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Vadivuchezhian Kaliveeran

Areas of Expertise: Solid Mechanics, Tribology, Contact Mechanics, Experimental Mechanics.

Date of Birth	14 January 1980
Education	**Ph.D** (Aerospace Engineering.) (2005 – 2013): Indian Institute of Technology Madras, Chennai, India. ***Thesis topic*:** Characterization of friction coefficient at contact interface. **M.E.** (Aeronautical Engg.) (2002 – 2004): Madras Institute of Technology, Anna University, Chennai. **B.E.** (Mechanical Engg.) (1997 – 2001): College of Engineering Guindy, Anna University, Chennai.
Professional Experience	***July 2013 – Current***: Assistant Professor, Department of Applied Mechanics and Hydraulics, National Institute of Technology Karnataka, Surathkal, Mangalore, India. ***Sep. 2009 – July 2013***: Assistant Professor, Department of Aerospace Engineering, Madras Institute of Technology, Anna University, Chennai, India. ***Aug. 2005 – Aug. 2009***: Research Scholar, Department of Aerospace Engineering, Indian Institute of Technology Madras, Chennai, India. ***June 2004 – June 2005***: Lecturer, Department of Aeronautical Engineering, Park College of Engineering and Technology, Coimbatore, India.
Research Activities	♦ Developed a loading frame for fatigue testing (200 kN capacity) ♦ Developed setup for reciprocating friction (full sliding) studies as well as fretting fatigue studies. Design involved development of a simple finite element model using beam-column elements to study the effect of different dimensions of the rig and validation using a detailed FEM analysis using ANSYS. ♦ Obtained friction coefficient as a function of sliding distance from reciprocating full sliding tests conducted using the developed testing facility. ♦ Developed an analysis tool using contact mechanics based approach that can include the effect of spatial variation of friction coefficient on contact traction. ♦ Characterized the friction coefficient in contact interface as a function of time and space using the analysis tool and full sliding tests. ♦ Correlated the predictions from mechanics based approach with fretting tests
Research Interaction	I have visited Trinity College Dublin, Ireland for research interaction from 29th June 2016 to 6th July 2016 inclusive, hosted by Prof. Roger P. West, Trinity College Dublin, Director of Structural Laboratories, School of Engineering. In collaboration with Prof. Roger P. West, Professor, Director of Structural Laboratories, I wrote computer code using C-Programming to analyse the structural response of a beam-column joint which was being tested in a 3000 kN internal reaction rig.
Journal Publications	**K. Vadivuchezhian**, S. Sundar and H. Murthy, "Effect of variable friction coefficient on contact tractions", *Tribology International*, Vol. **44**, pp 1433 –1442 (2011). **Vadivuchezhian Kaliveeran,** Subrahmanya Kundapura and Chockappan

	Neethipathi, "Finite Element Modeling of Effect of Adhesive Layer used for Strain Gauge Mounting ", Advanced Materials Research, Vol. 1119, pp 828 –832 (2015). Subrahmanya Kundapura, **Vadivuchezhian Kaliveeran** and Chockappan Neethipathi, "Experimental Verification of Effect of Adhesive Layer Thickness used for Strain Gauge Mounting", Advanced Materials Research, Vol. 1119, pp 789 –793 (2015). H. Murthy and **K. Vadivuchezhian**, " Estimation of friction distribution in partial-slip contacts from reciprocating full-sliding tests", *Tribology International*, (2016) (Accepted)
Conference Proceedings	**K. Vadivuchezhian**, S. Sundar & H. Murthy, "Effect of variable friction coefficient on contact tractions", *6th Intl. Symp. on Fretting Fatigue (ISFF6)*, 2010, Chengdu, China. **K. Vadivuchezhian** and H. Murthy, "Design of a simple rig for fretting fatigue testing of metals", *Intl. Conf. of Theoretical, Applied Computational and Experimental Mechanics, (ICTACEM)*, 2010, Kharagpur, India. **Vadivuchezhian Kaliveeran**, Subrahmanya Kundapura and Chockappan Neethipathi, "Finite Element Modeling of Effect of Adhesive Layer used for Strain Gauge Mounting ", 5th International Conference on Key Engineering Materials, (ICKEM), 2015, Singapore. Subrahmanya Kundapura, **Vadivuchezhian Kaliveeran** and Chockappan Neethipathi, "Experimental Verification of Effect of Adhesive Layer Thickness used for Strain Gauge Mounting", 5th International Conference on Key Engineering Materials, (ICKEM), 2015, Singapore. H. Murthy and **K. Vadivuchezhian**, "Estimation of friction distribution in partial-slip contacts from reciprocating full-sliding tests", *8th Intl. Symp. on Fretting Fatigue (ISFF8)*, 2016, Brasilia, Brasil. Ramachandra Rao N., **Vadivuchezhian Kaliveeran** and Amey Abraham, “Buckling analysis of offshore pipelines using 3-D finite element analysis”, International Conference on Recent Advances in Material Chemistry (ICRAMC 2017), Chennai, India. Raja Pandi R., **Vadivuchezhian Kaliveeran**, Gowtham S. and Ramesh M. R., “Effect of normal load on coefficient of friction for stainless steel alloys (SS304L and SS316) under dry sliding condition”, International Conference on Recent Advances in Material Chemistry (ICRAMC 2017), Chennai, India. Palanikumar P., Nagaraj M. K., Gnanasekaran N., Gowtham S. and **Vadivuchezhian Kaliveeran**, “Dry sliding experiments to understand the effect of sliding speed on coefficient of friction for SS304 and SS304L”, International Conference on Recent Advances in Material Chemistry (ICRAMC 2017), Chennai, India. Neeraja J., **Vadivuchezhian Kaliveeran** and Murugan N., “Dynamic analysis of jacket structure using finite element method”, International Conference on Recent Advances in Material Chemistry (ICRAMC 2017), Chennai, India. Srinivasula Reddy I., **Vadivuchezhian Kaliveeran**, Gowtham S. and Ramesh M. R., “Wear tests on Aluminium alloys (Al 6061 and Al 6082) under dry sliding condition using pin on disk tribometer”, International Conference on Recent Advances in Material Chemistry (ICRAMC 2017), Chennai, India.
Industrial Project	“Development of Test Facility for Fretting Fatigue Studies on LP Steam Turbine Blading Steel” (‘09-‘10) for BHEL, Hyderabad (under the guidance of Prof. H. S. N. Murthy)
Guidance	Guided **3** M.E. projects, **3** B.E. Projects at Dept. of Aerospace Engg., Madras Institute of Technology, Anna University.

	Guided **2** Summer Intern at NITK. Guided **4 B.Tech (Civil Engineering)** full time students at Applied Mechanics Dept., NITK. Guided **8 M.Tech** full time students at Applied Mechanics Dept., NITK. Currently guiding **2 M.Tech** full time students at Applied Mechanics Dept., NITK. Currently guiding **5 PhD** students at Applied Mechanics Dept., NITK.
Courses of Interest	Engineering Mechanics, Strength of Materials, Theory of Elasticity, Contact Mechanics, Finite Element Analysis, Experimental Stress Analysis, Thin Walled Structures.
Other Responsibilities	Involved in establishment of new laboratory facility for fatigue, fretting and friction testing in Aerospace Engineering dept. of IIT Madras under the guidance of Dr. H.S.N. Murthy.
Skills	Finite element analysis, *ANSYS*, programming in C, skilled in design and use of hydraulic fatigue testing machines (like INSTRON, MTS).