

Dr. J. A. RANGA BABU

Department : Mechanical Engineering
College : Gudlavalleru Engineering College
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RESIDENTIAL ADDRESS:

D.No: 19/622, Circar Thota, Machilipatnam, Andhra Pradesh -521002

ACADEMIC QUALIFICATIONS:

- ❖ PhD : Thermal Engineering at **NIT WARANGAL**, May - 2018
- ❖ M.Tech : CAD/CAM at **V R SIDDHARTHA, VJA**, June - 2010
- ❖ B.Tech : Mechanical Engineering at **KLCE, VADDESWAREM**, June - 2003
- ❖ Diploma : Mechanical Engineering at **SVL POLYTECHNIC, MTM**, June 2000.

PROFESSIONAL EXPERIENCE:

- Working as an Associate Professor in Gudlavalleru Engineering College, Gudlavalleru from 01.06.2018 to till date and ratified by JNTUK, Kakinada in February 2022.
- Worked as an Assistant Professor in Gudlavalleru Engineering College, Gudlavalleru from 31.05.2012 to 31.05.2018 and ratified by JNTUK, Kakinada in August 2012.
- Worked as Head of the Department in AANM & VVRSR Polytechnic, Gudlavalleru from 01.06.2010 to 30.05.2012.
- Worked as Sr. Lecturer in AANM & VVRSR Polytechnic, Gudlavalleru from 01.07.2008 to 31.05.2010.
- Worked as Lecturer in AANM & VVRSR Polytechnic, Gudlavalleru from 01.07.2003 to 30.06.2008.

PROJECTS GUIDED:

PhD	Post Graduation	Under Graduation
2 Scholars registered	0	12

SPECIALIZATION: Thermal Engineering

PATENTS: 02

- ❖ Design No.: 202241051257: **“HYDRO-FORMED AXLE ASSEMBLY WITH WELD LESS BRAKE FLANGE”** In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001: The Patent Office, Government of India.
- ❖ Design No.202041028546 : **“DESIGN OF NOVEL ELECTROSTATIC SPRAY MACHINE FOR KILLING LOCUST”** In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001: The Patent Office, Government of India.

PAPERS PUBLISHED IN JOURNALS:

Journals:	International :	13+3
Conferences:	National :	04
	International :	17

Journals:

- E V Ratna Kumar G, K. Senthil kumar, J. A. Ranga Babu, “Effect Of Crab Shell Ash (Csa) Reinforcement On Sliding Wear Characteristics Of Al-7075 Composites” Journal of Mechanics of Continua and Mathematical Sciences, Vol.-19, No.-5, May (2024) pp 15-24 ISSN (Print) 0973-8975 Vol. 7 No. 08 August, 2022, <https://doi.org/10.26782/jmcms.2024.05.00002>
- E V Ratna Kumar G, K. Senthil kumar, Ranga Babu J A, “Fabrication, Mechanical Characterization, and Ranking of Shell Ash Reinforced Al-7075-Based Hybrid Composites” Journal of Engineering Sciences Volume 10, Issue 2 (2023), [10.21272/jes.2023.10\(2\).c5](https://doi.org/10.21272/jes.2023.10(2).c5)

- E V Ratna Kumar G, K. Senthil kumar, J. A. Ranga Babu, “A Review On Fabrication And Mechanical Characterization Of Particulate Reinforced Al-7075 Metal Matrix Composites/ Hybrid Composites” International Journal of Mechanical Engineering, Vol. 7 No. 08 August, 2022, <https://doi.org/10.56452/7-8-38>
- Pereddy Nageswara Reddy, D. Tarun, G. Prabhakara Rao, J. A. Ranga Babu “Air-Argon Combined Cycle Gas Turbine Engine with Water Injection” Journal of The Institution of Engineers (India): Series C volume 103, pages545–556 (2022) <https://doi.org/10.1007/s40032-022-00843-7>
- J A Ranga Babu, Esub Khan, P. Satyanarayana, P. Bhargava Kumar, “Performance evaluation of Mini channel heat Sink using different Nanofluids” International Journal of Mechanical and Production Engineering Research and Development, Vol.10 (2020) 467-473
- K Sai Prasanna, S Sreekanth, J A Ranga Babu, “Evaluation of Mechanical properties of Alumina Zerconia metal matrix composites” Lecture notes in Mechanical Engineering, (2020) 159-165.
- K. Vijaya Kumar, P. Shailesh, K. Srinivasa Raghavan, J. A. Ranga Babu, P. Ravi Kumar, “Experimental investigation on performance and emission characteristics of modified piston in DI diesel engine” Australian Journal of Mechanical Engineering, 06 Jun 2019, <https://doi.org/10.1080/14484846.2019.1623004>.
- K. Vijaya Kumar, P. Shailesh, K. Srinivasa Raghavan, J. A. Ranga Babu, P. Ravi Kumar, “Performance and Emission analysis of Diesel Engine with Design Modifications on Piston Crown” International Journal of Ambient Energy, September 2018, <https://doi.org/10.1080/01430750.2018.1517664>.
- J.A. Ranga Babu, K. Kiran Kumar, S. Srinivasa Rao, “State-of-art review on hybrid nanofluids” Renewable and Sustainable Energy Reviews, 77 (2017) 551-565. <http://dx.doi.org/10.1016/j.rser.2017.04.040>.
- J.A. Ranga Babu, K. Kiran Kumar, S. Srinivasa Rao, “Thermodynamic analysis of hybrid nanofluid based solar flat plate collector”, World Journal of Engineering, Vol. 15 Issue: 1, pp.27-39, <https://doi.org/10.1108/WJE-03-2017-0048>.

- K. Vijaya Kumar, P. Shailesh, J A Ranga Babu, Ravi Kumar Puli, " Preparation and characterization of GFRPC Material" Materials Today: Proceedings 4 (2017) 3053–3061.
- J.A. Ranga Babu, K. Kiran Kumar, S. Srinivasa Rao, “Numerical Analysis and Validation Of Heat Transfer Mechanism of Flat Plate Collectors” Proceedia Engineering, 127 (2015) 63-70.
- J A Ranga Babu, K Kiran Kumar, S Srinivasa Rao, P Satyanarayana, “Miniaturization of Nanofluid Based Solar Flat Plate Collector: Environmental and Energy Aspects” submitted to Journal of Building Engineering.
- J A Ranga Babu, P. Bhargava Kumar, “A Comprehensive Review on Mono-Hybrid and Magnetic Nanofluids” Submitted to Renewable and Sustainable Energy Reviews.
- J A Ranga Babu, P. Bhargava Kumar, “Road Map to Hybrid and Magnetic Nanofluids - A Review” submitted to Energy conversion management.
- J A Ranga Babu, P Nageswara Reddy, P Satyanarayana, “Evaluation of Heat Transfer Characteristics of Fe₃O₄ Nanofluids in Mini-channel Heat Sinks” submitted to Journal of energy storage.

National:

- Ch. Uday Kiran, T. Siva Krishna, J A Ranga Babu , “Availability Analysis of Tube in Tube Heat Exchanger” International Journal of Scientific Research & Engineering Trends Volume 10, Issue 3, May-June-2024, ISSN (Online): 2395-5661.
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PAPERS PUBLISHED IN CONFERENCES:

a) National

1. J A Ranga Babu, Esub Khan, P. Satyanarayana, P. Bhargava Kumar, "Performance evaluation of Minichannel heat Sink using different nanofluids" National Conference on “Futuristic Trends in Materials, Manufacturing, and Mechanical Engineering (FTMMME-2020)” 28-29 February 2020, NIT Raipur

2. J A Ranga babua, K. Kiran Kumar, S.Srinivasa Rao, “Nanofluids in Solar Flat Plate Collectors- A Review” National Symposium of Mechanical Engineering Research Scholars NSMERS-2016, NIT Warangal 7th Oct, 2016.
3. “Performance and Emission Characterization of CI Engine with Design Modifications in Piston: Inducing Turbulence by Swirl” National Symposium of Mechanical Engineering Research Scholars NSMERS-2016, NIT Warangal 7th Oct, 2016.
4. J.A.Ranga babu, K.Kiran kumar, D.Mohan Krishna, “An Over View On Preparation And Estimation Of Nanofluid Properties” Proceedings of National Conference NCIET 2013, GEC - Gudlavalleru, 27-28th December 2013, ISBN: 978-4275-5484-7.

b) International

1. J A Ranga babua, K. Kiran Kumar, S.Srinivasa Rao, Shivam Shukla, “Numerical Analysis of Flat Plate Collectors thermal performances and validation of heat transfer mechanism” International Conference on New Frontiers in Chemical, Energy and Environmental Engineering INCEEE-2015, NIT Warangal 23rd - 24th Nov 2015.
2. J A Ranga babua, K. Kiran Kumar, S.Srinivasa Rao, “CFD Analysis of hybrid nanofluid based Solar Flat Plate Collector” International Conference on Recent Trends in Engineering, Science and Technology, ICRTEST-2016, Hyderabad, India.
3. Kareddula Vijaya Kumara, P Shailesh, J A Ranga babu, Ravi Kumar Puli “Preparation and Characterization of GFRPC Material” 5th International Conference of Materials Processing and Characterization, ICMPC 2016. Hyderabad, India.
4. J A Ranga Babu, D.MohanKrishna, P.Satyanarayana “Evaluation of Mechanical Properties of Slag Reinforced Polymer Composite” International Conference on Energy and Engineering-2014, ICEE-2014, Hyderabad, India.
5. Kareddula Vijaya Kumar, Ravi Kumar Puli, A Veeresh Babu, J.A. Ranga Babu, “Performance and Emission Evaluation of Plastic Oil blended with Diesel Fuel in Compression Ignition Engine” International Conference on Energy and Engineering-2014, ICEE-2014, Hyderabad, India.
6. K. Srinivasa Raghavan, K Vijaya Kumar, J A Ranga babu, P Shailesh, “Experimentation and Characterization of CI Engine Performance with Design Modifications in Piston: By

Inducing Turbulence” International Conference on Paradigms in Engineering & Technology - ICPET-2016.

7. P Shailesh, Kareddula Vijaya Kumar, K Srinivasa Raghavan, Ravi Kumar Puli, J A Ranga Babu, “Experimental Investigation of Diesel Engine with Design Modifications in Piston: Inducing Turbulence by Swirl” International Conference on Recent Trends in Engineering, Science and Technology, ICRTEST-2016, Hyderabad, India.
8. J A Ranga Babu, K Kumara Swamy, M. Kamal Tej, N. Prem Das, P Satyanarayana, “Evaluation of Heat Transfer Characteristics of a Minichannel with Nanofluids” International conference on materials for energy and environmental protection- ICMEEP-2018, CR Reddy College of Engineering, Eluru, India.
9. Perreddy Nageswara Reddy, J A Ranga Babu, “Solar Organic Cogeneration Plant for Electrification and Air-conditioning of Residential Buildings and Domestic Hot Water” National summit of IEI, Pune Local Center, Pune, October 15-16, 2018.
10. J. A. Ranga Babu, P. Nageswara Reddy, “Evaluation of Heat Transfer Characteristics of A Minichannel With Fe_3O_4 Nanofluids” Twelve International Conference on Thermal Engineering: Theory and Applications February 23-26, 2019, Gandhinagar , India.
11. Bhargava Kumar P, Ranga Babu J A , , MR Ch Sastry, “A Review on Magnetic Nano Fluids” First International Conference on Applied Mechanical Engineering Research 2019 (ICAMER) to be held during 2-4 May 2019 at NIT Warangal.
12. Md. Esub Khan, J A Ranga Babu, P. Satyanarayana, “ Performance evaluation of hybrid photovoltaic thermal collectors” International Conference on Advanced Renewed Renewable Energy Technologies (ICARRET-2019 during 23rd – 24th October, 2019 at V.R. Siddhartha Engineering College, Vijayawada, Andhra Pradesh.
13. B. Rajesh, J A Ranga Babu, M.R.Ch. Sastry, “Solar photovoltaic power for hybrid agricultural and domestic sectors” International Conference on Advanced Renewed Renewable Energy Technologies (ICARRET-2019 during 23rd – 24th October, 2019 at V.R. Siddhartha Engineering College, Vijayawada, Andhra Pradesh.
14. Y. Hemanth, Dr. P. Ravindra Babu, Dr. J. A. Ranga Babu, Dr. B. Karuna Kumar, Dr. M R Ch Sastry, P.Satyanaraya, " Evaluation of Mechanical Properties of Hybrid Fly Ash- E-

Glass Reinforcement in Aluminium Metal Matrix Composites" "International Virtual Conference of Recent Innovations in Science, Engineering and Technology (IVCRASET-2020)" by M.Kumarasamy College of Engineering on 03rd - 4th July 2020.

15. B Ramesh Babu, J A Ranga Babu, "Numerical Analysis on performance evaluation of Microchannel heatsinks using ANSYS" International Conference on Research Contributions in Mechanical Engineering (ICRCME- 2022) held on 25th and 26th February-2022.
16. P Bhargava Kumar, J A Ranga Babu, "Performance Evaluation of Solar Collector Using Different PV Panel Materials" International Conference on Research Contributions in Mechanical Engineering (ICRCME- 2022) held on 25th and 26th February-2022.
17. Dr. J A Ranga Babu, P Bhargava Kumar, P Satyanarayana, V. Naga Raju, "Allocation of Resources In Production Line Using Flexsim Software Tool" 5th International Conference on Innovations and Challenges in Mechanical Engineering (ICICME-2024) during 15th and 16th March 2024.

LIST OF WORKSHOPS ORGANIZED:

- Online FDP: Two-week FDP on "Machine Learning applications in Mechanical Engineering" organized by E & ICT academy, NITW and SRGEC from 3rd to 14th February 2025.

LIST OF WORKSHOPS / SEMINARS ATTENDED:

- Attended One week ATAL FDP on " Machine Learning and its prospects in Manufacturing & Industry 4.0", Seshadri Rao Gudlavalleru Engineering College, Gudlavalleru, during 10th– 15th February 2025.
- Attended One week ATAL FDP on " Unmanned Air Vehicles and Drone Technology", Maturi Venkata Subba Rao Engineering College, during 27th January – 01st February 2025.
- Attended One week ATAL FDP on " Advancements in AI for healthcare and medical imaging", Marwadi University, during 20th– 25th January 2025.

- Attended One week Faculty Development Program on "Advanced Data Modeling and Visualization with Power BI", VNR Vignana Jyothi Institute of Engineering & Technology, Hyderabad, during 22nd– 27th July 2025.
- Attended One week ATAL FDP on "Emerging Green hydrogen energy technologies for societal sustainability and climate change mitigation", Lakireddy Balireddy College Of Engineering, Mylavaram, during 16th– 21st December 2024.
- Attended One week International Faculty Development Program on “Advances in Materials and Manufacturing”, organized by VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad, during 15th – 19th July 2024
- Attended Three day Faculty Development Program on “Generative AI”, organized by Seshadri Rao Gudlavalleru Engineering College, Gudlavalleru, during 26th – 28th June 2024
- Attended One week International Faculty Development Program on “Advancements in Automobile Engineering for Sustainable Development”, organized by VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad, during 24th – 28th June 2024
- Attended One week Faculty Development Program on “Current Trends in Mechanical Engineering - Case studies from Industries and Academia to promote Innovation, Design thinking and startups”, organized by Shri Vishnu College of Engineering for Women, Bhimavaram, during 20th May – 25th May 2024.
- Attended One week Faculty Development Program on “Smart Materials and Research Opportunities”, organized by Vasireddy Venkatadri Institute of Technology, Nambur, during 27th May – 31st May 2024.
- Attended One week Faculty Development Program on “Design Thinking And Innovation”, organized by Narasaraopeta Engineering College (Autonomous) Narasaraopet, during 18th June– 22nd June 2024.

- Attended One week Faculty Development Program on “Advancements in Thermal and Renewable Energy Technologies”, organized by Lakireddy Bali Reddy College of Engineering, Mylavaram, during 04th July – 09th July 2022.
- Attended Two Day Faculty Development Program on “Enriching Quality of Academics & Research in Relevance to NEP-2020”, organized by Vallurupalli Nageswara Rao Vignana Jyothi Institute of Engineering and Technology, Hyderabad, during 24th February – 25th July 2023.
- Attended One week Faculty Development Program on “Evaluating students’ performance and designing question papers”, organized by National Institute of Technical Teachers’ Training and Research, Kolkata, during 25th Feb – 1st March 2019.
- Attended Two Day Faculty Development Program on “Advances in Manufacturing”, organized by the Department of Mechanical, Gudlavalleru Engineering College, Gudlavalleru during 16th – 17th November 2018.
- Attended One Refresher Course on “Computational Fluid Dynamics”, organized by AICTE – ISTE, and Department of Mechanical, Gudlavalleru Engineering College, Gudlavalleru during 18th – 23rd June 2018.
- Attended One Day workshop on “Characterization of Metal Matrix Composites”, organized by Gudlavalleru Engineering College, Gudlavalleru on 11th August February 2018.
- Attended Two Day Training Program on “MATLAB, Simulink and Related Tool Boxes”, organized by Capricot Technologies Pvt. Ltd. in Gudlavalleru Engineering College, Gudlavalleru during 8th – 9th February 2018.
- Attended a 5 day GIAN course on “Thermal Management of Electronics” at NIT Warangal during 30th Oct – 3rd Nov, 2017.
- Attended in one day workshop on “Advanced Photonics Technologies for Science and Engineering Applications” organised by NIT Warangal, on 12th April, 2015.

- Attended One Week Faculty Development Program on “MATLAB Applications in Mechanical Engineering”, organized by the Department of Mechanical, Gudlavalleru Engineering College, Gudlavalleru during 7th – 11th September 2015.
- Attended in Two day workshop on “ Research Methodology and Scholarly Writing Skills” organised NIT Warangal, during 25th – 26th January 2014.
- Attended a Two day National workshop on “Advances in Sustainable Energy Studies” by NIT Warangal, during 1st and 2nd November, 2014.
- Attended one week workshop on “ Training Teachers for Excellence” organised by Gudlavalleru Engineering College, Seshadri Rao Knowledge Village, Gudlavalleru during 29th April – 4th May, 2013.
- Participated in A Five Day workshop on “Computational Research Techniques in design and thermal Engineering (CRT-2013)” at NITW, Warangal during 7th -11th August 2013.
- Participated in one Day (18-2-2013) Workshop on “Thermodynamics Solution and Practice using MATLAB”, organised by Gudlavalleru Engineering College, Seshadri Rao Knowledge Village, Gudlavalleru.
- Participated in One Day National level seminar on “Advances in Design and Manufacturing Automation” Organised by DMS SVH College of Engineering, Machilipatnam, during 24th Feb, 2012.
- Participated in Two day workshop on “ Best Practices in Production” organised by Gudlavalleru Engineering College, Seshadri Rao Knowledge Village, Gudlavalleru during 20th – 21st July, 2012.
- Participated in One day workshop on “ DFX- Product design Excellence” organised by Gudlavalleru Engineering College, Seshadri Rao Knowledge Village, Gudlavalleru during 17th September, 2012.
- Participated in two Day National Seminar of “Applications of Finite Element Methods in Engineering” organised by Gudlavalleru Engineering College, Seshadri Rao Knowledge Village, Gudlavalleru during 8th and 9th July 2011.

- Participated in Two Day National Seminar on “ Role of Natural Fiber Composites as Future Materials” Organised by V.R. Siddhartha Engineering College, Vijayawada, Andhra Pradesh during 11th – 12th March, 2010.
- Participated in One Day Workshop on “Current Trends in Bio Fuels” ” organised by Gudlavalleru Engineering College, Seshadri Rao Knowledge Village, Gudlavalleru during 23rd October, 2010.
- Attended One day “Entrepreneurship Awareness Camp” ” organised by Gudlavalleru Engineering College, Gudlavalleru during 7th November 2007.
- Participated in Two day 9th ISTE Students National Convention at Adichunchangiri Institute of Technology, Chikmangalur, Karnataka during 6th – 7th Oct, 2006.

COURSES TAUGHT:

- Finite Element Methods
- Alternative Sources of Energy
- Automation in Manufacturing
- Engineering Thermodynamics
- Thermal Engineering – II
- Applied Thermodynamics
- Research Methodology
- Engineering Graphics
- Automobile Engineering
- Fluid Mechanics
- Metal Cutting and Machine Tools.
- Fluid Mechanics and Hydraulic Machines
- Renewable sources of Energy

LAB COURSES:

- Fluid Mechanics and Hydraulic Machines laboratory
- Thermal engineering Laboratory

- Metal Cutting and Machine Tools Laboratory
- CAD/CAM Laboratory
- Engineering Graphics

MEMBERSHIP IN PROFESSIONAL BODIES:

- MIE (I) – M-163706-6
- SAE INDIA – 7190410488

RESEARCH AREA:

- Solar Thermal Collectors
- Nanofluids
- Renewable Sources of Energy
- Composite Materials

RESEARCH GUIDANCE:

- Sri G E V Ratna Kumar, registered for PhD at Annamalai University with the proposal of “Mechanical Characterization of green flyash reinforced hybrid metal matrix composites” (**Submitted**)
- Sri P Ravi Kumar, registered for PhD at KL University with the proposal of “additive manufacturing for bio medical applications”

ACADEMIC RESPONSIBILITIES:

- Institution level Coordinator for NAAC
- Institution level AQAR coordinator
- Department Coordinator in NBA
- Cultural club Coordinator - Institution level
- Department Examination section In-charge during 2021-23
- Faculty advisor for GEC Go Kart Team-2018.
- Faculty advisor to SAE India collegiate club, GEC, Gudlavalluru
- Member of SAE India Amaravathi Division Management committee.

GUEST LECTURES DELIVERED: 06

- Delivered a guest lecture on “Advanced Materials” at Eluru College of Engineering and Technology, Eluru on 3rd February 2023.
- Delivered a guest lecture on "Electrical; Vehicle - An upcoming alternative to Transportation" at St. Peters Engineering College, Hyderabad on 5th June, 2020.
- Delivered a guest lecture on "Solar Energy - An Origin of all Renewable Energies" at St. Peters Engineering College, Hyderabad on 3rd June, 2020.
- Delivered a guest lecture on “Fundamentals of Refrigeration and Air Conditioning” at Eluru College of Engineering and Technology, 26th and 27th May 2020.
- Delivered a guest lecture on “Additive Manufacturing” at VKR, VNB & AGK College of Engineering, Gudivada, on 26th June 2019.
- Delivered a guest lecture on “Nanofluids and Engineering Applications” at Eluru College of Engineering and Technology, Eluru on 18 August 2018.

Declaration: Here by I am declaring that all the above information provided is correct to the best of my knowledge and I am sole responsible for above provided information.

Place: Gudlavalleru

Date: 22.02.2025



Signature