Dr. K. Venkata Rao, Ph.D.

Designation: Professor in Technical Education and Management
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Area of Research:

- Vibration based Tool Condition Monitoring
- Additive Manufacturing
- Wire cut Electric Discharge Machining
- Sustainable Manufacturing
- Artificial Intelligence in Manufacturing
- Technical Education

Awards received and Recognitions

1. **Listed among the World's Top 2% Scientists in 2025, 2024, 2023 and 2022 published by Stanford University, USA & Elsevier.**
2. Awarded in recognition of Outstanding Performance in executing high quality research publication at Vignan's Foundation for Science Technology and research in the year 2021.
3. Awarded in recognition of Outstanding Performance for personal h-index at Vignan's Foundation for Science Technology and research in the year 2021
4. Received Best Researcher award at Vignan's Foundation for Science Technology and Research in the year 2018.
5. Four times received letter of appreciation and Best Teacher award at Vignan's Foundation for Science Technology and Research

Funded Project

1. Tool condition monitoring by analyzing, vibration of cuttingtool or workpiece and surface roughness, DST-SERB (August, 2015- August, 2018), Rs. 33,40,000, Completed. Role: PI.
2. Synergistic Training programUtilizing the Scientific and Technological Infrastructure (STUTI) Program, DST, Govt. of India (2022), Rs. 8,50,000, Completed. Role: PI.

Publications:

SCIE Publications: 47
ESCI Publications: 10
SCOPUS Publications: 12
Other indexed Publications: 12

Key publications:

K Venkata Rao (2025) Assessment of tool condition and surface quality using hybrid deep neural network: CNN-LSTM based segmentation and statistical analysis, **ASME Journal of Tribology**, 147(8), 2025, 084201, **(SCIE/Q2/IF: 3.0/ H-Index: 102)**

G Sudharsan Reddy, **K Venkata Rao**, Y Prasanna Kumar, PBGSN Murthy, B. Ratna Sunil (2024) Forecasting micro hardness, surface roughness and metal removal rate in electrical discharge machining using GM(1,N|sin) power model, The International Journal of Advanced Manufacturing Technology 135, 4695–4713, (**SCIE/Q1/IF:3.1/H-Index: 175**)

K Venkata Rao, L Suvarna Raju, Gamini Suresh, J Ranganayakulu, Jogi Krishna (2024) Modelling of kerf width and surface roughness using vibration signals in laser beam machining of stainless-steel using design of experiments, **Optics and Laser Technology**, 169, 110146 **(SCIE/Q1/IF: 5/H-Index: 116)**

K Venkata Rao (2024) Online modeling and prediction of weld bead geometry in robotic gas metal arc based additive manufacturing using grey prediction model, **Expert Systems with Applications**, 236, 2024, 121284, **(SCIE/Q1/IF: 7.5/H-Index: 290)**

T Sunil Kumar, **K Venkata Rao**, M Balaji, PBGSN Murthy, D Vijaya Kumar (2022), Online monitoring of crack depth in Fiber Reinforced Composite Beams using optimization Grey model GM(1,N), **Engineering Fracture Mechanics**, 271, 108666. **(SCIE/Q1/IF: 5.3/H-Index: 166)**

K. Venkata Rao (2021) The use of teaching-learning based optimization technique for optimizing weld bead geometry as well as power consumption in additive manufacturing, **Journal of Cleaner Production,** 279, 123891 **(SCIE/Q1/IF: 10.0/H-Index: 354)**

Vijay K. Singh, Jeeoot Singh**, K. Venkata Rao,** Nishant K. Singh, Chandrasekhar Saran, Manikant Paswan, Subrata K. Panda, Vivek Chaudhary (2021) Control of Elastic behavior in smart material integrated shallow spherical composite panel using HOSDT kinematics, **Composite structures,** 260, 113504, **(SCIE/Q1/IF: 7.1/H-Index: 213)**

M. Chaitanya Reddy, **K. Venkata Rao,** Gamini Suresh (2021) An experimental investigation and optimization of energy consumption and surface defects in wire cut electric discharge machining, **Journal of Alloys and Compounds,** 851, 158582, **(SCIE/Q1/IF: 6.3/H-Index: 235)**

Nagarjuna Maguluri, Gamini Suresh, **K Venkata Rao** (2023) Assessing the effect of FDM processing parameters on mechanical properties of PLA parts using Taguchi method, **Journal of Thermoplastic Composite Materials,** 36(4), 1472–1488, **(SCIE/Q1/ IF: 3.4/ H-index: 63)**

K Venkata Rao, M. Chaitanya Reddy, Y. Prasanna Kumar, L. Suvarna Raju, B. Rama Rao, D. Azad (2023) Multi-response optimization in WEDM process of Al- Si alloy using TLBO-graph theory algorithm towards sustainability, **The International Journal of Advanced Manufacturing Technology,** 126: 3679–3694, **(SCIE/ Q1/IF:3.1/H-Index: 175)**

K. Venkata Rao, Ch Ramesh (2022) Modeling of tool vibration and its effect on roundness and surface roughness of hole in helical milling of Inconel 718, **Journal of Vibration and Control,** 28(1-2) 159–168, **(SCIE/Q2/ IF: 2.8/ H-index: 86)**

K Venkata Rao, B Harish Babu, V UmasaiVara Prasad (2019) A study on effect of dead metal zone on tool vibration, cutting and thrust forces in micro milling of Inconel 718**, Journal of Alloys and Compounds,** 793 (2019) 343-351, **(SCIE/Q1/IF: 6.3/H-Index: 235)**

K. Venkata Rao (2019) A study on performance characteristics and multi response optimization of process parameters to maximize performance of micro milling for Ti-6Al-4V, **Journal of Alloys and Compounds,** 781,773-782, **(SCIE/Q1/IF: 6.3/H-Index: 235)**

K Venkatarao, (2019) Power consumption optimization strategy in micro ball-end milling of D2 steel via TLBO coupled with 3D FEM simulation, **Measurement,** 132, 68-78, **(SCIE/Q1/IF: 5.6/H-index: 146)**

K Venkatarao and PBGSN Murthy (2018), Modeling and optimization of tool vibration and surface roughness in boring of steel using RSM, ANN and SVM, **Journal of Intelligent Manufacturing,** 29, 1533-1543, **(SCIE/Q1/IF: 7.4/H-Index: 113)**

K VenkataRao, PBGSN Murthy, KP Vidhu (2017) Assignment of weightage to machining characteristics to improve overall performance of machining using GTMA and utility concept, **CIRP Journal Manufacturing Science and Technology,** 18, 152-158, **(SCIE/Q1/IF: 5.4/H-Index: 69)**

K. Venkata Rao, Y. Prasanna Kumar, Vijay Kumar singh, L. Suvrna Raju, J. Ranganayakulu, (2021) Vibration based tool condition monitoring in Milling of Ti-6Al-4V usingan optimization model of GM(1,N) and SVM, **The International journal of Advanced Manufacturing Technology,** 115: 1931–1941, (**SCIE/ Q1/IF:3.1/H-Index: 175**)

Reviewer: More than 25 (SCIE indexed journals)

Editor: EnPress Journals

Other academic activities:

1. Member in Executive Council of Vignan's Foundation for Science Technology and Research, Deemed University, AP.

2. Member in Academic Council of Vignan's Foundation for Science Technology and Research, Deemed University, AP

3. Member in Academic Council of Chirala Engineering College, Chirala, AP.

4. Member in Board of studies for Vignan Institute of Technology and Science, Hyderabad, TG.

4. Member in Board of studies for Kallam Haranadareddy Institute of Technology, Guntur, AP.

5. Member in Board of studies for RISE group of institutions, Ongole, AP.

6. Member in Board of studies for Vignan's LARA Institute of Technology and Science, Vadlamudi, AP.

Conferences/Workshops/Training programs organized: 4

Invited talks/Guest lectures delivered: 35