

Curriculum Vitae: Pradeep Sharma

EDUCATION:

1990–1994

Bachelor of Science in Mechanical Engineering
M.S. University of Baroda, India

2000

M.S. in Mechanical Engineering, University of Maryland at College Park.

1995–2000

Ph.D. in Mechanical Engineering, August 2000
University of Maryland, College Park

PROFESSIONAL ACCREDITATION:

Chartered Physicist (Ch.Phy.)---Institute of Physics, London, UK, 2003
Professional Engineer (P.E.)---registered in the State of Texas. Since 2016.

PROFESSIONAL EXPERIENCES:

2012 - present, M.D. Anderson Professor and Department Chair, Department of Mechanical Engineering, University of Houston, TX

2008-2011, Bill Cook Endowed Associate Professor, Department of Mechanical Engineering, University of Houston, TX

2005-2008, Bill Cook Endowed Assistant Professor, Department of Mechanical Engineering, University of Houston, TX

Jan 2004-2008, Assistant Professor, Department of Mechanical Engineering, University of Houston, TX

September 2000– October 2003, Research Scientist, General Electric Corp. R & D, Schenectady, NY

AWARDS AND HONORS:

- (1) ONR Young Investigator Award, 2005
- (2) Bill D. Cook Faculty Endowed Chair, 2005
- (3) Texas Space Grants Consortium New Investigators Program Award, 2005
- (4) University of Houston, Excellence in Research and Scholarship Award, Assistant Professor Level, 2006
- (5) University of Houston, Cullen College of Engineering Junior Faculty Award, 2007
- (6) Thomas J.R. Hughes ASME Young Investigator Award¹, 2009; **Citation:** “*For outstanding contributions to understanding size-effects of coupled mechanical and physical phenomena in materials*”.
- (7) Faculty of the Year award by local ASME student chapter—2010
- (8) University of Houston, Excellence in Research and Scholarship Award, Associate Professor Level, 2011
- (9) Distinguished M.D Anderson Professorship, 2012
- (10) Fulbright Fellowship, 2013

¹ Awarded annually by the ASME to a mechanician under 40.

- (11) ASME Fellow, 2013
- (12) University of Houston Teaching Award, 2013
- (13) ASME Melville Medal, 2015
- (14) James R. Rice Medal from the Society of Engineering Science, 2019
- (15) Charles Russ Richards Medal (highest joint award of Pi Tau Sigma and ASME), 2019
- (16) The Guggenheim Fellowship, for exceptional scholarship or creativity; only one award in engineering per year, 2020

SOCIETY LEADERSHIP

- (1) Board member, Society of Engineering Science, 2012-2016
- (2) President, Society of Engineering Science, 2015
- (3) Track chair of ASME Annual IMECE Conference, 2015
- (4) Member of the Executive Committee, Applied Mechanics Division, ASME, 2013-2018
- (5) Chair, Executive Committee, Applied Mechanics Division, ASME, 2018

JOURNAL EDITORSHIP

- (1) Guest Editor: *Mathematics and Mechanics of Solids*, 2007 (special issue on size-effects in mechanics)
- (2) Founding Editor: *iMechanica Journal Club*, 2007
- (3) Associate Editor: *Journal of the Mechanics and Physics of Solids*
- (4) Associate Editor: *Mathematics and Mechanics of Solids*
- (5) Associate Editor: *Transactions of the ASME---Journal of Engineering Materials and Technology*
- (6) (past) Associate Editor: *Journal of Theoretical and Computational Nanoscience*
- (7) (past) Associate Editor: *Transactions of the ASME --Journal of Applied Mechanics*
- (8) Editorial Board Member: *International Journal of Applied Mechanics*

PATENTS

- (1) Monolithic light emitting devices based on wide bandgap semiconductor nanostructures and methods for making same; US Patent Issued on October 17, 2006
- (2) Fabrication of self-assembling nanostructures; US Patent issued on March 27, 2008

BOOK CHAPTERS

(Invited) R. Maranganti, and **P. Sharma**, "A Review of Strain Field Calculations in Embedded Quantum Dots and Wires", Chapter 118, *Handbook of Theoretical and Computational Nanotechnology*, Michael Reith and Wolfram Schommers (eds.), 2006

(Invited) Q. Deng, L. Liu, and **P. Sharma**, "A Continuum Theory of Flexoelectricity", Chapter 3, *Flexoelectricity in Solids: From Theory to Applications*, A.K. Tagantsev and P.V. Yudin (eds.), 2017

(Invited) K. Mozaffari, S. Yang, **P. Sharma**, "Surface Energy and Nanoscale Mechanics", *Handbook of Materials Modeling*, Andreoni W., Yip S. (eds.), 1-26, 2019

SELECTED REFEREED JOURNAL PUBLICATIONS: Reprints and preprints of most listed papers are available on the following website: <http://sharma.me.uh.edu>

1. M. Grasinger, K. Mozaffari, **P. Sharma**, “Flexoelectricity in soft elastomers and the molecular mechanisms underpinning the design and emergence of giant flexoelectricity”, *Proceedings of the National Academy of Sciences*, **118 (21)**, 2021
2. F. Darbaniyan, K. Mozaffari, L. Liu, **P. Sharma**, ” Soft Matter Mechanics and the Mechanisms Underpinning the Infrared Vision of Snakes”, *Matter*, **4**, 241-252, 2021 ([Highlighted by Physics World](#))([Highlighted by Scientific American](#))
3. L. Chen, X. Yang, B. Wang, S. Yang, K. Dayal, **P. Sharma**, “The interplay between symmetry-breaking and symmetry-preserving bifurcations in soft dielectric films and the emergence of giant electro-actuation”, *Extreme Mechanics Letters*, 101151, **43**, 2021
4. K. Mozaffari, F. Ahmadpoor, **P. Sharma**, “Flexoelectricity and the entropic force between fluctuating fluid membranes”, *Mathematics and Mechanics of Solids*, 2021
5. S. Yang, **P. Sharma**, ” A tutorial on the stability and bifurcation analysis of the electromechanical behaviour of soft materials”, *arXiv preprint arXiv:2011.08665*, 2020
6. K. Tan, X. Wen, Q. Deng, S. Shen, L. Liu, **P. Sharma**, “Soft rubber as a magnetoelectric material—Generating electricity from the remote action of a magnetic field”, *Materials Today*, 2020
7. A. Apte, K. Mozaffari, L.S. Samghabadi, J.A. Hachtel, L. Chang, S. Susarla, J.C. Idrobo, D.C. Moore, N.R. Glavin, D. Litvinov, **P. Sharma**, A.B. Puthirath, P.M. Ajayan, “2D Electrets of Ultrathin MoO₂ with Apparent Piezoelectricity”, *Advanced Materials* , 2000006(1-8), 2020
8. C. Liu, X. Yan, **P. Sharma**, Y. Fan, “Unraveling the non-monotonic ageing of metallic glasses in the metastability-temperature space”, *Computational Materials Science*, **172**, 109347, 2020
9. J. Yvonnet, X. Chen, **P. Sharma**, “Apparent Flexoelectricity Due to Heterogeneous Piezoelectricity”, *Journal of Applied Mechanics*, **87**, 111003(1-10), 2020
10. Z. Li, Z. Liu, T. Y. Ng, **P. Sharma**, “The effect of water content on the elastic modulus and fracture energy of hydrogel”, *Extreme Mechanics Letters*, **35**, 100617, 2020
11. F. Darbaniyan, X. Yan, **P. Sharma**, “An atomistic perspective on the effect of strain rate and lithium fraction on the mechanical behavior of silicon electrodes”, *Journal of Applied Mechanics*, **87**, 031011(1-7), 2020
12. B. Wang, S. Yang, **P. Sharma**, “Flexoelectricity as a universal mechanism for energy harvesting from crumpling of thin sheets”, *Physical Review B*, **100**, 035438(1-11), 2019
13. Q. Deng, F. Ahmadpoor, W. E. Brownell, **P. Sharma**, “The collusion of flexoelectricity and Hopf bifurcation in the hearing mechanism”, *Journal of the Mechanics and Physics of Solids*, **130**, 245-261, 2019
14. S. Krichen, L. Liu, **P. Sharma**, “Liquid inclusions in soft materials: capillary effect, mechanical stiffening and enhanced electromechanical response”, *Journal of the Mechanics and Physics of Solids*, **127**, 332-357, 2019
15. F. Darbaniyan, K. Dayal, L. Liu, **P. Sharma**, “Designing soft pyroelectric and electrocaloric materials using electrets”, *Soft Matter*, **15**, 262 – 277, 2019
16. A.H. Rahmati, S. Yang, S. Bauer, **P. Sharma**, “Nonlinear bending deformation of soft electrets and prospects for engineering flexoelectricity and transverse (d₃₁) piezoelectricity”, *Soft Matter*, **15**, 127 – 148, 2019
17. R. Zhao, Y. Kim, S. A. Chester, **P. Sharma**, X. Zhao, “Mechanics of Hard-Magnetic Soft Materials”, *Journal of the Mechanics and Physics of Solids*, **124**, 244-263, 2019
18. L. Liu, **P. Sharma**. “Emergent electromechanical coupling of electrets and some exact relations—the effective properties of soft materials with embedded external charges and dipoles.”, *Journal of the Mechanics and Physics of Solids*, **112**, 1-24, 2018

19. Z. Alameh, S. Yang, Q. Deng, **P. Sharma**. “Emergent magnetoelectricity in soft materials, instability, and wireless energy harvesting”, *Soft Matter*, **14**, 5856 – 5868, 2018
20. X. Yan, A. Gouissem, P. Guduru, **P. Sharma**. “Elucidating the atomistic mechanisms underpinning plasticity in Li-Si nano-structures”, *Physical Review Materials*, 055401(1-9), 2017
21. M. Zelisko, F. Ahmadpoor, H. Gao, P. Sharma. “Determining the Gaussian modulus and edge properties of 2D materials from graphene to lipid bilayers”, *Physical Review Letters*, **119**, 068002(1-6), 2017
22. S. Krichen, L. Liu, P. Sharma. “Biological cell as a soft magnetoelectric material: Elucidating the physical mechanisms underpinning the detection of magnetic fields by animals”, *Physical Review E*, 042404(1-11), 2017
23. S. Yang, X. Zhao, **P. Sharma**. “Avoiding the pull-in instability of a dielectric elastomer film and the potential for increased actuation and energy harvesting”, *Soft Matter*, **13**, 4552 – 4558, 2017
24. F. Ahmadpoor, P. Wang, R. Huang, **P. Sharma**. “Thermal fluctuations and effective bending stiffness of elastic thin sheets and graphene: A nonlinear analysis”, *Journal of the Mechanics and Physics of Solids*, **107**, 294–319, 2017
25. S. Yang, X. Zhao, P. Sharma, “Revisiting the instability and bifurcation behavior of soft dielectrics”, *Journal of Applied Mechanics*, **84**, 2017
26. X. Yan*, **P. Sharma**, “Time Scaling in Atomistics and the Rate-dependent Mechanical Behavior of Nanostructures”, *Nano Letters*, **16**, 3487–3492, 2016
27. S. Krichen*, **P. Sharma**, “Flexoelectricity: a Perspective on an Unusual Electromechanical Coupling”, *Journal of Applied Mechanics*, **83**, 030801(1-5), 2016
28. F. Ahmadpoor*, **P. Sharma**, “Thermal Fluctuations of Vesicles and Nonlinear Curvature Elasticity-implications for Size-dependent Renormalized Bending Rigidity and Vesicle Size Distribution”, *Soft Matter*, **12**, 2523-2536, 2016
29. X. Li, L. P. Liu, **P. Sharma**, “A New Type of Maxwell Stress in Soft Materials Due to Quantum Mechanical-elasticity Coupling”, *Journal of the Mechanics of Physics of Solids*, **87**, 115-129, 2016
30. H. Agrawal*, M. Zelisko*, L. Liu, **P. Sharma**, “Rigid Proteins and Softening of Biological Membranes—with Application to HIV-Induced Cell Membrane Softening”, *Scientific Reports*, **6**, 25412(1-12), 2016
31. F. Ahmadpoor*, **P. Sharma**, “Flexoelectricity in Two-dimensional Crystalline and Biological Membranes”, *Nanoscale*, **7**, 16555-16570, 2015
32. X. Li, L. P. Liu, **P. Sharma**, “Geometrically Nonlinear Deformation and the Emergent Behavior of Polarons in Soft Matter”, *Soft Matter*, **11**, 8042-8047, 2015
33. Y. Liu, H. Cai, M. Zelisko, Y. Wang, J Y. Hanlumyuang, X. Li, **P. Sharma**, “Mechanical strain can switch the sign of quantum capacitance from positive to negative”, *Physical Chemistry Chemical Physics*, **16(42)**, 22962-22967, 2014
34. . Sun, F. Yan, F. Ma, Pwang, Q. N. Chen, H. Zheng, X. Meng, **P. Sharma**, Y. Zhang, J. Li, “Ferroelectric switching of elastin”, *Proceedings of the National Academy of Sciences*, **111 (27)**, E2780-E2786, 2014
35. M. Zelisko, Y. Hanlumyuang, S. Yang, Y. Liu, C. Lei, J. Li, P. M. Ajayan, **P. Sharma**, “Anomalous piezoelectricity in two-dimensional graphene nitride nanosheets”, *Nature Communications*, **5:4284**, 2014
36. Q. Deng, L. P. Liu, **P. Sharma**, “Electrets in soft materials: Nonlinearity, size effects, and giant electromechanical coupling”, *Physical Review E*, **90**, 012603, 2014
37. Q. Deng, L.P. Liu, **P. Sharma**, “Flexoelectricity in soft materials and biological membranes”, *Invited Paper for Sixtieth anniversary issue in honor of Professor Rodney Hill, Journal of the Mechanics of Physics of Solids*, **62**, 209-227, 2014
38. Boron Nitride – Graphene Nanocapacitor and the Origins of Anomalous Size-dependent

- Increase of Capacitance, G. Shi, Y. Hanlumuayang, Z. Liu, Y. Gong, W. Gao, J. Lou, R. Vajtai, **P. Sharma**, P.M. Ajayan, *Nano Letters*, **14**, 1739-1744, 2014
39. P. Mohammadi, L.P. Liu, **P. Sharma**, "A theory of flexoelectric membranes and effective properties of heterogeneous membranes", *Journal of Applied Mechanics*, **81**, 011007-2, 2014
 40. Q. Deng, M. Kammoun, A. Erturk, **P. Sharma**, "Nanoscale flexoelectric energy harvesting", *International Journal of Solids and Structures*, **51**, 3218-3225, 2014
 41. Y. Hanlumuayang, L.P. Liu, **P. Sharma**, "Revisiting the entropic force between fluctuating biological membranes", *Journal of the Mechanics of Physics of Solids*, **63**, 179-186, 2014
 42. R. Mbarki, N. Baccam, Kaushik Dayal, **P. Sharma**, "Piezoelectricity above the Curie temperature? Combining exoelectricity and functional grading to enable high-temperature electromechanical coupling", *Applied Physics Letters*, **104**, 122904, 2014
 43. **P. Sharma**, "Entropic force between membranes reexamined", *Proceedings of the National Academy of Sciences*, 110(6), 1976-1977, 2013
 44. L.P. Liu, **P. Sharma**, "Giant and universal magneto-electric coupling in soft materials and the concomitant ramifications for materials science and biology", *Physical Review E*, **88**, 040601(R), 2013
 45. L.P. Liu and **P. Sharma**, "Flexoelectricity and thermal fluctuations of lipid bilayer membranes: Renormalization of flexoelectric, dielectric, and elastic properties", *Physical Review E*, **87**, 032715, 2013
 46. Z. Liu, Y. Zhan, S. Moldovan, M. Gharbi*, L. Song, G. Shi, L. Ma, W. Gao, S. Zhao, J. Huang, R. Vajtai, F. Banhart, **P. Sharma**, J. Lou, P.M. Ajayan, "Anomalous High Capacitance in a Coaxial Nanowire Capacitor", *Nature Communications*, **3**:879, 2012
 47. S. Chandratre*, **P. Sharma**, "Coaxing Graphene to be Piezoelectric", *Applied Physics Letters*, **100**, 023114-1-023114-3, 2012
 48. P. Chhapadia*, P. Mohammadi*, **P. Sharma**, "Curvature-dependent Surface Energy and Implications for Nanostructures", *Journal of the Mechanics and Physics of Solids*, **59**, 2103-2115, 2011
 49. P. Mohammadi, L.P. Liu, **P. Sharma**, R.V. Kukta, "Surface energy, elasticity and the homogenization of rough surfaces", *Journal of the Mechanics of Physics of Solids*, **61**, 325-340, 2013
 50. S. Dai**, M. Gharbi*, **P. Sharma**, H.S. Park, "Surface Piezoelectricity, Size-effects in Nanostructures and Emergent Piezoelectricity in Non-piezoelectric Materials", *Journal of Applied Physics*, **110**, 104305, 2011
 51. C. Mi, D. A. Buttry, **P. Sharma**, D.A. Kouris, "Atomistic insights into dislocation-based mechanisms of void growth and coalescence", *Journal of the Mechanics and Physics of Solids*, Volume 59, Issue 9, 1858, 2011
 52. R. Maranganti* and **P. Sharma**, "Revisiting Quantum Notions of Stress", *Proceedings of Royal Society A*, **466**, 1097-1116, 2010
 53. M. Gharbi*, Z.H. Sun, K. White, S. El-Borgi, and **P. Sharma**, "Flexoelectric properties of ferroelectrics and the nanoindentation size-effect", *International Journal of Solids and Structures*, **48** (2011) 249-256
 54. N.D.Sharma*, C.M.Landis and **P. Sharma**, "Piezoelectric Thin-Film Super Lattices Without Using Piezoelectric Materials", *Journal of Applied Physics*, **108**, 024304, 2010
 55. M. Gharbi*, Z.H. Sun**, **P. Sharma**, K. White, "The Origins of Electromechanical Indentation Size Effect in Ferroelectrics", *Applied Physics Letters*, **95**, 142901, 2009
 56. M.S. Majdoub*, R. Maranganti*, **P. Sharma**, "Understanding the origins of the intrinsic dead layer effect in nanocapacitors", *Physical Review B*, **79**, 115412, 2009
 57. R. Maranganti* and **P. Sharma**, "Atomistic Determination of Flexoelectric Properties of Crystalline Dielectrics", *Physical Review B* **80**, 054109, 2009

58. **(Invited)** A. K. Tagantsev, V. Meunier, and **P. Sharma**, "Novel Electromechanical Phenomena at the Nanoscale: Phenomenological Theory and Atomistic Modeling", *MRS bulletin*, volume 34 , 2009
59. F. Shi*, **P. Sharma** and G.H. Gunaratne, "How To Create Perfectly Ordered Quantum Dots via Self-Assembly, *Chaos*, 19 , 033141 ,2009
60. X. Zhang*, M. Gharbi*, **P. Sharma**, and H. T. Johnson, "Quantum Field Induced Strains in Nanostructures and Prospects for Optical Actuation", *International Journal of Solids and Structures*, 46,3810–3824, 2009
61. M.S. Majdoub*, **P. Sharma** and T. Cagin, Enhanced Size-Dependent Piezoelectricity And Elasticity in Nanostructures Due to The Flexoelectric Effect", *Physical Review B*, 77, 125424-1 – 125424-9, 2008
62. M.S. Majdoub*, **P. Sharma** and T. Cagin, "Dramatic Enhancement in Energy Harvesting For a Narrow Range of Dimensions in Piezoelectric Nanostructures", *Physical Review B*, 78, 121407 (R), 2008
63. S. Sahoo, R. Maranganti*, S. Lastella, G. Mallick, S. Karna, **P. Sharma** and P.M. Ajayan, "Reversible Separation of Single-Walled Carbon Nanotubes in Bundles", *Applied Physics Letters*, **93**, 083120, 2008
64. F. Shi*, **P. Sharma**, D.J. Kouri, F. Hussain and G.H. Gunaratne, "Nanostructures with Long-Range Order in Monolayer Self-Assembly ", *Physical Review E*, 78, 025203, 2008
65. R. Maranganti* and **P. Sharma**, "Length Scales at Which Classical Elasticity Breaks Down for Various Materials", *Physical Review Letters*, **98**, 195504-1– 195504-4, 2007
66. X.Zhang*, **P.Sharma** and H.T.Johnson, "Quantum Confinement Induced Strain in Quantum Dots", *Physical Review B*, **75**, 155319-1– 155319-8, 2007
67. N.D. Sharma*, R. Maranganti* and **P. Sharma**, "On the Possibility of Piezoelectric Nanocomposites without using Piezoelectric Materials", *Journal of the Mechanics and Physics of Solids*, **55**, 2328–2350, 2007
68. R. Maranganti* and **P. Sharma**, "A Novel Atomistic Approach to Determine Strain Gradient Elasticity Constants: Tabulation and Comparison for Various Metals, Semiconductors, Silica, Polymers and the (Ir) relevance for Nanotechnologies", *Journal of the Mechanics and Physics of Solids*, Vol. 55, issue 9, p. 1823-1852, 2007
69. S. Hu**, G. Nathan**, F. Hussain, D.J. Kouri, **P. Sharma**, and G.H. Gunaratne, "On Stability of Self-Assembled Nanoscale Patterns", *Journal of the Mechanics and Physics of Solids*, **55**, 1357– 1384, 2007
70. **(Invited Review Article)** R.Maranganti*, **P.Sharma**, and L.Wheeler, "Quantum Notion of Stress", *Journal of Aerospace Engineering*, **20**, 22– 37, 2007
71. **P. Sharma**, and L.T. Wheeler, "Size-dependent Elastic State of Ellipsoidal Nano-inclusions Incorporating Surface/Interface Tension", *Journal of Applied Mechanics*, **74**, 447– 454, 2007
72. X. Peng**, S. Ganti, **P. Sharma**, A. Alizadeh, S. Nayak, S. Kumar, "Strain Engineered Photoluminescence of Silicon Nanoclusters", *Physical Review B* **74**,035339-1– 035339-5, 2006
73. R. Maranganti*, N.D. Sharma* and **P. Sharma**, "Electromechanical Coupling in Non-piezoelectric Materials due to Nonlocal Size Effects at the Nanoscale: Fundamental Solutions (Green's Functions) and Embedded Inclusions", *Physical Review B* **74**,014110-1– 014110-14, 2006
74. X. Zhang*, J.Kun**, **P. Sharma** and B. Yakobson, "An Atomistic and Non-classical Continuum Field Theoretic Perspective of Elastic Interactions between Defects (Force Dipoles) of Various Symmetries and Application to Graphene", *Journal of the Mechanics and Physics of Solids*, **54**, 2304-2329, 2006
75. **P. Sharma** and X. Zhang*, "Gauge Field Theoretic Solution of a Uniformly Moving Screw Dislocation and Admissibility of Supersonic Speeds", *Physics Letters A* **349**, 170–176, 2006

76. X. Zhang* and **P. Sharma**, "On the Scaling of Strain in Arbitrary Shaped, Anisotropic Embedded Quantum Dots due to (Nonlocal) Dispersive Effects", *Physical Review B*, **72**, 195345, 2005
77. X. Peng**, S. Ganti, **P. Sharma**, A. Alizadeh, S. Nayak, S. Kumar, "Novel Scaling Laws for Band Gaps of Quantum Dots", *Journal of Computational and Theoretical Nanotechnology*, **2**, 3, 2005
78. A. Mathur**, **P. Sharma**, R. Cammarata, "Negative Surface Energy: A Cautionary Note", *Nature Materials*, **4**, 186, 2005
79. Z. Li**, P. Dharap**, **P. Sharma**, S. Nagarajaiah and B. Yakobson, "A Physically Inspired Continuum Field Interpretation of (Stone-Wales) Defect Formation in Single Walled Carbon Nanotubes", *Journal of Applied Physics*, **97**, 074303, 2005
80. F. Shahedipour-Sandvik, J. Grandusky, A. Alizadeh, C. Keimel, S. P. Ganti, S. T. Taylor, S. F. LeBoeuf and **P. Sharma**, "Strain Dependent Facet Stabilization in Selective-area Heteroepitaxial Growth of GaN Nanostructures", *Applied Physics Letters*, **87**, 233108, 2005
81. X. Zhang* and **P. Sharma**, "Inclusions and Inhomogeneities in Second Gradient Elasticity with Couple Stresses and Related Problems", *International Journal of Solids and Structures*, **42**, 3833, 2005
82. **P. Sharma**, and S. Ganti, "Gauge-field-theory Solution of the Elastic State of a Screw Dislocation in a Dispersive (non-local) Crystalline Solid", *Proceedings of the Royal Society*, **461**, 1081, 2005
83. **P. Sharma**, A. Dasgupta, and G. Cuddalorepatta**, "The Connection Between Microstructural Damage Modeling and Continuum Damage Modeling for Eutectic Sn-Pb Solder Alloys", accepted, *International Journal of Damage Mechanics*, **14**, 343-363, 2005
84. A. Alizadeh, **P. Sharma**, S. Ganti, S. LeBoeuf, L. Tsakalagos, "Templated Wide Bandgap Nanostructures", *Journal of Applied Physics*, **95**, No. 12, 8199, 2004
85. **P. Sharma**, S. Ganti, H. Ardebili, A. Alizadeh, "Scaling of Thermal Stresses in Passivated Nano-interconnects", *Journal of Applied Physics*, **95**, No. 5, p 2763, 2004
86. **P. Sharma** and S. Ganti, "Size-dependent Eshelby's Tensor for Embedded Nano-inclusions Incorporating Surface/Interface Energies", *Journal of Applied Mechanics*, Vol 71, 663, 2004
87. **P. Sharma**, "Inclusions and Defects in Chiral Solids", *International Journal of Solids and Structures*, **41**, 6317, 2004
88. **P. Sharma**, S. Ganti and N. Bhate, "The Effect of Surfaces on the Size-Dependent Elastic State of (Nano) Inhomogeneities", *Applied Physics Letters*, **82**, No 4, 2003
89. **P. Sharma**, and S. Ganti, "On the Grain-size Dependent Elastic Modulus of Nanocrystalline Materials with and without Grain Boundary Sliding", *Journal of Materials Research*, 1823-1826, 18, No.8, 2003
90. **P. Sharma**, and S. Ganti, "The Size-dependent Elastic State of Inclusions in Non-local Elastic Solids", *Philosophical Magazine Letters*, Vol. 83, No. 12, 745, 2003
91. **P. Sharma**, and R. Sharma, "On the Eshelby's Inclusion Problem for Ellipsoids with Non-Uniform Dilatational Gaussian and Exponential Eigenstrains", *Journal of Applied Mechanics*, 70, No 3, 418-425, 2003
92. **P. Sharma**, A. Dasgupta, S. Ganti and J. Loman, "Prediction of Rate-Independent Constitutive Behavior of Pb-Free Solders Based on First Principles", *IEEE Transactions on Components and Packaging*, **26**, 659, 2003
93. **P. Sharma**, and A. Dasgupta, "Scale-Dependent Average Elastic Fields of Spherical and Cylindrical Inhomogeneities in Micropolar Medium and Overall Properties", *Physical Review B* **66**, 2241XX, 2002
94. **P. Sharma**, and S. Ganti, "Interfacial Elasticity Corrections to the Elastic State of Quantum Dots", *Physica Status Solidi (b)* **234**, No.3, R10-R12, 2002
95. **P. Sharma**, H. Ardebili and J. Loman, "A Note on the Thermal Stresses in Passivated Metal Interconnects", *Applied Physics Letters*, Vol. 79, No. 11, p 1706, 2001

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97. L. Chen, X. Yang, B. Wang, S. Yang, K. Dayal, **P. Sharma**, "The interplay between symmetry-breaking and symmetry-preserving bifurcations in soft dielectric films and the emergence of giant electro-actuation", *Extreme Mechanics Letters*, 101151, 43, 2021
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99. K. Tan, X. Wen, Q. Deng, S. Shen, L. Liu, **P. Sharma**, "Soft rubber as a magnetoelectric material—Generating electricity from the remote action of a magnetic field", *Materials Today*, 2020
100. J. Yvonnet, X. Chen, **P. Sharma**, "Apparent Flexoelectricity Due to Heterogeneous Piezoelectricity", *Journal of Applied Mechanics*, 87, 111003(1-10), 202
101. P.S. Owuor, T. Tsafack, H. Agrawal, H.Y. Hwang, M. Zelisko, T. Li, S. Radhakrishnan, J.H. Park, Y. Yang, A.S. Stender, S. Ozden, J. Joyner, R. Vajtai, B.A. Kaiparettu, B. Wei, J. Lou, **P. Sharma**, C.S. Tiwary, P.M. Ajayan, "Poly-albumen: Bio-derived structural polymer from polymerized egg white", *Materials Today Chemistry*, 9, 73 – 79, 2018
102. F. Ahmadpoor, **P. Sharma**, "A perspective on the statistical mechanics of 2D materials", *Extreme Mechanics Letters*, 38-43, 84, 2017
103. **P. Sharma**. "Book Review; Extending the Theory of Composites to Other Areas of Science", *Journal of Applied Mechanics*, 84, 2017
104. X. Yan, **P. Sharma**, "Time scaling in atomistics and the rate-dependent mechanical behavior of nanostructures", *Nano Letters*, 16, 3487–3492, 2016
105. F. Liu, L. You, K. L. Seyler, X. Li, P. Yu, J. Lin, X. Wang, J. Zhou, H. Wang, H. He, S. T. Pantelides, W. Zhou, **P. Sharma**, X. Xu, P. M. Ajayan, J. Wang, Z. Liu, "Room-temperature ferroelectricity in CuInP2S6 ultrathin flakes", *Nature Communications*, 7, 12357(1-6), 2016
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