

Jianliang Xiao

Assistant Professor
Department of Mechanical Engineering
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University of Colorado
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EDUCATION

- Ph.D., Mechanical Engineering, Northwestern University, 12/2009
Advisor: Yonggang Huang
- Ph.D. candidate, Mechanical Engineering, University of Illinois at Urbana-Champaign, 08/2006 – 08/2007
Advisor: Yonggang Huang
- M.S., Solid Mechanics, Tsinghua University, China, Jul 2006
Advisor: Keh-Chih Hwang
- B.S., Engineering Mechanics, Tsinghua University, China, Jul 2003

PROFESSIONAL EXPERIENCE

- 08/2011 – present, *Assistant Professor*, Mechanical Engineering, University of Colorado Boulder
- 01/2010 – 07/2011, *Postdoctoral Research Associate*, Materials Science and Engineering, University of Illinois at Urbana-Champaign
Advisor: John A. Rogers
- 08/2007 – 12/2009, *Graduate Research Assistant*, Mechanical Engineering, Northwestern University
- 01/2009 – 03/2009, *Teaching Assistant*, Mechanical Engineering, Northwestern University
- 08/2006 – 08/2007, *Graduate Research Assistant*, Mechanical Science and Engineering, University of Illinois at Urbana-Champaign
- 09/2003 – 07/2006, *Graduate Research Assistant*, Engineering Mechanics, Tsinghua University

AWARDS & HONORS

- Best Paper Award, Theoretical & Applied Mechanics Letters, 2018
- College Outstanding Dissertation Award (only 1 awarded in the College of Engineering and Applied Science each year) and ME Steven M. Woodward Outstanding Dissertation Award, 2017
- Best Poster award in Colorado Photonics Industry Association Annual Meeting, 2013

- NSF Fellowship for Summer Institute on Additive Manufacturing, 2013
- ASME Haythornthwaite Research Initiation Award, 2012
- NSF Fellowship for Summer Institute on Mechanics of Soft Materials, 2010
- Haythornthwaite travel grant for ASME IMECE, 2009
- NSF travel grant for the Humboldt Kolleg, Nano-Bio: The Next Transformative Convergence, 2009
- Cabell Fellowship, Northwestern University, 2009
- NSF travel grant for NSF CMMI Research and Innovation Conference, 2009
- Chinese Government Award for Outstanding Self-financed Students Abroad, 2008
- The Graduate School Conference Travel Grant, Northwestern University, 2008, 2009
- NSF Fellowship for Summer Institute on Energy Challenge and Nanotechnology, 2008
- Walter P. Murphy Fellowship, Northwestern University, 2007
- NSF Fellowship for Summer Institute on Nano Mechanics and Materials, 2007
- Tsinghua University Distinguished Leadership Award, 2001, 2002
- Academic Excellence Scholarship, Tsinghua University, 2000-2004

ACADEMIC SERVICE & ACTIVITIES

ACADEMIC SOCIETY SERVICE

Editorial Board, NPJ Flexible Electronics (10/2016 – Present), Science China Technological Sciences (10/2017 – Present), Micromachines (11/2018 – Present)

Chair (11/2017 – Present), Elasticity Technical Committee, Applied Mechanics Division, ASME

Chair (11/2015 – 11/2017), Electronic Materials Technical Committee, Materials Division, ASME

Associate Chair (2014 – 2017), Elasticity Technical Committee, Applied Mechanics Division, ASME

Associate Chair (2014 – 11/2015), Electronic Materials Technical Committee, Materials Division, ASME

CONFERENCE ORGANIZATION

- [1] Topic Organizer, “Mechanics of adhesion and friction”, *ASME International Mechanical Engineering Congress & Exposition 2018*, November 11-14, 2018, Pittsburgh, PA
- [2] Topic Organizer, “Material Processing of Flexible Electronics, Sensors, and Devices”, *ASME International Mechanical Engineering Congress & Exposition 2018*, November 11-14, 2018, Pittsburgh, PA
- [3] Topic Organizer, “Mechanics and Materials of Flexible, Stretchable, and Bio-Electronics”, *ASME International Mechanical Engineering Congress & Exposition 2018*, November 11-14, 2018, Pittsburgh, PA
- [4] Topic Organizer, “Mechanics of Thin-Film and Multi-Layer Structures”, *ASME International Mechanical Engineering Congress & Exposition 2018*, November 11-14, 2018, Pittsburgh, PA

- [5] Topic Organizer, “Flexible and Stretchable Electronics: Mechanics, Materials, and Manufacture”, *55th Annual Technical Meeting of Society of Engineering Science*, October 10-12, 2018, Madrid, Spain
- [6] Topic Organizer, “Mechanics of adhesion and friction”, *ASME International Mechanical Engineering Congress & Exposition 2017*, November 3-9, 2017, Tampa, FL
- [7] Topic Organizer, “Material Processing of Flexible Electronics, Sensors, and Devices”, *ASME International Mechanical Engineering Congress & Exposition 2017*, November 3-9, 2017, Tampa, FL
- [8] Topic Organizer, “Mechanics and Materials of Flexible, Stretchable, and Bio-Electronics”, *ASME International Mechanical Engineering Congress & Exposition 2017*, November 3-9, 2017, Tampa, FL
- [9] Topic Organizer, “Material Processing of Flexible Electronics, Sensors, and Devices”, *ASME International Mechanical Engineering Congress & Exposition 2016*, November 11-17, 2016, Phoenix, AZ
- [10] Topic Organizer, “Mechanics of adhesion and friction”, *ASME International Mechanical Engineering Congress & Exposition 2016*, November 11-17, 2016, Phoenix, AZ
- [11] Topic Organizer, “Mechanics and engineering processes in heterogeneous structures”, *ASME International Mechanical Engineering Congress & Exposition 2016*, November 11-17, 2016, Phoenix, AZ
- [12] Topic Organizer, “Mechanics and Materials of Soft Electronics and Structures”, *ASME International Mechanical Engineering Congress & Exposition 2016*, November 11-17, 2016, Phoenix, AZ
- [13] Topic Organizer and Session Chair, “Material Processing of Flexible Electronics, Sensors, and Devices”, *ASME International Mechanical Engineering Congress & Exposition 2015*, November 13-19, 2015, Houston, TX
- [14] Topic Organizer and Session Chair, “Mechanics of Adhesion and Friction”, *ASME International Mechanical Engineering Congress & Exposition 2015*, November 13-19, 2015, Houston, TX
- [15] Topic Organizer and Session Chair, “Mechanics and Materials of Soft Electronics and Structures”, *ASME International Mechanical Engineering Congress & Exposition 2015*, November 13-19, 2015, Houston, TX
- [16] Topic Organizer and Session Chair, “Instabilities”, *ASME International Mechanical Engineering Congress & Exposition 2015*, November 13-19, 2015, Houston, TX
- [17] Topic Organizer, “Mechanics of Instability and Interfacial Adhesion in Bio-Compatible Electronics”, *52nd Annual Technical Conference of Society of Engineering Science*, October 26-28, 2015, Texas A&M University, College Station, Texas
- [18] Topic Organizer, “Mechanics and Materials for Flexible, Stretchable, and Bio-Integrated Soft Electronics”, *ASME 2015 Applied Mechanics and Materials Conference (McMAT2015)*, June 29-July 1, 2015, Seattle, WA
- [19] Topic Organizer and session chair, “Mechanics of Adhesion and Friction”, *ASME International Mechanical Engineering Congress & Exposition 2014*, November 14-20, 2014, Montreal, Canada

- [20] Topic Organizer and session chair, “Hybridization of Materials for Functional Structures, Devices and Systems: Mechanics, Materials, and Manufacturing”, *ASME International Mechanical Engineering Congress & Exposition 2014*, November 14-20, 2014, Montreal, Canada
- [21] Topic Organizer and session chair, “Mechanics of Adhesion and Friction”, *ASME International Mechanical Engineering Congress & Exposition 2013*, November 15-21, 2013, San Diego, CA
- [22] Session Chair, “Synthesis, Characterization, and Modeling of Low-Dimensional Nanomaterials”, *50th Annual Technical Conference of Society of Engineering Science*, July 28-31, 2013, Brown University, Providence, RI
- [23] Topic Organizer and session chair, “Mechanics of Adhesion”, *ASME International Mechanical Engineering Congress & Exposition 2012*, November 9-15, 2012, Houston, TX
- [24] Topic Organizer and session chair, “Mechanics of Thin Film and Multilayer Structures”, *49th Annual Technical Conference of Society of Engineering Science*, October 10-12, 2012, Georgia Tech, Atlanta, GA
- [25] Topic Organizer and session chair, “Mechanics of Adhesion”, *48th Annual Technical Conference of Society of Engineering Science*, October 12-14, 2011, Northwestern University, Evanston, IL
- [26] Session Chair, “Stress and Deformation of Thin Film and Multi-layer Materials III”, *ASME International Mechanical Engineering Congress & Exposition 2009*, November 13-19, 2009, Lake Buena Vista, FL

MEMBERSHIP

American Society of Mechanical Engineers
 Society of Engineering Science
 Materials Research Society
 American Physical Society
 SPIE

JOURNAL REVIEW (29)

Nature Nanotechnology, Science Advances, Proceedings of the National Academy of Sciences, Advanced Materials, Scientific Reports, Advanced Functional Materials, Physical Review Letters, Journal of the Mechanics and Physics of Solids, Carbon, Nanotechnology, Physical Review B, Applied Physics Letters, International Journal of Fracture, Journal of Physics D: Applied Physics, Journal of Physics: Condensed Matter, Journal of Applied Mechanics, Computational Mechanics, Journal of Engineering Materials and Technology, Computational Materials Science, Mechanics Research Communications, Thin Solid Films, Reports on Progress in Physics, Proceedings of the Royal Society A, Acta Mechanica, Journal of Nanomechanics and Micromechanics, Nanoscale, Mechanics of Materials, Extreme Mechanics Letters, International Journal of Solids and Structures

GRANT PROPOSAL REVIEW

NSF (2012, 2013, 2014, 2015, 2016, 2018), ACS PRF (2014, 2017), Research Grants Council (RGC) of Hong Kong

UNIVERSITY OF COLORADO BOULDER SERVICE

Department of Mechanical Engineering

Infrastructure Committee (2016-present)

Instructor Search Committee (2015, 2016)

Department Undergraduate Committee (2014-2016)

Tenure Track Faculty Search Committee (2013-2014)

Department Seminar Coordinator (2012)

Solid Mechanics Prelim Exam Coordinator (2011-2014)

Department Graduate Committee (2011-2013)

College of Engineering & Applied Science

Tenure Track Faculty Special Hire Committee in Civil Engineering (2014)

TEACHING & STUDENT GUIDANCE ACTIVITIES

STUDENT SUPERVISION

Postdoc Scholars

Yu Wang, Mechanical Engineering (5/2016 – 4/2017), now Postdoc at Houston Methodist Research Institute

PhD Students

Andres Villada, Mechanical Engineering (Fall 2015 – Present)

Zhanan Zou, Mechanical Engineering (2014 – Present)

Jose Antonio Rodriguez Lopez, Mechanical Engineering (2014 – 2015) (quitted PhD program in September 2015 due to family reasons)

Zhengwei Li, Mechanical Engineering (Fall 2012 – 2/2017), College Outstanding Dissertation Award (only 1 awarded in the College of Engineering and Applied Science each year) and ME Steven M. Woodward Outstanding Dissertation Award, now postdoc at UIUC

Yu Wang, Mechanical Engineering (Spring 2012 – 5/2016)

Narasimha Boddeti, Mechanical Engineering (co-supervised with Martin Dunn, 2011 – 2014)

MS Students

Yimeng Liu, Mechanical Engineering (8/2018 – present)

Qingyang Sun, Mechanical Engineering (9/2016 – 5/2018)

Sichong Li, Mechanical Engineering (8/2016 – 12/2017)

Yinding Chi, Mechanical Engineering (8/2016 – 12/2017), now PhD student at Temple University

Yan Li, Mechanical Engineering (1/2016 – 12/2017)

Zenan Wu, Mechanical Engineering (2014 – 2016)

Wangyang Wang, Mechanical Engineering (2014 – 2015)

Hailong Ji, Mechanical Engineering (2012 – 2013)

Vibin Mahadev Sankaranarayanan, Mechanical Engineering (2012 – 2013)

BS Students

Dana Francesca Stamo, Chemical and Biological Engineering (8/2017 – 8/2018)

Roy Powell, Mechanical Engineering (8/2016 – 5/2017)

Samatha Preston, Mechanical Engineering (8/2015 – 5/2016), “People’s Choice Award” in Discovery Learning Research Symposium (Multifunctional Artificial Compound Eyes) (one out of over 90 projects/DLA students)

Jacob Carson, Mechanical Engineering (8/2015 – 5/2016)

Griffith Michael Wendland, Mechanical Engineering (5/2015 – 8/2015)

Blake Wiehe, Mechanical Engineering (2014 – 2015)

Krishan Patel, Mechanical Engineering (2012 – 2013)

Da Zhou, Mechanical Engineering (2012 – 2013)

Visiting Scholars & Students

Ms. Yan Sun, PhD student, School of Materials Science and Engineering, Harbin Institute of Technology (11/2018 – 10/2019)

Ms. Ye Qiu, PhD student, School of Mechanical Engineering, Zhejiang University of Technology (11/2018 – 5/2019)

Mr. Yucheng Huo, UG student, Solid Mechanics, Beihang University (8/2018 – 10/2018)

Mr. Zhengwei Liu, UG student, Mechanical Engineering, Donghua University (7/2018 – 9/2018)

Dr. Haiqing Lu, Senior Lecturer, School of Mechanical-electronic and Vehicle Engineering, Weifang University (4/2018 – 3/2019)

Ms. Xingli Wu, PhD student, Department of Mechanical Engineering, Shenyang University of Technology (4/2018 – 3/2019)

Ms. Chuanqian Shi, PhD student, School of Aerospace Engineering and Applied Mechanics, Tongji University, China (10/2017 – 9/2019)

Mr. Diego Monserrat Lopez, UG student, Universitat Politecnica de Catalunya, Spain (Balsells International Mobility Program, 2/2016 – 7/2016)

High School Students

Zach Chen, Monarch High School (7/2017 –)

Laura Macdonald & Perrin Ruth, Monarch High School (9/2016 – 5/2017)

PHD THESIS COMMITTEES

Qingcong Hu (Electrical, Computer, and Energy Engineering, 2011), Yushan Li (Electrical, Computer, and Energy Engineering, 2012), Feng Miao (Mechanical Engineering, 2012), Qi Ge (Mechanical Engineering, 2012), Binglian Wang (Mechanical Engineering, 2012) Nathan Sutton (Electrical, Computer, and Energy Engineering, 2013), Steven Koenig (Mechanical Engineering, 2013), Xinghui Liu (Mechanical Engineering, 2014), Narasimha Boddeti (Mechanical Engineering,

2014), Jacob Dove (Mechanical Engineering, 2014), Alexander Watson (Mechanical Engineering, 2015), Lewis Cox (Mechanical Engineering, 2015), Jamie Williamson (Electrical, Computer, and Energy Engineering, 2016), David Stobbe (Mechanical Engineering, 2018), Raza Qazi (ECEE, 2019)

PhD COMPS COMMITTEES

David Stobbe (Mechanical Engineering, 2017), Masoud Aghajani (Mechanical Engineering, 2018)
Raza Qazi (ECEE, 2018),

PhD PRELIM COMMITTEES

Masoud Aghajani (2017), Andres Villada (2017), Jacob Hutfles (2017), Emanuele Sortino (Materials Science, 2018), Marco A. Inzunza (Mechanical Engineering, 2018), Yinan Lu (Mechanical Engineering, 2018), Ali Nematollahisarvestani (Mechanical Engineering, 2018)

MS THESIS COMMITTEES

John D Sweetser (Mechanical Engineering, 2012), Chengpu Zhu (Chemistry and Biochemistry, 2017), Jian Kan (Mechanical Engineering, 2018)

COURSES TAUGHT

MCEN 2063, Mechanics of Solids, Spring 2014, Spring 2016

MCEN 4173/5173, Finite Element Analysis, Fall 2011, Fall 2012, Fall 2015, Fall 2016, Spring 2018

MCEN 4228/5228, Thin Film Materials, Spring 2012, 2013, 2015, 2016, 2017

MCEN 5023/ASEN 5012, Solid Mechanics 1, Fall 2014, Fall 2016

MCEN 5228, Flexible Electronics, Spring 2018

MCEN 4085, Senior Design, 2018-2019

Patent

[P2] J. Xiao, W. Zhang, Z. Zou, and C. Zhu, “Dynamic Covalent Thermoset Nanocomposites and Uses Thereof”, PCT International Patent Application No. PCT/US2018/062083, filed November 20, 2018, which claims priority to U.S. Provisional Patent Application No. 62/588,814, filed November 20, 2017.

[P1] J. Xiao, and Y. Wang, “Programmable, reversible and repeatable wrinkling of shape memory polymer thin films on elastomeric substrates for smart adhesion”, U.S. Provisional Patent Application No. 62/692,258, filed June 29, 2018

BOOK CHAPTERS

- [B4] S. Wang, J. Xiao, J. Song, Y. Huang, and J. A. Rogers, “Mechanics of Curvilinear Electronics”, in *Nano and Cell Mechanics: Fundamentals and Frontiers* (eds. Horacio D. Espinosa, and Gang Bao), Wiley, Hoboken, NJ, Chapter 13 (2013).
- [B3] J. Xiao, W. Zhou, Y. Huang, J.M. Zuo, and K.C. Hwang, “Potentials For van der Waals Interaction in Nano-scale Computation”, in *Trends in Computational Nanomechanics: Transcending Length and Time Scales* (ed. Traian Dumitrica), Springer, New York, Chapter 12 (2010).
- [B2] J. Xiao, H. Jiang, Y. Huang, and J. A. Rogers, “Mechanics of stiff thin films of controlled wavy geometry on compliant substrates for stretchable electronics”, in *Semiconductor Nanomaterials for Flexible Technologies: From Photovoltaics and Electronics to Sensors and Energy Storage* (eds. Yugang Sun, and John A. Rogers), William Andrew, Chapter 10 (2010).
- [B1] J. Xiao, D.-Y. Khang, Y. Huang, and J. A. Rogers, “Buckling Mechanics of Carbon Nanotubes on Elastomeric Substrates”, in *Recent developments in modeling and applications of Carbon Nanotubes* (eds. Q. Wang, B.I. Yakobson, and K.M. Liew), Research Signpost/Transworld Research Network, Kerala, India, pp 49-70 (2009).

REFEREED JOURNAL PUBLICATIONS (* as corresponding author)

- [J71] H. Hafeez, C. Shi, P.J. Jesuraj, D.H. Kim, C.M. Lee, M. Song, C.-S. Kim, J. Xia, S.Y. Ryu, Facile fabrication of high performance stretchable lithium microbattery improved design of high performance lithium microbattery for stretchable electronics, submitted
- [J70] R. Qazi, A.M. Gomez, Z. Zhou, J.Y. Sim, Y. Xiong, J. Abdo, C.Y. Kim, A. Anderson, F. Lohner, B.C. Lee, K.-I. Jang, J. Xiao, M.R. Bruchas and J.-W. Jeong, Chronic, smartphone-enabled wireless in vivo neuropharmacology and optogenetics, submitted
- [J69] K. Sim, Zh. Rao, Z. Zou, J. Lei, A. Thukral, F. Ershad, J. Chen, Q. Huang, J. Xiao, C. Yu, Sol-Gel-on-Polymer Processed Oxide Semiconductor Nanomembrane based Ultra-Thin, Stretchable, and Imperceptible Electronics for Wearable Human-Machine Interfaces, submitted
- [J68] S. Zhang, C. Wang, S. Nie, J. Xiao, and J. Song, Wrinkling of silicon nanoribbons on shape memory polymers, *Journal of Physics D: Applied Physics*, submitted
- [J67] Y. Qi, Z. Zou, J. Xiao, and R. Long, Mapping the nonlinear crack tip deformation field in soft elastomer with a particle tracking method, *J. Mech. Phys. Solids* 125, 326-346 (2019)
- [J66] P.J. Jesuraj, C. Shi, D.H. Kim, H. Hafeez, J.C. Lee, W.H. Lee, D.K. Choi, Z. Zou, J. Xiao, J. Min, M. Song, C. Kim, S.Y. Ryu, Direction-dependent stretchability of AgNW electrodes on microprism-mediated elastomeric substrates, *AIP Advances* 8, 065227 (2018)
- [J65] Y. Wang, Q. Sun, and J. Xiao, Simultaneous Formation of Multiscale Hierarchical Surface Morphologies through Sequential Wrinkling and Folding, *Applied Physics Letters* 112, 081602 (2018)
- [J64] Y. Wang, Y. Zhai, A. Villada, S.N. David, X. Yin, and J. Xiao, Programmable localized wrinkling of thin films on shape memory polymers with application in nonuniform optical gratings, *Applied Physics Letters* 112, 251603 (2018)

- [J63] Z. Zou, C. Zhu, Y. Li, X. Lei, W. Zhang, J. Xiao, Rehealable, fully recyclable, and malleable electronic skin enabled by dynamic covalent thermoset nanocomposite. *Science Advances* 4, eaaq0508 (2018).
 -----reported by *Newsweek, ScienceDaily, Smithsonian, Forbes, EurekAlert, New Atlas, LiveScience, the Verge, the Mirror (UK), Express (UK), CCTV (China), Xinhua (China), the Hindu (India), India.com, Radio Sputnik (Russia), Channel NewsAsia (Singapore), La Vanguardia (Spain), Ansa (Italy), and Sveriges Television AB (Sweden)*...
- [J62] K.N. Noh, S.I. Park, R. Qazi, Z. Zou, A.D. Mickle, J.G. Grajales-Reyes, K.-I. Jang, R.W. Gereau IV, J. Xiao, J.A. Rogers, and J.-W. Jeong, Miniaturized, Battery-Free Optofluidic Systems with Potential for Wireless Pharmacology and Optogenetics, *Small* 14, 1702479 (2018).
- [J61] Y. Wang, J. Xiao, Programmable, Reversible and repeatable wrinkling of shape memory polymer thin films on elastomeric substrates for smart adhesion, *Soft Matter* 13, 5317-5323 (2017)
- [J60] Y. Wang, K. Yu, H.J. Qi, and J. Xiao, Temperature dependent evolution of wrinkled single-crystal silicon ribbons on shape memory polymer, *Soft Matter* 13, 7625-7632 (2017)
- [J59] Z. Li, X. Meng, and J. Xiao, Theoretical studies on lattice-oriented growth of single-walled carbon nanotubes on sapphire, *Nanotechnology* 28, 385601 (2017)
- [J58] Z. Li, Y. Zhai, Y. Wang, G.M. Wendland, X. Yin, and J. Xiao, Harnessing Surface Wrinkling-Cracking Patterns for Tunable Optical Transmittance, *Advanced Optical Materials* 5, 1700425 (2017)
- [J57] H. Hafeez⁺, Z. Zou⁺, D.H. Kim⁺, J.Y. Shin, M. Song, C.-S. Kim, W.J. Choi, J. Song, J. Xiao^{*}, and S.Y. Ryu^{*}, Multiaxial Wavy Top-Emission Organic Light-Emitting Diodes on Thermally Prestrained Elastomeric Substrates, *Organic Electronics* 48, 314-322 (2017) (⁺These authors contributed equally)
- [J56] Y.-S. Kim, J. Lu, B. Shih, A. Gharibans, Z. Zou, K. Matsuno, R. Aguilera, J. Xiao, Y. Han, A. Meek, M.T. Tolley, and T.P. Coleman, Scalable Manufacturing of Solderable and Stretchable Physiologic Sensing Systems, *Advanced Materials* 29, 1701312 (2017)
- [J55] L. Wu, H. Yan, J. Xiao, X. Li, and X. Wang, Characterization and photocatalytic properties of SiO₂-TiO₂ nanocomposites prepared through gaseous detonation method, *Ceramics International* 43, 9377-9381 (2017)
- [J54] R. Jiang, J. Xiao, J. Song, Buckling of thin gel strip under swelling, *Theoretical and Applied Mechanics Letters* 7, 134-137 (2017)
- [J53] Y. Liu, J.J.S. Norton, R. Qazi, Z. Zou, K.R. Ammann, H. Liu, L. Yan, P.L. Tran, J. Lee, K.-I. Jang, J.W. Lee, D. Zhang, K.A. Killian, S.H. Jung, T. Bretl, J. Xiao, M.J. Slepian, Y. Huang, J.-W. Jeong, J.A. Rogers, Epidermal mechano-acoustic sensing electronics for cardiovascular diagnostics and human-machine interfaces, *Science Advances* 2, e1601185 (2016)
 ----- Reported by *IEEE Spectrum, ScienceDaily, Yahoo News, BBC Radio, 7News Denver, NBC 9News, CCTV, EurekAlert!, New Scientist, The Verge*...
- [J52] X. Meng, B. Liu, Y. Wang, T. Zhang, and J. Xiao, Third-Order Polynomials Model for Analyzing Multilayer Hard/Soft Materials in Flexible Electronics, *Journal of Applied Mechanics-Transactions of the ASME* 83, 081011 (2016)

- [J51] L.M. Cox, J.P. Killgore, Z. Li, R. Long, A.W. Sanders, J. Xiao, and Y. Ding, Influences of Substrate Adhesion and Particle Size on the Shape Memory Effect of Polystyrene Particles, *Langmuir* 32, 3691–3698 (2016)
- [J50] J.J. Brown, S.-H. Lee, J. Xiao, Z.C. Wu, Observations of stress accumulation and relaxation in solid-state lithiation and delithiation of suspended Si microcantilevers, *Physica Status Solidi A: Applications and Materials Science* 213, 2156–2168 (2016)
- [J49] Y. Wang, Z. Li, and J. Xiao*, Stretchable Thin Film Materials: Fabrication, Application and Mechanics, *Journal of Electronic Packaging* 138, 020801 (2016)
- [J48] Z. Li, Y. Wang, and J. Xiao*, Mechanics of Bioinspired Imaging Systems, *Theoretical and Applied Mechanics Letters* 6, 11-20 (2016)
- [J47] Z. Li, and J. Xiao*, Strain tunable optics of elastomeric microlens array, *Extreme Mechanics Letters* 4, 118-123 (2015)
- [J46] S.H. Maruf, Z. Li, J.A. Yoshimura, J. Xiao, A.R. Greenberg, and Y. Ding, Influence of Nanoimprint Lithography on Membrane Structure and Performance, *Polymer* 69, 129-137 (2015)
- [J45] Z. Li, and J. Xiao*, Mechanics and Optics of Stretchable Elastomeric Microlens Array for Artificial Compound Eye Camera, *J. Appl. Phys.* 117, 014904 (2015)
- [J44] Z. Li, Y. Wang, and J. Xiao*, Mechanics of curvilinear electronics and optoelectronics, *Current Opinion in Solid State & Materials Science* 19, 171-189 (2015)
- [J43] L.M. Cox, Z. Li, N. Sowan, D. Nair, J. Xiao, C.N. Bowman, and Y. Ding, Reconfigurable Surface Patterns on Covalent Adaptive Network Polymers Using Nanoimprint Lithography, *Polymer* 55, 5933-5937 (2014)
- [J42] X. Meng, M. Li, Z. Kang, J. Xiao*, Folding of Multi-layer Graphene Sheets Induced by van der Waals Interaction, *Acta Mechanica Sinica* 30, 410-417 (2014).
- [J41] D. Kang, S. Lee, Z. Li, A. Seyedi, J. O'Brien, P.D Dapkus, J. Xiao, and J. Yoon, Compliant, Heterogeneously Integrated GaAs Micro-VCSELs Towards Wearable and Implantable Integrated Optoelectronics Platforms, *Advanced Optical Materials* 2, 373-381 (2014)
- [J40] L. M. Cox, J. P. Killgore, Z. Li, Z. Zhang, D. C. Hurley, J. Xiao, and Y. Ding, Morphing Metal-Polymer Janus Particles, *Advanced Materials* 26, 899-904 (2014)
- [J39] N.G. Boddeti, X. Liu, R. Long, J. Xiao, J.S. Bunch, and Martin L. Dunn, Graphene Blisters with Switchable Shapes Controlled by Pressure and Adhesion, *Nano Letters* 13, 6216–6221(2013)
- [J38] Y. M. Song⁺, Y. Xie⁺, V. Malyarchuk⁺, **J. Xiao⁺**, I. Jung, K.-J. Choi, Z. Liu, H. Park, C. Lu, R.-H. Kim, R. Li, K. B. Crozier, Y. Huang, and J. A. Rogers, Digital Cameras With Designs Inspired By the Arthropod Eye, *Nature* 497, 95–99 (2013)
- ⁺ *These authors contributed equally to this work.*
- *This paper is highlighted in the 2013 Editors' choice in Nature News and Views on 12/19/2013 [<http://www.nature.com/nature/journal/v504/n7480/full/504386a.html>]*
- *This paper is a feature article reported by Nature on 5/2/2013 [Published online <http://www.nature.com/nature/journal/v497/n7447/full/497047a.html> (Nature News & Views)].*

----- Reported by *Nature*, *Science*, *BBC*, *CNN*, *AFP*, *ABC*, *UPI*, *NBC*, *TIME*, *NPR*, *The Washington Post*, *National Geographic*, *Bloomberg*, *Businessweek*, *Xinhua*, *Sohu*, *Sina*, *ChinaNews*, *Yahoo*, *Wired*, *The Times of India*, *The Irish Times*, *The Hindu (India)*, *The Australian*, *The Straits Times (Singapore)*, *Science Daily*, *RIA Novosti (Russia)*, *RedOrbit*, *PhysOrg*, *Physics Today*, *LATimes*, *IndiaTimes*, *India Express*, *Herald Sun (Australia)*, *Gulf Times (Qatar)*, *Guardian (UK)*, *French Tribune*, *DailyTelegraph (UK)*, *Daily Mail (UK)*, *BangkokPost (Thailand)*, *Stuff.co.nz* ...

- [J37] N. G. Boddeti, S. P. Koenig, R. Long, **J. Xiao**, J. S. Bunch, and M. L. Dunn, Mechanics of Adhered, Pressurized Graphene Blisters, *Journal of Applied Mechanics-Transactions of the ASME* 80, 040909 (2013)
- [J36] X. Liu, N.G. Boddeti, M.R. Szpunar, L. Wang, M.A. Rodriguez, R. Long, **J. Xiao**, M.L. Dunn, and J.S. Bunch, Observation of Pull-in Instability in Graphene Membranes under Interfacial Forces, *Nano Letters* 13, 2309-2313 (2013)
- [J35] C. Lü, M. Li, **J. Xiao**^{*}, I. Jung, J. Wu, Y. Huang, K.-C. Hwang, and J.A. Rogers, Mechanics of tunable hemispherical electronic eye camera systems that combine rigid device elements with soft elastomers, *Journal of Applied Mechanics-Transactions of the ASME* 80, 061022 (2013)
- [J34] X. Meng, M. Li^{*}, Z. Kang, X. Zhang, **J. Xiao**^{*}, Mechanics of Self-Folding of Single-layer Graphene, *J. Phys. D: Appl. Phys.* 46, 055308 (2013)
- [J33] Y. Wang, J. Song, **J. Xiao**^{*}, Surface effects on in-plane buckling of nanowires on elastomeric substrates, *J. Phys. D: Appl. Phys.* 46, 125309 (2013)
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Physics World, RedOrbit, The Independent Online, Indiatimes (India), The Straits Times (Singapore),...

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- [P3] J. Xiao, Y. M. Song, Y. Xie, V. Malyarchuk, I. Jung, K.-J. Choi, Z. Liu, H. Park, C. Lu, R.-H. Kim, R. Li, K. B. Crozier, Y. Huang, and J. A. Rogers, Bio-inspired hemispherical compound eye camera, Proc. of SPIE Vol. 8958 89580A, 2014

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INVITED TALKS

- [I40] School of Mechanical Engineering, Shanghai Jiao Tong University, July 27, 2018
- [I39] Invited talk, International Conference on Flexible Electronics, July 16-17, 2018, Hangzhou, China
- [I38] Center for Data Science in Health and Medicine, Peking University, June 7, 2018, China
- [I37] School of Aerospace Engineering, Tsinghua University, June 6, 2018, China
- [I36] Aeronautics, Astronautics and Mechanics Forum, May 25, 2018, Jiaxing, Zhejiang, China
- [I35] College of School of Aeronautics and Astronautics, Zhejiang University, May 24, 2018, China
- [I34] College of Electronic Science and Engineering, Shenzhen University, March 30, 2018, China
- [I33] Invited talk, Nadai Medal Symposium in Honor of Prof. John Rogers, *The ASME International Mechanical Engineering Congress & Exposition 2017*, Nov 3-9, 2017, Tampa, FL
- [I32] Invited talk, W. Prager Medal Symposium in Honor of Prof. Yonggang Huang, The Society of Engineering Science (SES) Technical Meeting, July 25-28, 2017, Northeastern University, Boston, MA
- [I31] Invited talk, IUTAM Symposium on Mechanics of Stretchable Electronics, March 17-18, 2016, Hangzhou, China
- [I30] ASME Students in Industry Day 2016, Denver, February 25, 2016
- [I29] Department of Mechanical Engineering Mechanics, Stony Brook University, September 2015
- [I28] Department of Engineering Mechanics, Dalian University of Technology, June 2015
- [I27] Invited talk, Eringen Medal Symposium in honor of Prof. John A. Rogers, 51st Annual Technical Conference of Society of Engineering Science, October 1-3, 2014, Purdue University, West Lafayette, IN
- [I26] Keynote talk, Symposium on Mechanics of Thin Films and Multi-layer Materials, 51st Annual Technical Conference of Society of Engineering Science, October 1-3, 2014, Purdue University, West Lafayette, IN
- [I25] Invited talk, Symposium on Future Smartphones and Killer Apps, University of Colorado Boulder, June 2014
- [I24] School of Aeronautic Science and Engineering, Beihang University, China, May 2014

- [I23] Invited talk, Flexible Electronics: Multifaceted Evolutions and Applications, Micro- and Nanotechnology Sensors, Systems, and Applications VI, SPIE Defense + Security, Baltimore, May 5-9, 2014
- [I22] Department of Mechanical Engineering, University of Colorado Boulder, February 2014
- [I21] Invited talk, Bioinspired, Biointegrated, Bioengineered Photonic Devices II, BiOS, SPIE Photonics West, San Francisco, February 1-6, 2014
- [I20] Invited talk, Advanced Study Institute: Printed Electronics, Chinese University of Hong Kong, December 2013
- [I19] Department of Applied Physics, Hong Kong Polytechnic University, September 2013
- [I18] School of Aeronautics and Astronautics, Zhejiang University, China, June 2013
- [I17] School of Electronic Science and Engineering, Nanjing University, China, June 2013
- [I16] School of Aerospace, Tsinghua University, China, June 2013
- [I15] Institute of Mechanics, Chinese Academy of Sciences, China, June 2013
- [I14] Institute of Microelectronics, Tsinghua University, China, June 2013
- [I13] School of Aeronautics and Astronautics, Zhejiang University, China, August 2012
- [I12] Department of Engineering Mechanics, Tsinghua University, China, November 2011
- [I11] School of Aeronautic Science and Engineering, Beihang University, China, November 2011
- [I10] OEQS Seminar, Department of Electrical, Computer, and Energy Engineering, University of Colorado Boulder, October 2011.
- [I9] Mechanical Engineering Seminar, Department of Mechanical Engineering, University of Colorado Boulder, September 2011.
- [I8] Department of Mechanical Engineering, Temple University, March 2011
- [I7] Department of Industrial Engineering, University of Pittsburgh, February 2011.
- [I6] Department of Mechanical Engineering, University of Texas at Dallas, February 2011.
- [I5] Department of Mechanical Engineering, University of Colorado Boulder, February 2011.
- [I4] Department of Mechanical Engineering, Carnegie Mellon University, January 2011.
- [I3] Department of Civil and Environmental Engineering, University of Southern California, January 2011.
- [I2] iOptics Seminar, University of Illinois at Urbana-Champaign, October 18, 2010.
- [I1] Nanoelectronics and Photonics Seminar, University of Illinois at Urbana-Champaign, March 29, 2010.

CONFERENCE PRESENTATIONS

- [C41] J. Xiao, Rehealable, fully recyclable and malleable electronic skin, *The ASME International Mechanical Engineering Congress & Exposition 2018*, Nov 9-15, 2018, Pittsburgh, PA

- [C40] J. Xiao, Wrinkling and cracking/folding for multiscale hierarchical surface morphologies, *The ASME International Mechanical Engineering Congress & Exposition 2018*, Nov 9-15, 2018, Pittsburgh, PA
- [C39] J. Xiao, Programmable wrinkling of shape memory polymers with applications in tunable adhesion and nonuniform optical gratings, *The ASME International Mechanical Engineering Congress & Exposition 2018*, Nov 9-15, 2018, Pittsburgh, PA
- [C38] J. Xiao, Rehealable, fully recyclable and malleable electronic skin enabled by dynamic covalent thermoset nanocomposite, 256th ACS National Meeting, Aug 19-23, 2018, Boston, MA
- [C37] J. Xiao, Rehealable, fully recyclable and malleable electronic skin enabled by dynamic covalent thermoset nanocomposite, *GRC Multifunctional Materials and Structures*, Jan 14-19, 2018, Ventura, CA
- [C36] J. Xiao, Rehealable, fully recyclable and malleable electronic skin enabled by dynamic covalent thermoset nanocomposite, *Symposium of Materials and Mechanics in the Midwest*, Dec 1-2, 2017, Northwestern University, Evanston, IL
- [C35] J. Xiao, Multiscale Wrinkling of Shape Memory Polymers, *The ASME International Mechanical Engineering Congress & Exposition 2017*, Nov 3-9, 2017, Tampa, FL
- [C34] J. Xiao, Third-Order Polynomials Model for Analyzing Multilayer Hard/Soft Materials in Flexible Electronics, *The ASME International Mechanical Engineering Congress & Exposition 2016*, Nov 11-17, 2016, Phoenix, AZ
- [C33] J. Xiao, Programmable Localized Wrinkling of Thin Films on Shape Memory Polymer Substrates, *AmeriMech Symposium: Mechanical Behavior of 2D Materials Graphene and Beyond*, April 4-6, 2016, University of Texas at Austin
- [C32] Z. Li, J. Xiao, Mechanics and Optics of Stretchable Elastomeric Microlens Array for Artificial Compound Eye Camera, *The ASME International Mechanical Engineering Congress & Exposition 2015*, Nov 13-19, 2015, Houston, TX
- [C31] Z. Li, J. Rodriguez, G. Wendland, Y. Wang, J. Xiao, Tunable Adhesion Enabled by Hierarchical Surface Morphologies, ASME 2015 Applied Mechanics and Materials Conference (McMAT2015), June 29-July 1, 2015, Seattle, WA
- [C30] J. Xiao, Unique wrinkling behavior of stiff thin films on shape memory polymers, International Workshop on Pattern Formation in Soft Materials, June 1-4, 2015, Tianjin, China
- [C29] Y. Wang, K. Yu, H. Qi, X. Yin, J. Xiao, Surface wrinkling of shape memory polymers, 2014 *Energy Materials Nanotechnology (EMN) Fall Meeting*, Nov 22-25, 2014, Orlando, Florida
- [C28] Y. Wang, K. Yu, J. Xiao, H. Qi, Unique wrinkling behavior of stiff thin films on shape memory polymers, *The ASME International Mechanical Engineering Congress & Exposition 2014*, Nov 14-20, 2014, Montreal, Canada
- [C27] J. Xiao, Y. Huang, J.A. Rogers, Artificial Compound Eye Camera Inspired by The Arthropod Eye, *The ASME International Mechanical Engineering Congress & Exposition 2014*, Nov 14-20, 2014, Montreal, Canada
- [C26] J. Xiao, Y.M. Song, Y. Xie, V. Malyarchuk, Y. Huang, J.A. Rogers, Bio-inspired Artificial Apposition Compound Eye, *APS March Meeting 2014*, March 3-7, 2014, Denver, Colorado

- [C25] J. Xiao, H. Qi, Y. Wang, K. Yu, Time and temperature dependent wrinkling of stiff thin films on shape memory polymers, *The ASME International Mechanical Engineering Congress & Exposition 2013*, Nov 15-21, 2013, San Diego, California
- [C24] J. Xiao, M. Li, X. Meng, Mechanics of Self-Folding of Graphene, *The ASME International Mechanical Engineering Congress & Exposition 2013*, Nov 15-21, 2013, San Diego, California
- [C23] J. Xiao, Y. Wang, J. Song, Surface effects on in-plane buckling of nanowires on elastomeric substrates, *The ASME International Mechanical Engineering Congress & Exposition 2013*, Nov 15-21, 2013, San Diego, California
- [C22] J. Xiao, C. Lu, M. Li, Y. Huang, J. Rogers, Mechanics of tunable hemispherical electronic eye camera systems that combine rigid device elements with soft elastomers, *The ASME International Mechanical Engineering Congress & Exposition 2013*, Nov 15-21, 2013, San Diego, California
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- [C20] J. Xiao, H. Qi, Y. Wang, K. Yu, Time and temperature dependent wrinkling of stiff thin films on shape memory polymers, *50th Annual Technical Conference of Society of Engineering Science*, July 28-31, 2013, Brown University, Providence, RI
- [C19] J. Xiao, M. Li, X. Meng, Mechanics of Self-Folding of Single-layer Graphene, *50th Annual Technical Conference of Society of Engineering Science*, July 28-31, 2013, Brown University, Providence, RI
- [C18] J. Xiao, I. Jung, Y. Huang, J. Rogers, Mechanics of dynamically tunable electronic eye camera, *The ASME International Mechanical Engineering Congress & Exposition 2012*, Nov 9-15, 2012, Houston, Texas
- [C17] J. Xiao, Y. Zhang, Y. Huang, J. Rogers, Alignment Controlled Growth of Single-Walled Carbon Nanotubes on Quartz Substrates, *The ASME International Mechanical Engineering Congress & Exposition 2012*, Nov 9-15, 2012, Houston, Texas
- [C16] J. Xiao, Y. Huang, J. Rogers, U. Paik, and H. Jiang, Buckling mechanics of one-dimensional nanomaterials on elastomeric substrates, *The ASME International Mechanical Engineering Congress & Exposition 2012*, Nov 9-15, 2012, Houston, Texas
- [C15] J. Xiao, C. Lu, Z. Liu, I. Jung, Y. Huang, and J. A. Rogers, Mechanics of dynamically tunable electronic eye camera, *49th Annual Technical Conference of Society of Engineering Science*, October 10-12, 2012, Georgia Tech, Atlanta, GA
- [C14] J. Xiao, S. Y. Ryu, Y. Huang, K.-C. Hwang, U. Paik, J. A. Rogers, Mechanics of nanowire/nanotube in-surface buckling on elastomeric substrates, *The 23rd International Congress of Theoretical and Applied Mechanics*, August 19 -24, 2012, Beijing, China
- [C13] J. Xiao, S. Dunham, P. Liu, Y. Zhang, Y. Huang, and J. A. Rogers, Alignment Controlled Growth of Single Walled Carbon Nanotubes on Quartz, *2012 MRS Spring Meeting & Exhibit*, April 9-13, 2012, San Francisco, CA

- [C12] J. Xiao, Y. Huang, J. A. Rogers, Buckling mechanics of one-dimensional nanomaterials on elastomeric substrates, *48th Annual Technical Conference of Society of Engineering Science*, October 12-14, 2011, Northwestern University, Evanston, IL
- [C11] Y. Huang, J. Xiao, J. A. Rogers, Alignment Controlled Growth of Single-Walled Carbon Nanotubes on Quartz Substrates, *48th Annual Technical Conference of Society of Engineering Science*, October 12-14, 2011, Northwestern University, Evanston, IL
- [C10] J. Xiao, S. Dunham, P. Liu, Y. Zhang, C. Kocabas, L. Moh, Y. Huang, K.-C. Hwang, C. Lu, W. Huang and J. A. Rogers, Alignment of single-wall carbon nanotubes grown on quartz. *The ASME International Mechanical Engineering Congress & Exposition 2009*, Nov 13-19, 2009, Lake Buena Vista, Florida.
- [C9] J. Xiao, S.Y. Ryu, Y. Huang, K.-C. Hwang, U. Paik and J.A. Rogers, Mechanics of In-surface Buckling of Silicon Nanowires on Elastomeric Substrates. *The ASME International Mechanical Engineering Congress & Exposition 2009*, Nov 13-19, 2009, Lake Buena Vista, Florida.
- [C8] J. Xiao, A. Carlson, Z.J. Liu, Y. Huang, H. Jiang, and J.A. Rogers, Stretchable and Compressible Thin Films of Stiff Materials on Compliant Wavy Substrates. *The ASME International Mechanical Engineering Congress & Exposition 2009*, Nov 13-19, 2009, Lake Buena Vista, Florida.
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- [C6] J. Xiao, Y. Huang, J. A. Rogers, and H. Jiang, Stretchable nanoelectronics with applications in biomedical devices (poster). *The Humboldt Kolleg, Nano-Bio: The Next Transformative Convergence*, Oct 14-15, 2009, Roanoke, Virginia.
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- [C4] J. Xiao, J. Qin, Y. Huang, and K. C. Hwang, The Equivalence of Axisymmetric Indentation Model for Three-Dimensional Indentation Hardness. *The ASME International Mechanical Engineering Congress & Exposition 2008*, Oct 31-Nov 6, 2008, Boston, Massachusetts.
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