

FACULTY PROFILE



NAME : Dr. UMESHA P. K.

Designation: Professor

Department of Civil Engineering

Date of Joining	01-10-2018
Length of Professional Experience	36 years

Contact Details

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Academic Background

<ul style="list-style-type: none">• Ph.D in Civil Engineering from University of Mysore, Karnataka
<ul style="list-style-type: none">• M.Tech in Civil Engineering (Structures) from Indian Institute of Technology, Madras
<ul style="list-style-type: none">• B.E in Civil Engineering from MCE, Hassan, University of Mysore, Karnataka

Areas of Interest

<ul style="list-style-type: none">• Analytical and experimental studies of Communication and Transmission line towers
<ul style="list-style-type: none">• Failure analysis of structures and repair and rehabilitation
<ul style="list-style-type: none">• Analytical and experimental Studies of steel structures under simulated corrosion and elevated temperature
<ul style="list-style-type: none">• Low cost housing using alternative building materials
<ul style="list-style-type: none">• Computational Structural Mechanics
<ul style="list-style-type: none">• Behaviour of steel structural components and structures
<ul style="list-style-type: none">• Parallel computing techniques for analysis of structural systems
<ul style="list-style-type: none">• Structural design optimization using heuristic methods

Significant Publications

- Umesh, P.K., Ravichandran, R., Sivasubramanian K., 'Crack detection and quantification in beams using wavelets', *International Journal of Computer-Aided Civil and Infrastructure Engineering*, 24, November 2009, pp.593-607.
- Umesh, P.K., Venuraju, M.T., Hartmann, D., Leimbach, K.R., 'Parallel Computing Techniques for Sensitivity Analysis in Optimum Structural Design', *Int. Journal of Computing in Civil Engineering(ASCE)*. 21(6), Nov./Dec. 2007, pp.463-477.
- Umesh, P.K., Venuraju, M.T., Hartmann, D., Leimbach, K.R., "Optimal design of truss structures using parallel computing", *Int. Journal of Structural and Multidisciplinary Optimization*, 29(4), 2005, pp.285 – 297.
- Cinitha.A., Umesh.P.K., Nagesh R.Iyer, An overview of corrosion and experimental studies on corroded mild steel compression members, *KSCE Journal of civil engineering*, 18(6), 2014, pp.1735-1744.
- Balagopal, R. Rao, NP, Rokade, RP, Umesh,PK, "Studies on strengthening techniques for existing transmission line and communication towers", *Recent Advances in Structural Engineering*, 2, 2019, pp.639-648.
- Cinitha,A., Umesh,P.K., Palani,G.S., Sampath,V., "Compression Behaviour of Steel Tubular Members under Simulated Corrosion and Elevated Temperature", *International Journal of Steel Structures*, 18 (1), 2018, pp.139-152.
- Balagopal, R. Rao, NP, Rokade, RP, Umesh,PK, "Experimental Investigation on Strengthening of Bolted Connections in Transmission/Communication Towers", *Journal of The Institution of Engineers (India): Series A*, 99 (2), 2018, pp.269-277.
- Cinitha, A., Umesh, P.K., Nagesh R Iyer, Lakshmanan, N., "Performance-based Seismic Evaluation of RC Framed building", *Jr. Institution of Engineers, India, Ser..A*, 96(4), Dec. 2015, pp.285-294.
- Cinitha, A., Umesh,P.K., Palani,G.S., "Studies on behaviour of steel tubular compression members subjected to accelerated corrosion", *Advances in Structural Integrity*, 2018, pp. 267-277.
- Cinitha, A., Umesh,P.K., Kesavan,K., "Assessment of Strain in a Corrosive Environment of Structural Steel", *Advances in Structural Integrity*, 2018, pp.437-449.
- Vikraman, R., Cinitha, A., Umesh, P.K., "Numerical studies on corroded steel angle members", *Journal of Structural Engineering*, 43(2), June-July 2016, PP. 197-205.
- Shanmuga Priya.D, Cinitha.A, Umesh, P.K.,Nagesh R.Iyer, "A critical review on enhancing the seismic response of buildings with energy dissipation methods", *Journal of Structural Engineering*, 42(3), Aug.-Sep. 2015, pp.78-88
- Shanmuga Priya.D, Cinitha.A, Umesh P.K.,Nagesh R.Iyer, Enhancing the seismic response of buildings with energy dissipation methods-An overview, *Journal of civil engineering research*, 4(2a), 2014, pp.17-22,Doi:10.5923/CJCE.20141.04.
- Aparna Ben, Vikraman.R, Cinitha.A, Umesh.P.K., Eapen Sakaria, 'Compressive Strength of Uniformly Corroded Steel Angle Members Retrofitted with CFRP', *International Journal of Emerging Technology and Advanced Engineering*. 4(8), Aug. 2014, pp.463-470.
- Jinu Mary Mathew, Cinitha.A, Umesh.P.K, Nagesh R.Iyer, Eapen Sakaria, Seismic response of RC building by considering soil structure interaction, *International Journal of structural and civil engineering research*, 3(1), 2014, pp.160-172.
- Cinitha, A, Umesh. P.K, Nagesh R. Iyer, Evaluation of seismic performance of existing steel buildings, *American journal of civil and structural engineering*, 1(2), 2014, pp.23-33.
- Cinitha. A, Umesh, P.K., Nagesh R. Iyer, Evaluation of seismic performance and review on retrofitting strategies of existing RC buildings, *Asian journal of applied science*, 7(4), 2014, pp.169-181.
- Cinitha. A., Umesh, P.K., Nagesh R. Iyer, Numerical investigation on structural behaviour of steel beams under elevated temperature, *Journal of Structural Engineering*, 39(5), 2013, pp.529-537.

- Cinitha, A., Umesha, P.K., Nagesh R Iyer, Performance levels and acceptance criteria for joints with rigid, semi-rigid and flexible connections, *International journal of civil and structural engineering*, 3(3), 2013, pp.526-535.
- Cinitha.A., Umesha, P.K., Nagesh R.Iyer, Nonlinear static analysis to assess seismic performance and vulnerability of code-conforming RC buildings, *WSEAS transactions on applied and theoretical mechanics*, 7(1), 2012, pp.39-48.
- Cinitha.A, Umesha, P.K., Nagesh R.Iyer, A rational approach for fundamental period of low and medium rise steel building frames, *International journal of modern engineering research (IJMER)*, 2(5), 2012, pp. 3340-3346.
- Sivasubramanian,K., Umesha, P.K., Damage identification in beams using discrete wavelet transforms. *Int. J Civil Struct. Eng*, 2(3), 2012, pp. 950-969.
- Sivasubramanian, K., Umesha, P.K., 'A graphical method for damage detection and quantification of structural systems', *Int. Journal of Multidiscipline Modeling in Materials and Structures(MMMS)*, 4(2), 2008, pp.189-206.
- Sivasubramanian, K., Rama Mohan Rao, A., Umesha, P.K., 'Performance of seismically excited tall buildings with optimal vibration control algorithm', *Journal of Structural Engineering*, 34(1), April-May 2007, pp. 70-79.
- Roopesh. K. K., Umesha, P.K., Kalappa, M.S. "Software based on Heuristic Technique for Optimization of Transmission Line Towers", *Journal of Structural Engineering*, 33(2), 2006, pp.157-166.
- Sivasubramanian, K., Rama Mohan Rao, A. and Umesha, P.K., 'Control of structural responses of seismically excited buildings using predictive control algorithm', *Advances in Vibration Engineering*, Vol. 4, No. 4., 2005, pp.397-414.
- Umesha, P.K., and Venuraju, M.T., "A parallel computer adaptive language for structural analysis on message passing systems", *Journal of Structural Engineering*, Vol.27, No.3, October 2000, pp.183 - 194.
- Umesha, P.K., and Venuraju, M.T., "Parallel non-linear analysis of reticulated space trusses", *Journal of Structural Engineering*, Vol.24, No.2, 1997, pp.83-88
- Umesha, P.K., 'Pre-Engineered steel buildings : Fast paced solutions for diverse needs', *Journal of The Master Builder*, Vol. 10, No. 11, November 2008, pp.132-142.
- Vikraman R., Sakthivel.M , Cinitha.A , Umesha.P.K , Pradeep Kumar D., "Numerical Study on Combined Effect of Uniform and Pitting Corrosion on Steel Tubular Members", *International Journal of Innovative Research in Science, Engineering and Technology*, Vol.5, 2015, PP.1854-1862.
- Umesha, P.K., Sivasubramanian, K., Rekha Maai, T.R.S., Arunachalam, K., 'Wavelets in structural health monitoring', *Journal of New Building materials & Construction World*, Vol. 12 (10), April 2007, pp.110-130.
- Sivasubramanian, K., Umesha, P. K., 'Control of vibrations in tall structures subjected to earthquake loads', *Journal of New Building Materials*, Vol.12(2), August 2006, pp..150-166.
- Umesha, P. K., Kavitha, R., Jayabalan, P., 'HEMTAAD: A Computer Software for Analysis and Design of Microwave Towers', *Journal of New Building Materials & Construction World*, Vol. 10(2), August 2004, pp.44-55.
- Umesha, P.K., "CAL-OPT: A Computer Adaptive Language for Structural design optimization", *Journal of New Building Materials & Construction World*, Vol. 9(2), August 2003, pp.8-17.
- Umesha, P.K., and Venuraju, M.T., "Analysis of large structure under parallel computing environment", *Journal of New Building Materials & Construction World*, Vol. 8(4), October 2002, pp.8-20
- Umesha, P.K., "A Graphic user interface for design of multi-storey frames with staggered Veirendeel girders", *Journal of New Building Materials & Construction World*, Vol. 7 Issue2, August 2001, pp.17-22
- Umesha, P.K., and Venuraju, M.T., "An Interactive Software for Analysis and Design Optimization of Tower structures", *Journal of New Building Materials & Construction World*, Vol.6, Issue-2, August 2000, pp.39-46.

Achievements

- Fellow of Institution of Engineers (FIE)
- Fellow of Indian Concrete Institute (FICI)
- Life member Indian Association for Computational Mechanics
- Life member of Computer Society of India
- Life member of Advanced Computing Society

Honors/Awards

- Awarded “Best Project of the Year-2020” from KSCST for student project on “Experimental investigations of Spherical Shell roof using Bamboo reinforcement”, 2020.
- Awarded “Sir Arthur Cotton Memorial Prize” from Institution of Engineers (India) for the best Paper in the Journal Institution of Engineers Series A during 2019.
- Awarded “Dr. Jai Krishna Prize” from Institution of Engineers (India) for the best paper Paper in the Journal Institution of Engineers Series A during 2016.
- Team of CSIR-SERC to receive the CORROSION AWARENESS AWARD-2014 for Excellent Laboratory Award in recognition of meritorious contribution to the field of Corrosion Science and Technology by NACE International Gateway India Section
- Award for Parallel Computing Techniques, Excellence in High Performance Cluster Computing, 2004, Sun Microsystems, 2004.
- CSIR Technology Prize (Certificate for Appreciation), Scientific contributions in the development of advanced computational methodologies, modeling techniques and software development, CSIR, 1999.
- CSIR-KFA Bilateral programme, Carrying out Advanced R & D in Parallel Computing Techniques, DFG, June 1997 - August 1997.
- DAAD Fellowship award for Carrying out Advanced R & D in Parallel Computing Techniques for the year 1990-92, DAAD West Germany.

Assistance provided for National / International building

- Member of Standing of Experts on failure of EHV Transmission Line Towers, CEA, Ministry of Power, Govt. India From 2015.
- Member of Committee of Audit of Transmission Towers with respect to design and life of the tower (on a 5% sampling basis), CEA, Ministry of Power, Govt. India From 2017.
- Research outcomes are incorporated in the codal provisions by Bureau of Indian Standards for Transmission Line towers and steel structures
- As a Head of Tower Testing & Research Station, made the drastic change in the infrastructure and made attraction in Clientele from National and International Transmission Communities for trusting facilities and accuracy for testing of Transmission line tower.
- Member of Research Board in Anna University, Chennai (2009-2012).
- Member of doctoral committee in Anna University (Since 2003).
- Member Panel of Examiners for adjudicating the Ph.D. and M.S. theses for Visvesvaraya Technological University, Belgaum, Kuvempu University, Shankaraghatta, Shimoga (during 2008 &2009).

Patent Awarded / Applied

Serial No.	Title	Country	Filed on (Patent No. & Date)	Granted on (Date)	Names of other inventors
1.	Bamboo mesh as a reinforcement for spherical Shell roof	India	Application No. 202041037789 Dt:02.09.2020	Under review process	Dr. Umesha P K (VVCE, Mysuru) Arjun V Anjan B K Kanmani S S Nishanth Karthik M P Mahedra Halamandage
2.	Emergency Retrieval Scheme (ERS) for Power Line Towers (FTT Project at CSIR-SERC)	India	Provisional - Applied	Under review process	Shri Rajendra Pitambar Rokade (CSIR-SERC) Prof. Santosh Kapuria, Dr. K. Balaji Rao, Dr. P.K.Umesha, Shri K. Dilli Dr. N. Prasad Rao, Dr. R. Balagopal
3.	A novel transportable device for lifting and flaying animals	India	Application No. : 0200/DEL/2007 dated 31.01.2007	Under review process	Shri D Lakshmanan (CLRI), Dr. P.K. Umesha (SERC), Dr. P.K. Sehgal (CLRI), Dr. T. Ramasami (CLRI), Dr. N. Lakshmanan (SERC)
4.	An improved transportable device for flaying of dead animals	India	Application No. : 0269/DEL/2011 dated 04.02.2011	Under review process	Shri D Lakshmanan (CLRI), Shri R Veerapandian (Uma Industries), Dr. A Amudeswari (CLRI), Dr. P.K. Sehgal (CLRI), Dr. A.B. Mandal (CLRI), Dr. P.K. Umesha (SERC), Dr. Nagesh Ranganatha Iyer (SERC)