

Dr. P. Raju Mantena, Ph.D., Fellow ASME  
Composite Structures and Nano Engineering Research

---

Department of Mechanical Engineering  
Carrier 201B, University of Mississippi  
University, MS 38677

**Phone:** (662) 915-5990  
**Fax:** (662) 915-1640  
**E-mail:** [meprm@olemiss.edu](mailto:meprm@olemiss.edu)

**Professional Preparation:**

Ph.D. Mechanical Engineering, University of Idaho, Moscow, Idaho, 1989  
M.S. Mechanical Engineering, University of Idaho, Moscow, Idaho, 1985  
D.I.I.T. Design Engineering, IIT Delhi, India, 1975  
B.E. Mechanical Engineering, Andhra University, India, 1973

**Appointments:**

Professor, Dept. of Mechanical Engineering, University of Mississippi, July 2003 - present  
Associate Professor, Dept. of Mechanical Engineering, University of Mississippi, July 96 - June 2003  
Assistant Professor, Dept. of Mechanical Engineering, University of Mississippi, Aug 90 - June 1996  
Research Associate, Advanced Composites Research Laboratory, Dept. of Mechanical Engineering,  
Wayne State University, Detroit, MI, June 1989 - July 1990  
Senior Development Engineer, BHEL, Corporate R&D Labs, Hyderabad, India, May 1975-June 1983

**Synergistic Activities:** Dr. Raju Mantena's research interests are in optimizing the blast, shock, ballistic, impact response of composite structures, nano-reinforced materials, structural foams, and non-destructive evaluation. He has served as PI/Co-PI for several research grants from the NSF, NASA, USDA, ONR, ARO, DHS, DURIP, EPRI, AOC, Allied Signal and Dow Automotive. Dr. Mantena is actively involved with the American Society for Composites (ASC) and the American Society of Mechanical Engineers (ASME). He has organized several national/international symposiums serving as Chair of Materials Characterization Technical Committee for ASME-Noise Control and Acoustics Division, and Chair of the Fastening and Joining Technical Committee for ASME-Design Engineering Division. The results of his research have been published in numerous scholarly articles and presented at a variety of national/international meetings.

At the University of Mississippi, Dr. Mantena teaches Engineering Mechanics, Kinematics and Dynamics of Machinery, Vibrations, Mechanics of Composite Materials and Experimental Stress Analysis. He received the School of Engineering *Faculty Service Award (2007)*; *Senior Faculty Research Award (2008, 2014)*; and *three-time recipient of Outstanding Mechanical Engineering Teacher*. Dr. Mantena is a Fellow of ASME; and recipient of the *ASME International John A. Shortall Outstanding Faculty Advisor Award* in recognition of his leadership in mentoring and guiding the ASME Student Section at Ole Miss.

**Journal Publications** (past five years):

- 1) Damian Stoddard, Suman Babu Ukyam, **P. Raju Mantena**, A.M. Rajendran (2018); Energy Absorption of Pultruded Glass-Graphite/Epoxy Hybrid Composites under High Strain-Rate Induced Transfer Tension, *Open Journal of Composite Materials*, April 2018.
- 2) Veera Boddu, Matthew W. Brenner, Jignesh S. Patel, Ashok Kumar, **P. Raju Mantena**, Tezeswi Tadepalli, Brahmananda Pramanik (2016); Energy Dissipation and High Strain-rate Dynamic Response of E-glass Fiber Composites with Anchored Carbon Nanotubes, *Composites Part B*:88 (2016) 44-54.
- 3) Seyed Soheil Daryadel, **P. Raju Mantena**, Kiyun Kim, Damian Stoddard, A.M. Rajendran (2015); Dynamic Response of Glass under Low-Velocity Impact and High Strain-Rate SHPB Compression Loading, *Journal of Non-Crystalline Solids*, NDC-1744, 8 pages, 2015.

- 4) Kiyun Kim, **P. Raju Mantena**, Seyed Soheil Daryadel, Veera M. Boddu, Matthew W. Brenner and Jignesh S. Patel (2015); Dynamic Mechanical Analysis and High Strain-Rate Energy Absorption Characteristics of Vertically Aligned Carbon Nanotube (VACNT) Reinforced Woven Fiber-glass Composites, *Journal of Nanomaterials*, Vol. 2015, Article ID 480549, 7 pages, 2015.
- 5) Mohammad Afrough, Tejas Pandya, Seyed Soheil Daryadel and **P. Raju Mantena** (2015); Dynamic Response of Pultruded Glass-Graphite/Epoxy Hybrid Composites Subjected to Transverse High Strain-Rate Compression Loading, *Materials Sciences and Applications*, Vol. 6, No.11, 10 pages, 2015.
- 6) Seyed Soheil Daryadel, Cameron Ray, Tejas Pandya and **P. Raju Mantena** (2015); Energy Absorption of Pultruded Hybrid Glass/Graphite Epoxy Composites under High Strain-Rate SHPB Compression Loading, *Materials Sciences and Applications*, Vol. 6, No. 6, 10 pages, 2015.
- 7) Ahmad Almagableh, **P. Raju Mantena**, Ahmed Alostaz, Mahmoud Rababah, Mohammad Aljarrah and Ahmed S. Awad (2015); Modeling the Elastic Modulus of Exfoliated Graphite Platelets filled Vinyl Ester: Analytical Predictions with Consideration of Fiber Filler Percolation; *Journal of Composite Materials* 2015, Vol 49 (11), 1285-1290.
- 8) **P. Raju Mantena**, Brahmananda Pramanik, Tezeswi Tadepalli, Veera M. Boddu, Matthew W. Brenner and Ashok Kumar (2014); Effect of Process Parameters on the Dynamic Modulus, Damping and Energy Absorption of Vertically Aligned Carbon Nano-Tube (VACNT) Forest Structures, *Journal of Multifunctional Composites*, 2 (2014) 93-100.
- 9) Pramanik, B., and **Mantena, P.R.**, (2014); Strain-rate Dependent Ductile to Brittle Transition of Graphite Platelet Reinforced Vinyl Ester Nanocomposites, *Advances in Materials Science and Engineering*, Volume 2014 (2014) Article ID 765698, 8 pages.
- 10) Brahma Pramanik, **P. Raju Mantena**, Tezeswi Tadepalli and A.M. Rajendran (2014); Indirect Tensile Characterization of graphite Platelet Reinforced Vinyl ester Nanocomposites at High-Strain Rate, *Open Journal of Composite Materials* 2014, 4, pp. 201-214.
- 11) **Mantena, P.R.**; Tadepalli, T.; Pramanik, B.; Boddu, V.M.; Brenner, M.W.; Stephenson, L.D.; and Kumar, A., (2013); Energy Dissipation and the High-Strain Rate Dynamic Response of Vertically Aligned Carbon Nanotube (VACNT) Ensembles Grown on Silicon Wafer Substrate, *Journal of Nanomaterials*, Vol. 2013, Article id 259458, 7 pages, doi:10.1155/2013/259458.
- 12) Tadepalli, T. and **P. Raju Mantena** (2012); Numerical and Experimental Blast Response Characterization of Sandwich Composite Structural Panels, *Journal of Sandwich Structures and Materials*, Volume 15, No.1 /January 2013, pp.110-133
- 13) Pramanik, B., Tadepalli, T. and **Mantena, P. R.** (2012); Surface Fractal Analysis for Estimating the Fracture Energy Absorption of Nanoparticle Reinforced Composites, *Materials* 2012, 5, pp. 922-936.

#### **Professional Society Membership:**

American Society of Mechanical Engineers (ASME), American Society for Composites (ASC)

#### **Research Grants (recent):**

- 1) A.M. Rajendran (PI) and **P. Raju Mantena (Co-PI)**; *Bio-Inspired Functionally Graded Composites for Blast and Impact Hazard Mitigation*, **DoD-ERDC; \$1,500,000**; June 1, 2018 to May 31, 2019.
- 2) **P. Raju Mantena (PI)**, *High-Strain Rate Experimental Characterization and Analytical Modeling of Nanoenhanced Functionally Graded Composites for Energy Dissipation under Shock and Impact Loading*, **ERDC-CERL; \$98,000**; Sep 1, 2012 to Dec 31, 2015.
- 3) **P. Raju Mantena (PI)**, A.M. Rajendran, Tezeswi Tadepalli; *High-Speed Digital Stereo Imaging & Projection Moire Systems for Visualization/Analysis of Blast, Shock, Ballistic and Impact Dynamic Events*, **Defense Univ Research Instrumentation Program - DURIP; \$243,000**; July 1 2013 to June 30, 2014.
- 4) A.M. Rajendran (PI) and **P. Raju Mantena (Co-PI)**; *Atomistic Modeling of Transparent Glass/Ceramic Materials*, **ARO-TARDEC; \$199,960**; Nov 1, 2012 to September 30, 2014.
- 5) **P. Raju Mantena (PI)**, Alex Cheng, Ahmed Al-Ostaz, A.M. Rajendran; *Blast and Impact Resistant Composite Structures for Navy Ships*; **Office of Naval Research; \$2,600,000**; July 16, 2007 to Dec 31, 2011.