

VIJAYA CHALIVENDRA
Professor
Department of Mechanical Engineering

HIGHER EDUCATION

A. Degrees

- 2003** **Ph.D., University of Rhode Island, U.S.A**
Experimental & Analytical Fracture in Graded Materials
Adviser: Prof. Arun Shukla
- 1997** **M.S., Sri Venkateswara University, Tirupati, India**
Technology Management in RDBMS framework
- 1993** **B.S., Sri Venkateswara University, Tirupati, India**
Mechanical Engineering

B. Additional Education

- 2003-2005** **Postdoctoral Research Fellow, California Institute of Technology**
Experimental Validation of large-scale simulations
Adviser: Prof. Ares Rosakis

HONORS & AWARDS

- Associate Technical Editor for Experimental Mechanics Journal (Springer) from 2013-present
- Keynote speaker in TechConnect Conference, Boston, MA, June 2019
- Guest Editor for Special Issue on Dynamic Behavior of Materials for Experimental Mechanics journal (Springer), February 2012.
- University Graduate Fellowship, University of Rhode Island (2002-2003)
- Excellent Paper Award, Student Symposium on Mechanics and Packaging, May 2003 (sponsored by Society for Experimental Mechanics)
- The Outstanding Paper Award, Society for Experimental Mechanics Graduate Student Symposium, May 2002

EXPERIENCE:

A. Teaching Experience

2017- Now	Professor , Department of Mechanical Engineering University of Massachusetts Dartmouth
2011-2017	Associate Professor , Department of Mechanical Engineering University of Massachusetts Dartmouth
2005-2011	Assistant Professor , Department of Mechanical Engineering University of Massachusetts Dartmouth
2000-2003	Teaching Assistant , Department of Mechanical Engineering University of Rhode Island
1998-1999	Full-time Lecturer , Department of Mechanical Engineering Koneru Lakshmaiah College of Engineering, Vijayawada, India

B. Industrial Experience

1997-1998	Senior Officer , Industrial Engineering, Tata Refractories Ltd., Orissa, India
1993-1994	Deputy Engineer , Research & Development Bharat Electronics Ltd., Andhra Pradesh, India

ACADEMIC AND PROFESSIONAL ACHIVEMENTS:

A. Research Grants Received

1. "Acquisition of Nanoindentation facility", **National Science Foundation**, \$103,969, 2006-2007. (PI: Chalivendra; co-PIs: Paul Calvert, Balram Singh)
2. "Boron Nitride-Polyurethane Nanocomposites: A New Type of Acoustically Clear, High Thermal Conductivity Encapsulants", **Office of Naval Research**, \$140,000, 2007-2010. (PI: Chalivendra; No co-PI)
3. "Nano-scale embrittlement of textile fibers", **National Textile Center**, \$74,120, 2008-2011. (PI: Chalivendra; co-PI: Paul Calvert)
4. "Collaborative Research: Electrical Response of Conductive Polymer Grafted Carbon Nanotube Reinforced Copolymers under Quasi-static and Dynamic Loading", **National Science Foundation**, \$140,776, 2009-2012. (PI: Chalivendra; No co-PI)
5. "Design and Characterization of Graded Metallic Bone Implants", \$50,000, **College of Engineering Cluster grant**, 2009-2011. (PI: Chalivendra, co-PIs: Sherif El Wakil, Sankha Bhowmick, Nima Rahbar)

6. "Development of micro-tensile tester operated in atomic force microscopy," \$27,799, **National Science Foundation**, 2010-2011. (PI: Chalivendra; No co-PI)
7. "Mechanical Characterization of Gelatinous Mesoglea of Sea Jelly Bodies for Regeneration of Synthetic Hydrogels," \$18,031, **Center for Regenerative Biomaterials**, 2009-2010. (PI: Chalivendra; No co-PI)
8. "Statistical Modeling and Contact Analysis of Fractal Topography for Radio-Frequency (RF)-MEMS", \$269,000, **National Science Foundation**, 2011-2014. (co-PI: Chalivendra, PI: Wenzhen Huang)
9. "Greener High Strength, Lightweight and Low Cost Structural Composites using Sustainable Natural Fibers" \$40,000, **Massachusetts Technology Transfer Center**, 2012-2013. (PI: Chalivendra, co-PI: Yong Kim)
10. "Novel textile based personal injury preventing cushioning pad material", \$25,000, **Commercial Ventures and Intellectual Property**, 2012-2013. (co-PI: Chalivendra, PI: Yong Kim)
11. "Non-invasive detection of biomolecules secretion from living cells using peptide nanotube arrays," \$25,080, Jan-June 2015, **Provost's Multidisciplinary Seed Funding**. (co-PI: Chalivendra, PI: Milana Vasudev)
12. "Degradation and biocompatibility of microbially synthesized poly(hydroxybutyrate-co-hydroxyhexanoate) polymer:impact on mechanical stability and medical applications," \$12,100, Jan-June 2015, **Provost's Multidisciplinary Seed Funding**. (co-PI: Chalivendra, PI: Christopher Brigham)
13. "Mechanics of Multi-functional Biocomposites" \$291,954, **National Science Foundation**, Duration: 07/01/2016-06/30/2020 (PI: Chalivendra, co-PI: Yong Kim).
14. "Applying Flock technology to Warfighter Needs in Military Helmet pads," \$158,206, **US.Army Natick Laboratory**, Duration: 07/10/15 - 04/10/17 (co-PI: Chalivendra, PI: Yong Kim)
15. "Fundamental evaluation of FEAM and FEAM structures relative to optimizing their impact energy absorption and functional properties," \$84,182, PI, **Corsair Innovations**, Duration: 01/28/16 - 01/27/18. (PI: Chalivendra)
16. "Mechanical characterization of composite structures," \$10,000, PI, **Raytheon**, Duration: 01/01/16 - 06/30/16. (PI: Chalivendra)
17. "Fabrication of Pre-flocked Carbon Fabric Pre-preg Sheet Materials," \$15,250, PI, **Wright Patterson Air Force Base**, Duration: 06/01/15-08/30/15. (PI: Chalivendra)
18. "A computational and experimental study of self-assemble peptide nanotubes for energy applications," \$13,000, co-PI, **Provost's Multidisciplinary Seed Funding**. This project will be completed in August 2016. (co-PI: Chalivendra, PI: Maricris Mayes)
19. "In vivo Degradation of polyhydroxyalkanoate biodegradable plastic fibers in a mouse model system," \$13,600, co-PI, **Provost's Multidisciplinary Seed Funding**. This project will be completed in August 2016. (co-PI: Chalivendra, PI: Christopher Brigham)
20. Energy Absorbing Materials for Mitigating Head and Other Impact Injuries," **S&T President's award**, \$125, 000, 2016 (co-PI: Chalivendra, PI: Yong Kim).

21. "Bio-based, biodegradable plastics: from "waste to treasure" with a medical focus," **S&T President's award**, \$25, 000, 2016 (co-PI: Chalivendra, PI: Christopher Brigham).
22. "Acquisition of State-of-the-Art High-Speed Video Camera for Capturing Dynamic Deformation under Impact loads," **DOD-DURIP**, \$235,000, Duration: 05/01/17-04/30/18. (PI: Chalivendra, co-PI: Yong Kim).
23. "Damage Detection in Carbon Nanotubes Embedded and Carbon Fibers Flocked Multi-functional Laminated Composites," **Army Research Laboratory**, \$150,000, 09/26/17-09/25/20. (PI: Chalivendra, co-PI: Yong Kim).
24. "MRI: Acquisition of a Scanning Electron Microscope," **National Science Foundation**, \$240,329, 2017-2020, (co-PI: Chalivendra, PI: Vasudev).
25. "Multiscale Modeling with Machine Learning for Optimal Design of 3D Printed Polymers in Biomedical Implants," **Multidisciplinary Seed Funding Program**, \$ 29,541, 01/25/18-12/31/18, (co-PI: Chalivendra, PI: Jun Li).
26. National Football League Head Health Challenge Symposium, **NFL Travel Grant**, \$1,000, November 2019.
27. "Creating the Ultimate Ballistic Body Armor (UBBA) Material Structure," **Massachusetts Technology Transfer Center (MTTC)**, \$15,000, 12/01/19-02/29/20, (co-PI: Chalivendra, PI: Yong Kim).
28. "Marine Sensing Technology for Acoustic Detection and Damage Monitoring through Embedded Composite Conductors," **Marine Undersea Technology (MUST), Office of Naval Research**, \$277,399, 2020-23.

B. Published Refereed Journal Articles

1. Yang, S., Chalivendra, V., Kim, Y., (2020) "Electro-bending Behavior of Curved Natural Fiber Laminated Composites," *Composite Structures*, 238, 112004. <https://doi.org/10.1016/j.compstruct.2020.112004>
2. O'Donnell, J., **Chalivendra, V.**, Hall, A., Haile, M., Nataraj, L., Coatney, M., Kim, Y. (2020) "Electrical and shear constitutive response of conductive glass fibre/epoxy composites," *Plastics, Rubber and Composites: Macromolecular Engineering*. <https://doi.org/10.1080/14658011.2019.1711345>
3. Hamedani, Y., Macha, P., Sammeta, V., **Chalivendra, V.**, Vasudev, M.C. (2019) "Electrospinning of Tyrosine-based Oligopeptides: Self-Assembly or Forced Assembly?" *Journal of Biomedical Materials Research Part A*. DOI: 10.1002/jbm.a.36861
4. Merlo, K., Aaronson, J., Vaidya R., Rezaee, T., **Chalivendra, V.**, Karim, L. (2019) "In vitro induced high sugar environments deteriorate human cortical bone elastic modulus and fracture toughness," *Journal of Orthopaedic Research*, <https://doi.org/10.1002/jor.24543>.
5. Correia, J., **Chalivendra, V.**, Kim, Y. (2020) "Parametric study of a fibrous energy absorbing material under impact shear loading," *Composite Structures*, 232, 111583.

6. Yang, S. **Chalivendra, V.**, Kim, K. (2019) "Electro-fracture Studies of Natural Fiber Composites," *Journal of Natural Fibers*, <https://doi.org/10.1080/15440478.2019.1685425>
7. Chakravarty, J., Rabbi, M.F., **Chalivendra, V.**, Ferreira, T., Brigham C.J. (2019) "Mechanical and biological properties of chitin/poly lactide (PLA)/hydroxyapatite (HAP) composites cast using ionic liquid solutions," *International Journal of Biological Macromolecules*, <https://doi.org/10.1016/j.ijbiomac.2019.10.168>.
8. Sherman, R., **Chalivendra, V.**, Hall, A., Haile, M., Nataraj, L., Coatney, M., Kim, Y. (2109) "Electro-mechanical characterization of three-dimensionally conductive graphite/epoxy composites under tensile and shear loading," *Composites Communications*, 15, 30-33.
9. Sherman, R., **Chalivendra, V.**, Hall, A., Haile, M., Nataraj, L., Coatney, M., Kim, Y. (2019) "Characterization of electro-mechanical response in novel carbon fiber composite materials," *Journal of Composite Materials*, 53(19), 2675-2686.
10. Rabbi, M.F., **Chalivendra, V.B.**, Li, D. (2019) "A Novel Approach to Increase Dynamic Fracture Toughness of Additively Manufactured Polymer," *Experimental Mechanics*, [Doi.org/10.1007/s11340-019-00486-3](https://doi.org/10.1007/s11340-019-00486-3).
11. O'Donnell, J., **Chalivendra, V.**, Hall, A., Haile, M., Nataraj, L., Coatney, M., Kim, Y. (2019) "Electro-mechanical studies of multi-functional glass fiber/epoxy reinforced composites," *Journal of Reinforced Plastics and Composites*, 38(11), 506-520.
12. Li, J., Yang, S., Li, D., **Chalivendra, V.** "Numerical and experimental studies of additively manufactured polymers for enhanced fracture properties," *Engineering Fracture Mechanics*, 204: 557-569, 2018.
13. Fodor, K., **Chalivendra, V.**, Kim, Y., Lewis, A.F. (2019) "Dynamic mechanical behavior of flocked layer composite materials," *Composite Structures*, 207, 677-683.
14. Chakravarty, J., Rabbi, M.F., Bach, N., **Chalivendra, V.**, Yang, C-L., Brigham, C. (2018) "Fabrication of porous chitin membrane using ionic liquid and subsequent characterization and modelling studies," *Carbohydrate Polymers*, 198, 443-451.
15. Yang, S., **Chalivendra, V.**, Kim, Y. (2018) "Damage sensing in multi-functional hybrid natural fiber composites under shear loading," *Smart materials and Structures*, 27, 115034.
16. Yang, S. **Chalivendra, V.B.** Benjamin, E., Kim, Y. (2019) "Electrical Response of Novel Carbon Nanotubes Embedded and Carbon Fiber Z-axis Reinforced Jute/Epoxy Laminated Composites," *Polymer Composites*, 50, E1189-E1198.
17. Md. Fazlay Rabbi, **Chalivendra, V.B.**, Kim, Y. (2018) "Dynamic constitutive response of novel auxetic Kevlar®/epoxy composites," *Composite Structures*, 195, 1-3.
18. Shkolnik, K. and **Chalivendra, V.B.** (2017) "Numerical studies of electrical contacts of carbon nanotubes-embedded epoxy under tensile loading," *Acta Mechanica*, DOI 10.1007/s00707-017-1955-8.
19. Liu, J., **Chalivendra, V.B.** and Huang, W. (2017) "Finite element based contact analysis of radio frequency MEMs switch membrane surfaces," *Journal of Micromechanics and Microengineering*, 27, 105012.
22. Yong Kim, John Rice, **Vijay Chalivendra**, Armand Lewis (2017), Flock fibre-reinforced laminar composites for improved Mode I fracture toughness, January-February, JEC

Composites Magazine.

23. Sen Yang, **Vijaya B. Chalivendra**, Yong K. Kim (2017) "Fracture and impact characterization of novel auxetic Kevlar /Epoxy laminated composites," *Composite Structures* 168, 120–129.
24. Sirisha Mukkavalli, **Vijay Chalivendra**, Bal Ram Singh (2017) "Physico-chemical analysis of herbally prepared silver nanoparticles and its potential as a drug bioenhancer," *Open Nano*, 2, 19-27.
25. Stuckey, J.P., **Chalivendra, V.B.**, Haile, M.A and Hall, A.J. (2017) "Damage Detection in Epoxy Embedded Carbon Nanotubes Using Electrical Resistance and Acoustic Emission," *Journal of Nanomechanics and Micromechanics*, 7 (3), 06017001.
26. Kehail, A.A., Rabbi, M.R., Bach, N., **Chalivendra, V.** and Brigham, C. (2017) "Modeling mechanical properties of polyhydroxyalkanoate during degradation in animal tissue," *Polymers for Advanced Technologies*, 28 (12), 1879-1883.
27. Benoit, S. **Chalivendra, V.B.**, Rice, M. Doleski, R. (2016) "Characterization of the Microstructure, Fracture, and Mechanical Properties of Aluminum Alloys 7085-O and 7175-T7452 Hollow Cylinder Extrusions," *Metallurgical and Materials Transactions A*, 47 (9), 4476-4483.
28. Kehail, A.A., Boominathan, V., Fodor, K., **Chalivendra, V.**, Ferreira, T and Brigham, C.J. (2016) "In Vivo and In Vitro Degradation Studies for Poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) Biopolymer," *Journal of Polymers and the Environment*, 25 (2), 296-307.
26. Pinto, M., **Chalivendra, V.B.**, Kim, Y.K. and Lewis, A.F. (2016) "Improving the strength and service life of jute/epoxy laminar composites for structural applications," *Composite Structures*, 156, 333-337.
27. Schell, J.Y., Wilks, B.T., Patel, M., Franck, C., **Chalivendra, V.**, Cao, X., Shenoy, V.B. and Morgan, J.R. (2016) "Harnessing cellular-derived forces in self-assembled microtissues to control the synthesis and alignment of ECM," *Biomaterials*, 77, 120-129.
28. Bach, M., **Chalivendra, V.B.**, Aleves, C. and Depina, E. "Mechanical characterization of natural biodegradable sandwich materials," *Journal of Sandwich Structures and Materials*, 19 (4), 482-496, 2015.
29. Kehail, A.A., Foshey, M., **Chalivendra, V.** and Brigham, C.J.(2015) "Thermal and mechanical characterization of solvent-cast poly(3-hydroxybutyrate-co-3-hydroxyhexanoate)," *Journal of Polymer Research*, 22, 216.
30. Wanasekara, N.D., Ghosh, S., Chen, M., **Chalivendra, V.B.**, Bhowmick, S.B. "Effect of Stiffness of Micron/Sub-Micron Electrospun Fibers in Cell Seeding," *Journal of Biomedical Materials Research: Part A*, 103(7):2289-99, 2015.
31. Cardoso, S.M., O'Connell, C.D., Pivonka, R., Mooney, C., **Chalivendra, V.B.**, Shukla, A. and Yang, S.Z. "Effect of External Loads on Damage Detection of Rubber-Toughened Nanocomposites Using Carbon Nanotubes Sensory Network," *Polymer Composites*, 37 (2), 360-369, 2016.
32. Pinto, M., **Chalivendra, V.B.**, Kim, Y.K. and Lewis, A. (2013) "Effect of Surface Treatment and Z-axis Reinforcement on the Interlaminar Fracture of Jute/Epoxy Laminated Composites," *Engineering Fracture Mechanics*, 114, 104-114, 2013.

33. Sun, L., Wanasekara, N.D., **Chalivendra, V.B.**, Calvert, P.D. (2015) "Nano-mechanical studies on polyglactin sutures subjected to in vitro hydrolytic and enzymatic degradation," *Journal of Nanoscience and Nanotechnology*, 15, 93-99.
34. Pinto, M., **Chalivendra, V.B.**, Kim, Y.K., Lewis, A.M., (2014) "Evaluation of Surface Treatment and Fabrication Methods for Jute Fiber/Epoxy Laminar Composites," *Polymer Composites*, 35(2), 310-317.
35. Huang, W., Liu, J., **Chalivendra, V.B.**, Ceglarek, D., Kong Z. and Zhou Y. (2013) "Statistical Modal Analysis (SMA) for Variation Characterization and Application in Manufacturing Quality Control," *IIE Transactions*, 46(5), 497-511.
DOI:10.1080/0740817X.2013.814928
36. Vadlamani, V.K., **Chalivendra, V.B.**, Shukla, A., Yang, S. (2012) "In-situ sensing of Non-linear Deformation and Damage in Epoxy Particulate Composites", *Smart Materials and Structures*, 21(7), 075011.
37. Wanasekara, N.D., **Chalivendra, V.B.** and Calvert, P.D. (2012) "Effect of Accelerated Ultraviolet and Thermal Exposure on Nano-scale Mechanical Properties of Nylon Fibers", *Polymer Engineering and Science*, **52(11)**, 2482-2488.
38. Cardoso, S. **Chalivendra, V.B.**, Shukla, A. and Yang, S. (2012)"Damage detection in the fracture process zone of rubber toughened epoxy using carbon nanotube sensory network", *Engineering Fracture Mechanics*, **96**, 380-391.
39. Vadlamani, V., **Chalivendra, V.B.**, Shukla, A. and Yang, S. (2012) "Sensing of Damage in Carbon Nanotubes and Carbon Black Reinforced Epoxy Composites under Tensile Loading," *Polymer Composites*, 33(10), 1809-1815.
40. Heeder, N., Shukla, A., **Chalivendra, V.B.**, Yang, S.Z. (2012) "Sensitivity and dynamic electrical response of CNT-reinforced nanocomposites," *Journal of Materials Science*, **47**, 3808-3816.
41. Abotula, S., Kidane, A., **Chalivendra, V.B.** and Shukla, A. (2012) "Dynamic curved cracks in functionally graded materials under thermo-mechanical loading", *International Journal of Solids and Structures*, **49**, 1637-1655.
42. Gupta, S., Abotula, S., **Chalivendra, V.B.**, Shukla, A. and Chona, R. (2012) "Transient thermo-mechanical analysis of dynamic curving cracks in functionally graded materials", *Acta Mechanica*, 223(7), 1485-1506.
43. Dannemann, K., **Chalivendra, V.B.** and Song, B. (2012) "Dynamic Behavior of Materials", *Experimental Mechanics*, Editorial to Special Issue, **52(2)**, 117-118.
44. Heeder, N., Shukla, A., **Chalivendra, V.B.**, Yang, S.Z. and Park, K. (2012), "Electrical Response of Carbon Nanotube Reinforced Nanocomposites Under Static and Dynamic Loading," *Experimental Mechanics*, **52**, 315-322.
45. Bender, S., **Chalivendra, V.B.**, Rahbar N. El Wakil, S. (2012), "Mechanical characterization and modeling of graded porous stainless steel specimens for possible bone implant applications," *International Journal of Engineering Science*, **53**, 67-73.
46. Wanasekara, N.D., **Chalivendra, V.B.** and Calvert, P.D., (2011) "Sub-micron Scale Mechanical Properties of Polypropylene Fibers Exposed to Ultraviolet and Thermal Degradation," *Polymer Degradation and Stability*, 96, 432-437.

47. Bender, S., El Wakil, S.D. and **Chalivendra, V.B.** (2011), "Fabrication and Characterisation of Powder Metallurgy Parts having Porosity Gradient, *Powder Metallurgy*, **54(5)**, 599-603.
48. Wanasekara, N.D. and **Chalivendra, V.B.** (2010), "Role of Surface Roughness on Wettability and Coefficient of Restitution in Butterfly Wings," *Soft Matter*, **7**, 373-379.
49. Aboutla, S. and **Chalivendra, V.B.**, (2010) "Experimental and Numerical Investigation of Static and Dynamic Constitutive Behavior of Aluminum Alloys," *Journal of Strain Analysis for Engineering Design*, **45(8)**, 555-565.
50. Kiddane, A., **Chalivendra, V.B.** and Shukla, A. (2010), "Thermo-Mechanical Stress Fields and Strain Energy associated with a Mixed-Mode Propagating Crack," *Acta Mechanica*, **215(1-4)**, 57-69.
51. Kiddane, A., **Chalivendra, V.B.** and Shukla, A., Chona, R. (2010), "Mixed-mode dynamic crack propagation in graded materials under thermo-mechanical loading, " *Engineering Fracture Mechanics*, **77(14)**, 2864-2880.
52. Rousseau, C.-E., **Chalivendra, V.B.**, Tippur, H. and Shukla, A. (2010) "Experimental Fracture Mechanics of Functionally Graded Materials: An Overview of Optical investigations," *Experimental Mechanics*, **50(7)**, 845-865.
53. Maclure, A., **Chalivendra, V.B.** and Ramotowski, T. (2009), "Effect of Pressure Cycling on Fracture Energy of Polyurethane/Aluminum Adhesive Bonds," *Journal of Adhesion*, **85(12)**, 869-888.
54. **Chalivendra, V. B.**, Hong, S., Arias, I., Knap, J., Rosakis, A., Ortiz, M. (2009), "Experimental validation of large-scale simulations of dynamic fracture along weak planes," *International Journal of Impact Engineering*, **36(7)**, 888-898.
55. **Chalivendra, V. B.** (2009), "Mixed-mode Crack-tip Stress Fields for Orthotropic Functionally Graded Materials," *Acta Mechanica*, **204(1)**, 51-60.
56. Crowley, J. and **Chalivendra, V.B.** (2008) "Mechanical Characterization of Ultra-High Molecular Weight Polyethylene-Hydroxyapatite Nanocomposites," *Biomedical-materials and Engineering*, **18(3)**, 149-160.
57. Lee, K.H., **Chalivendra, V. B.** and Shukla, A. (2008) "Thermo-Mechanical Stress and Displacement Fields for Propagating Crack Tip in Functionally Graded Materials," *ASME Journal of Applied Mechanics*, **75**, 1-7.
58. **Chalivendra, V. B.** (2008), "Mode-I Crack-tip Stress Fields for Inhomogeneous Orthotropic Medium," *Mechanics of Materials*, **40**, 293-301.
59. **Chalivendra, V. B.** and Rosakis, A.J., (2008), "Interaction of dynamic mode-I cracks with inclined interfaces," *Engineering Fracture Mechanics*, **75**, 2385-2397.
60. **Chalivendra, V. B.**, (2007), "Asymptotic analysis of a transient crack in functionally graded materials," *International Journal of Solids and Structures*, **44**, 465-479.
61. Arias, I., Knap, J., **Chalivendra, V. B.**, Hong, S., Ortiz, M., and Rosakis, A.J., (2007), "Numerical modeling and experimental validation of dynamic fracture events along weak planes," *Computer Methods in Applied Mechanics and Engineering*, **196**, 3833-3840.
62. Xia, K., **Chalivendra, V. B.**, and Rosakis, A.J., (2006), "Observing Ideal "Self-similar" Crack Growth in experiments," *Engineering Fracture Mechanics*, **73**, 2748-2755.

63. Xia, K., **Chalivendra, V. B.**, and Rosakis, A.J., (2006), "Spontaneous Mixed-mode Fracture in Bonded Similar and Dissimilar Materials," *Experimental Mechanics*, **46**, 163-171.
64. **Chalivendra, V. B.**, and Shukla, A., (2005), "Transient Elastodynamic crack growth in Functionally Graded Materials," *Journal of Applied Mechanics*, March, **72**, 237-248.
65. **Chalivendra, V. B.**, Shukla, A., Bose, A. and Parameswaran, V. (2003) "Processing and Mechanical Characterization of Lightweight Polyurethane Composites," *Journal of Materials Science*, **38(8)**, 1631-1643.
66. **Chalivendra, V. B.**, Shukla, A., and Parameswaran, V. (2003), "Quasi-Static Stress Fields for a Crack Inclined to the Property Gradation in Functionally Graded Materials," *Acta Mechanica*, **162**, 167-184.
67. **Chalivendra, V. B.**, Shukla, A., and Parameswaran, V. (2002), "Dynamic Out of Plane Displacement Fields for an Inclined Crack in Graded Materials," *Journal of Elasticity*, **69**, 99-119.
68. Shukla, A., **Chalivendra, V. B.**, Parameswaran, V. and Lee, K. H., (2003), "Photoelastic Investigation of Interfacial Fracture Between Orthotropic and Isotropic Materials," *Optics and Lasers in Engineering*, **40**, 307-324.
69. Ricci, V., Shukla, A., **Chalivendra, V. B.**, Lee, K. H. (2003), "Subsonic interfacial fracture using strain gages in an isotropic orthotropic biomaterial," *Theoretical and Applied Fracture Mechanics*, **39(2)**, 143-161.
70. Lee, K.H., Shukla, A., Parameswaran, V., **Chalivendra, V. B.**, and Hawong, J. S. (2002), "Static and Dynamic Fracture Analysis for the Interface Crack of Isotropic - Orthotropic Bimaterial," *KSME International Journal*, **16**, 2, 165-174.

C. Conference Publications

1. O'Donnell, J., **Chalivendra, V.**, Hall, A., Haile, M., Nataraj, L., Coatney, M., Kim, Y. "Electro-mechanical Response of Multi-functional Glass fiber/epoxy reinforced composites under Shear Loading," Proceedings of SEM Annual Conference & Exposition, Reno, NV, June 3-6, 2019.
2. Rabbi, M.F., **Chalivendra, V.B.** "Effect of Z-axis Reinforcement on Dynamic Mixed Mode Fracture and Electrical Responses of Glass Fiber/Epoxy Composites," Proceedings of SEM Annual Conference & Exposition, Reno, NV, June 3-6, 2019.
3. Correira, J., **Chalivendra, V.B.**, Kim, Y. "Parametric Study of a Fibrous Energy Absorbing Material for Sport Helmet Applications," Proceedings of SEM Annual Conference & Exposition, Reno, NV, June 3-6, 2019.
4. Yang, S., **Chalivendra, V.B.**, Kim, Y. "Multi-functional Natural Fiber Composites under Quasi-static Fracture Loading," Proceedings of SEM Annual Conference & Exposition, Reno, NV, June 3-6, 2019.

5. Yang, S., **Chalivendra, V.B.**, Kim, Y., "Detection of Damage in Three-Dimensional Conductive Jute/Epoxy Composites Under Shear Loading," ASCE-EMI conference, MIT, Cambridge, May 29-June 1, 2018.
6. Yang, S., **Chalivendra, V.B.**, Kim, Y., "Damage Sensing in Multi-Functional Natural Fiber Composites Under Shear Loading," SEM Annual Conference & Exposition, Greenville, SC, June 4-7, 2018.
7. Yang, S., **Chalivendra, V.B.**, Kim, Y., "Electro-Mechanical Response of Multi-functional Natural Fiber Composites under Inter-laminar Fracture Loading," SEM Annual Conference & Exposition, Greenville, SC, June 4-7, 2018.
8. Rabbi, M.F., Li, D., **Chalivendra, V.B.**, "Dynamic Fracture Characterization of 3D printed materials," SEM Annual Conference & Exposition, Greenville, SC, June 4-7, 2018.
9. Corriea, J., Paquette, J., **Chalivendra, V.B.**, Kim, Y., Lewis, A. "Impact energy absorption characterization of novel energy absorbing materials for sport helmet applications," SEM Annual Conference & Exposition, Greenville, SC, June 4-7, 2018.
10. Merlo, K., Aaronson, J., Riordan, J., Ghrandiz, R., Karim, L., Louhghalam, A., **Chalivendra, V.B.** "Mechanical and Fracture Properties of Human Cortical Bone with Simulated Diabetes," SEM Annual Conference & Exposition, Greenville, SC, June 4-7, 2018.
11. O'Donnell, J., **Chalivendra, V.**, Hall, A., Haile, M., Nataraj, L., Coatney, M., Kim, Y. "Characterization of multi-functional Glass fiber/epoxy reinforced composites," SEM Annual Conference & Exposition, Greenville, SC, June 4-7, 2018.
12. Sherman, R., **Chalivendra, V.**, Hall, A., Haile, M., Nataraj, L., Coatney, M., Kim, Y. "Multi-functional Carbon fiber/epoxy reinforced composites," SEM Annual Conference & Exposition, Greenville, SC, June 4-7, 2018.
13. Fodor, K., **Chalivendra, C.**, Kim, Y. "Viscoelastic and In-Plane Shear Properties of Novel Energy Absorbing Materials," SEM Annual Conference & Exposition, Indianapolis, IN, June 12-15, 2017.
14. Rabbi, F. Md., **Chalivendra, V.B.**, Kim Y., "Dynamic Constitutive Response of Novel Auxetic Kevlar/Epoxy Composites," SEM Annual Conference & Exposition, Indianapolis, IN, June 12-15, 2017.
15. Yang, S., **Chalivendra, V.B.**, Kim, Y. "Characterization of Multi-functional Natural Fiber Composites," SEM Annual Conference & Exposition, Indianapolis, IN, June 12-15, 2017.
16. J. Liu, L., **V.B. Chalivendra**, W. Huang, "Contact analysis of RF MEMS switch contact surfaces," International Conference and Exposition on Experimental and Applied Mechanics, Society for Experimental Mechanics, June 6-9, 2016.
17. S. Yang, **V.B. Chalivendra**, Y.K. Kim, "Characterization of Auxetic Kevlar/epoxy laminated composites, International Conference and Exposition on Experimental and Applied Mechanics, Society for Experimental Mechanics, June 6-9, 2016.
18. S.G. Benoit, M. Rice, R. Doleski, and **V.B. Chalivendra**, "Fracture Investigation of Aluminum Alloys for Naval Applications," Proceedings of 2015 SEM Annual Conference & Exposition on Experimental & Applied Mechanics, Costa Mesa, CA, June 8-11.

19. M. Bach, C.H. Alves, E. Depina, **V.B. Chalivendra**, "Static and Impact Characterization of Natural Sandwich Structures," Proceedings of 2015 SEM Annual Conference & Exposition on Experimental & Applied Mechanics, Costa Mesa, CA, June 8-11.
20. K. Shkolnik, **V. B. Chalivendra**, Modelling of Experimental Observations of Electrical Response of CNT Composites," Proceedings of 2015 SEM Annual Conference & Exposition on Experimental & Applied Mechanics, Costa Mesa, CA, June 8-11.
21. Pinto, M., **Chalivendra, V.B.**, Kim, Y.K., Lewis, A.F., Improving the Strength and Service Life of Jute/Epoxy Laminar Composites for Structural Applications, Proceedings of 18th International Conference on Composite Structures, June 15-18, 2015 Lisbon, Portugal
22. Yong K Kim, Armand F. Lewis, John M. Rice and **Vijay Chalivendra**, Z-Direction Reinforced Laminar Composites For Improved Interlaminar Shear And Impact Resistance, Proceedings of 18th International Conference on Composite Structures, June 15-18, 2015 Lisbon, Portugal Paper Composite Structures.
23. Pinto, M., Kim, Y., Lewis, A. and **Chalivendra, V.B.** (2013) "Fabrication and Mechanical Characterization of Jute Fiber/Epoxy Laminar Composites," *Proceedings of 2013 SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Lombard, IL, [June 3-5](#).
24. Cardoso, S., Mooney, C., Pivonka, R., **Chalivendra, V.B.**, Shukla, A. and Yang, S. (2012) "Detection of Damage of Epoxy Composites Using Carbon Nanotube Network," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Costa Mesa, CA, June 12-17.
25. Heeder, N., Shukla, A., **Chalivendra, V.B.** and Yang, S.Z. (2011) "Electrical response of carbon nanotubes reinforced nanocomposites under static and dynamic loading," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Uncasville, CT, June 13-17, 2011.
26. Calvert, P., Agrawal, A., Rahbar, N. and **Chalivendra, V.B.** (2011) "Tough, strong Hydrogels with Elastomeric Fiber Reinforcement," *Proceedings of Fall 2011 Materials Research Society*, Nov 28-Dec 2, Boston, MA.
27. Agrawal, A. Wanasekara, N. **Chalivendra, V.B.** Rahbar, N. and Calvert, P. (2011) "Strong fiber reinforced hydrogels for biomedical applications," *Proceedings of North Eastern BioEngineering Conference*, Rensselaer Polytechnic Institute, Troy, NY, USA, April 1-3, 2011.
28. Sun, L., **Chalivendra, V.B.**, and Calvert, P. (2011) "Sub-micron scale mechanical characterization of polyglactin sutures subjected to hydrolysis and enzymatic degradation," *Proceedings of North Eastern BioEngineering Conference*, Rensselaer Polytechnic Institute, Troy, NY, USA, April 1-3, 2011.
29. Vadlamani, V., **Chalivendra, V.B.** Shukla, A. and Yang, S. (2011) "Evaluation of resistance measurement technique in carbon black and carbon nanotubes reinforced epoxy," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Uncasville, CT, June 13-17, 2011.

30. Sun, L. **Chalivendra, V.B.**, Calvert, P. (2011) "Nano-indentation Studies of Polyglactin 910 Monofilament Sutures," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Uncasville, CT, June 13-17, 2011.
31. Purohit, K., M. Mirville, S.C. Yang, A. Shukla, and **Chalivendra, V.B.** (2010) "Conductive nano-brush synthesized by physical grafting of conductive polymers on carbon nanotube," *Proceedings of Materials Research Society*, Nov 29 - Dec 2, Boston, MA.
32. Padamati, S., **Chalivendra, V.B.**, Agrawal, A. and Calvert, P.D. (2010), "Dynamic Constitutive Behavior of Reinforced Hydrogels Inside Liquid Environment," *Proceedings of IMPLAST, SEM Fall conference*, Providence, RI, October 12-14.
33. Colon, H., Rice, J., Kim, Y. and **Chalivendra, V.B.** (2010), "Projectile Impact Behavior of Flock Fiber Z-Reinforced Composites," *Proceedings of IMPLAST, SEM Fall conference*, Providence, RI, October 12-14.
34. Wanasekara, N.D., Chen, M., **Chalivendra, V.B.** and Bhowmick, S. (2010), "Investigation of the Young's Modulus of Fibers in an Electrospun PCL Scaffold Using AFM and its Correlation to cell Attachment," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Indianapolis, June 7-10.
35. Wanasekara, N.D., **Chalivendra, V.B.** and Calvert, P.D. (2010), "Sub-micron Scale Mechanical Properties of Polypropylene Fibers Exposed to Ultraviolet and Thermal Degradation," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Indianapolis, June 7-10.
36. Wanasekara, N.D., **Chalivendra, V.B.** and Calvert, P.D. (2010), "Effect of Accelerated Ultra Violet and Thermal Exposure on Nano Scale Mechanical Properties of Nylon Fibers," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Indianapolis, June 7-10.
37. Abotula, S. and **Chalivendra, V.B.** (2010), "Effect of Aspect Ratio of Cylindrical Pulse shapers on Force Equilibrium in Hopkinson Pressure Bar Experiments," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Indianapolis, June 7-10.
38. Bender, S., El Wakil, S.D., **Chalivendra, V.B.**, Rahbar, N., Bhowmick, S. (2010) "Fabrication and Characterization of Novel Graded Bone Implant Material," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Indianapolis, June 7-10.
39. Vadlamani, V., **Chalivendra, V.B.**, Shukla, A. and Yang, S., (2010) "Electro-Mechanical Response of Carbon Nanotube Reinforced Polymer Composites," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Indianapolis, June 7-10.
40. Costa, J. V., Ramotowski, T., Warner, S. and **Chalivendra, V.B.**, (2010) "High Thermal Conductivity Polyurethane-Boron Nitride Nanocomposite Encapsulants," *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Indianapolis, June 7-10.
41. Wanasekara, N.D., Chen, M., Chalivendra, V.B. and Bhowmick, S. (2009) "Role of Scaffold Architecture and Mechanical Properties of Electrospun Scaffolds in Cell Seeding," *Proceedings of Materials Research Society*, Nov 30 - Dec 4, Boston, MA.

42. Maclure, A., Chalivendra, V.B. and Ramotowski, T. (2009), "Effect of Pressure Cycling on Fracture Energy of Polyurethane/Aluminum Adhesive Bonds" *Proceedings of SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, June 1-4, Albuquerque, NM.
43. Wanasekara, N.D., Vadlamani, V.K., Agrawal, A., **Chalivendra, V.B.**, Calvert, P.D., (2009) Nanoindentation Studies of Epoxy Hydro gels for Tissue Engineering Applications, *Proceedings of North Eastern Bio-Engineering Conference*, April 2-4, Boston, MA.
44. Crowley, J., **Chalivendra, V. B.** (2008) "Dynamic Constitutive Behavior of UHMWPE-HAP Nanocomposites", *Proceedings of SEM XI International Congress & Exposition on Experimental & Applied Mechanics*, June 2-5, Orlando, FL.
45. Abotula, S., **Chalivendra, V. B.**, Crowley, J. (2008) "Quasi-static and Dynamic Constitutive Behavior of Aerospace Alloys", *Proceedings of SEM XI International Congress & Exposition on Experimental & Applied Mechanics*, June 2-5, Orlando, FL.
46. Kidane, A., **Chalivendra, V.B.**, Shukla, A., Chona, R. (2008) "Effect of Temperature on the Dynamic Crack-tip Stress Fields in Graded Materials", *Proceedings of SEM XI International Congress & Exposition on Experimental & Applied Mechanics*, June 2-5, Orlando, FL.
47. **Chalivendra, V. B.**, (2008) "Asymptotic Mode-I Crack-tip Stress Fields for Orthotropic Graded Materials", *Proceedings of International Conference on Computational and Experimental Sciences*, March 17-22, Honolulu, Hawaii.
48. Crowley, J., **Chalivendra, V. B.**, (2007) "Experimental Characterization of Polyethylene-Hydroxyapatite Composites," *Proceedings of SEM Annual Conference & Exposition*, June 4-7, Springfield, MA.
49. Maclure, A., **Chalivendra, V. B.**, Ramotowski T. and Ricci, V., (2007) "Effect of Pressure Cycling on Metal-Polymer Adhesive Bond Strength," *Proceedings of SEM Annual Conference & Exposition*, June 4-7, Springfield, MA.
50. **V.B. Chalivendra**, (2006) "Transient Elasto-Dynamic Crack Growth in Functionally Graded Materials", *Proceedings of Multi-scale and Functionally Graded Materials Conference*, October 16-18, Honolulu, Hawaii,
51. **Chalivendra, V. B.**, Rosakis, A. J., Hong, S., (2006) "Deflection and penetration behavior of propagating mode-I cracks towards weak inclined planes," *Proceedings of 2006 SEM Annual Conference & Exposition*, June 4-7, St. Louis, MO.
52. Arias, I., Knap, J., **Chalivendra, V. B.**, Hong, S., Ortiz, M., Rosakis, A. J., (2006) "Validation of large scale simulations of dynamic fracture," *Proceedings of III European Conference on Computational Mechanics*, June 5-9, Lisbon, Portugal.
53. Arias, I., Knap, J., **Chalivendra, V. B.**, Hong, S., Ortiz M., and Rosakis, A. J., (2005) "Validation of massively parallel simulations of dynamic fracture and fragmentation of brittle solids," *Proceedings 8th U.S. National Congress on Computational Mechanics*. U. S. Association for Computational Mechanics.
54. **Chalivendra, V. B.**, Hong, S., Rosakis, A.J., Knap, J., and Ortiz, M. (2005), "Experimental Validation of Dynamic Fragmentation Simulations", *Proceedings of 2005 SEM Conference & Exposition on Experimental & Applied Mechanics*, June 7-9, Portland.

55. **Chalivendra, V. B.**, Hong, S., Rosakis, A.J., Arias, I., Knap, J., Ortiz, M. (2005), "Interaction of dynamic cracks with inclined interfaces", *Proceedings of International Conference on Fracture (ICF11)*, Turin, Italy, March 20-25.
56. Xia, K., **Chalivendra, V.B.**, Rosakis, A.J. (2005), "Experimental studies of mixed mode spontaneous fractures expanding along inclined planes" *Proceedings of International Conference on Fracture (ICF11)*, Turin, Italy, March 20-25.
57. Arias, I., Knap, J., **Chalivendra, V.B.**, Hong, S., Ortiz, M., Rosakis, A.J. (2005), "Validation of massively parallel simulations of dynamic fracture and fragmentation of brittle solids", *Proceedings of International Conference on Fracture (ICF11)*, Turin, Italy, March 20-25.
58. **Chalivendra, V. B.**, Jain, N. and Shukla, A. (2003), "Static and Dynamic Fracture of an Inclined Isotropic-Orthotropic Bimaterial Interface", *Proceedings of 2003 SEM Annual Conference and Exposition*, Charlotte, June 1-3.
59. **Chalivendra, V. B.**, Parameswaran, V. and Shukla, A., (2002), "Dynamic Characterization of Ceramic Micro Balloon Reinforced Polyurethane", *Proceedings of the SEM Annual Conference and Exposition on Experimental and Applied Mechanics*, June 10-12, Milwaukee, WI
60. Lee, K. H., Parameswaran, V., **Chalivendra, V. B.** and Shukla, A. (2001), "Evaluation of Static and Dynamic Fracture Parameters along the Interface of Isotropic-Orthotropic Bimaterial", *Proceedings of the SEM Annual Conference on Experimental Mechanics*, Portland, June 4-6.
61. Ricci, V., Shukla, A., **Chalivendra, V. B.** and Lee, K. H. (2001), "Analysis of subsonic Interfacial fracture using strain gages in an isotropic orthotropic bimaterial", *Proceedings of 10th International Congress of Fracture*, Hawaii, December 3-7.
62. **Chalivendra, V. B.**, Reddy, C. E. and Padmanabhan, G. (1998), "Development of software package for Technology Management in RDBMS framework", *Proceedings of National conference on Industrial Engineering towards 21st century*, Sri Venkateswara University, Tirupati, India, February.
63. **Chalivendra, V. B.**, Godla, J. and Reddy, C. E. (1993) "A Petrinet based analysis of Flexible Automated Forming and Assembly Systems", *Proceedings of International Conference on CAD, CAM, Robotics and Automation Factories (INCARF)*, Indian Institute of Technology, New Delhi, India, December.
64. Godla, J., **Chalivendra, V. B.** and Reddy, C. E. (1992), "A stochastic Petrinet Based analysis of Tool Management Issues in FMS", *Proceedings of International Conference on Automation, Robotics, and Computer Vision (ICARCV)*, Nanyang Technological University, Singapore, June.

D. Conference Presentations

1. Yang, S., **Chalivendra, V.B.**, Kim, Y. (2018) "Electrical Response of Multi-functional Natural Fiber Composites Under Shear Loading," *New.Mech* 2018, September 29, Brown University, RI.

2. Rabbi, M.F., Li, D., **Chalivendra, V.B.**, (2018) "Effect of surface pattern on the dynamic fracture toughness of the 3D Printed Materials," *New.Mech* 2018, September 29, Brown University, RI.
3. Kehail, A.A., **Chalivendra, V.** and Brigham, C.J. (2016) "In Vivo and In Vitro Degradation Studies for Poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) Biopolymer," American Society for Microbiology general meeting, Boston, MA, June 16-20.
4. Noah S. Franklin, Lisa Perreault, Karoly Fodor, Maricris Mayes, **Vijaya B. Chalivendra**, Milana C. Vasudev, (2016) "Peptide Nanotubes for the Non-invasive Detection of Biomolecule Secretion from Cells," XXV International Materials Research Congress, August.
5. Kehail, A.A., **Chalivendra, V.** and Brigham, C.J., (2016) "Thermal and Mechanical Characterization of Poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) Biopolymer and In Vivo and In Vitro Degradation Studies ," International Conference for Biopolymers, 21-23 November, Dubai, UAE.
6. Liu, J-Y., **Chalivendra, V.B.**, Goldsmith, C.L. and Huang, W. (2013) "Multi-scale Regular-fractal Topography Characterization and Modeling," *2013 IEEE International Conference on Automation Science and Engineering*, August 17-21, Madison, Wisconsin, USA.
7. **Chalivendra, V. B.**, Hong, S., Rosakis, A.J., Knap, J., and Ortiz, M. (2005), "Experimental Validation of Dynamic Fragmentation Simulations", presented in *2005 SEM Conference & Exposition on Experimental & Applied Mechanics*, June 7-9, Portland.
8. Hong, S., **Chalivendra, V. B.**, Rosakis, A.J., Knap, J., and Ortiz, M. (2005), "Experimental Measurement of Mixed-mode Cohesive Zone Laws of Adhesive Bonds", presented in *2005 SEM Conference & Exposition on Experimental & Applied Mechanics*, June 7-9, Portland.
9. Xia, K., **Chalivendra, V. B.**, and Rosakis, A.J., "Spontaneous Fracture in Similar and Dissimilar Materials", presented in *2005 SEM Conference & Exposition on Experimental & Applied Mechanics*, June 7-9, Portland.
10. **Chalivendra, V. B.**, Rosakis, A.J., Arias, I., and Ortiz, M. (2004), "Dynamic Photoelastic Validation of Large Scale Fracture and Fragmentation Simulations", presented in *2004 SEM International Conference & Exposition on Experimental & Applied Mechanics*, Costa Mesa, June 7-10.
11. **Chalivendra, V. B.**, Arias, I., Knap, J., Rosakis, A.J., and Ortiz, M. (2004), "Validation of large scale dynamic fracture and fragmentation simulations", poster presentation in *Caltech ASCI Center Visit to Sandia National Laboratories*, February 2-4.
12. **Chalivendra, V. B.**, Arias, I., Knap, J., Rosakis, A.J., and Ortiz, M. (2004), "Validation of large scale dynamic fracture and fragmentation simulations", poster presentation in *Caltech ASCI Center Visit to Los Alamos National Laboratories*, February 2-4.
13. **Chalivendra, V. B.** (2002), "Fabrication and Evaluation of a Lightweight Polyurethane-Cenosphere Composite", presented at *the SEM student competition*, June 10-12, 2002, Milwaukee.

14. **Chalivendra, V. B.** (2002), "Constitutive Behavior and Fracture of Microsphere filled Polyurethane Composite", Presented in *SEM Graduate Student Symposium*, Stony Brook, New York, 6-7 May 2002.
15. **Chalivendra, V. B.** (2003), "Determination of fracture parameters for a crack inclined to the property gradation in functionally gradient materials", presented at the *Student Symposium on Mechanics and Packaging (SSMP)*, May 2-3, WPI, Worcester.

E. Invited talks

1. "Interactions of Dynamic cracks with Inclined Interfaces", *ASCI Research Review*, May 12-13, 2005, California Institute of Technology, USA.
2. "Transient Crack Growth in Functionally Gradient Materials", *Solid Mechanics Group meeting*, May 17, 2004, California Institute of Technology, USA.
3. "Dynamic Fracture in Brittle Materials", *ASCI Alliance/Laboratory V and V Workshop*, July 13-14, 2004, La Jolla, California, USA.
4. "Static and Dynamic Fracture in Homogeneous and Nonhomogeneous Materials", July 22, 2004, *The Goodyear Tire & Rubber Company*, Akron, Ohio, USA.
5. "Dynamic Fracture of Homogeneous and Nonhomogeneous Materials", February 24, 2005, *American University of Sharjah*, presented to the committee in Chicago, IL, USA.
6. "Dynamic Failure of Homogeneous and Nonhomogeneous Materials", March 28, 2005, *University of Massachusetts*, Dartmouth, USA.
7. "Dynamic Failure of Layered Materials", November 18, *University of Rhode Island*, 2005.
8. "Dynamic Failure of Engineering Materials", June 23, *Naval Underwater Warfare Center*, Newport, 2006.
9. "Dynamic Failure of Homogeneous and Non-homogeneous Materials," June 5, 2007, *Indian Institute of Technology*, Chennai, India.
10. "Dynamic Failure of Homogeneous and Non-homogeneous Solids," June 13, 2007, *Indian Institute of Science*, Bangalore, India.
11. "Crack-tip stress fields for orthotropic functionally graded materials," October 12, 2007, *Department of Materials & Textiles*, UMass Dartmouth.
12. "Solid Mechanics-Bioengineering Perspective", December 5, 2008, Invited lecture for Introduction to Bioengineering course taught by Dr. Sankha Bhowmick.
13. "Nano-mechanical Characterization of Polypropylene and Nylon Fibers Exposed to Ultraviolet and Thermal Degradation", March 29, 2010, *Materials & Solid Mechanics seminar series*, Brown University.
14. "Nano-Characterization of Polymer Fibers and Butterfly Wings; In-situ Sensing of Non-linear Deformation & Damage of Carbon Nanotubes Reinforced Composites," January 24, 2012, *Civil Engineering Department*, KL University, Vijayawada, India.
15. "Damage Detection using Carbon Nanotubes in Polymer Particulate Composites," April 24, 2013, *Bristol Community College*, MA.
16. "Detection of damage using Carbon Nanotubes at Various Loading Conditions," ARL,

March 18, 2015, Maryland, USA.

17. "Damage Sensing & Damage Tolerant Composite Materials," 01/06/17, Civil & Mechanical Engineering Department, KL University, Vijayawada, India.
18. "Damage Sensing using Carbon Nanotubes in Composites," 11/29/18, Naval Undersea Warfare Center, Newport, RI.
19. "Multi-functional carbon based materials," 10/04/19, Worcester Polytechnique Institute, Worcester, MA.

OTHER PROFESSIONAL ACTIVITIES:

A. Editorial Services

1. Guest editor of a special issue on "Dynamic Behavior of Materials" for journal of *Experimental Mechanics* (Issue: February 2012).
2. Editor of Proceedings of 2012 Annual Conference on Experimental and Applied Mechanics, "Dynamic Behavior of Materials".
3. Editorial board of American Journal of Engineering and Technology Research (2012-current).
4. Associate Technical editor of "Experimental Mechanics" journal (2013-current)

B. Service in Professional Societies

1. Chaired a session "Time-dependent Constitutive Behavior-I" in *2006 SEM Annual Conference & Exposition*, June 4-7, St. Louis, MO.
2. Co-organized a general session on Dynamic behavior of Materials in SEM Annual Conference & Exposition on Experimental & Applied Mechanics, Spring Filed, Massachusetts, June 3-6, 2007.
3. Co-organized a track "Dynamic Behavior of Materials" in *2008 SEM Annual conference & Exposition*, June 2-5, Orlando, FL.
4. Organized a session on "Dynamic Failure of Materials under Impact Loading" in Society for Experimental Mechanics (SEM) XI International Congress & Exposition on Experimental & Applied Mechanics, Orlando, Florida, June 2-5, 2008.
5. Co-organized a session on "Dynamic behavior of composites" in Society for Experimental Mechanics (SEM) XI International Congress & Exposition on Experimental & Applied Mechanics, Orlando, Florida, June 2-5, 2008.
6. Chaired a session "Dynamic Behavior of Composites-I" in Society for Experimental Mechanics (SEM) XI International Congress & Exposition on Experimental & Applied Mechanics, Orlando, Florida, June 2-5, 2008.
7. Chaired a session "Dynamic Behavior of Composites-II" in Society for Experimental Mechanics (SEM) XI International Congress & Exposition on Experimental & Applied Mechanics, Orlando, Florida, June 2-5, 2008.
8. Co-chaired a session "Dynamic Failure of Materials-I" in Society for Experimental

- Mechanics (SEM) XI International Congress & Exposition on Experimental & Applied Mechanics, Orlando, Florida, June 2-5, 2008.
9. Co-chaired a session "Dynamic Failure of Materials-II" in Society for Experimental Mechanics (SEM) XI International Congress & Exposition on Experimental & Applied Mechanics, Orlando, Florida, June 2-5, 2008.
 10. Co-organized a track "Dynamic Behavior of Materials" in *2009 SEM Annual conference & Exposition*, June 1-4, Albuquerque, NM.
 11. Organized a session on "Dynamic Failure of Materials" in Society for Experimental Mechanics (SEM) Annual Congress & Exposition on Experimental & Applied Mechanics, Albuquerque, NM, June 1-4, 2009.
 12. Co-chaired a session on "Dynamic Failure of Materials" in Society for Experimental Mechanics (SEM) Annual Congress & Exposition on Experimental & Applied Mechanics, Albuquerque, NM, June 1-4, 2009.
 13. Co-chaired a session on "Dynamic Failure of Materials" in Society for Experimental Mechanics (SEM) Annual Congress & Exposition on Experimental & Applied Mechanics, Indianapolis, NM, June 7-10, 2010.
 14. Co-organized a track "Dynamic Behavior of Materials" in *2010 SEM Annual conference & Exposition*, Indianapolis, IN, June 7-10, 2010.
 15. Co-organized a track "Dynamic Behavior of Materials" in *2011 SEM Annual conference & Exposition*, Uncasville, CT, June 13-17, 2011.
 16. Co-organized a track "Dynamic Behavior of Materials" in *2012 SEM Annual conference & Exposition*, Costa Mesa, CA, June 12-14, 2012.
 17. Co-organized a symposium on "Performance of Materials and Structures under Extreme Loading Conditions", held on 12-13 October at University of Rhode Island.
 18. Co-organized sessions on "Dynamic Fracture & Failure" in 2013 SEM XI Annual conference & Exposition, Chicago, 2013.
 19. Co-organized two sessions of "Dynamic Fracture/Failure" in 2014 Society of Experimental Mechanics annual conference.
 20. Co-chaired two sessions on "Fracture of Composite Materials," International Conference and Exposition on Experimental and Applied Mechanics, Society for Experimental Mechanics, June 6-9, 2016.
 21. Co-chaired a session on "Fracture of Composite Materials," International Conference and Exposition on Experimental and Applied Mechanics, Society for Experimental Mechanics, June 4-7, 2018.

C. Membership in Professional Societies:

- American Society for Mechanical Engineering
- Society for Experimental Mechanics