Lecture Notes in Engineering and Computer Science: Proceedings of The World Congress on Engineering 2012, WCE 2012, 4-6 July, 2012, London, U.K., Vol. 2199, Issue 1, pp. 1692-1696. ISSN: 20780958.
 - Savsani Poonam, Hemant Nagarsheth, "Trajectory Planning of 3R Robotic Arm Using Genetic Algorithm (GA) And Artificial Bee Colony (ABC) Optimization Methods", ASME 2010 Early Career Technical Journal, Vol. 9, pp. 138-145.
 - (iv) Anil K. Gillawat & Hemant J. Nagarsheth, "Human Upper Limb Joint Torque Minimization Using Genetic Algorithm", In: Kumar H., Jain P.K. (Ed.) Recent Advances in Mechanical Engineering, part of Lecture Notes in Mechanical Engineering, pp. 57-70, 2020.
- Title: Adoption of Village for Serving Clean Biogas for Cooking and Electrification Funding agency: Unnat Bharat Abhiyan (UBA), Principal Investigator: Dr. H. J. Nagarsheth. (Ongoing in the institute).
- Title: Development of human upper limb
 Funding: ICMR Investigators: Dr. Mansi Patel, Dr. Dharitri Parmar of Government Medical College (GMC), Surat.

*This project was supported by myself and has been acknowledged.

Outcome:

(i) Dharitri Parmar, Mansi Patel, **Hemant Nagarsheth**, "Modelling Of Artificial Human Upper Limb", National Journal of Physiology, Pharmacy

and Pharmacology, Vol.3, Issue No. 1, pp. 21-26, 2013. doi: 10.5455/njppp.2013.3.21-26. (Citation: 3)

- (ii) Dr. Hemant J. Nagarsheth, Poonam V. Savsani, and Dr. Mansi A. Patel, "Modeling and Dynamics of Human Arm", 4th IEEE International Conference on Automation Science and Engineering, Washington DC, USA, August 23-26, 2008, pp. 924-928. (Citation: 16)
- (iii) H. J. Nagarsheth, S. V. Surve and M. A. Patel, "Computer Simulation of Dynamics of Human Leg", in Proceedings of the 3rd Annual IEEE Conference on Automation Science and Engineering, 2007, pp. 249-254. (Citation: 4)

PhD Supervised (4 - Soul Supervisor, 1 – Co-Supervisor)

- Manan Desai (D06ME005), "Evolution of an Inventive Configuration and Vertical Dynamical Investigations of a Concept Hybrid Car ADRENe", SVNIT, Surat, 2013 (Co-Supervision).
- 2. Rishi Pareek (DS12ME), "Development and Analysis of Small Biogas Digester for Efficient Production", SVNIT, Surat, 2017 (Single Supervision).
- **3.** Divyang Shah (D10ME001), "Enhancing Potential of Biogas for its Application as a Fuel for Internal Combustion Engines", SVNIT, Surat, 2018 (Single Supervision).
- **4.** Dipak Gosai (D11ME002), "Perfromance Evaluation of Twin Cylinder Four Stroke Diesel Engine Under Adiabatic Condition with Thermal Barrier Coatings", SVNIT, Surat, 2018 (Single Supervision).
- **5.** Anil Gilawat (D11ME017), "Mathematical Modelling, Analysis and Optimisation of Human Upper Limb Extremities", SVNIT, Surat, 2020 (Single Supervision).

M. Tech and B. Tech Supervised:

Total: 34 M. Tech Thesis supervised, 25 U.G. Projects supervised and ongoing till date.

Publications (Annexure I)

Patents:

Sr. no.	Title of the Patent	Inventors	Application number	Year	Status
1.	The unique process for efficient production of Biogas in all seasons	Rishi Pareek(Student) Dr. H. J. Nagarsheth	4209/MUM/2015	2015	Under advance examination stage (Published in The Official Journal of the Patent Office)
2.	A novel spherical joint for TSF (Taylor Spatial Frame)	Dr. H. J. Nagarsheth Anil Mahato	201821006060	2018	Under advance examination stage (Published in The Official Journal of the Patent Office)
3.	Domestic Overhead water tank probe based water monitoring system	Shaival Nagarsheth Dr. H. J. Nagarsheth	201821008021 A	2018	Under advance examination stage (Published in The Official Journal of the Patent Office)

Journal Publications:

Sr. No.	Title
1	Anil Kumar Gillawat and Hemant Jayantilal Nagarsheth "Development & Control of Human Upper Limb 10 DOF R-Type Kinematic Model Using Matrix Approach" Journal of Physics 2019,2019 <i>J. Phys.: Conf. Ser.</i> 1240 012025 https://doi.org/10.1088/1742-596/1240/1/012025
2	Manan Desai, S.A. Channiwala and H.J. Nagarsheth , "Simulative predictions and analysis of vehicle dynamical responses", <i>Int. J. Engineering Systems Modelling and Simulation, Vol. 7, No. 3, 2015</i> 213, 2015.
3	Manan Desai, S. A. Channiwala, H. J. Nagarsheth , "Experimental and Computational Aerodynamic Investigations of a Car", WSEAS Transactions on Fluid Mechanics, Issue 4, Volume 3, October 2008, pp. 359-368.
4	Manan Desai, S.A. Channiwala. and H.J.Nagarsheth "A Comparative Assessment of Two Experimental Methods for Aerodynamic Performance Evaluation of a Car", Journal of Scientific and Industrial Research, Vol-67, July 2008, pp.518-522
5	Shaival H. Nagarsheth, Utpal Pandya, Hemant J. Nagarsheth , "Control Analysis Tuning Methods for a Designed, Developed and Modeled Cross Flow Water Tube Heat Exchanger",

 World Academy of Science, Engineering and Technology International Journal of Mechanical, Aerospace, Industrial and Mechatronics Engineering Vol.8 No:12, 2014. D.C.Gosai and H.J.Nagarsheth, "A comparative study on Low Heat Rejection Engine using two different TBC Materials", Research Journal of Recent Sciences, Vol.5(ISC-2015), 60- 70(2016), E-ISSN 2277-2502 Shah Divyang, Nagarsheth Hemant J. and Acharya Pradeep, "Purification of Biogas using Chemical Scrubbing and Application of urified Biogas as Fuel for Autootive Engines", Research Journal of Recent Sciences, Vol.5(ISC-2015), 1-7 (2016), E-ISSN 2277-2502 Rishi Pareek and Hemant J. Nagarsheth, "Preparation Parametric Comparison and Performance Evalution of FRP and HDPE Type Biogas Digesters", Journal of Clean Energy Technologies, Vol.4,No.5, September 2016. D.C.Gosai and Dr. H.J.Nagarsheth, "Exhaust Emission Evaluation of Copper Coated Diesel Engine," International Journal of Science, Technology and Management, Volume no.04, Special Issue No.01, march 2015, ISSN(online): 2394-1537. Dharitri Parmar, Mansi Nagarsheth, Hemant Nagarsheth, "Modelling Of Artificial Human Upper Limb", National Journal of Physiology, Pharmacy and Pharmacology, Vol.3, Issue No. 1, pp. 21-26, 2013. doi: 10.5455/njppp.2013.3.21-26 Manan Desai, Salim Channiwala, Hemant Nagarsheth, "Vertical Dynamical Response Evaluations For A Vehicle Travelling Over A Bump", International Journal on Mechanical & Automobile Engineering, Volume 21, Issue No. 01, 2012, pp. 52-58. Chirag Trivedi, Hemant Nagarsheth, "Recent Developments and Advances in Automobile Space Conditioning Technology: A Review", International Journal of Recent Trends in Engineering, Vol. 1, No. 5, May 2009, pp. 132-136. Savsani Poonam, Dr. Hemant Nagarsheth, "Trajectory Planning of 3R Robotic Arm Using Genetic Algorithm(GA) and Artificial Bee Colony (ABC) Optimization Methods", ASME Early Carcer Technical Journal, 2010 ASME Early Carcer Technical Confer		
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Conference Publications:

Sr. no.	Title
1	D.C. Gosai and Dr. H. J. Nagarsheth, "Experimental Study of effects on Combustion,
	Performance and Emission Characteristics of Computerized Twin cylinder LHRE coated with
	MgZrO ₃ Y," International Conference on Electrical, Electronics, and Optimization Techniques
	(ICEEOT)-2016.

- 2 D.C.Gosai and Dr. H. J. Nagarsheth, "Diesel Engine Cycle Analysis of Two Different TBC combustion Chamber" 3rd International Conference on Innovation in Automation and Mechatronics Engineering 2016, Procedia Technology 23(2016) 504 -512, Science Direct.
- 3 Anilkumar Gillawat, Hemant J. Nagarsheth, Mansi H.Nagarsheth, Nirmal Kumar Kushwaha, "Kinematics and Dynamics of Four R-Type joint Anthropomorphic Finger," XXV Congress of the International Society of Biomechanics, Scottish Exhibition and Conference Centre (SECC), 12th-16th July,2015, PO0230.
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Book Chapters:

Sr. No.	Title
1	Chirag Trivedi & Hemant J. Nagarsheth , "Mathematical Modeling of Scroll Compressor Used in Automobile Space Conditioning", In: Mahadevan V. (Ed.) Mechanical and Electronics Engineering, pp. 309-312, 2010
2	Anil K. Gillawat & Hemant J. Nagarsheth , "Human Upper Limb Joint Torque Minimization Using Genetic Algorithm", In: Kumar H., Jain P.K. (Ed.) Recent Advances in Mechanical Engineering, part of Lecture Notes in Mechanical Engineering, pp. 57-70, 2020.
3	Anil Kumar Gillawat, Hemant J. Nagarsheth , Mansi Nagarsheth, and H.D. Desai, "Development of RRR Type Anthropomorphic Shoulder Joint Model and its Dynamics", In: Ao. S. I. <i>et al.</i> (Ed.) Lecture Notes in Engineering and Computer Science: Proceedings of The World Congress on Engineering 2012, WCE 2012, 4-6 July, 2012, London, U.K., pp. 1692- 1696.

Outreach Activities:

Sr. no.	Activity	Organization
1	Member, Board of Studies	The Maharaja Sayajirao University (MSU) Baroda
2	Member, Board of Studies	Faculty of Agricultural engineering and Technology, Sardarkrushinagar, Dantiwada, Agricultural University.
3	Member, Board of Studies	Bhagwan Mahavir College of Engineering & Technology
4	Member of Interview Board for Faculty recruitment	NIT Warangal
5	Member of Interview Board for Principal/Director recruitment	Bhagwan Mahavir Polytechnic
6	Member of Interview Board for Principal/Director recruitment	Mahavir Swami College of Polytechnic
7	Member of Interview Board for Principal/Director recruitment	Mahavir Swami College of Engineering and Technology
8	Member of Interview Board for Assistant Professor	Mahavir Swami College of Engineering and Technology in Automobile branch
9	Member of Interview Board for Head of Department	Bhagwan Mahavir Polytechnic in Mechanical branch
10	Selection Committee member for Asst. Prof.	Shri S'ad Vidya Mandal, Bharuch
11	Selection Committee member for Professor/Associate Professor/ assistant Professor	Shri S'ad Vidya Mandal, Bharuch
12	Selection Committee member for Principal	Shri S'ad Vidya Mandal, Bharuch
13	Selection Committee member for Asst. Prof.	Shri S'ad Vidya Mandal, Bharuch
14	Invited Talk Delivered	Rotary Club of Surat Topic: Future of Robotics in Everyday Life

15	PhD thesis External Examiner	NIT Warangal (PhD thesis of Rama Krishna Varsi of
		DRDO)
16	PhD thesis External Examiner	NIT Warangal (PhD thesis of Pavishankar Hota)
		(FID thesis of Ravisnankar Hota)
17	PhD thesis External Examiner	Chhattisgarh Swami Vivekanand Technical University Bhilai Newai Durg
		Chhattisgarh
18	PhD thesis External Examiner	GITAM Institute of Management and
		(Student Name: Gautam Edara)
19	PhD thesis External Examiner	GITAM Institute of Management and
		(Student Name: P. Naveen)
20	PhD External Examinar as DPC member	Guiarat Technological University
20	T IID External Examiner as DI C member	Student : Ragadia Sadiq Yaqub
21	PhD External Examiner as DPC member	Gujarat Technological University, Student : Mahida HiranKumar P
		Student : Manua IntenKuniai K.
22	Session Chair	International Conference on Industrial Engineering (ICIE 2011), SVNIT
23	Reviewer Committee member	International Conference on Recent Innovations & Technological Development
		in Mechanical Engineering (ICRITDME- 2019)
24	As Reviewer	ICRADM2020: 1st International Conference on Resent Advancements in
		Design and Manufacturing,
2 5	As Reviewer	Tribology in Industry (Journal of the Serbian Tribology Society)

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