

**Profile....**  
**Dr. K. Venkata Rao**  
**Associate Professor**  
**Mechanical Engineering Department**



**Academic Record**

Degree	University	Year	Branch/Specialization
Ph. D	Visvesvaraya Technological University	April, 2016	Adaptive Structures
M.E	Bangalore University	February, 1989	Machine Design
B.E	Bangalore University	September, 1982	Mechanical Engineering

**Employment details**

Name of Institution	Designation	Duration	
		From	To
BMSECE	Lecturer	1-07-1986	25-07-1996
BMSECE	Senior Lecturer	26-07-1996	10-02-2000
BMSECE	Selection grade lecturer	11-02-2000	31-12-2005
BMSECE	Associate Professor	1-01-2006	Till date

**Publications:**

Conference/Journal/Text books	Number of Presentations/Publications
International conferences	18
National conferences	02
International journals	06
Text Books authored	02

**Academic bodies:**

Formerly Member of Board of studies, Mechanical Engineering Department, BMS College of Engineering, Bangalore-19.

### **Life Member of professional bodies:**

1. Indian Society for Technical Education (ISTE)
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2. Indian Society for Theoretical and Applied Mechanics (ISTAM)
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3. Indian Society for Mechanical Engineering (ISME)
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### **Text Books Authored**

1. **Computer Concepts and C Programming**, K.V.Rao, Subhas Publications, Bangalore.
2. **Mechanics of materials**, K.V.Rao and G. C. Raju, Subhas Publications, Bangalore.

### **Subjects Taught:**

#### **Undergraduate Courses:**

- Theory of Elasticity
- Finite Element Methods
- Mechanical Vibrations
- Engineering Mechanics
- Mechanics of Materials
- Machine Design

#### **Post Graduate Course:**

- Mechanics of Composite Materials

### **Selected M. Tech Projects Guided**

- Coupled Field Finite Element Analysis of Piezoelectric Adaptive Sandwich Plate
- Actuation Authority and Free Vibration Analysis of Piezoelectric Adaptive Sandwich Beam
- Formulation of Degenerated Three Noded Triangular Element for Analysis of Smart Plate
- Design and analysis of six axis passive vibration isolator based on stewart platform
- Modeling and analysis of electro active polymer composites for multifunctional applications
- Finite element analysis of adaptive sandwich beam with partially debonded piezoelectric actuators

### **Technical Talks Delivered**

1. **Finite Element Modeling of Piezoelectric based Adaptive Structures**, 12-01-2016, FDP on *Advances in Engineering Mathematical Models*, BMS Institute of Technology, Bengaluru.

## Courses Attended

1. Two week FDP (TEQIP) **Fatigue and Fracture Mechanics**, 25<sup>th</sup> July – 05<sup>th</sup> August 2016, BMS College of Engineering, Bangalore.
2. FDP (TEQIP) on **Additive Manufacturing and Rapid Product Development Technologies** (Dec 26<sup>th</sup> – 31<sup>rd</sup>, 2016), NIT Trichy.
3. FDP on **Processing of Materials, Material Characterization and Testing** (16<sup>th</sup> Jan– 21<sup>st</sup> Jan, 2017), M. S. Ramaiah Institute of Technology, Bengaluru.
4. Two weeks Faculty Development Program (TEQIP 1.2.1) on, **3M – Modeling, Materials and Manufacturing** (13<sup>th</sup> -23<sup>rd</sup> Dec)-, BMS College of Engineering, Bengaluru.
5. One Week FDP (TEQIP II) on **Current Research Scenarios in Energy, Environmental and Chemical Engineering**, (30-01-17 to 4-02-17), NIT, Trichy.

## Publications in the International Journal:

1. Rao, K. V., Raja, S. and Gowda, T. M. K., “**On the Actuation Authority of Adaptive Sandwich Beam with Composite Actuators: Coupled Finite Element Analysis**,” **Journal of Advanced Materials Research**, Vol. **585**, 2012, pp. 332-336. **H Index: 22, Scimago.**
2. Rao, K. V., K., Raja, S. and Gowda, T. M. K., “**Bending Behavior and Vibration of Piezoelectric Beam with Debonded Actuators: Coupled Finite Element Analysis**,” **International Journal of Applied Engineering and Research**, ISSN 0973-4562 Vol.7 (11), 2012, pp. (6 pages)
3. Rao, K. V., Raja, S. and Gowda, T. M. K., “**Finite Element Modeling and Bending Analysis of Piezoelectric Sandwich Beam with Debonded Actuators**,” **Smart Structures and Systems**, Vol. **13** (1), 2014, pp. 055-80. **Impact factor: 1.368, H Index: 26.**
4. Tripti, P. and Rao, K. V., **Influence of Actuator-Thickness on Vibration of Debonded Piezoelectric Sandwich Beam with Extension and Shear Actuator**, **IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)** e-ISSN: 2278-1684, p-ISSN: 2320-334X PP 67-71, 2014, pp. 67-71.
5. Rao, K. V., Raja, S. and Gowda, T. M. K., “**Finite Element Modeling and Vibration Control Study of Active Plate with Debonded Piezoelectric Actuators**,” **Acta Mechanica**, Vol. 225(10), 2014, pp. 2923-2942. **Impact factor: 1.694, H Index: 52.**
6. Rao, K. V., Raja, S. and Gowda, T. M. K., “**Improved Finite Element Modeling of Piezoelectric Beam with Edge Debonded Actuator for Actuation Authority and Vibration Behaviour**”, **International Journal of Mechanics and Materials in Design**. **Impact factor: 1.2 and H Index: 15.** (Published as online first article and will be published in the month of March, 2017).

## **Proceedings of International Conferences:**

1. Rao, K. V., Raja, S. and Gowda, T. M. K, **Bending Behavior of Active Sandwich Beam with Partially Debonded Piezoelectric Actuators**, International Conference on Composites for 21<sup>st</sup>Century-Current and Future Trends (ICC-CFT), **IISC, Bangalore**, Jan 4-7, 2011.
2. Rao, K. V., Raja, S. and Gowda, T. M. K, **Modeling and Parametric Analysis of Piezoelectric Sandwich Beam with Partially Debonded Actuators**, Fifth International Conference on Advances in Mechanical Engineering, (ICAME-2011), **SVNIT, Surat**, June 6-8, 2011.
3. Rao, K. V., Raja, S. and Gowda, T. M. K, **Analytical Modeling Of PMN-PT Based Shear Actuated Fiber Composite for Estimation of Properties and FE Analysis of Adaptive Sandwich Beam with Composite Actuators**, XVII National Seminar on Aerospace Structures, **IIT Kanpur**, Sept 22-24, 2011.
4. Rao, K. V., Raja, S. and Gowda, T. M. K, **Actuation Performance of Adaptive Sandwich Beam with Debonded Composite Actuators**, 2<sup>nd</sup> International Conference on Advances in Mechanical, Manufacturing and Building Sciences (ICAMB2012), **VIT University, Vellore**, Jan 9-11, 2012.
5. Rao, K. V., Raja, S. and Gowda, T. M. K, **Coupled Field Finite Element Analysis of Mindlin Plate with Debonded Actuators**, 2<sup>nd</sup> International Conference on Advances in Mechanical, Manufacturing and Building Sciences (ICAMB2012), **VIT University, Vellore**, Jan 9-11, 2012.
6. Darshan, C. and Rao, K. V., **Actuation Authority of Piezoelectric Sandwich Beam with Partially Debonded Shear Actuator**, International Conference on Emerging Trends in Engineering 2012, **NITTE, Udupi**, May 18-19, 2012.
7. Sangamesh and Rao, K. V., **Finite Element Modeling and Analysis of Piezoelectric Adaptive Sandwich Plate**, International Conference on Emerging Trends in Engineering 2012, **NITTE, Udupi**, May 18-19, 2012.
8. Rao, K. V., Raja, S. and Gowda, T. M. K, **Finite Element Modeling of Piezoelectric Sandwich Beam Using Timoshenko Beam Theory**, International Conference on Challenges and Opportunities in Mechanical Engineering Industrial Engineering and Management Studies, (ICCOMIM-2012) **MSRIT, Bangalore**, July 11-13, 2012.
9. Rao, K. V., Raja, S. and Gowda, T. M. K, **On the Actuation Authority of Adaptive Sandwich Beam with Composite Actuators: Coupled Finite Element Analysis**, International Conference on Advances in Materials Processing Challenges and Opportunities, **IIT, Roorkee**, Nov 2-4, 2012.
10. Rao, K. V., Raja, S. and Gowda, T. M. K, **Bending Behavior and Vibration of Piezoelectric Beam with Debonded Actuators: Coupled Finite Element Analysis**, 3rd International Conference on Emerging Trends in Engineering &Technology (IETET-2012), **Gita Institute of Technology, Kurukshetra**, Nov 9-11, 2012.
11. Rao, K. V., Raja, S. and Gowda, T. M. K, **Finite Element Modeling And Vibration Control Study Of Active Plate With Debonded Piezoelectric Actuators**, Third Asian Conference on Mechanics of Functional Materials and Structures (ACMFMS-2012), **IIT Delhi**, Dec 9-11, 2012.

12. Rao, K. V., Raja, S. and Gowda, T. M. K, **Vibration Control of Piezoelectric Sandwich Beam with Debonded Actuators**, International Congress on Computational Mechanics and Simulation (ICCMS), **IIT Hyderabad**, Dec 10-12, 2012.
13. Rao, K. V., Raja, S. and Gowda, T. M. K, **Vibration Control of Piezoelectric Sandwich Beam with Debonded Actuators**, International Congress on Computational Mechanics and Simulation (ICCMS), **IIT Hyderabad**, Dec 10-12, 2012.
14. Rao, K. V., Raja, S. and Gowda, T. M. K, **Vibration of Piezoelectric Sandwich Beam**, Second International Conference on Advanced manufacturing and Automation (INCAMA 2013), **K.L. University, Madurai**, March 28-30, 2013.
15. Rao, K. V., Raja, S. and Gowda, T. M. K, **Vibration Analysis and Actuation Authority of Plate with Debonded Macro-Fiber Composite Actuators**, ISSS National Conference on MEMS, Smart Materials, Structures and Systems, **DRDO, Pune**, India September 06-07, 2013.
16. Rao, K. V., Raja, S. and Gowda, T. M. K, **Vibration Control of Piezoelectric Beam with Debonded Actuators**, The second International Conference on Intelligent Robotics, Automation and Manufacturing, **IIT Indore**, 16<sup>th</sup>- 18<sup>th</sup> December, 2013.
17. Rao, K. V., Raja, S. and Gowda, T. M. K, **Coupled Finite Element Analysis of Debonded Piezoelectric Sandwich Beam for Actuation Authority and Vibration**, International Conference on Computer Aided Engineering, Department of Mechanical Engineering, **IIT Madras**, India, 19<sup>th</sup>-21<sup>st</sup>, December, 2013.
18. Rao, K. V., Raja, S. and Gowda, T. M. K, **Improved Piezoelectric Beam Finite Element for Modeling and Analysis Of Beam with Debonded Actuator**, International Conference on Computer Aided Engineering, Department of Mechanical Engineering, **IIT Madras**, India, 19<sup>th</sup>-21<sup>st</sup>, December, 2013.
19. Rao, K. V., Raja, S. and Gowda, T. M. K., **A Review on the Advancement of Piezoelectric Composite Actuators**, International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME 2014), **Punjab Technical University**, Jalandhar, 16<sup>th</sup>-18<sup>th</sup> October, 2014.
20. Rao, K. V., Raja, S. and Gowda, T. M. K., **Modeling of Sandwich Beam with Two-Plane Edge Debonding of Piezoelectric Shear Actuator**, International conference on computational modeling and simulation, **IIT Bombay**. 27<sup>th</sup> June-1<sup>st</sup> July, 2016 (Accepted for presentation).