

Curriculum Vitae

Dr. BASUKUMAR H.K

11, DEVI APARTMENTS

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Dharwad- 580004

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Summary:

- Assistant Professor and Researcher with 14+ years of teaching and 8 years of Industrial experience has a strong background in engineering and other related fields; has the ability to conduct research and feasibility studies in fields of interest; has a secured doctorate degree in the area of specialty.

Educational Qualification:

Qualification	Name of the Institute & Place	University/Board	Percentage of marks (%)	Year of Passing/submission
Ph.D	Government Engineering College, Haveri, Karnataka, India	Visvesvaraya Technological University, Belagavi, Karnataka, India	-	2022
M.Tech (Machine Design)	Bapuji Institute of Engineering and Technology, Davangere, Karnataka, India	Visvesvaraya Technological University, Belagavi, Karnataka, India	77.3	2005
B.E (Mechanical)	Bapuji Institute of Engineering and Technology, Davangere, Karnataka, India	KUVEMPU University, Shankaraghatta-shimoga Dist. Karnataka, India	61.03	1998

Work experience:

- Presently working as Assistant professor in department of mechanical engineering of KLE institute of technology from Aug'2015 to till date.
- Actively participated in the **ISO** certification and **NBA** accreditation process presenting the department for NBA accreditation and part of various committees in the campus and departmental tasks.

- In my capacity as a coordinator for internal assessments tests, I oversaw their administration in accordance with the college calendar of events.
- Actively participated and coordinated for the curricular as well as co-curriculum activities such as 'Advitiya', a national level techno-fest organized by the college and extracurricular activity 'Khushi' – Annual cultural event; other community services organized by the institute;
- Resource person for the Student's Short Term Training Programme on virtual labs conducting a session on machine dynamics and vibrations lab
- Delivery of lectures, seminars and tutorials; assess students' coursework; supervise students' activities, including final year undergraduate projects;
- As a sports enthusiastic and supportive, participated in local sports events such as table tennis, swimming and active member in the local sports club.

Some of the Courses Handled

- Mechanics of Materials, Theory of Elasticity, Tribology
- Material science and engineering, Design of machine elements I &II, Finite element methods
- Solid mechanics, Fracture mechanics for Post graduates
- Management and Economics, Operation management, Total quality Management, CNC machine tools, Universal Human values II

Teaching-Learning Process

- Adopted different types of teaching methods to develop the outcomes through Power Point presentations and Video demonstrations.
- Chalk and Talk method for Problem (numerical) Solving.
- collaborative (Group Learning) learning in the class by assigning certain topics and present to the class for undergraduate students

Research Work

- **Thesis titled "Characterization of Stress Corrosion Cracking and Hydrogen Embrittlement in Ductile Materials"**

The study is focused on the response of material to the type of externally applied load with the environmental conditions which leads to damages such as Stress Corrosion Cracking (SCC) and environmentally induced Hydrogen Embrittlement (HE). The combined effect has a catastrophic effect on the damage behavior of the material. In the present investigation, the work has been carried out to study the effect of SCC and HE on two widely used structural materials, spring steel, EN47 and stainless steel SS316. The behavior of the materials under severe environmental conditions, like; HE and SCC have been carried out according to the procedure as outlined in the ASTM standards. The nature of failure/ failure

behavior of both SCC and HE was found to be different and distinguishable. The laboratory experiments were conducted on the treated samples under tensile, bending, impact, fatigue and few other form of loading conditions. The mechanical behavior of the materials in terms of Stress/strain/time relationships, fracture mechanics, tribological properties of materials and the investigation of mechanical characterization in the context of laboratory simulated environmental processes was investigated.

Papers/ Research Publications

- **eBook contribution published on SpringerLink**

Basukumar H K, Arun K V," Stress Corrosion Cracking Behavior of Spring Steel in Aggressive Corrosion Environment " Recent Trends in Electrochemical Science and Technology, edited by U. Kamachi Mudali, S. T. Aruna, H. P. Nagaswarupa, Dinesh Rangappa, Springer nature, 2022, pp. 67-76

- H.K. Basukumar, K.V. Arun, Tensile behavior of pre-stress corroded and post hydrogen embrittled spring steel, *Materials Today: Proceedings*, 2021, ISSN 2214-7853, <https://doi.org/10.1016/j.matpr.2021.08.156>.
- Basukumar H K and Arun K V., July 2021 "Tensile Behavior of Pre-Stress Corroded and Post Hydrogen Embrittled Spring Steel", Global Conference on Recent Advances in Sustainable Materials (GC-RASM 2021) 29 - 30, July 2021, held at A.J. Institute of Engineering & Technology, Karnataka, India.
- Basukumar H K and Arun K V., March 2021, Experimental investigation on Hydrogen embrittlement of EN47 Spring steel, *IOP Conf. Ser.: Mater. Sci. Eng.* 1126 012077, IOP Conference Series: Materials Science and Engineering, Volume 1126, 3rd International Conference on trends in Material Science and Inventive Materials (ICTMIM 2021) 12th-13th March 2021, Coimbatore, India
- Basukumar H. K and Arun K V, Jan 2021, Stress Corrosion Cracking of Spring Steel in an aggressive corrosive environment, National symposium on "Electrochemical Science and Technology' NEST2020, on IISC campus, Bengaluru, India
- Basukumar H. K and Arun K V, Dec 2020, Failure of spring steel by stress corrosion cracking and hydrogen embrittlement-an experimental investigation, *GIS Science Journal*, ISSN NO: 1869-9391
- Basukumar H K, Arun K V, Study on the combined effect of corrosive environment and impact loading on the behaviour of low carbon steel, International Conference on Advances of Mechanical Engineering Sciences, April 2017, ISBN 978-81-932966-3-9

- Basukumar H K, Arun K V, 'Experimental Approach to Study the Effect of Hydrogen Embrittlement on Structural Steel under the Influence of Impact Loading and Wear Characterization', International Journal of Science Technology & Engineering, Volume 3, Issue 04 October 2016
- Arikatti K C, Arun K V, Basavakumar H K., Effect of Hydrogen Charging on the Wear Behavior of Spring Steel, International Journal of Engineering Science and Computing, June 2016; volume 6 (6):7015-7020, ISSN (Online) 2456-1290.

Some of Training/ Faculty Development Programs Attended

Subject Area of Training	Organization	Place	Period / Duration
Inculcating Universal Human Values in Technical Education	All India Council for Technical Education (AICTE)	Online	17th June to 21st June 2024
workshop on Fractal Academics	IIIT Dharawad, Karnataka, India	-	June 15, 2024
Fracture, Fatigue And Failure of Materials	NPTEL/IIT Kharagpur	Online	Jul-Oct 2022/ 12 weeks
Introduction to high throughput materials development	Georgia Institute of Technology	Online	Dec-Jan 2022/ 5 weeks
Mechanics of Materials I: Fundamentals of Stress & Strain and Axial Loading	Georgia Institute of Technology	Online	Dec-Jan 2022/ 5 weeks
FDP on "Automotive friction materials"	SRM Institute of Science and Technology	Online	13-12-2021 to 12-17-2021
Novel Materials for next Generation Applications (ATAL FDP)	M S Ramaiah Institute of Technology	Online	12-7-2021 to 16-7-2021
Functional Materials for Engineering Applications (TEQIP sponsored)	BMS College of Engineering	Online	15-02-2021 to 19-02-2021
Failure Analysis and prevention	NPTEL/IIT ROOKEE	Online	Jan-April 2020/ 8 weeks
Material Science:10 Things every engineer should know	University of California, Davis	Online	Mar – June 2020/ 5 weeks
Material Behavior	Georgia Institute of Technology	Online	Mar – June 2020/ 6 weeks
Machine Design Part I	Georgia Institute of Technology	Online	Mar– June 2020/ 5weeks
Protecting the World: Introducing Corrosion Science and Engineering	University of Manchester	Online	Mar – June 2020 / 4 weeks
Surface Engineering for corrosion and	NPTEL/ IIT Kharagpur	Online	Jan-April 2019/

wear resistant applications			12Weeks
“Refresh programme on Design of Machine Elements” organized by	Vidyavardhaka College of Engineering (VVCE)	Mysuru	July 2018/ 1Week
“Aerospace materials; Microstructure, fracture and fatigue”	IIT Gandhinagar,	Gandhi nagar, Gujarat	June 2018 / 2Weeks
Membership of National and International Professional Bodies/Organisations			
Name of Professional Body/Organization	Place	Membership Category	
The Indian Society for Technical Education	New Delhi	Life member / LM104981	
The Institution of Engineers (India)	Kolkata	Life member / M-1805007	

Project work at Post graduation (Master of Technology)

- **"Evaluation of fracture properties of Ti-6Al-4V material used for realization of satellite propellant tanks for spacecraft applications".**
The propellant tanks used for satellite propulsion systems are made of Ti-6Al-4V material under solutions treated & aged/Annealed condition. The pressure vessels will be coming contact with corrosive propellants like Mixed oxides of Nitrogen-3, Mono-methyl hydrazene and test fluids like Iso-propyl alcohol, water. The fracture properties and stress corrosion cracking factors will play a very important role in design of pressure vessels. The experimental values will be compared with that of solution obtained from Finite Element Analysis (Ansys) and NASAGROW. The project work is carried out in Liquid Propulsion System Centre, ISRO, Bangalore.

Previous work experience:

- Worked as Assistant professor in department of mechanical engineering of BVB college of Engineering and technology from Aug'2010 to Aug'2015.
- Worked as Assistant manager, Product and Development, in Ion Exchange (I) Ltd., specialists in water and waste water treatment for over four decades from Feb'2006 to July 2010

Achievements:

- Implementation of the 3D modeling in the company with the customization of the piping standards.
- Standardization of water purification systems. And preparation of Data sheet for all components used High Purity Systems
- Design of Distribution Systems for Pharmaceutical industries. This involves the design of equipments, selection of pumps & instruments, piping & installation, commissioning the plant.
- Worked as a lecturer, mechanical engineering department in Bapuji Institute of Engineering and Technology' Davanagere from August 2004 to June 2005.
- Worked as a Quality Engineer for a period of 24 months (June'00-Aug'02) in 'Niranjan Industries' Davanagere, a leading liner manufacturer since from 1970.

Personal Details:

Father's Name : H.Kuberappa
Permanent Address : #2035/39,8th cross
Anjaneya Extension.
Davanagere-577004
Nationality : Indian
DOB : 25th Nov 1976
Marital status : Married

Language skills (ability to)	Speak	Read / Write
	Kannada	YES
	Hindi	YES
	English	YES

The above-furnished details are correct to best of my knowledge.

Date :
Place : Dharwad

(BASUKUMAR H.K)