

CURRICULUM VITAE

NAME Paul Heyliger
Professor
Civil Engineering Department
Colorado State University
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EDUCATION

Ph.D. Virginia Polytechnic Institute and State University
Engineering Science and Mechanics, 1986
Dissertation Title: “Computational and Hybrid Algorithms
for Plane Elastic Contact Problems”

M.S. Colorado State University, Civil Engineering, 1983
Thesis Title: “Reliability Design of Planar Wood
Transmission Structures”

B.S. Colorado State University, Civil Engineering, 1981

EXPERIENCE

2002 Alexander von Humboldt Research Fellow, Germany

1999-present Professor of Civil Engineering
Colorado State University

1999 Visiting Professor, University of California-Santa Barbara

1999 Alexander von Humboldt Research Fellow, Germany

1993-1999 Associate Professor of Civil Engineering
Colorado State University

1988-1993 Assistant Professor of Civil Engineering
Colorado State University

1992 NASA Summer Faculty Fellow, Structural Mechanics Branch
NASA-Lewis Research Center, Cleveland, Ohio.

1986-1988 Post-doctoral Research Associate, Fracture and Deformation Division
National Bureau of Standards, Boulder, Colorado.

HONORS AND AWARDS

- 2022 Funniest Professor, Engineering Legislature, Colorado State University
- 2021 Golden Screw Award, Engineering Legislature, Colorado State University
- 2021 Faculty Award for Excellence in Service
Department of Civil Engineering, Colorado State University
- 2017 Best Professor Award, Engineering Legislature, Colorado State University
- 2014 Best Professor Award, Engineering Legislature, Colorado State University
- 2013 Most Entertaining Professor, Engineering Legislature, Colorado State University
- 2012 Best Professor of the Year, Engineering Legislature, Colorado State University
- 2012 Faculty Award for Excellence in Teaching
Department of Civil Engineering, Colorado State University
- 2012 Abell Award for Outstanding Teaching
College of Engineering, Colorado State University
- 2012 Chi Epsilon Golden Key Award
Outstanding Civil Engineering Professor , Colorado State University
- 2009 Best Professor of the Year
Engineering Legislature, Colorado State University
- 2008 Faculty Award for Excellence in Teaching
Department of Civil Engineering, Colorado State University
- 2007 Faculty Award for Excellence in Service
Department of Civil Engineering, Colorado State University
- 2004 Outstanding Faculty Performance Award
Department of Civil Engineering, Colorado State University
- 2002 Alexander von Humboldt Research Fellowship
Institut fur Computeranwendungen, Physik auf Hochleistungsrechnern , AvH Foundation
- 2002 Excellence in Teaching Award: Rocky Mountain District
Chi Epsilon Honor Society
- 2001 Abell Faculty Award for Teaching Excellence
College of Engineering, Colorado State University
- 1998 Alexander von Humboldt Research Fellowship
AvH Foundation, Staatliche MaterialPrufunsanstalt, Germany
- 1996 Chi Epsilon Golden Key Award
Outstanding Civil Engineering Professor , Colorado State University
- 1992 Deans Council Award for Outstanding Performance
College of Engineering , Colorado State University
- 1990 Chi Epsilon Golden Key Award
Outstanding Civil Engineering Professor , Colorado State University
- 1985 Jefferson Student Paper Award
AIAA/ASME/ASCE/AHS, 26th Annual SDM Conference, Orlando FL
- 1983-1985 Pratt Fellowship
Virginia Polytechnic Institute and State University
- 1980 Employee Commendation and Performance Award
Martin Marietta Aerospace, Denver, Colorado

COURSES TAUGHT

Undergraduate Courses

- Dynamics
- Mechanics of Solids
- Structural Analysis
- Mechanics of Composite Materials

Graduate Courses

- Advanced Mechanics of Materials
- Analysis of Continua
- Intermediate Structural Analysis
- Finite Element Method
- Foundations of Solid Mechanics
- Fundamentals of Vibrations
- Theory of Plates and Shells
- Advanced Finite Element Methods
- Nonlinear Structural Mechanics
- Material Point Method

REVIEWER ACTIVITIES

Proposal Reviews

- Air Force Office of Scientific Research
- Army Research Office
- National Institutes of Health
- National Science Foundation
- Office of Naval Research
- United States Department of Agriculture
- United States Department of Commerce
- United States Department of Transportation
- Several dozen reviews for state agencies outside of Colorado.

Textbook Reviews

- *Mechanics of Materials* by Craig for Wiley.
- *Mechanics of Materials* by Bedford and Fowler.
- *Statics* by Sheppard and Tongue.
- *Engineering Mechanics - Statics: Assignment Guide and Suggested Student Hints* by C. S. Ammerman.
- *Elementary Engineering: Mechanics of Solids* by Akhtar Khan and Moin Malik.
- *Structural Analysis: Using Classical and Matrix Methods*, by James K. Nelson, Jr. and Jack C. McCormac.
- *Introduction to the Finite Element Method* by J. N. Reddy.
- *Analysis of Plates: Analytical and Approximate Methods* by Hu.
- *Vector Mechanics for Engineers* by Beer and Johnston.
- *Mechanics of Solids* by Beer and Johnston.
- *Structural Analysis* by R. C. Hibbeler.
- *Engineering Mechanics: Dynamics* by R. C. Hibbeler.
- *Engineering Mechanics: Statics* by R. C. Hibbeler.
- *Engineering Mechanics: Statics* by Meriam and Kraige for Prentice-Hall.

Reviewer for the following journals

- ASCE Journal of Materials Engineering
- ASCE Journal of Engineering Mechanics
- ASCE Journal of Structural Engineering
- ASME Journal of Vibration and Acoustics
- Acta Mechanica
- AIAA Journal
- ASTM Journal of Testing and Evaluation
- Communications in Applied Numerical Methods
- Communications in Numerical Methods in Engineering
- Composites B
- Composite Structures
- Computational Structural Mechanics
- Computer Methods in Applied Mechanics and Engineering
- Engineering Fracture Mechanics
- European Journal of Mechanics
- Finite Elements in Analysis and Design
- IEEE Journal of Ultrasonics, Ferroelectrics, and Frequency Control
- Journal of the Acoustical Society of America
- Journal of Applied Mechanics
- Journal of Applied Physics
- Journal of Computational Physics
- Journal of Physics D
- International Journal of Acoustics and Vibration
- International Journal of Fracture
- International Journal of Intelligent Material Systems
- International Journal of Mechanical Sciences
- International Journal of Nonlinear Mechanics
- International Journal of Numerical Methods in Engineering
- International Journal of Solids and Structures
- Journal of Applied Physics
- Journal of Composite Materials
- Journal of Intelligent Material Systems and Structures
- Journal of Micromechanics and Microengineering
- Journal of Smart Materials and Structures
- Journal of Sound and Vibration
- Journal of Thin-walled Structures
- Mechanics of Advanced Composite Materials
- Mechanics of Advanced Materials and Structures
- Mechanics Research Communications
- Philosophical Magazine
- Physical Review D
- Physical Review Letters
- Proceedings of the Royal Society of London
- Powder and Particle Journal
- Powder Technology
- Structural Mechanics
- Structural Mechanics and Engineering
- Wood and Fiber Science

REFEREED PUBLICATIONS

1. "Reduction of Free-Edge Stress Concentration", P.R. Heyliger and J.N. Reddy, *Journal of Applied Mechanics*, Vol. 52, No. 4, pp. 801-805 (1985).
2. "A Mixed Computational Algorithm for Plane Elastic Contact Problems, 1. Formulation", P.R. Heyliger and J.N. Reddy, *Computers and Structures*, Vol. 64, No. 4, pp. 621-637 (1987).
3. "A Mixed Computational Algorithm for Plane Elastic Contact Problems, 2. Numerical Examples", P.R. Heyliger and J.N. Reddy, *Computers and Structures*, Vol. 64, No. 4, pp. 638-653 (1987).
4. "A Mixed Updated Lagrangian Formulation for Plane Elastic Problems", J.N. Reddy and P.R. Heyliger, *Journal of Composites Technology and Research*, Vol. 9, No. 4, pp. 131-140 (1987).
5. "On a Mixed Finite Element Model for Large Deformation Analysis of Elastic Solids", P.R. Heyliger and J.N. Reddy, *International Journal for Non-linear Mechanics*, Vol. 23, No. 2, pp. 131-145 (1988).
6. "On Conventional and Quarter-Point Mixed Elements in Linear Elastic Fracture Mechanics", P.R. Heyliger, *Engineering Fracture Mechanics*, Vol. 31, pp. 157-171 (1988).
7. "A Higher Order Beam Finite Element for Bending and Vibration Problems", P.R. Heyliger and J.N. Reddy, *Journal of Sound and Vibration*, Vol. 126, pp. 309-326 (1988).
8. "Stress Intensity Factors by Enriched Mixed Finite Elements", P.R. Heyliger and R.D. Kriz, *International Journal for Numerical Methods in Engineering*, Vol. 28, pp. 1461-1473 (1989).
9. "Flaw Detection by Capacitive Array Sensors Using Finite and Infinite Elements", P.R. Heyliger, J.C. Moulder and N. Nakagawa, *International Journal of Numerical Modelling*, Vol. 2, pp. 117-129 (1989).
10. "Resonating-Orthotropic-Cube Method for Elastic Constants", P.R. Heyliger, H. Ledbetter and M.Austin, in *Dynamic Elastic Modulus Measurements in Materials*, ASTM STP 1045, Alan Wolfenden, editor, American Society for Testing and Materials, Philadelphia, 1989.
11. "Boundary Singularities in the Laplace Equation by Enriched Finite Elements", P.R. Heyliger, *Computers and Structures*, Vol. 34, pp. 681-683 (1990).
12. "Capacitive Arrays for Quantitative NDE", P.J. Schull, P.R. Heyliger and A.V. Clark, *Research in Nondestructive Evaluation*, Vol. 2, pp. 11-27 (1990).
13. "Axisymmetric Free Vibrations of Finite Anisotropic Cylinders", P.R. Heyliger, *Journal of Sound and Vibration*, Vol. 148, No. 3, 507-520 (1991).
14. "Theory of Capacitor Probe Method for Noncontact Characterization of Dielectric Properties of Materials", V. Tewary, P.R. Heyliger and A.V. Clark, *Journal of Materials Research*, Vol. 6, No. 3, 629-638 (1991).
15. "The Free Vibrations of Inhomogeneous Anisotropic Cylinders and Spheres", P.R. Heyliger and A. Jilani, *International Journal of Solids and Structures*, Vol. 29, pp. 2689-2708 (1992).
16. "Global-Local Finite Element Models for Calculating Fracture Parameters", P.R. Heyliger, *Engineering Fracture Mechanics*, Vol. 43, pp. 869-885 (1992).

17. "Evaluation of Field Singularities by an Iterative Boundary Element Method", P.R. Heyliger and T. Rudolphi, *Communications in Applied Numerical Methods*, Vol. 9, pp. 337-343 (1993).
18. "Free Vibrations of Laminated Anisotropic Cylindrical Shells", P. R. Heyliger and A. Jilani, *ASCE Journal of Engineering Mechanics*, Vol. 119, No. 5, pp. 1062-1077 (1993).
19. "Elastic Constants of Isotropic Cylinders Using Resonant Ultrasound", P. R. Heyliger, A. Jilani, H. Ledbetter, R. Leisure, C.-K. Wang, *Journal of the Acoustical Society of America*, Vol. 94, 1482-1487 (1993).
20. "Animation of Free Vibration Modes of Homogeneous Elastic Solids, P. R. Heyliger, M. Hussein, and H. Ledbetter, in *International Video Journal of Engineering Research*. Vol. 3, 73-83 (1993).
21. "Axisymmetric Free Vibrations of Homogeneous and Laminated Piezoelectric Cylinders", N. Kharouf and P. R. Heyliger, *Journal of Sound and Vibration*, Vol. 174, 539-561 (1994).
22. "Static Behavior of Piezoelectric Laminates with Distributed and Patched Electrodes", S. P. Brooks and P. R. Heyliger, *International Journal of Smart Material Systems and Structures*, Vol. 5, 635-646 (1994).
23. "Static Behavior of Laminated Elastic/Piezoelectric Plates", P. R. Heyliger, *AIAA Journal*, Vol. 32, 2481-2484 (1994).
24. "Coupled Discrete-Layer Finite Element Models for Laminated Piezoelectric Plates", P. R. Heyliger, G. Ramirez, and D. Saravanos, *Communications in Numerical Methods in Engineering*, Vol. 10, 971-981 (1994).
25. "Free Vibration of Piezoelectric Laminates in Cylindrical Bending", P.R. Heyliger, *International Journal of Solids and Structures*, Vol. 32, pp. 2945-2959 (1995).
26. "Coupled Electromechanical Response of Composite Beams with Embedded Piezoelectric Sensors and Actuators", D. A. Saravanos and P. R. Heyliger, *International Journal of Intelligent Material Systems and Structures*, Vol. 6, pp. 350-363 (1995).
27. "Exact Free Vibration Analysis of Laminated Plates with Embedded Piezoelectric Layers", P. R. Heyliger and D. A. Saravanos, *Journal of the Acoustical Society of America*, Vol. 98, No. 3, pp. 1547-1557 (1995).
28. "Elastic Constants and Internal Friction of Polycrystalline Copper", H. Ledbetter, C. Fortunko, and P. R. Heyliger, *Journal of Materials Research*, Vol. 10, pp. 1352-1353 (1995).
29. "Orthotropic Elastic Constants of a B/Al Fiber-Reinforced Composite: An Ultrasonic-Resonance-Spectroscopy Study", H. Ledbetter, P. R. Heyliger and C. Fortunko, *Journal of Applied Physics*, Vol. 78, pp. 1542-1546 (1995).
30. "Compressibility of Polycrystal and Monocrystal Copper: Ultrasonic-Resonance Spectroscopy", H. Ledbetter, S. Kim, C. Fortunko, and P. Heyliger, *International Journal of Thermophysics*, Vol. 17, pp. 263-269 (1995).
31. "Layerwise Mechanics and Finite Element Model for Laminated Piezoelectric Shells", P. R. Heyliger, K. C. Pei and D. A. Saravanos, *AIAA Journal*, Vol. 34, pp. 2353-2360 (1996).

32. "Discrete-Layer Analysis of Axisymmetric Vibrations of Laminated Piezoelectric Cylinders", M. Hussein and P. Heyliger, *Journal of Sound and Vibration*, Vol. 192, pp. 995-1003 (1996).
33. "Exact Solutions for Piezoelectric Laminates in Cylindrical Bending", P. R. Heyliger and S. P. Brooks, *ASME Journal of Applied Mechanics*, Vol. 63, pp. 903-910 (1996).
34. "Elastic Constants of Short-Fiber Textured Composites", M. Dunn, H. Ledbetter, P. Heyliger, W. Choi, *Journal of the Mechanics and Physics of Solids*, Vol. 44, pp. 1509-1541 (1996).
35. "Layerwise Mechanics and Finite Element for the Dynamic Analysis of Piezoelectric Composite Plates", D. A. Saravanos, P. R. Heyliger and D. A. Hopkins, *International Journal of Solids and Structures*, Vol. 34, pp. 359-378 (1997).
36. "Exact Solutions for Simply-Supported Laminated Piezoelectric Plates", P. R. Heyliger, *ASME Journal of Applied Mechanics*, Vol. 64, 299-306 (1997).
37. "Planar Free Vibrations of Off-Axis Piezoelectric Laminates", P. R. Heyliger, *ASCE Journal of Engineering Mechanics*, Vol. 123, 604-610 (1997).
38. "A Note on the Static Behavior of Simply-Supported Piezoelectric Cylinders", P. R. Heyliger, *International Journal of Solids and Structures*, Vol. 34, pp. 3781-3794 (1997).
39. "Detection of Surface and Subsurface Flaws in Homogeneous and Composite Solids Using Resonant Ultrasound", P. R. Heyliger and H. Ledbetter, *Journal of Nondestructive Evaluation*, Vol. 17, pp. 79-86 (1998).
40. "Three-Dimensional Vibrations of Layered Piezoelectric Cylinders", M. Hussein and P. R. Heyliger, *ASCE Journal of Engineering Mechanics*, Vol. 124, pp. 1294-1298 (1998).
41. "A Local/Global Matrix Formulation for Laminated Piezoelectric Media", P. R. Heyliger and G. Ramirez, *Mechanics Research Communications*, Vol. 25, pp. 701-708 (1998).
42. "Electroelastic Fields in Layered Piezoelectric Spheres", P. R. Heyliger and Y. C. Wu, *International Journal of Engineering Science*, Vol. 37, pp. 143-161 (1999).
43. "Mechanics and Computational Models for Laminated Piezoelectric Beams, Plates, and Shells", D. A. Saravanos and P. R. Heyliger, *Applied Mechanics Reviews*, Vol. 52, pp. 305-320 (1999).
44. "A Discrete Layer Model of Hygrothermopiezoelectric Plates", W. Smittakorn and P. R. Heyliger, *Mechanics of Composite Materials and Structures*, Vol. 7, pp. 79-104 (2000).
45. "Traction-Free Vibration of Layered Elastic and Piezoelectric Rectangular Parallelepipeds", P. R. Heyliger, *Journal of the Acoustical Society of America*, Vol. 107, pp. 1235-1245 (2000).
46. "Free Vibration of Laminated Circular Piezoelectric Plates and Discs", P. R. Heyliger and G. Ramirez, *Journal of Sound and Vibration*, Vol. 229, pp. 935-956 (2000).
47. "Mode-Selective Resonance Ultrasound Spectroscopy of a Layered Parallelepiped", H. Ogi, P. Heyliger, H. Ledbetter, and S. Kim, *Journal of the Acoustical Society of America*, Vol. 108, pp. 2829-2834 (2000).
48. "Free Vibration of Piezoelectric Spherical Caps", Y. Wu and P. R. Heyliger, *Journal of Sound and Vibration* **245**, pp. 527-544 (2001).

49. "Cold Plastic Compaction of Powders by a Network Model", P. R. Heyliger and R. M. McMeeking, *Journal of the Mechanics and Physics of Solids* **49** pp. 2031-2054 (2001).
50. "Anisotropic Elastic Constants: Measurement by Impact Resonance", P. R. Heyliger, P. Ugander, and H. Ledbetter, *ASCE Journal of Materials in Civil Engineering*, **13**, pp. 356-363 (2001).
51. "An Adaptive Wood Composite: Theory", W. Smittakorn and P. R. Heyliger, *Wood and Fiber Science* **33**, pp. 595-608 (2001).
52. "Free Vibrations of Simply Supported and Multilayered Magneto-Electro-Elastic Plates", E. Pan and P. R. Heyliger, *Journal of Sound and Vibration*, **252**, pp. 429-442 (2002).
53. "An Adaptive Wood Composite: Experiment", W. Smittakorn and P. R. Heyliger, *ASCE Journal of Structural Engineering*, Vol. 129, pp. 699-702 (2003).
54. "Traction-Free Vibration of Trigonal Elastic Cylinders," P. R. Heyliger and W. Johnson, *Journal of the Acoustical Society of America*, Vol. 113, pp. 1812-1825 (2003).
55. "Symmetrization of Ritz Approximation Functions for Vibrational Analysis of Trigonal Cylinders," W. Johnson and P. R. Heyliger, *Journal of the Acoustical Society of America*, Vol. 113, pp. 1826-1832 (2003).
56. "Frictionless Contact in a Layered Piezoelectric Half-Space", G. Ramirez and P. Heyliger, *Smart Materials and Structures*, Vol. 12, pp. 612-625 (2003).
57. "Elastic Constants of Natural Quartz", P. Heyliger, H. Ledbetter, and S. Kim, *Journal of the Acoustical Society of America*, Vol. 114, pp. 644-650 (2003).
58. "Exact Solutions for Magneto-Electro-Elastic Laminates in Cylindrical Bending," E. Pan and P. R. Heyliger, *International Journal of Solids and Structures*, Vol. 40, pp. 6859-6876 (2003).
59. "Elastic Constants of Layers in Isotropic Laminates," P. R. Heyliger, H. Ledbetter, S. Kim, and I. Reimanis, *Journal of the Acoustical Society of America*, Vol. 114, pp. 2618-2625 (2003).
60. "The Compaction of Aggregates of Non-Spherical Linear Viscous Particles," Y. C. Wu, E. G. Thompson, and P. R. Heyliger, *Computer Methods in Applied Mechanics and Engineering*, Vol. 192, pp. 4929-4946 (2003).
61. "Static Fields in Magnetoelastic Laminates," P. R. Heyliger and E. Pan, *AIAA Journal*, Vol. 42, pp. 1435-1443 (2004).
62. C. W. Yu, E. G. Thompson, and P. R. Heyliger, "The Compaction of Blended Aggregates of Non-Spherical Linear Viscous Particles," *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, pp. 3871-3890 (2004).
63. P. R. Heyliger, F. Ramirez, and E. Pan, "Two-Dimensional Static Fields in Magnetoelastic Laminates", *Journal of Intelligent Material Systems and Structures*, Vol. 15, pp. 689-709 (2004).
64. R. Hartschuh, A. Kisliuk, V. Novikov, A. Sokolov, P. R. Heyliger, C. M. Flannery, W. L. Johnson, C. L. Soles and W.-L. Wu, "Acoustic Phonon Confinement in Polymeric Nanostructures: Elastic Properties Probed by Brillouin Light Scattering", *Applied Physics Letters* **87**, pp. 173121-173123 (2005).

65. F. Ramirez, P. R. Heyliger, and E. Pan, "Static Analysis of Functionally Graded Elastic Anisotropic Plates Using a Discrete-Layer Approach," *Composites B* **37**, pp. 10-20 (2005).
66. P. R. Heyliger and J. Kienholz, "The Mechanics of Pyramids", *International Journal of Solids and Structures* **43**, pp. 2693-2709 (2006).
67. F. Ramirez, P. R. Heyliger, and E. Pan, "Free Vibration Response of Two-Dimensional Magneto-Electro-Elastic Laminated Plates," *Journal of Sound and Vibration* **292**, pp. 626-644 (2006).
68. F. Ramirez, P. R. Heyliger, and E. Pan, "Discrete Layer Solution to Free Vibrations of Functionally Graded Magneto-Electro-Elastic Plates", *Mechanics of Advanced Materials and Structures* **13**, pp. 249-266 (2006).
69. P. R. Heyliger, "Ritz Finite Elements for Curvilinear Particles", *Communications in Numerical Methods in Engineering* **22**, pp. 335-345 (2006).
70. A. Nair and P. R. Heyliger, "Elastic Waves in Combinatorial Material Libraries", *Wave Motion* **43**, pp. 529-543 (2006).
71. J. Chen, H. Chen, E. Pan, and P. R. Heyliger, "Modal Analysis of Magneto-Electro-Elastic Plates Using the State-Vector Approach", *Journal of Sound and Vibration*, **304**, pp. 722-734 (2007).
72. Ramirez, F., Heyliger, P. R., Rappe, A. K., and Leisure, R. G., "Breakdown of Frequency-Spectra Scaling of Si Nanoparticles", *Physical Review B*, **76** p. 085415 (2007).
73. Johnson, W., Martino, C. F., Kim, S. A., and Heyliger, P. R., "Mode-Selective Acoustic Spectroscopy of Trigonal Piezoelectric Crystals", *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* **55**, pp. 1133-1142 (2008).
74. P. R. Heyliger, E. Pan, S. Cook, and M. Manaloto, "The Influence of Shape and Material Anisotropy on the Vibrational Modes of Free Particles", *Journal of Sound and Vibration* **311**, pp. 184-199 (2008).
75. F. Ramirez and P. R. Heyliger, "Effective Mechanical Properties of Low-Density Fibrous Composites," *International Journal of Computational Methods in Engineering Science and Mechanics* **9**, pp. 91-102 (2008).
76. F. Ramirez, P. R. Heyliger, A. K. Rappe, and R. G. Leisure, "Vibrational Modes of Free Nanoparticles from Atomic to Continuum Scales," *Journal of the Acoustical Society of America* **123**, pp. 709-717 (2008).
77. P. R. Heyliger, W. L. Johnson, and C. Flannery, "Vibrational Modes of Nanolines," *Nanotechnology* **19**, 145707 (2008).
78. J. W. van de Lindt, P. R. Heyliger, J. A. H. Carraro, and C. Choi, "Application and Feasibility of Coal Fly Ash as a Wood Wall Insulation Supplement in Residential Buildings," *Resources, Conservation, and Recycling* **52**, pp. 1235-1240 (2008).
79. Johnson, W. L., Kim, S. A., Geiss, R., Flannery, C. M., Soles, C. L., Wang, C., Stafford, C. M., Wu, W.-L., Torres, J. M., Vogt, B. D., and Heyliger, P. R., "Elastic Constants and Dimensions of Imprinted Polymeric Nanolines Determined from Brillouin Light Scattering," *Nanotechnology* **21** 075703 (2010).

80. Ramirez, F., Heyliger, P. R., and Ramirez, G., Computational Simulation of Low-Density Fibrous Composites,” *Revista Facultad de Ingenieria - Universidad de Antioquia* **54**, pp. 73-83 (2010).
81. Johnson, W. L., Kim, S. A., Geiss, R., Flannery, C. M., Bertness, K. A., and Heyliger, P. R., “Vibrational Modes of GaN Nanowires in the Gigahertz Range,” *Nanotechnology* **23** p. 495709 (2012).
82. Heyliger, P. R., “When Beam Theories Fail,” *Journal of Mechanics of Materials and Structures* **8** p. 15-36 (2013).
83. Heyliger, P. R., and Johnson, W. L., “Continuum-based Free Vibration of Circular Isotropic and Trigonal Plates,” *Journal of the Acoustical Society of America* **134**, pp. 1039-1048 (2013).
84. Steadman, J., Atadero, R. A., and Heyliger, P. R., “Influence of Local Wall Variation in the Elastic Properties of Planar Cellular Solids,” *Mechanics of Advanced Materials and Structures* **21**, pp. 117-128 (2014).
85. Chen, J. Y., Heyliger, P. R., and Pan, E., “Free vibration of three-dimensional multilayered magneto- electro-elastic plates under combined clamped/free boundary conditions,” *Journal of Sound and Vibration* **333**, pp. 4017-4029 (2014).
86. Heyliger, P. R. “Elasticity-based free vibration of anisotropic thin-walled beams,” *Thin-Walled Structures* **95**, pp. 73-87 (2015).
87. Chen, J., Pan, E. and Heyliger, P.R. “Static deformation of a spherically anisotropic and multilayered magneto-electroelastic hollow sphere.” *International Journal of Solids and Structures* **60-61**, pp. 66-74 (2015).
88. Plankis, A., Lebsack, M., and Heyliger, P. R. “Elasticity-based beam vibrations for various support conditions,” *Applied Mathematical Modelling* **39**, pp. 6860-6879 (2015).
89. Wilson, J. M., Davis, C. J., Venayagamoorthy, S. K., and Heyliger, P. R. “Comparisons of Horizontal-Axis Wind Turbine Wake Interaction Models”, *ASME Journal of Solar Energy Engineering* **137**, p. 031001 (2015).
90. Jarrett, J. and Heyliger, P. R. “Elastic waves in sintered packings of planar discs and rings,” *Computational Particle Mechanics* **2**, pp. 209-220 (2015).
91. Heyliger, P. R., “Continuum-based stability of anisotropic and auxetic beams,” *Mechanics Research Communications* **69**, pp. 114-120 (2015).
92. Heyliger, P.R. “Elasticity alternatives to generalized Vlasov and Timoshenko models for composite beams,” *Composite Structures* **145** pp. 80-88 (2016).
93. Peterson, K.L., Johnson, W.L., Kim, S.A., and Heyliger, P.R. “Vibrational modes of multilayered ceramic capacitors,” *Finite Elements in Analysis and Design* **116**, pp. 1-11 (2016).
94. Peterson, K.L., Underhill, J., Carlson, B., and Heyliger, P.R. “The mechanics of plastic-aluminum composite I-beams,” *Composite Structures* **136**, pp. 241-250 (2016).
95. John, J., Radford, D. W., Venayagamoorthy, S. K., Heyliger, P. R. (2016). Elastic Field and Frequency Variation in Extendable Wind Turbine Blades. *Journal of Solar Energy Engineering*, 138(5), 054502.

96. Heyliger, P. R., Pan, E. (2016). Free vibration of layered magnetoelastic spheres. *Journal of the Acoustical Society of America*, 140(2), 988-999.
97. Johnson, W. L., Herzberger, J. L., Kim, S. A., Peterson, K. L., Heyliger, P. R., White, G. S. (2017). Resonant Acoustic Frequency Shifts Associated With Cracks in Multilayer Ceramic Capacitors. *IEEE Transactions on Device and Materials Reliability* 17(2), 316-323.
98. Jiang, Chao and Heyliger, P. R. (2017). Slenderness Effects in the Free Vibration of Laminated Magnetoelastic Beams, *Smart Materials and Structures* 26 085028.
99. Heyliger, P. R. (2017). Simple Cylindrical and Spherical Finite Elements. *International Journal for Numerical Methods in Engineering* 112 (13), 2174-2182.
100. Jiang, Chao and Heyliger, P.R. (2017) Thickness Effects in the Free Vibration of Laminated Magnetoelastic Plates, *Journal of Mechanics of Materials and Structures* 12 (4), 521-544.
101. Dinavahi, SL Divya, Chen, J, Heyliger, PR and Pan, E. Coupled Fields in layered thermo-magnetoelastic spheres. *Journal of Intelligent Material Systems and Structures* **29**, 2782-2794 (2018).
102. Alkharisi, MK and Heyliger, PR. Axial-Torsional Vibrational Modes of Braided and Trapezoidal Wires. *ASME Journal of Vibration and Acoustics* **141** 024501 (2019).
103. Hussein, A, Heyliger, P, and Mahmoud, H. Blast response of a thin oriented strand board wall. *Engineering Structures* **201** 109835 (2019).
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DISCUSSIONS

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