

Curriculum Vitae

Name: VENKATA NAGA LAKSHMI DURGA

Address for Correspondence: C/o Ratnakar Das
Assistant Professor
Department of
Manufacturing
Engineering National Institute of
Foundry and Forge Technology,
Hatia, Ranchi-834003

E-Mail: lakshmiratan2311@gmail.com

Contact No: 7008852181/ 8763760530

Academic Qualifications:

Sl No	Qualification	Institute	Year of passing	Branch/specialization	% of marks/CGPA
1	Ph.D	NIT Durgapur	2019	Mechanical Engineering	Awarded
2	M. Tech	IIT Guwahati	2008	Fluid & Thermal Engineering	8.53/10
3	B. Tech	JNTU, A.P	2002	Mechanical Engineering	72.64%
4	12 th	APIEB, AP	1998	Math, Physics, Chemistry	81.5%
5	10 th	APSEB, A.P	1996		88.5%

Teaching / Research Experience

Designation	Organization	Duration
Assistant Professor	Sarala Birla University, Ranchi	01-12-2021-till date
Assistant Professor	Usha Martin University, Ranchi	06-01-2020- 26-11-2021
Associate Project Engineer	IIT Guwahati	12-07-2018 to 08-10-18
Senior Research Fellow	IIT Guwahati	15-05-2017 to 07-03-2018

Assistant Professor	C.V. Raman College of Engineering, Bhubaneswar	8-2-2012 to 6-5-2017
Assistant Professor	GIET, Bhubaneswar	20-7-2011 to 7-2-2012
Senior Lecturer	EATM, Bhubaneswar	5-9-2009 to 29-05-2011
Lecturer	IACR, Rayagada	12-09-2002 to 18-6-2006.

Academic Projects:

M. Tech Thesis: “STUDIES ON METAL HYDRIDE TOPPED LITHIUM BROMIDE WATER HYBRID SYSTEM FOR SIMULTANEOUS HEATING AND COOLING APPLICATION”

Two stage metal hydride sorption heat pump system as topping cycle and a single effect lithium bromide water system as a bottom cycle analysis was studied to produce continuous cold generation. It was observed that from the study the metal hydride heat pump system helps to enhance the COP of the conventional system and maximum COP achieved by the system lies 1.65-2.

Ph.D. thesis work: “DEVELOPMENT AND TESTING OF SOLAR DRYERS INTEGRATED WITH THERMAL ENERGY STORAGE FOR DRYING OF MEDICINAL HERBS AND HIGH VALUE AGRICULTURAL PRODUCTS”

Shell and tube heat exchanger with latent heat energy storage (PCM) systems are developed for solar drying applications. Drying kinetic analysis of high value medicinal herbs is evaluated in the developed solar dryer. Performance analysis of mixed mode and indirect forced convection solar dryers studied in terms of drying efficiency, pick up efficiency and quality of the products.

Publications:

1. Juri Sonowal, B.Kiran Naik, **DVN. Lakshmi**, P. Muthukumar, R. Anandalakshmi, Evolution of solar driven desiccant systems for energy-efficient air conditioning: A review, Solar Compass, Volume 14, June 2025, 100115, <https://doi.org/10.1016/j.solcom.2025.100115>
2. Harsh Vardhan, Chandra Bhusan and **V.N. Lakshmi Durga**, Analysis of Physical and Chemical Ignition Delay with Di-tert Butyl Peroxide in Diesel Engine using Hydrogen as Gaseous Fuel, J. Environ. Nanotechnol., Volume 13, No 4 (2024) pp. 272-280, <https://doi.org/10.13074/jent.2024.12.243914> (SCOPUS).
3. Harsh Vardhan, Chandra Bhusan and **V.N. Lakshmi Durga**, Effect of Di Tert Butyl Peroxide on Performance and Emissions and Vibration Characteristics of Diesel Fuel with HHO Gas as Secondary Fuel. Volume 99, 20 January 2025, Pages 769-784, International Journal of Hydrogen Energy, Print ISSN: 0360-3199, <https://doi.org/10.1016/j.ijhydene.2024.12.130>. (**Q1, SCI and SCOPUS, IF 8.1**),2025.
4. Monal Bharty, Atul K. Srivastava, Hrishikesh Mahato and V. N. Lakshmi Durga, Maxwell–Cattaneo double-diffusive convection of Kuvshinski viscoelastic nanofluid in a Brinkman–Darcy porous medium, Zeitschrift für Naturforschung A Journal of Physical Sciences,ISSN: 1865-7109, <https://doi.org/10.1515/zna-2024-0145>. (Scopus).
5. Deepanka Saikia, Prakash Kumar Nayak, Kesavan Radha Krishnan, Rajesh Kondareddy, **Durga Venkata Naga Lakshmi**, Experimental investigation of modified indirect solar dryer with integrated thermal storage material for drying of dhekia (*Diplazium esculentum*) fern, **Environmental Science and Pollution Research**, <https://doi.org/10.1007/s11356-023-25310-3>, Electronic ISSN 1614-7499 (**Q1, SCI and SCOPUS, IF 5.19**) 19 Jan 2023.
6. P Muthukumar, **DVN Lakshmi**, Puja Koch, Mukesh Gupta, G Srinivasan, Effect of drying air temperature on the drying characteristics and quality aspects of black ginger, **Journal of Stored Products Research**, <https://doi.org/10.1016/j.jspr.2022.101966>, Volume 97, May 2022, 101966 (**Q2, SCI and IF 2.83**). ISSN: 0022-474X
7. Deepanka Saikia, Prakash Kumar Nayak, K Radha Krishnan, Rajesh Kondareddy, **DVN Lakshmi**, Development of indirect type solar dryer and experiments for

- estimation of drying parameters of dhekia (*Diplazium esculentum*), **Materials Today Proceedings, Volume 56, Part 2, 2022, Pages 774-780 (Scopus). ISSN:0022-474X. <https://doi.org/10.1016/j.matpr.2022.02.255>**
8. **D.V.N. Lakshmi, P. Muthukumar, P.K.Na yak**, Experimental investigations on active solar dryers integrated with thermal energy storage for drying of black pepper, **Renewable Energy, Volume 167, April 2021,728-739, (Q1,Scopus and SCI. Impact factor 8.7). ISSN: 0960-1481. <https://doi.org/10.1016/j.renene.2020.11.144>**
 9. **D.V.N. Lakshmi, P. Muthukumar, J.P. Ekka ,Apurba Layek , P.K.Nayak**, Performance comparison of mixed mode and indirect mode parallel flow forced convection solar dries for drying of Curcuma Zedoaria, **Journal of Food process Engineering, June 2019,Volume 42, Issue 4, <https://doi.org/10.1111/jfpe.130454>. (Q2, Scopus and SCI. Impact factor 2.356). Print ISSN:0145-8876**
 10. **D.V.N. Lakshmi, , P. Muthukumar , Apurba Layek , P.K.Nayak**, Performance analysis of mixed mode forced convection solar dryer for drying of stevia leaves, **Solar Energy, Volume 188, August 2019, Pages 507-518. (Q1, Scopus and SCI. Impact factor 7.18) ISSN: 0038-092X. <https://doi.org/10.1016/j.solener.2019.06.009>**
 11. **D.V.N. Lakshmi, , P. Muthukumar , Apurba Layek , P.K.Nayak**, Drying kinetics and quality analysis of black turmeric (*Curcuma caesia*) drying in a mixed mode forced convection solar dryer integrated with thermal energy storage, **Renewable Energy, Volume 120, 10 May 2018, Pages 23-34. (Q1,Scopus and SCI. Impact factor 8.0). ISSN: 0960-1481. <https://doi.org/10.1016/j.renene.2017.12.053>.**
 12. **D.V.N. Lakshmi, P. Muthukumar, Apurba Layek**, Performance analysis of Trapezoidal corrugated solar air heater with sensible heat storage material, **Energy Procedia, Vol 109, March 2017, pp 463-470. (Scopus) ISSN: 1876-6102. <https://doi.org/10.1016/j.egypro.2017.03.069>**
 13. **P. Muthu Kumar, D.V.N. Lakshmi**, Nucleation Enhancement Studies on Aqueous Salt Solution, **Energy Procedia, Vol 109, March 2017, pp 174-180. (Scopus) ISSN: 1876-6102. <https://doi.org/10.1016/j.egypro.2017.03.089>**
 14. **D.V.N.Lakshmi, S.S.Mohapatra, H.C.Das**, An Experimental Study on Natural Convection Biomass Dryer with Different Sensible Heat Storage Materials, **Applied Mechanics and Materials 2016, ISSN: 1662-7482, Vol. 852, pp 707-711,**

doi:10.4028/www.scientific.net/AMM.852.707.

15. **D.V.N.Lakshmi**, S.S.Mohapatra, A.Satheesh, H.Das, Design and development of V grooved natural convection solar air heater for Odisha, Applied Mechanics and Materials, Vols-813-814 (2015) pp-668-673.
16. P.Mishra, **D.V.N.Lakshmi**, D.K.Sahu, Development of a Novel Process to Produce Bio-diesel and its Use as Fuel in CI Engine Performance Study and Exhaust Analysis, **IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE), Volume 11, Issue 4 Ver. IV (Jul- Aug. 2014), PP 39-44 ,e-ISSN: 2278-1684,p-ISSN: 2320-334X.**
17. Ratnakar Das, Aninidata Sharma,**D.V.N.Lakshmi**,A.Sood, “A Finite Element Analysis on the Effect of Location of holes, Die pockets and Extrusion Speed in Multi-hole Extrusion Process”, Procedia Engineering 97 (2014) 1247 – 1253.
18. **D.V.N.Lakshmi**, Muthukumar P, Thermodynamic analysis of thermally operated cascade sorption heat pump for continuous cold generation, International Journal of Energy and Environment,2012, Volume 4, pp 161-174.

Conferences/ Symposiums:

1. Venkata Naga Lakshmi Durga, Ratnakar Das (2025), Energy and Environmental analyses of V grooved Natural Convection Solar Air Heater, Second International Conference on Innovations in Thermo-Fluid Engineering and Sciences ICITFES 2025, National Institute of Technology Rourkela, 7th -9th Feb 2025.
2. Harsh Vardhan, V.N.L. Durga, Chandra Bhusan (2024), Analysis of Physical and Chemical Ignition Delay with Di-tert Butyl Peroxide in Diesel Engine using Hydrogen as Gaseous fuel. International Conference on SUSTAINABLE RESEARCH IN ENERGY AND ENVIRONMENT (SREE-2024), Dr B R Ambedkar National Institute of Technology Jalandhar. April 5-6, 2024 (Hybrid Mode).
3. Harsh Vardhan, V.N.L. Durga, Chandra Bhusan (2024), Analysis of ignition delay period by using Arrhenius Equation for a dual fuel diesel engine using hydrogen as a secondary fuel. International Conference on Thermo-Fluids and System Design (ICTFSD 2024) April 04–05, 2024, BIT MESRA.
4. Santosh Kumar Das and Venkata Naga Lakshmi Durga (2024), Supply Chain Network Management by Fusion of IoT and Blockchain, World IoT Day Symposium in online mode.

IEEE Bhubaneswar, 9 April 2024.

5. Venkata Naga Lakshmi Durga (2024), Embracing Synergy: The Intersection of IoT and Renewable Energy for Sustainable Solutions, World IoT Day Symposium in online mode. IEEE Bhubaneswar, 9 April 2024.
6. Brojo Kishore Mishra, Venkata Naga Lakshmi Durga (2024) ,Quantum Computing: Revolutionizing Intelligence in the Smart Society Era, NATIONAL CONFERENCE Organized by - Faculty of Applied Sciences in association with IQAC, Sarala Birla University, Ranchi, Jharkhand (India) ON RECENT ADVANCES IN QUANTUM SCIENCE & TECHNOLOGY (NCRAQST -2024), 16 - 17 February, 2024, Sarala Birla University, Ranchi.
7. **Lakshmi, D.V.N.**, Palanisamy, M. (2021). Energy and Environmental Analyses of Active Solar Dryer for Medicinal Herbs Drying. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-33-4165-4_28.(Scopus). 10-12 Feb 2021.
8. Mayuresh Kulkarni, Satheesh A, **D.V.N.Lakshmi (2021)**, Computational Analysis of Horizontal type Mixed Mode Forced Convective Solar Dryer, **DOI: 10.1615/IHMTC-2021.150, pages 97-103.**
9. **D.V.N.Lakshmi**, P.Muthukumar (2019) “Design and development of mixed mode forced convection solar dryer for drying of curcuma zedoaria” International conference on thermal engineering and applications ICTEA 2019, Feb 23-26, Gandhinagar, India.
10. D.V.N.Lakshmi, P.Muthukumar and A.Layek (2018) “Evaluation of convective heat transfer coefficient of Moringa oleifera leaves in a mixed mode forced convection solar dryer” International conference on green energy for sustainable development, Oct 24-26 2018, Thailand. 10.23919/ICUE-GESD.2018.8635684.
11. D.V.N. Lakshmi, P. Muthukumar, A. Layek (2018) “Drying of Moringa oleifera leaves in mixed mode and indirect forced convection solar dryers” SEEC 2018 , Dec 31, 2017- Jan 2018, Indian Institute of Science, Bangalore

12. D.V.N.Lakshmi, P.Muthukumar and A.Layek (2017) “ Performance analysis of mixed mode forced convection solar dryer with and without thermal energy storage heat exchanger”. IOP Conference Series: Materials Science and Engineering (MSE) (Scopus Indexed), ICMRE 2017. doi:10.1088/1757- 899X/377/1/012195.
13. **D.V.N. Lakshmi**, P. Muthukumar, A. Layek, Abhimanyu Kumar Singhand Sushoban Das (2017) “Performance analysis of double pass counter flow solar air heater for drying application”, Proceedings of the *24thNational and 2ndInternational ISHMT- ASTFE Heat and Mass Transfer Conference(IHMTC-2017)*, December 27-30, 2017, BITS Pilani, Hyderabad, India. [10.1615/IHMTC-2017.410](https://doi.org/10.1615/IHMTC-2017.410).
14. J.P.Ekka, D.V.N.Lakshmi, Y.Sahoo, P.Muthukumar, (2017)” Drying characteristic of mixed mode type solar dryer using forced convection and thermal storage for ginger “Proceedings of the 24thNational and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC-2017), December 27-30, 2017, BITS Pilani, Hyderabad, India.
15. Prasheet Mishra, D.V.N.Lakshmi, D. K. Sahu. “Development of a Novel Process to produce Biodiesel and its use as fuel in CI Engine performance study” International Symposium on the Fusion Technologies 2014 (ISFT 2014) Jeonju, S.Korea 30 July – 3 August, 2014
16. **D. V.N. Lakshmi**, R. Das “Metal hydride sorption systems for automotive cooling.”1st KIIT International Symposium on Advances in Automobile Technology-2013, KIIT, BBSR.
17. S. S. Mohapatra, D.V.N.Lakshmi, P Mahanta, “Performance Evaluation of Natural Convection Dryer in Presence of Thermal Energy Storage Materials”, 4th Nirma University International Conference on Engineering (Nuicone-2013), Nirma university, Ahmedabad, Gujarat.
18. D.V.N.Lakshmi, Muthukumar P, “Thermodynamic Analysis of Metal Hydride Sorption System” IISC -Bangalore -2008.

Organization of Conference/FDP

Sl. No.	Conference/ Workshop/ Seminar	Organized by	Post/Responsibility	International/ National/ State/Local	Duration
1.	International Conference	International Conference on Emerging Trends in Renewable Energy, December 2013, C.V.Raman College of Engineering, Bhubaneswar, India	Organizing Secretary	International	DEC 27-28,2013
2	Five Day FDP	Green Technology for Sustainable Environment SARALA BIRLA UNIVERSITY, RANCHI	Organizing Secretary	National	Sept26-30, 2022.
3	Five Day STTP	Scientific Writing and Publishing	Organizing Secretary	National	31 July to 4 Aug 2023
4	National Conference on Recent Advances in Quantum Science & Technology (ncraqst - 2024)	Sarala Birla University, Ranchi	Organizing Member and Editorial Committee member	National	16 th to 17 th Feb,2024
5	Five Day FDP	Green Technology for Sustainable Environment	Convener	National	24 June-28

		(Series -II) SARALA BIRLA UNVIERSITY, RANCHI			June,2024
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Short Term Courses/ FDP Attended

Sl. No.	Course	Organizer	Duration	
			From	To
	Quantum Technologies & Applications	Electronics & ICT Academies MNIT Jaipur, NIT Patna, IIT Roorkee, IIT Guwahati, IIITDM Jabalpur, NIT Warangal	28 Feb 2025	22March 2025
	Online Refresher Course on Computational Fluid Dynamics in Engineering	UGC-MMTC-ISM Dhanbad	28 Feb 2025	11 March 2025
	Advanced Technologies and Trends in Robotics	SR University, Warangal	24 Feb 2025	28 Feb 2025
	Recent Trends in Design Softwares	MNIT Bhopal	24 Feb 2025	28 Feb 2025
	Green Hydrogen: The Future of Clean Energy	BIT Mesra	20 Jan 2025	24 Jan 2025
	Sustainable Practices in Energy and Environment Sector,	D Y Patil International University-ATAL	16 Dec,2024	21Dec,2024
	Digital Manufacture Technology	NIAMT, Hatia-ATAL	2 Dec,2024	7 Dec ,2024
	“Responsible Research & Innovation in India’s Water-Energy-Food-Health Nexus”- Series-II	The University of Edinburg & IIT Khargpur	May 27,2024	May 31, 2024
	NEP 2020 Orientation Program on Malaviya Mission Teacher Training(15Days)	Indian Institute of Technology (ISM), Dhanbad	Feb 16,2024	Feb 28,2024.
	“Responsible Research & Innovation in India’s Water-Energy-Food-Health Nexus”	The University of Edinburg & IIT Khargpur	July 31,2023	Aug 4 ,2023

	Advanced Manufacturing: Latest Trends and Techniques	Sandip University		
	Advanced Remanufacturing Technology	National Institute of Foundry and Forge Technology	SEPT 12,2022	SEPT 23,2022
	Desalination by using Green Technology	National Institute of Foundry and Forge Technology	AUG 09,2021	AUG 13,2021
	Energy and Water Efficiency in Built Environment	School of Planning and Architecture, Vijayawada (An Institution of National Importance)	JUNE 28,2021	JULY 02,2021
	Thermal Energy Storage for Building Applications	NIT Rourkela	January 25, 2021	January29, 2021
	Green Technologies For Sustainable Engineering	A D Patel Institute of Technology	SEPT 21,2020	SEPT25,2020
	Energy Efficient Green Energy Technologies	IIT Guwahati	NOV 20, 2018	NOV 30, 2018
	A Road Map for Research Paper Publication in Referred Indexed Journal	CVRCE, Bhubaneswar	DEC 5,2016	DEC 11,2016
	Energy Management and Energy Efficiency	IIT Guwahati	MAY 23 ,2016	MAY 27,2016
	Distributed Multimode Renewable Energy Systems (DMRES)	NIT Rourkela	APRIL 11,2016	APRIL 15, 2016
	Use of ICT in Teaching Learning Process	NITTR Kolkata	JUNE 01,2015	JUNE 05, 2015
	Biogas Production, Purification and Power Generation	IIT Delhi	MAY 18,2015	MAY 20,2015
	Basic and Applications of HVAC/R	CVRCE, Bhubaneswar	DEC 22,2014	DEC 27,2014
	Two Weeks ISTE workshop on Fluid Mechanics	IIT Kharagpur andNMICT	MAY 20,2014	MAY 30,2014

Research IDs

Scopus ID : 36760907900

ORCID: 0000-0002-5042-152X

Google Scholar: <https://scholar.google.co.in/citations?user=C-4fCF8AAAAJ&hl=en>

Citations	754	732
h-index	8	8

PERSONAL DETAILS

Gender: **Female**

Marital Status: **Married**

Nationality: **Indian**

Languages Known: **English, Hindi, Telugu, and Odia.**

Permanent Address: **C/o Ratnakar Das, Qtr. No. D-1/2, NIFFT Colony, NIFFT, Hatia, Ranchi-834003.**

References

1. Dr.P.Muthu Kumar

Professor

**Department of Mechanical
Engineering**

IIT Tirupati

pmkumar@iittp.ac.in

9435407780

2. Dr.Apurba Layek

Professor

**Department of Mechanical
Engineering**

NIT Durgapur

[alayek.me@ nitdgp.ac.in](mailto:alayek.me@nitdgp.ac.in)

9434788058

Place: Ranchi

(VENKATA NAGA LAKSHMI DURGA)