

# HANQING JIANG

Associate Professor

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## PROFESSIONAL EXPERIENCE

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| <b>Associate Professor</b><br><i>Mechanical and Aerospace Engineering</i><br>Arizona State University, Tempe, Arizona                            | Aug. 2011 - present   |
| <b>Assistant Professor</b><br><i>Mechanical and Aerospace Engineering</i><br>Arizona State University, Tempe, Arizona                            | Aug. 2006-Aug. 2011   |
| <b>Research Scientist</b><br><i>Department of Mechanical and Industrial Engineering</i><br>University of Illinois, Urbana, Illinois              | Jul. 2005 - Aug. 2006 |
| <b>Postdoctoral Research Associate</b><br><i>Department of Mechanical and Industrial Engineering</i><br>University of Illinois, Urbana, Illinois | Jul. 2001 – Jul. 2005 |

## EDUCATION

- |                                     |  |           |
|-------------------------------------|--|-----------|
| <b>Ph.D.</b> , Solid Mechanics      | Tsinghua University, China             | 1996-2001 |
| <b>B.E.</b> , Engineering Mechanics | Dalian University of Technology, China | 1992-1996 |

## HONORS AND AWARDS

- NSF CAREER Award, 2009
- National Excellent Doctoral Dissertation Award, China, 2003

## RESEARCH INTERESTS

- Heterogeneous soft/hard materials
- Mechanics and devices of energy storage
- Nanomaterials and nanomechanics

## PEER-REFEREED JOURNAL PAPERS

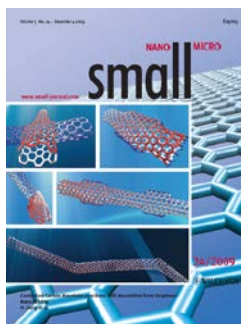
77 Peer-reviewed journal papers, including 1 in Science, 1 in Nature Nanotechnology, 1 in PNAS, 2 in Nano Letters, 2 in Advanced Materials, 1 in Small, 2 in PRL, 9 in JMPS, 2 in IJP and 2 review articles.

1960 Total Citation, h index 24 --- ISI Database, April 10, 2012

1. H. Lee, J. Zhang, H. Jiang, and N. Fang, Prescribed Pattern Transformation in Swelling Gel Tubes by Elastic Instability, *Physical Review Letters* (in press).
2. J. Zhang, Y. AN, K. Yazzie, N. Chawla, and H. Jiang, Finite Element Simulation of Swelling-Induced Crack Healing in Gels, *Soft Matter* (in press).
3. K. Yazzie, H. Fei, H. Jiang, and N. Chawla, Rate Dependent Behavior of Sn Alloy-Cu Couples: Effects of Microstructure and Composition on Mechanical Shock Resistance Acta Materialia, *Acta Materialia* (in press).
4. H. Fei, K. Yazzie, N. Chawla, and H. Jiang, Modeling Fracture of Sn-Rich (Pb-Free) Solder Joints under Mechanical Shock Conditions, *Journal of Electronic Materials* (in press).
5. L. Jiang, H. Jiang, and N. Chawla, The Effect of Crystallographic Orientation on the Mechanical Behavior of Cu<sub>6</sub>Sn<sub>5</sub> by Micropillar Compression Testing, *Journal of Electronic Materials* (in press).
6. H. Fei, A. Abraham, N. Chawla, and H. Jiang, Evaluation of Micro-Pillar Compression Tests for Accurate Determination of Elastic-Plastic Constitutive Relations, *Journal of Applied Mechanics* (in press).
7. J. Li, Y. An, R. Huang, H. Jiang and T. Xie, 2012, Unique aspects of a shape memory polymer as the substrate for surface wrinkling, *ACS Applied Materials & Interfaces* (in press).
8. H. Fei, K. Yazzie, N. Chawla, and H. Jiang, 2012, Simulating Void Nucleation and Growth in Sn-Rich solders Using a Modified Gurson Model, *Journal of Electronic Materials*, **41**, 177-183.
9. C. Yu, X. Li, T. Ma, J. Rong, R. Zhang, J. Shaffer, Y. An, Q. Liu, B. Q. Wei, and H. Jiang, 2012, Silicon Thin Films As Anodes For High Performance Lithium Ion Batteries With Effective Stress Relaxation, *Advanced Energy Materials*, **2**, 68-73.
10. Y. An, X. Li, Q. Wei, and H. Jiang, 2011, A Statistical Mechanics Model of Carbon Nanotube Macro-films, *Theoretical and Applied Mechanics Letters*, **1**, 041003.
11. J. Li, R. Zhang, H. Jiang, and G. J. Cheng, 2011, Scalable Nano-Patterning of Graphenes Using Laser Shock, *Nanotechnology*, **22**, 475303.
12. C. Yu, Y. Pan, H. Ma, T. Ma, J. Zhang, Y. Song, M. Y. S. Kalani, L. Dai, and H. Jiang, 2011, Thermoresponsiveness of Integrated Ultra-thin Silicon with Poly(N-isopropylacrylamide) Hydrogels, *Macromolecular Rapid Communications*, **32**, 820-824.
13. R. Zhang, H. Jiang, Molecular Dynamic Simulations of Forming Graphene Nanoribbons from Single-Wall Carbon Nanotubes, 2011, *Journal of Computational Theoretical Nanoscience*, **8**, 717-721.
14. H. Fei, K. Yazzie, J. Williams, N. Chawla, and H. Jiang, 2011, Multiscale Modeling of the Interfacial Fracture Behavior in the Sn-Cu<sub>6</sub>Sn<sub>5</sub>-Cu System, *Journal of Computational Theoretical Nanoscience*, **8**, 873-880.
15. Y. An, F. J. Solis, H. Jiang, 2010, A Thermodynamic Model of Physical Gels, *Journal of the*

*Mechanics and Physics of Solids*, **58**, 2083-2099.

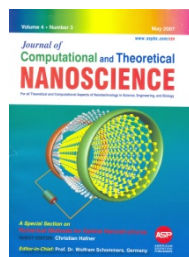
16. C. Yu and H. Jiang, 2010, Forming wrinkled stiff films on polymeric substrates at room temperature for stretchable interconnects applications, *Thin Solid Films*, **519**, 818-822.
17. K.E. Yazzie, J.J. Williams, D. Kingsbury, P. Peralta, H. Jiang, and N. Chawla, 2010, Digital Image Correlation Analysis of the Deformation Behavior of Pb-free Solders at Intermediate Strain Rates, *JOM*, **62**, 18-23.
18. C. Yu, K. O'Brien, Y. H. Zhang, H. Yu, and H. Jiang, 2010, Tunable Optical Gratings Based on Buckled Nano-Scale Thin Films on Transparent Elastomeric Substrates, *Applied Physics Letters*, **96**, 041111.
19. C. Yu, C. Masarapu, J. P. Rong, B. Q. Wei, H. Jiang, 2009, Stretchable Supercapacitors based on Buckled Single-Walled Carbon Nanotube Macro-Films, *Advanced Materials*, **21**, 4793-4797.
20. L. He, J.-Q. Lu, H. Jiang, 2009, Controlled Carbon Nanotube Junctions Self-assembled from Graphene Nanoribbons, *Small*, **5**, 2802-2806 (inside cover).



21. K. E. Yazzie, H. Fei, J. J. Williams, H. Jiang, and N. Chawla, 2009, Mechanical Shock Behavior of Bulk Pure Sn Solder, *Journal of Electronic Materials*, **28**, 2746-2755.
22. C. Yu, H. Gao, H. Yu, H. Jiang, G. Cheng, 2009, Laser Dynamic Forming of Functional Materials Laminated Composites on Patterned Three-Dimensional Surfaces with Applications on Flexible Microelectromechanical Systems, *Applied Physics Letters*, **95**, 091108.
23. C. Yu, Z. Wang, H. Yu, H. Jiang, 2009, A Stretchable Temperature Sensor Based on Elastically Buckled Thin Film Devices on Elastomeric Substrates, *Applied Physics Letters*, **95**, 141912.
24. X.-P. Zheng, Y.-P. Cao, B. Li, X.-Q. Feng, H. Jiang and Y. Huang, 2009, Determining the elastic modulus of thin films using a buckling-based method: computational study, *Journal of Physics D: Applied Physics*, **42**, 175506.
25. J. Song, H. Jiang, Y. Huang, and J. A. Rogers, 2009. Mechanics of Stretchable Inorganic Electronic Materials, *Journal of Vacuum Science and Technology A* **27**, 1107-1125.
26. H. Fei, H. Jiang, and D.-Y. Khang, 2009, Nonsinusoidal buckling of thin gold films on elastomeric substrates, *Journal of Vacuum Science and Technology A*, **27**, L9-L12.
27. J. Zhang, X. Zhao, Z. Suo, H. Jiang, 2009, A Finite Element Method for Transient Analysis of

- Concurrent Large Deformation and Mass Transport in Gels, *Journal of Applied Physics*, **105**, 093522.
28. H. Jiang, D.-Y. Khang, H. Fei, H. Kim, Y. Huang, J. Xiao, and J. A. Rogers, 2008, Finite Width Effect of Thin-Films Buckling on Compliant Substrate: Experimental and Theoretical Studies, *Journal of the Mechanics and Physics of Solids*, **56**, 2585-2598.
  29. H. Jiang, J. Zhang, Mechanics of Microtubule Buckling Supported by Cytoplasm, 2008, *Journal of Applied Mechanics*, **75**, 061019.
  30. H. Jiang, Y. Sun, J. A. Rogers, and Y. Huang, 2008, Post-buckling Analysis for the Precisely Controlled Buckling of Thin Film Encapsulated by Elastomeric Substrates, *International Journal of Solids and Structures*, **45**, 2014-2023.
  31. H. Jiang, J.-Q. Lu, M.-F. Yu, and Y. Huang, 2008, Carbon Nanotube Transmission between Linear and Rotational Motions, *CMES: Computer Modeling in Engineering & Sciences*, **24**, 95-102.
  32. H. Jiang, L.Y. Jiang, J.D. Posner, B.D. Vogt, 2008, Atomistic-based Continuum Constitutive Relation for Microtubules: Elastic Modulus Prediction, *Computational Mechanics*, **42**, 607-618.
  33. J. Song, H. Jiang, Z. J. Liu, D. Y. Khang, Y. Huang, J. A. Rogers, C. Lu, and C. G. Koh, 2008, Buckling of a Stiff Thin Film on a Compliant Substrate in Large Deformation, *International Journal of Solids and Structures*, **45**, 3107-3121.
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  35. D.-Y. Khang, J. Xiao, C. Kocabas, S. MacLaren, T. Banks, H. Jiang, Y. Huang, and J. A. Rogers, 2008, Molecular Scale Buckling Mechanics on Individual Aligned Single-Wall Carbon Nanotubes on Elastomeric Substrates, *Nano Letters*, **8**, 124-130.
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  39. X. Guo, A.Y.T. Leung, X.Q. He, H. Jiang, and Y. Huang, 2008, Bending buckling of single-walled carbon nanotubes by atomic-scale finite element, *Composites Part B: Engineering*, **39**, 202-208.
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42. J. Q. Lu, H. Jiang, 2008, Theoretical Modeling on Mechanical-Electrical Coupling of Carbon Nanotubes, 2008, *Journal of Computational and Theoretical Nanoscience*, **5**, 449-463 (review article).
43. T.-H. Kim, W. M. Choi, D. H. Kim, M. A. Meitl, E. Menard, H. Jiang, J. A. Carlisle, and J. A. Rogers, 2008, Printable, Flexible and Stretchable Forms of Ultrananocrystalline Diamond with Applications in Thermal Management, *Advanced Materials*, **20**, 2171.
44. J. Xiao, H. Jiang, D.-Y. Khang, J. Wu, Y. Huang, and J.A. Rogers, 2008, Mechanics of buckled carbon nanotubes on elastomeric substrates, *Journal of Applied Physics*, **104**, 033543.
45. H. Jiang, D.-Y. Khang, J. Song, Y. Sun, Y. Huang, and J. A. Rogers, 2007, Finite Deformation Mechanics in Buckled Thin Films on Compliant Supports, *Proceedings of the National Academy of Sciences of the United States of America*, **104**, 15607-15612.
46. H. Jiang, Y. Sun, J. A. Rogers, and Y. Huang, 2007, Mechanics of Precisely Controlled Thin Film Buckling on Elastomeric Substrate, *Applied Physics Letters*, **90**, 133119.
47. H. Jiang, K.C. Hwang, Y. Huang, 2007, Mechanics of Carbon Nanotubes: A Continuum Theory Based on Interatomic Potentials, *Key Engineering Materials*, **340-341**, 11-20 (review article).
48. J. Song, H. Jiang, J. Wu J, Y. Huang, and K. C. Hwang, 2007, Stone-Wales transformation in boron nitride nanotubes, *Scripta Materialia*, **4**, 571-574.
49. H. Jiang, M.-F. Yu, J.-Q. Lu, Y. Huang, H.T. Johnson, X.-G. Zhang, and P. Ferreira, 2007, Carbon Nanotube Electronic Displacement Encoder with Sub-Nanometer Resolution, *Journal of Computational and Theoretical Nanoscience*, **4**, 574-577. (cover)



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51. X. Guo, A.Y.T. Leung, H. Jiang, X.Q. He, Y. Huang, 2007, Critical strain of carbon nanotubes: an atomic-scale finite element study, *Journal of Applied Mechanics*, **74**, 347-351.
52. D.-Y. Khang, H. Jiang, Y. Huang, and J. A. Rogers, 2006, A stretchable form of single crystal silicon for high-performance electronics on rubber substrates, *Science*, **311**, 208-212.
53. X. Feng, Y. Huang, H. Jiang, D. Ngo, and A.J. Rosakis, 2006, The effect of thin film/substrate radii on the stoney formula for thin/substrate subjected to non-uniform axisymmetric misfit strain and temperature, *Journal of Mechanics of Materials and Structures*, **1**, 1041-1054.

54. Y. Sun, W.-M. Choi, H. Jiang, Y. Huang, and J. A. Rogers, 2006, Controlled Buckling of Semiconductor Nanoribbons for Stretchable Electronics, *Nature Nanotechnology*, **1**, 201-207.
55. J. Song, H. Jiang, D.-L. Shi, X.-Q. Feng, Y. Huang, M.-F. Yu, and K. C. Hwang, 2006, Stone-Wales transformation: precursor of fracture in carbon nanotubes, *International Journal of Mechanical Sciences*, **48**, 1464-1470.
56. J. Song, Y. Huang, H. Jiang, K. C. Hwang, and M.-F. Yu, 2006, Deformation and bifurcation analysis of boron-nitride nanotubes, *International Journal of Mechanical Sciences*, **48**, 1197-1207.
57. L.Y. Jiang, Y. Huang, H. Jiang, G. Ravichandran, H. Gao, K.C. Hwang, and B. Liu, 2006, A cohesive law for carbon nanotube/polymer interfaces based on the van der Waals force, *Journal of the Mechanics and Physics of Solids*, **54**, 2436-2452.
58. A.Y.T. Leung, X. Guo, X.Q. He, H. Jiang, Y. Huang, 2006, Postbuckling of carbon nanotubes by atomic-scale finite element, *Journal of Applied Physics*, **99**, 124308.
59. D.-L. Shi, X.-Q. Feng, H. Jiang, Y. Huang, and K.C. Hwang, 2005, Multiscale analysis of fracture of carbon nanotubes embedded in composites, *International Journal of Fracture*, **134**, 369-386.
60. H. Jiang, Y. Huang, and K.C. Hwang, 2005, A Finite-Temperature Continuum Theory based on Interatomic Potential, *Journal of Engineering Materials and Technology*, **127**, 408-416.
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62. H. Jiang, M.-F. Yu, B. Liu, and Y. Huang, 2004, Intrinsic Energy Loss Mechanisms in a Cantilevered Carbon Nanotube Beam Oscillator, *Physical Review Letters*, **93**, article 185501.
63. K. C. Hwang, Y. Guo, H. Jiang, Y. Huang, and Z. Zhuang, 2004, The Finite Deformation Theory of Taylor-based Nonlocal Plasticity, *International Journal of Plasticity*, **20**, 831-839.
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65. H. Jiang, B. Liu, Y. Huang, and K. C. Hwang, 2004, Thermal Expansion of Single Wall Carbon Nanotubes, *Journal of Engineering Materials and Technology*, **126**, 265-270.
66. H. Jiang, Y. Huang, and C. Liu, 2004, Fracture Analysis of Facesheets in Sandwich Composites, *Composites Part B: Engineering*, **35**, 551-556.
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68. P. Zhang, H. Jiang, Y. Huang, P. H. Geubelle, and K. C. Hwang, 2004, An Atomistic-based Continuum Theory for Carbon Nanotubes: Analysis of Fracture Nucleation, *Journal of the Mechanics*

*and Physics of Solids*, **52**, 977-998.

69. S. Qu, Y. Huang, W. D. Nix, H. Jiang, F. Zhang, and K. C. Hwang, 2004, The Indenter Tip Radius Effect on the Nix-Gao Relation in Micro- and Nanoindentation Hardness Experiments, *Journal of Materials Research*, **19**, 3423-3434.
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71. B. Liu, Y. Huang, H. Jiang, S. Qu, and K. C. Hwang, 2004, The Atomic-scale Finite Element Method, *Computer Methods in Applied Mechanics and Engineering*, **193**, 1849-1864.
72. K. C. Hwang, H. Jiang, Y. Huang, and H. Gao, 2003, Finite Deformation Analysis of Mechanism-based Strain Gradient Plasticity: Torsion and Crack Tip Field, *International Journal of Plasticity*, **19**, 235-251.
73. H. Jiang, P. Zhang, B. Liu, Y. Huang, P. H. Geubelle, H. Gao, and K. C. Hwang, 2003, The Effect of Nanotubes Radius on the Constitutive Model for Carbon Nanotubes, *Computational Materials Science*, **28**, 429-442.
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76. H. Jiang, Y. Huang, Z. Zhuang, and K. C. Hwang, 2001, Fracture in Mechanism-based Strain Gradient Plasticity, *Journal of the Mechanics and Physics of Solids*, **49**, 979-993.
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#### **PATENTS**

1. Patent Pending, H. Jiang, H. Yu, C. Yu, K. O'Brien, and Y.-H. Zhang, Tunable optical gratings based on buckled nano-scale thin films on transparent elastomeric substrates.
2. Patent Pending, H. Jiang, B. Q. Yu, C. Yu, Buckled silicon nanostructures on elastomeric substrates for rechargeable lithium ion batteries.
3. Patent Pending, H. Jiang, B. Q. Yu, C. Yu, Stretchable supercapacitors based on buckled single-walled carbon nanotube micro-films.
4. Patent Pending, S. O'Rourke, D. Loy, H. Jiang, Method of controlling bow and warp in a flexible substrate mounted to a rigid carrier.
5. Patent Pending, J. A. Rogers, R. Nuzzo, Y. Huang, M. Meitl, Y. Sun, H.-C. Ko, D. Y. Khang, H. Jiang, M. Stoykovich, A. Carlson, Controlled Buckling Structures in Semiconductor Interconnects and

Nanomembranes for Stretchable Electronics.

### **BOOK CHAPTERS**

1. **H. Jiang**, J. Song, Y. Huang and J. A. Rogers, “Mechanics of Stretchable Silicon on Elastomeric Substrates,” in *Unconventional Nanopatterning Techniques And Applications* (eds. H. H. Lee and J. A. Rogers), Hoboken, New Jersey, Chapter 18, pp 483-514, 2008
2. **H. Jiang**, Y. Huang and K.C. Hwang, A comparison of different interatomic potentials: radius effect of single wall carbon nanotubes, in “IUTAM Symposium on Mechanical Behavior and Micro-Mechanics of Nanostructured Materials (eds, Y. L. Bai, Q. S. Zheng, Y. G. Wei), ISBN 1402056230, Springer, Dordrecht, Netherlands, pp. 121-135, 2007.
3. **H. Jiang**, Y. Huang, P. Zhang, and K.C. Hwang, “Fracture Nucleation in Single-wall Carbon Nanotubes: the Effect of Nanotube Chirality,” in *Nanomechanics of Materials and Structures* (eds. T. J. Chuang, P. M. Anderson, M. -K. Wu, S. Hsieh), ISBN 1402039506, Springer, Dordrecht, Netherlands, pp. 79-88, 2006.
4. B. Liu, Y. Huang, **H. Jiang**, S. Qu, and M.-F. Yu, “Finite Element Method: from Discrete Atoms to Continuum Solids,” in *Handbook of Theoretical and Computational Nanotechnology* (eds. M. Rieth and W. Schommers), ISBN 158883042X, American Scientific Publishers, Stevenson Ranch, CA, Vol. 2, Chap. 5, pp. 201-219.
5. K.C. Hwang, **H. Jiang**, and Y. Huang, “Fracture in mechanism-based strain gradient plasticity with consideration of material compressibility,” in *Mechanical Properties of Advanced Engineering Materials* (eds. Tokuda M and Xu B), Mie University Press, Tsu, Japan, pp. 27-34, 2001.

### **REFEREED CONFERENCE PROCEEDINGS**

1. **H. Jiang**, J. Q. Lu, M.-F. Yu, and Y. Huang, Carbon Nanotube Transmission between Linear and Rotational Motions, 2008 *Proceedings of International Conference on Computational & Experimental Engineering and Sciences*, 453-464. Honolulu, Hawaii, USA.
2. C. Luo, J. Wei, A. Chattopadhyay, **H. Jiang**, A Void Growth and A Cyclic Model in Ductile Material using Mechanism-based Strain Gradient Crystal Plasticity Theory, *Proceedings of IMECE2007 2007 ASME International Mechanical Engineering Congress and Exposition*, November 11-15, 2007, Seattle, Washington, USA, IMECE2007-42612.

### **PRESENTATIONS**

#### **A. KEYNOTE LECTURE**

1. **H. Jiang**, D.-Y. Khang, Y. Huang, and J. A. Rogers, 2006, Mechanics for Stretchable Electronics on Rubber Substrate, *Society of Engineering Science Conference*. State College, Pennsylvania, USA.

#### **B. INVITED TALKS AT OTHER INSTITUTIONS**

1. H. Jiang, October, 2010, University of Pittsburgh
2. H. Jiang, July, 2009, Institute of High Performance Computing, Singapore.



3. H. Jiang, July, 2009, Zhejiang University, Hangzhou, China.
4. H. Jiang, October, 2008, University of Arizona, Tucson, Arizona.
5. H. Jiang, July, 2006, Sandia National Laboratories, Albuquerque, New Mexico.
6. H. Jiang, June, 2006, Department of Engineering Mechanics, Zhejiang University, Hangzhou, China.
7. H. Jiang, May, 2006, Department of Engineering Mechanics, Tsinghua University, Beijing, China.
8. H. Jiang, May, 2006, Department of Mechanics and Aerospace Engineering, Peking University, Beijing, China.
9. H. Jiang, May, 2006, Institute of Mechanics, Chinese Academy of Science, Beijing, China.
10. H. Jiang, May, 2006, Department of Engineering Mechanics, Shanghai Jiao Tong University, Shanghai, China.
11. H. Jiang, May, 2006, College of Mechanical Engineering, Tongji University, Shanghai, China.
12. H. Jiang, March 2006, Department of Mechanical Engineering, University of Maryland, College Park, Maryland.
13. H. Jiang, October 2005, Department of Civil Engineering, University of Mississippi, University, Mississippi.

#### **C. INVITED TALKS AT CONFERENCES**

1. **H. Jiang**, L. He, J. Lu, Controlled Carbon Nanotube Junctions Self-assembled from Graphene Nanoribbons, *16<sup>th</sup> US National Congress of Theoretical and Applied Mechanics*, State College, PA.
2. **H. Jiang**, J. Zhang, Finite Element Analysis of Concurrent Large Deformation and Diffusion in Gels, *16<sup>th</sup> US National Congress of Theoretical and Applied Mechanics*, State College, PA.
3. **H. Jiang**, L. He, J. Lu, Controlled Carbon Nanotube Junctions Self-assembled from Graphene Nanoribbons, *2009 ASME International Mechanical Engineering Congress & Exposition*, Orlando, FL.
4. **H. Jiang**, J. Zhang, Coupled Large Deformation and Case II Diffusion, *2009 ASME International Mechanical Engineering Congress & Exposition*, Orlando, FL.
5. **H. Jiang**, J. Zhang, Finite Element Analysis of Concurrent Large Deformation and Diffusion in Gels, *2009 ASME International Mechanical Engineering Congress & Exposition*, Orlando, FL.
6. **H. Jiang**, C. Yu, Y. Yu, Stretchable Temperature Sensors, *2009 ASME International Mechanical Engineering Congress & Exposition*, Orlando, FL.
7. **H. Jiang**, J. Zhang, Finite Element Analysis of Concurrent Large Deformation and Diffusion in Gels, NSF-NSFC Workshop on Nano and Bio-Mechanics, Dalian, China.
8. **H. Jiang**, J. Q. Lu, Carbon Nanotube Transmission between Linear and Rotational Motions, *2008 International Conference on Computational & Experimental Engineering and Sciences*, Honolulu, Hawaii, USA.
9. **H. Jiang**, D.-Y. Khang, H. Fei, J. A. Rogers, Y. Huang, Finite Width Effect of Thin Films Buckling on Compliant Substrate, *235th American Chemical Society National Meeting*, New Orleans, LA.

10. **H. Jiang**, C. Yu, B. Wei, Carbon Nanotube Based Deformable Supercapacitors, *2008 ASME International Mechanical Engineering Congress & Exposition*, Boston, MA.
11. **H. Jiang**, D.-Y. Khang, J. Xiao, Y. Huang, J. A. Rogers, Buckling Mechanics in Individual, Aligned Single-Wall Carbon Nanotubes on Elastomeric Substrates, *2008 ASME International Mechanical Engineering Congress & Exposition*, Boston, MA.
12. Y. Huang, **H. Jiang**, Mechanics of Stretchable Electronics, *2008 ASME International Mechanical Engineering Congress & Exposition*, Boston, MA.
13. Y. Huang, J. Song, **H. Jiang**, J. A. Rogers, Theoretical Study of Herringbone Buckling Pattern of Hard Thin Film on Compliant Substrate, *2008 ASME International Mechanical Engineering Congress & Exposition*, Boston, MA.
14. **H. Jiang**, D.-Y. Khang, J. A. Rogers, Y. Sun, J. Song, Y. Huang, Finite Deformation Mechanics in Buckled Thin Films on Compliant Substrates, *2007 ASME International Mechanical Engineering Congress & Exposition*. Seattle, Washington, USA.
15. **H. Jiang**, D.-Y. Khang, H. Kim, J. A. Rogers, Y. Huang, Finite Width Effect of Thin Films Buckling on Compliant Substrate, *2007 ASME International Mechanical Engineering Congress & Exposition*. Seattle, Washington, USA.
16. **H. Jiang**, D.-Y. Khang, J. A. Rogers, Y. Sun, J. Song, Y. Huang, Mechanics of Stretchable Electronics, *2007 ASME International Mechanical Engineering Congress & Exposition*, Seattle, Washington, USA.
17. **H. Jiang**, D.-Y. Khang, J. A. Rogers, Y. Sun, J. Song, Y. Huang, Finite Deformation Mechanics in Buckled Thin Films on Compliant Substrates, *9<sup>th</sup> US National Congress on Computational Mechanics*, San Francisco, CA, USA.
18. **H. Jiang**, D.-Y. Khang, H. Kim, J. A. Rogers, Y. Huang, Finite Width Effect of Thin Films Buckling on Compliant Substrate, *2007 Society of Engineering Science Conference*. College Station, Texas, USA.
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#### **D. TALKS AT CONFERENCES**

1. **H. Jiang**, C. Yu, B. Wei, Mechanics of Silicon Anode Lithium Ion Batteries, *2010 MRS Fall Meeting*, Boston, MA.
2. **H. Jiang**, J. Zhang, Finite Element Method for Transient Analysis of Concurrent Large Deformation and Mass Transport in Gels, *2010 MRS Fall Meeting*, Boston, MA.
3. **H. Jiang**, C. Yu, H. Yu, Tunable Optical Gratings Based on Buckled Nanoscale Thin Films on Transparent Elastomeric Substrates, *2010 MRS Fall Meeting*, Boston, MA.
4. **H. Jiang**, Y. An, F. Solis, A Phenomenological Model of Physical Gels, *2010 MRS Fall Meeting*, Boston, MA.
5. **H. Jiang**, J. Zhang, N. Fang, H. Lee, C. Xia, Simulations of Dynamical Behavior of Gels with Implication to Biological Systems, *2010 ASME International Mechanical Engineering Congress & Exposition*, Vancouver, BC, Canada.
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