

THE UNIVERSITY OF TEXAS AT AUSTIN
Cockrell School of Engineering
Standard Resume

FULL NAME: Nanshu Lu**TITLE:** Frank and Kay Reese Professor**DEPARTMENT:** Aerospace Engineering and Engineering Mechanics**EDUCATION:**

Harvard University	Mechanics of Materials	PhD	June 2009
Harvard University	Applied Physics	MS	June 2006
Tsinghua University (Beijing)	Solid Mechanics	BEng	July 2005

CURRENT AND PREVIOUS ACADEMIC POSITIONS:

University of Texas at Austin	Assistant Professor	Sep. 2011 - Aug. 2017
University of Texas at Austin	Associate Professor with tenure	Sep. 2017 - present
University of Texas at Austin	Full Professor	Sep. 2022

OTHER PROFESSIONAL EXPERIENCE:

Harvard University	Postdoctoral Fellow	June 2009 - Aug. 2009
University of Illinois at Urbana-Champaign	Beckman Postdoctoral Fellow	Sep. 2009 - Aug. 2011

HONORS AND AWARDS:

- Outstanding Graduate of Tsinghua University, Tsinghua University, Beijing, 2005
- Winston Chen Graduate Fellowship, 2005-2006
- Beckman Postdoctoral Fellowship, 2009-2011
- 35 Innovators under 35 by MIT Technology Review (TR35), 2012
- Haythornthwaite Foundation Research Initiation Grant by ASME Applied Mechanics Division, 2012
- Netexplo Grand Prix for Digital Innovation, 2013
- Frontiers of Science, Engineering and Medicine Symposium invited speaker, 2013, 2019
- 3M Nontenured Faculty Award by 3M Company, 2014-2016
- U.S. National Science Foundation (NSF) CAREER Award, 2014-2019
- U.S. Air Force Office of Scientific Research (AFOSR) Young Investigator Award, 2015-2018
- U.S. Office of Naval Research (ONR) Young Investigator Award, 2015-2018
- Biomedical Engineering Society (BMES) Innovation and Career Development Award, 2015
- Five great innovators at UT-Austin, 2016
- Texas Health Catalyst Awards, 2016, 2018
- Silver Prize in the Bio Engineering & Life Science Division, the 24th Samsung HumanTech Paper Award, 2018

- Faculty Research Assignments (FRA) (an award equivalent for one-semester sabbatical), UT-Austin, 2018-2019
- Five World-Changing Women at UT-Austin, 2019
- [Micromachines] Best Paper Award, 2019
- iCANx/ACS Nano Inaugural Rising Star Lectureship, 2020
- Web of Science Highly Cited Researcher, 2020, 2021
- Best Presenter Award of Symposium S.SM04 in MRS Fall Virtual Meeting, 2020
- U.S. National Academy of Medicine (NAM) Healthy Longevity Global Competition Winner, 2021
- National Academy of Medicine (NAM) Emerging Leaders in Health and Medicine Forum Speaker, 2022
- Snow Lecturer of the Churchill conferences on the deformation, yield and fracture of polymers (DYFP), 2022
- Thomas J.R. Hughes Young Investigator Award, ASME Applied Mechanics Division (AMD), 2022

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES:

- Fellow, American Society of Mechanical Engineers (ASME)
- Senior Member: Institute of Electrical and Electronics Engineers (IEEE)
- Member: Society of Engineering Science (SES), Materials Research Society (MRS), American Physical Society (APS), American Association for the Advancement of Science (AAAS)

UNIVERSITY COMMITTEE ASSIGNMENTS:

Departmental-	Member, Instructional Laboratory Committee	2012-2020
	Member, EM Mechanics Services Courses Committee	2012-present
	Member, ASE Strategic Planning Committee	2012
	Member, EM Faculty Search Committee	2012, 2015, 2016, 2020, 2021, 2022
	Member, ASE Website Overview Committee	2013-present
	Advisor to ASE Women in Aerospace for Leadership and Development (WIALD)	2016-2017, 2020-2021
	Member, ASE Diversity, Equity and Inclusion (DEI) Committee	2019-2020
	Chair, ASE Diversity, Equity and Inclusion (DEI) Committee	2020-present
	Faculty Mentor, ECE Partner Program	2021-present
	Collegiate-	Member, Gender Equity Council
Member, Women in Engineering Program (WEP) Committee		2013-2019
Member, Texas Materials Institute (TMI) Executive Committee		2016-present
Chair, Women in Engineering Program (WEP) Committee		2017-2019
Faculty Co-Chair, Asian/Asian American Faculty and Staff Association (AAAFSA)		2018-2019
		2018-2020

PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:

- Associate Editor,
 - *Soft Robotics*, co-founder, 2013-2019
 - *Science China Technological Sciences*, 2017-2021
 - *Journal of Applied Mechanics*, 2021-present
 - *Nano Letters*, 2022-present
- Editorial Board,
 - *Sensors*, 2020-present
- International Advisory Board
 - *Advanced Electronic Materials*, 2022-present
- Organizer,

- “Track 10 Emerging Applications”, *2022 IEEE International Conference on Flexible and Printable Sensors and Systems (FLEPS)*
- MiniSymposium, “MS 328, Mechanics of flexible, stretchable and bio-integrated electronics”, *U.S. National Committee for Theoretical and Applied Mechanics (USNC/TAM) 2022*
- Track “Soft, Active Materials and Applications in Soft Robotics”, *Society of Engineering Science (SES) 2020*
- Topic “Mechanics of Integrated Structures and Materials in Advanced Technologies”, *American Society of Mechanical Engineers (ASME) International Mechanical Engineering Congress & Exposition (IMECE)*, November 2012 & 2013
- Symposium “Mechanics, Materials, and Manufacture of Flexible and Stretchable Electronics”, *Society of Engineering Science (SES) 2016*
- Co-organizer,
 - Topic “Mechanics of Integrated Structures and Materials in Advanced Technologies”, *ASME IMECE*, November 2011
 - Topic “Mechanics of Soft Materials”, *ASME IMECE*, November 2013
 - Symposium “Compliant Energy Sources”, *Materials Research Society (MRS) Fall Meeting*, November 2012
 - Symposium “Stretchable and Active Polymers and Composites for Energy and Medicine”, *MRS Fall Meeting*, December 2015
- Committee Chair,
 - 2012-Present ASME Applied Mechanics Division “Integrated Structures” Technical Committee
- Committee Member,
 - 2011-2012 ASME Applied Mechanics Division “Integrated Structures” Technical Committee
 - 2013-Present ASME Applied Mechanics Division “Soft Materials” Technical Committee
- Proposal Reviewer,
 - Singapore National Research Foundation
 - European Research Council
 - NSF Civil, Mechanical and Manufacturing Innovation (CMMI) Division
 - NSF Integrative Strategies for Understanding Neural and Cognitive Systems (NCS) Program
 - DOE Basic Energy Sciences (BES) Program
 - NASA Early Career Faculty (ECF) Award Program
 - NASA Human Exploration Research Opportunities (HERO)
 - AFOSR Mechanics of Multifunctional Materials & Microsystems (M⁴) Program
 - Natural Sciences and Engineering Research Council of Canada (NSERC)
- Fellowship Panelist,
 - National Defense Science and Engineering Graduate (NDSEG) Evaluation Panel
 - DOD’s Science, Mathematics & Research for Transformation (SMART) Evaluation Panel
- Technical Reviewer for Science, Nature Nanotechnology, Proceedings of the National Academy of Sciences, Nature Communications, Advanced Materials, Advanced Functional Materials, Nano Letters, ACS Nano, Scientific Reports, Applied Physics Letters, Journal of Mechanics and Physics of Solids, International Journal of Solids and Structures, Extreme Mechanics Letters, Journal of Materials Research, Acta Materialia, Biomedical Microdevices, Transactions on Biomedical Engineering

PUBLICATIONS:

Google Scholar link: <https://scholar.google.com/citations?user=mj-O9psAAAAJ&hl=en>

Bold Italic represents Nanshu Lu. Bold indicates Nanshu’s PhD and postdoctoral advisors.

Italic highlights UT students, postdocs, and visiting scholars supervised by Nanshu at the time that the research was conducted.

† indicates equal contribution.

* indicates the corresponding authorship.

A. Refereed Journal Papers

Published before joining UT

1. J. Yoon, Z. Zhang, **N. Lu**, and **Z. G. Suo***, "The Effect of Coating in Increasing the Critical Size of Islands on a Compliant Substrate," *Applied Physics Letters*, vol. 90(21), pp. 211912, May 2007.
<http://dx.doi.org/10.1063/1.2742911>
2. **N. Lu**, J. I. Yoon, and **Z. G. Suo***, "Delamination of stiff islands patterned on stretchable substrates," *International Journal of Materials Research*, vol. 98(8), pp. 717-722, Aug. 2007.
<http://dx.doi.org/10.3139/146.101529>
3. **N. Lu**, X. Wang, **Z. G. Suo**, and **J. Vlassak***, "Metal films on polymer substrates stretched beyond 50%," *Applied Physics Letters*, vol. 91(22), pp. 221909, Nov. 2007.
<http://dx.doi.org/10.1063/1.2817234>
4. **N. Lu**, X. Wang, **Z. G. Suo**, and **J. Vlassak***, "Failure by Simultaneous Grain Growth, Strain Localization, and Interface Debonding in Metal Films on Polymer Substrates," *Journal of Materials Research*, vol. 24(2), pp. 379-385, Feb. 2009.
<http://dx.doi.org/10.1557/Jmr.2009.0048>
5. J. Y. Sun, **N. Lu**, J. Yoon, K. H. Oh, **Z. G. Suo**, and **J. J. Vlassak***, "Inorganic Islands on a Highly Stretchable Polyimide Substrate," *Journal of Materials Research*, vol. 24(11), pp. 3338-3342, Nov. 2009.
<http://dx.doi.org/10.1557/Jmr.2009.0417>
6. A. C. Siegel, S. T. Phillips, M. D. Dickey, **N. Lu**, **Z. G. Suo**, and G. M. Whitesides*, "Foldable Printed Circuit Boards on Paper Substrates," *Advanced Functional Materials*, vol. 20(1), pp. 28-35, Jan. 2010.
<http://dx.doi.org/10.1002/adfm.200901363>
7. **N. Lu**, **Z. G. Suo**, and **J. J. Vlassak***, "The Effect of Film Thickness on the Failure Strain of Polymer-Supported Metal Films," *Acta Materialia*, vol. 58(5), pp. 1679-1687, Mar. 2010.
<http://dx.doi.org/10.1016/j.actamat.2009.11.010>
8. D. H. Kim†, **N. Lu†**, R. Ghaffari†, Y. S. Kim, S. P. Lee, L. Z. Xu, J. A. Wu, R. H. Kim, J. Z. Song, Z. J. Liu, J. Viventi, B. de Graff, B. Elolampi, M. Mansour, M. J. Slepian, S. Hwang, J. D. Moss, S. M. Won, Y. G. Huang, B. Litt, and **J. A. Rogers***, "Materials for Multifunctional Balloon Catheters with Capabilities in Cardiac Electrophysiological Mapping and Ablation Therapy," *Nature Materials*, vol. 10(4), pp. 316-323, Apr. 2011.
<http://dx.doi.org/10.1038/Nmat2971>
9. D. H. Kim†, **N. Lu†**, R. Ma†, Y. S. Kim, R. H. Kim, S. D. Wang, J. Wu, S. M. Won, H. Tao, A. Islam, K. J. Yu, T. I. Kim, R. Chowdhury, M. Ying, L. Z. Xu, M. Li, H. J. Chung, H. Keum, M. McCormick, P. Liu, Y. W. Zhang, F. G. Omenetto, Y. G. Huang, T. Coleman, and **J. A. Rogers***, "Epidermal Electronics," *Science*, vol. 333(6044), pp. 838-843, Aug. 2011.
<http://dx.doi.org/10.1126/science.1206157>

Published in previous rank at UT

10. S. M. Won, H. S. Kim, **N. Lu**, D. G. Kim, C. Del Solar, T. Duenas, A. Ameen, and **J. A. Rogers***, "Piezoresistive Strain Sensors and Multiplexed Arrays Using Assemblies of Single-Crystalline Silicon Nanoribbons on Plastic Substrates," *IEEE Transactions on Electron Devices*, vol. 58(11), pp. 4074-4078, Nov. 2011.
<http://dx.doi.org/10.1109/Ted.2011.2164923>
11. J. Y. Sun, **N. Lu**, J. Yoon, K. H. Oh, **Z. G. Suo**, and **J. J. Vlassak***, "Debonding and Fracture of Ceramic Islands on Polymer Substrates," *Journal of Applied Physics*, vol. 111(1), pp. 013517, Jan. 2012.
<http://dx.doi.org/10.1063/1.3673805>
12. D. H. Kim, **N. Lu**, Y. G. Huang, and **J. A. Rogers***, "Materials for Stretchable Electronics in Bioinspired and Biointegrated Devices," *MRS Bulletin*, vol. 37(3), pp. 226-235, Mar. 2012.
<http://dx.doi.org/10.1557/Mrs.2012.36>
13. D. H. Kim, **N. Lu**, R. Ghaffari, and **J. A. Rogers***, "Inorganic Semiconductor Nanomaterials for Flexible and Stretchable Bio-Integrated Electronics," *NPG Asia Materials*, vol. 4, pp. e15, Apr. 2012.
<http://dx.doi.org/10.1038/am.2012.27>
14. D. H. Kim, R. Ghaffari, **N. Lu**, and **J. A. Rogers***, "Flexible and Stretchable Electronics for Biointegrated Devices," *Annual Review of Biomedical Engineering*, vol. 14, pp. 113-128, Apr. 2012.
<http://dx.doi.org/10.1146/annurev-bioeng-071811-150018>

15. **N. Lu**, Z. Zhang, J. Yoon, and **Z. G. Suo***, "Singular Stress Fields at Corners in Flip-Chip Packages," *Engineering Fracture Mechanics*, vol. 86, pp. 38-47, May 2012.
<http://dx.doi.org/10.1016/j.engfracmech.2012.02.010>
16. S. D. Wang, M. Li, J. Wu, D. H. Kim, **N. Lu**, Y. W. Su, Z. Kang, Y. G. Huang*, and **J. A. Rogers***, "Mechanics of Epidermal Electronics," *Journal of Applied Mechanics*, vol. 79(3), pp. 031022, Apr 2012.
<http://dx.doi.org/10.1115/1.4005963>
17. M. Ying†, A. P. Bonifas†, **N. Lu**, Y. W. Su, R. Li, H. Y. Cheng, A. Ameen, Y. G. Huang, and **J. A. Rogers***, "Silicon Nanomembranes for Fingertip Electronics," *Nanotechnology*, vol. 23(34), pp. 344004, Aug. 2012.
<http://dx.doi.org/10.1088/0957-4484/23/34/344004>
18. **N. Lu**, C. Lu, S. Yang, and **J. A. Rogers***, "Highly Sensitive Skin-Mountable Strain Gauges Based Entirely on Elastomers," *Advanced Functional Materials*, vol. 22(19), pp. 4044-4050, Oct. 2012.
<http://dx.doi.org/10.1002/adfm.201200498>
19. D. H. Kim†, R. Ghaffari†, **N. Lu†**, S. D. Wang, S. P. Lee, H. Keum, R. D'Angelo, L. Klinker, Y. W. Su, C. F. Lu, Y. S. Kim, A. Ameen, Y. H. Li, Y. H. Zhang, B. de Graff, Y. Y. Hsu, Z. J. Liu, J. Ruskin, L. Z. Xu, C. Lu, F. G. Omenetto, Y. G. Huang, M. Mansour, M. J. Slepian, and **J. A. Rogers***, "Electronic Sensor and Actuator Webs for Large-Area Complex Geometry Cardiac Mapping and Therapy," *Proceedings of the National Academy of Sciences of the United States of America*, vol. 109(49), pp. 19910-19915, Dec. 2012.
<http://dx.doi.org/10.1073/pnas.1205923109>
20. J. Y. Sun, **N. Lu**, K. H. Oh, **Z. G. Suo**, and **J. J. Vlassak***, "Islands Stretch Test for Measuring the Interfacial Fracture Energy between a Hard Film and a Soft Substrate," *Journal of Applied Physics*, vol. 113(22), pp. 223702, Jun. 2013.
<http://dx.doi.org/10.1063/1.4810763>
21. H. Y. Chang, S. Yang, J. H. Lee, L. Tao, W. S. Hwang, D. Jena, **N. Lu**, and D. Akinwande*, "High-Performance, Highly Bendable MoS₂ Transistors with High-K Dielectrics for Flexible Low-Power Systems," *ACS Nano*, vol. 7(6), pp. 5446-5452, Jun. 2013.
<http://dx.doi.org/10.1021/Nn401429w>
22. S. Yang, and **N. Lu***, "Gauge Factor and Stretchability of Silicon-on-Polymer Strain Gauges," *Sensors*, vol. 13(7), pp. 8577-8594, Jul. 2013.
<http://dx.doi.org/10.3390/S130708577>
23. L. Z. Xu, S. R. Gutbrod, A. P. Bonifas, Y. W. Su, M. S. Sulkin, **N. Lu**, H. J. Chung, K. I. Jang, Z. J. Liu, M. Ying, C. Lu, R. C. Webb, J. S. Kim, J. I. Laughner, H. Y. Cheng, Y. H. Liu, A. Ameen, J. W. Jeong, G. T. Kim, Y. G. Huang, I. R. Efimov, and **J. A. Rogers***, "3D Multifunctional Integumentary Membranes for Spatiotemporal Cardiac Measurements and Stimulation Across the Entire Epicardium," *Nature Communications*, vol. 5, pp. 3329, Feb. 2014.
<http://dx.doi.org/10.1038/Ncomms4329>
24. **N. Lu***, and D.-H. Kim, "Flexible and Stretchable Electronics Paving the Way for Soft Robotics," *Soft Robotics*, vol. 1(1), pp. 53-62, Mar. 2014.
<http://dx.doi.org/10.1089/soro.2013.0005>
25. B. Trimmer, R. H. Ewoldt, M. Kovac, H. Lipson, **N. Lu**, M. Shahinpoor, and C. Majidi, "At the Crossroads: Interdisciplinary Paths to Soft Robots," *Soft Robotics*, vol. 1, pp. 63-69, Mar. 2014.
<http://dx.doi.org/10.1089/soro.2013.1509>
26. D. Son, J. Lee, S. Qiao, R. Ghaffari, J. Kim, J. E. Lee, C. Song, S. J. Kim, D. J. Lee, S. W. Jun, S. Yang, M. Park, J. Shin, K. Do, M. Lee, K. Kang, C. S. Hwang, **N. Lu**, T. Hyeon*, and D. H. Kim*, "Multifunctional Wearable Devices for Diagnosis and Therapy of Movement Disorders," *Nature Nanotechnology*, vol. 9(5), pp. 397-404, May 2014.
<http://dx.doi.org/10.1038/Nnano.2014.38>
27. J. M. Kim, M. C. Lee, J. S. Rhim, P. Wang, **N. Lu**, and D.-H. Kim*, "Next-Generation Flexible Neural and Cardiac Electrode Arrays," *Biomedical Engineering Letters*, vol. 4(2), pp. 95-108, Jun. 2014.
<http://dx.doi.org/10.1007/s13534-014-0132-4>
28. L. Li†, H. T. Lin†, S. Qiao†, Y. Zou, S. Danto, K. Richardson, J. D. Musgraves, **N. Lu**, and J. J. Hu*, "Integrated Flexible Chalcogenide Glass Photonic Devices," *Nature Photonics*, vol. 8(8), pp. 643-649, Aug. 2014.
<http://dx.doi.org/10.1038/Nphoton.2014.138>

29. Y. A. Huang*, Y. Q. Duan, Y. J. Ding, N. B. Bu, Y. Q. Pan, **N. Lu**, and Z. P. Yin, "Versatile, kinetically controlled, high precision electrohydrodynamic writing of micro/nanofibers," *Scientific Reports*, vol. 4, pp. 5949, Aug. 2014.
<http://dx.doi.org/10.1038/Srep05949>
30. T. Widlund, S. Yang, Y. Y. Hsu, and **N. Lu***, "Stretchability and Compliance of Freestanding Serpentine-Shaped Ribbons," *International Journal of Solids and Structures*, vol. 51(23-24), pp. 4026-4037, Nov. 2014.
<http://dx.doi.org/10.1016/j.ijsolstr.2014.07.025>
31. S. Yang, B. Su, G. Bitar, and **N. Lu***, "Stretchability of Indium Tin Oxide (ITO) Serpentine Thin Films Supported by Kapton Substrates," *International Journal of Fracture*, vol. 190(1-2), pp. 99-110, Nov. 2014.
<http://dx.doi.org/10.1007/s10704-014-9977-x>
32. X. Xu, H. Subbaraman, S. Chakravarty, A. Hosseini, J. Covey, Y. Yu, D. Kwong, Y. Zhang, W. C. Lai, Y. Zou, **N. Lu**, and R. T. Chen*, "Flexible Single-Crystal Silicon Nanomembrane Photonic Crystal Cavity," *ACS Nano*, vol. 8(12), pp. 12265-12271, Dec. 2014.
<http://dx.doi.org/10.1021/Nn504393j>
33. S. Yang, E. Ng, and **N. Lu***, "Indium Tin Oxide (ITO) serpentine ribbons on soft substrates stretched beyond 100%," *Extreme Mechanics Letters*, vol. 2(0), pp. 37-45, Mar. 2015.
<http://dx.doi.org/10.1016/j.eml.2015.01.010>
34. W. Zhu, M. N. Yogeesh, S. Yang, S. H. Aldave, J. S. Kim, S. Sonde, L. Tao, **N. Lu**, and D. Akinwande, "Flexible Black Phosphorus Ambipolar Transistors, Circuits and AM Demodulator," *Nano Letters*, vol. 15(3), pp. 1883-1890, Mar. 2015.
<http://dx.doi.org/10.1021/Nl5047329>
35. S. J. Kim, H. R. Cho, K. W. Cho, S. Qiao, J. S. Rhim, M. Soh, T. Kim, M. K. Choi, C. Choi, I. Park, N. S. Hwang, T. Hyeon, S. H. Choi, **N. Lu**, and D. H. Kim*, "Multifunctional Cell-Culture Platform for Aligned Cell Sheet Monitoring, Transfer Printing, and Therapy," *ACS Nano*, vol. 9(3), pp. 2677-2688, Mar. 2015.
<http://dx.doi.org/10.1021/Nn5064634>
36. S. Qiao, and **N. Lu***, "Analytical Solutions for Bonded Elastically Compressible Layers," *International Journal of Solids and Structures*, vol. 58, pp. 353-365, Apr. 2015.
<http://dx.doi.org/10.1016/j.ijsolstr.2014.11.018>
37. **N. Lu***, and S. Yang, "Mechanics for Stretchable Sensors," *Current Opinion in Solid State & Materials Science*, vol. 19(3), pp. 149-159, Jun. 2015.
<http://dx.doi.org/10.1016/j.cossms.2014.12.007>
38. D. H. Son, J. H. Lee, D. J. Lee, R. Ghaffari, S. M. Yun, S. J. Kim, J. E. Lee, H. R. Cho, S. H. Yoon, S. X. Yang, S. H. Lee, S. Qiao, D. S. Ling, S. H. Shin, J.-K. Song, J. M. Kim, T. H. Kim, H. K. Lee, J. H. Kim, M. Soh, N. H. Lee, C. S. Hwang, S. W. Nam, **N. Lu**, T. G. Hyeon, S. H. Choi, and D.-H. Kim*, "Bioresorbable Electronic Stent Integrated with Therapeutic Nanoparticles for Endovascular Diseases," *ACS Nano*, vol. 9(6), pp. 5937-5946, Jun. 2015.
<http://dx.doi.org/10.1021/acsnano.5b00651>
39. S. Qiao, J.-B. Gratadour, L. Wang, and **N. Lu***, "Conformability of a Thin Elastic Membrane Laminated on A Rigid Substrate with Corrugated Surface," *IEEE Transactions on Components, Packaging and Manufacturing Technology*, vol. 5(9), pp. 1237-1243, Sep. 2015.
<http://dx.doi.org/10.1109/tcpmt.2015.2453319>
40. Y. Yu, D. A. Sanchez, and **N. Lu***, "Work of Adhesion/Separation between Soft Elastomers of Different Mixing Ratios," *Journal of Materials Research* 30(18), pp. 2702-2712, Sep. 2015.
<http://dx.doi.org/10.1557/jmr.2015.242>
41. S. Yang, Y.-C. Chen, L. Nicolini, P. Pasupathy, J. Sacks, B. Su, R. Yang, D. Sanchez, Y.-F. Chang, P. Wang, D. Schnyer, D. Neikirk, and **N. Lu***, "'Cut-and-Paste' Manufacture of Multiparametric Epidermal Sensor Systems (ESS)," *Advanced Materials*, vol. 27(41), pp. 6423-6430, Nov. 2015.
<http://dx.doi.org/10.1002/adma.201502386>
42. C. J. Brennan, J. Nguyen, E. Yu, and **N. Lu***, "Interface Adhesion between 2D Materials and Elastomers Measured by Buckle Delaminations," *Advanced Materials Interfaces*, vol. 2(16), pp. 1500176, Nov. 2015.
<http://dx.doi.org/10.1002/admi.201500176>
43. M. K. Choi, O. K. Park, C. Choi, S. Qiao, R. Ghaffari, J. Kim, D. J. Lee, M. B. Kim, W. J. Hyun, S. J. Kim, H. J. Hwang, S.-H. Kwon, T. G. Hyeon, **N. Lu**, and D.-H. Kim*, "Cephalopod-Inspired Miniaturized Suction Cups for Smart Medical Skin," *Advanced Healthcare Materials*, vol. 5(1), pp. 80-87, Jan. 2016.

- <http://dx.doi.org/10.1002/adhm.201500285>
44. L. Wang and N. Lu*, "Conformability of a Thin Elastic Membrane Laminated on a Soft Substrate with Slightly Wavy Surface," *Journal of Applied Mechanics*, vol. 83(4), pp. 041007, Jan. 2016.
<http://dx.doi.org/10.1115/1.4032466>
45. T. Ha, J. X. Zhang, and N. Lu*, "Thickness Ratio and d_{33} Effects on Flexible Piezoelectric Unimorph Energy Conversion", *Smart Materials and Structures*, vol. 25, pp. 035037, Feb. 2016.
<http://dx.doi.org/10.1088/0964-1726/25/3/035037>
46. H.-Y. Chang, M. N. Yogeesh, R. Ghosh, A. Rai, A. Sanne, S. Yang, N. Lu, S. K. Banerjee, and D. Akinwande*, "Large-Area Monolayer MoS₂ for Flexible Low-Power RF Nanoelectronics in the GHz Regime", *Advanced Materials*, vol. 28(9), pp.1818-1823, Mar. 2016.
<http://dx.doi.org/10.1002/adma.201504309>
47. S. J. Kim, K. W. Cho, H. R. Cho, L. Wang, S. Y. Park, S. E. Lee, T. Hyeon, N. Lu, S. H. Choi, and D.-H. Kim*, "Stretchable and Transparent Biointerface Using Cell-Sheet-Graphene Hybrid for Electrophysiology and Therapy of Skeletal Muscle," *Advanced Functional Materials*, vol. 26(19), pp. 3207-3217, May 2016.
<http://dx.doi.org/10.1002/adfm.201504578>
48. S. Qiao and N. Lu*, "Stress Analysis for Nanomembranes under Stamp Compression," *Extreme Mechanics Letters*, vol. 7, pp. 136-144, Jun. 2016.
<http://dx.doi.org/10.1016/j.eml.2016.02.002>
49. H. Lee, T. K. Choi, Y. B. Lee, H. R. Cho, R. Ghaffari, L. Wang, H. J. Choi, T. D. Chung, N. Lu, T. Hyeon, S. H. Choi, and D.-H. Kim*, "A Graphene-Based Electrochemical Device with Thermo-Responsive Microneedles for Diabetes Monitoring and Therapy", *Nature Nanotechnology*, vol. 11, pp. 566-572, Jun. 2016.
<http://dx.doi.org/10.1038/nnano.2016.38>
50. L. Liu*, and N. Lu, "Variational Formulations, Instabilities and Critical Loadings of Space Curved Beams", *International Journal of Solids and Structures*, vol. 87(1), pp. 48-60, Jun. 2016.
<http://dx.doi.org/10.1016/j.ijsolstr.2016.02.032>
51. J. Park†, S. Choi†, A. H. Janardhan, S.-Y. Lee, S. Raut, J. Soares, K. Shin, S. Yang, C. Lee, K.-W. Kang, H. R. Cho, S. J. Kim, P. Seo, W. Hyun, S. Jung, H.-J. Lee, N. Lee, S. H. Choi, M. Sacks, N. Lu, M. E. Josephson, T. Hyeon, D.-H. Kim*, and H. J. Hwang*, "Electromechanical Cardioplasty Using a Wrapped Elasto-Conductive Epicardial Mesh", *Science Translational Medicine*, vol. 8(344), pp. 344ra86, Jun. 2016.
<http://dx.doi.org/10.1126/scitranslmed.aad8568>

Published in rank at UT

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10. **N. Lu***, *H. Jeong*, "Wireless Electronic Tattoos", Structural Health Monitoring 2019, Enabling Intelligent Life-Cycle Health Management for Industry Internet Of Things (IIOT), Stanford University, CA, Sep. 10-12, 2019.
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11. K. Sel, A. Brown, *H. Jang*, H. M. Krumholz, **N. Lu**, R. Jafari, "A Wrist-worn Respiration Monitoring Device using Bio-Impedance", 2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), 3989-3993, online, Jul. 20, 2020.
<http://dx.doi.org/10.1109/EMBC44109.2020.9176367>

C. Other Major Publications

1. **N. Lu**, Mechanics, Materials, and Functionalities of Biointegrated Electronics, in The Bridge on Frontiers of Engineering, 43, pp. 31, Wilmington, Delaware, 2013.
<https://www.nae.edu/Publications/Bridge/106112/106158.aspx>
2. **N. Lu**, 'Cut-and-paste' manufacture of multiparametric epidermal electronic systems, SPIE Newsroom, Jul. 21 2016.
<http://dx.doi.org/10.1117/2.1201607.006473>

D. Books

1. **N. Lu**, *S. Yang*, and *L. Wang*: Stretchability, Conformability, and Low-Cost Manufacture of Epidermal Sensors, in Stretchable Bioelectronics for Medical Devices and Systems, pp. n/a, edited by J. A. Rogers, D.-H. Kim, R. Ghaffari, Springer, pp. 31-51, Feb. 2016.
http://dx.doi.org/10.1007/978-3-319-28694-5_2
2. D.-H. Kim, **N. Lu**, and J. A. Rogers: Stretchable Electronic and Optoelectronic Devices Using Single-Crystal Inorganic

Semiconductor Materials, in *Stretchable Electronics*, pp. 235-269, edited by T. Someya, Wiley-VCH Verlag GmbH & Co. KGaA, Dec. 2012.

<http://dx.doi.org/10.1002/9783527646982.ch10>

ORAL PRESENTATIONS (reverse chronology):

Invited Talks and Seminars

1. N. Lu, "Graphene E-Tattoos for Unobstructive Ambulatory Electrodermal Activity (EDA) Monitoring", IEEE Nanotechnology Materials and Devices Conference (NMDC), online, Nov. 19, 2022.
2. N. Lu, "Mechanics of Body-Conformable Electronics", Chinese Congress of Theoretical and Applied Mechanics (CCTAM) 2021+1, online, Nov. 6, 2022.
3. N. Lu, "Stretchable Hybrid Response Pressure Sensors", WiSe (Women in Sensors) Panel, IEEE Sensors Conference 2022, Dallas, TX, Oct. 31, 2022.
4. N. Lu, "Stretchable Hybrid Response Pressure Sensors", 2022 Society of Engineering Science (SES) Annual Technical Meeting, Texas A&M University, College Station, TX, Oct. 19, 2022.
5. N. Lu, "Mechanics of Bio-Conformable Devices", 2022 Society of Engineering Science (SES) Annual Technical Meeting, Texas A&M University, College Station, TX, Oct. 18, 2022.
6. N. Lu, "Stretchable Hybrid Response Pressure Sensors", Cell Press LabLinks Symposium, North Carolina State University, Raleigh, NC, Oct. 14, 2022.
7. N. Lu, "Poking and Bulging of 2D Crystals", Department of Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC, Oct. 13, 2022.
8. N. Lu, "E-Tattoos vs. E-Skins", Department of Mechanical Engineering and Materials Science, Duke University, Durham, NC, Oct. 12, 2022.
9. N. Lu, "A multi-day wearable EMG e-tattoo capable of edge-computing for muscle fatigue", *Military Health System Research Symposium*, Kissimmee, FL, Sep. 14, 2022.
11. N. Lu, "E-Tattoos vs. E-Skins", *Asilomar Bioelectronics Symposium 2022*, Pacific Grove, CA, Sep. 8, 2022.
12. N. Lu, "Stretchable Hybrid Response Pressure Sensors (SHRPS)", *the 16th International Symposium on Functionally Graded Materials*, Hartford, CT, Aug. 9, 2022.
13. N. Lu, "E-Tattoos vs. E-Skins", *The Shenzhen Institutes of Advanced Technology (SIAT) of the Chinese Academy of Science (CAS)*, online, Jul. 18, 2022.
14. N. Lu, "Soft Electronics for Digitizing Human Body and Human-Centered Robotics", *2022 China-America Frontiers of Engineering (CAFOE) Symposium*, University of California Irvine, Irvine, CA, Jul. 29, 2022.
15. N. Lu, "Poking and bulging of 2D crystals", *IUTAM Symposium on Enhancing material performance by exploiting instabilities and damage evolution*, Warsaw, Polan, Jun. 08, 2022
16. N. Lu, "Soft Electronics for Digitizing Human Body and Human-Centered Robotics", *2022 IEEE International Workshop on Metrology for Industry 4.0 and IoT*, online, Jun. 07, 2022
17. N. Lu, "Poking and bulging of 2D crystals", Department of Mechanical Engineering seminar, Northwestern University, May 26, 2022.
18. N. Lu, "Hybrid Response Pressure Sensor (HRPS) for Wearable and Robotic-Finger-based Pulse Wave Sensing", *2022 MRS Spring Meeting & Exhibit*, online, May 25, 2022
19. N. Lu, "Soft Electronics for Digitizing Human Body and Human-Centered Robotics", Snow Lecture, *the Churchill conferences on Deformation Yield & Fracture of Polymers (DYFP)*, online, Apr. 14, 2022.
20. N. Lu, "Soft Electronics for Human Biometric Sensing and Human-Centered Robots", *NAM Emerging Leaders Forum*, National Academy of Science, Washington D.C., Apr. 12, 2022.
21. N. Lu, "Soft Electronics for Digitizing Human Body and Human-Centered Robotics", Princeton Institute of Materials Symposium, Apr. 6, 2022.
22. N. Lu, "Soft Electronics for Digitizing Human Body and Human-Centered Robotics", *iHealthtech Wearable Technology Workshop*, online, Apr. 6, 2022.
23. N. Lu, "Challenges and Opportunities in Body-Conformable Electronics", *ACS Applied Materials & Interfaces Webinars*, online, Mar. 29, 2022.

24. N. Lu, "Mechanics of Body-Conformable Electronics", *Emerging Topics in Mechanics Conference*, Houston, TX, Mar. 23, 2022
25. N. Lu, "Soft Wearable Electronics for Wireless Sensing and Wireless Charging", *Monie A. Ferst Award Symposium in Honor of John A. Rogers*, Georgia Institute of Technology, Atlanta, GA, Mar. 18, 2022
26. N. Lu, "Soft Electronics for Human Body Digitization and Human-Centered Robotics", *School of Power and Mechanical Engineering, Wuhan University*, online, Mar. 6, 2022.
27. N. Lu, "Soft Electronics for Human Body Digitization and Human-Centered Robotics", *EML Webinar*, online (> 9,000 real-time viewers), Dec. 16, 2021.
28. N. Lu, "Soft Electronics for Mobile Health and Human-Centered Robotics", *Department of Mechanical Engineering Seminar, University of Connecticut*, Storrs, CT, Dec. 3, 2021.
29. N. Lu, "Wireless Graphene E-Tattoos for Long-Term Mental Stress Monitoring", *2021 Fall MRS In-Person Meeting Symposium SB06: Graphene and Related 2D Materials for Bioelectronics and Healthcare*, Boston, MA, Dec. 1, 2021.
30. N. Lu, "Poking and Bulging of 2D Crystals", *2021 Fall MRS In-Person Meeting Symposium EQ07: Defects and Strain Potential Enabled Emergent Behavior in Two-Dimensional Materials*, Boston, MA, Dec. 1, 2021.
31. N. Lu, "Soft Electronics for Mobile Health and Human-Centered Robotics", *the 19th International Symposium on Microelectronics and Packaging - D1. Flexible/ Wearable Electronics 1*, online, Nov. 5, 2021.
32. N. Lu, "Soft Electronics for Mobile Health and Human-Centered Robotics", guest lecturer at *EPFL Master Course Flexible Bioelectronics*, online, Oct. 22, 2021.
33. N. Lu, "Theoretical and Experimental Investigations of Nano-Bubbles and Nano-Tents Formed by 2D Materials", invited speaker at *The 12th Recent Progress in Graphene and Two-dimensional Materials Research Conference (RPGR 2021)*, online, Oct. 12, 2021
34. N. Lu, "Soft Electronics for Human-Centered Robotics", *FLEPS 2021 – IEEE International Conference on Flexible and Printable Sensors and Systems*, online, Jun. 22, 2021.
35. N. Lu, "Mechanics, Manufacture, and Applications of E-Tattoos", *Cornell CCMR Symposium – High Performance Soft Materials: from Bioinspiration to Synthesis and Fabrication*, online, Jun. 09, 2021.
36. N. Lu, "Wireless E-tattoos for Personalized Sensing and Therapy", invited talk by *IEEE MTT-S Taipei/Tainan Chapter*, online, May 13, 2021.
37. N. Lu, "High-sensitivity and wide-range capacitive pressure sensors enabled by the hybrid responses of a porous nanocomposite", *2021 Spring MRS Virtual Meeting, EL07.07: Flexible Bioelectronics*, online, Apr. 22, 2021.
38. N. Lu, "Mechanics and Applications of Bio-conformable Electronics", Session J62: Physical Review Invited Session: Forefront Research Across Disciplines, *2021 APS March Meeting*, online, Mar. 16, 2021.
39. N. Lu, "Soft Electronics for Human-Centered Robotics", *ETH Zurich Department of Materials Seminar*, online, Jan. 22, 2021.
40. N. Lu, "Mechanics, Manufacture, and Applications of Bio-Integrated Electronics", *JHU Department of Mechanical Engineering Seminar*, online, Jan. 20, 2021.
41. N. Lu, "Wireless E-Tattoos for Personalized Sensing and Therapeutics", *2020 International Microwave Biomedical Conference (IMBioC 2020), closing Keynote talk*, online, Dec. 17, 2020.
42. N. Lu, "Strategies for Bio-Conformable Electronics", *2020 Fall MRS Virtual Meeting, S.SM04: Fundamental Materials, Devices and Fabrication Innovations for Biointegrated and Bioinspired Electronics*, online, Nov. 28, 2020.
43. N. Lu, "Large-Area E-Tattoos for Human-Machine Interaction", *2020 Fall MRS Virtual Meeting, F.SM03: Materials and Mechanics Challenges in Haptics for Human–Machine Interfaces*, online, Nov. 11, 2020.
44. N. Lu, "Wireless E-Tattoos for Personalized Sensing and Therapeutics", *2020 IEEE 1st International Workshop on Wearable Sensors and Devices, Artificial Intelligence and Wearables Market (WSAIM)*, online, Nov. 19, 2020.
45. N. Lu, "Electronic Tattoos for Mobile Sensing and Therapeutics", *Max Planck Institute for Intelligent Systems*, online, Nov. 18, 2020.
46. N. Lu, "2D-Materials-based Epidermal and Implantable Bioelectronics", *IEEE Nanotechnology Materials and Devices Conference (NMDC)*, online, Oct. 27, 2020.
47. N. Lu, "Mechanics of Conformable Bioelectronics", *57th Annual Technical Meeting of Society of Engineering Science (SES)*, online, Sep. 30, 2020.
48. N. Lu, "Wireless and Large Area E-Tattoos", *The 15th IEEE Int'l Conference on Nano/Micro Engineered & Molecular Systems (IEEE-NEMS 2020)*, online, Sep. 27, 2020.

49. N. Lu, "2D-Materials-based Epidermal and Implantable Bioelectronics", *2020 CINT Annual Conference*, online, Sep. 23, 2020.
50. N. Lu, "Wireless E-Tattoos for Personalized Sensing and Therapeutics", *Merck*, online, Aug. 24, 2020.
51. N. Lu, "E-Tattoos for Personalized Sensing and Therapeutics", *Indonesia Disrupto 2020*, online, Jul. 16, 2020.
52. N. Lu, "Mechanics and Manufacture of Multimodal E-Tattoos", *iCANx/ACS Nano Young Investigator Award lecture*, online (> 200,000 real-time viewers), Jun. 12, 2020.
53. N. Lu, "Wireless E-Tattoos for Personalized Sensing and Therapeutics", *BRADA*, online, Jun. 9, 2020.
54. N. Lu, "2D Materials based Epidermal and Implantable Conformal Bioelectronics", *TMS 2020, 149th Annual Meeting & Exhibition*, San Diego, Feb. 25, 2020
55. N. Lu, "Wireless E-Tattoos for Personalized Sensing and Therapeutics", *The Future of Biosensing in Wearables and the Point of Care: Precision Diagnostic Center Inaugural Symposium*, Boston University, Feb. 24, 2020.
56. N. Lu, "Wireless E-Tattoos for Personalized Sensing and Therapeutics", *Dell Med Society (Dell Medical School Fund-Raising Event)*, Feb. 20, 2020.
57. N. Lu, "Mechanics and Manufacture of Wearable E-Tattoos", Department of Mechanical and Aerospace Engineering, *Ohio State University*, Jan. 31, 2020.
58. N. Lu, "Mechanics and Manufacture of Wearable E-Tattoos", George W. Woodruff School of Mechanical Engineering, *Georgia Institute of Technology*, Jan. 30, 2020.
59. N. Lu, "Wireless E-Tattoos Chargeable On-The-Go", *Materials Research Society (MRS) Fall Meeting*, Boston, MA, Dec. 2, 2019.
60. N. Lu, "Electrode Mechanics", invited tutorial, *IEEE Brain Virtual Conference*, Nov. 26, 2019.
61. N. Lu, "Wireless Electronic Tattoos for Mobile Sensing and Treatment", *7th Arab - American Frontiers of Science, Engineering and Medicine Symposium*, Cairo, Egypt, Nov. 18, 2019.
62. N. Lu, "Wireless Electronic Tattoos for Personalized Mobile Sensing and Therapeutics", *Texas Wireless Summit*, University of Texas at Austin, TX, Nov. 12, 2019.
63. N. Lu, "eTattoo You with Nanshu Lu: The Future of Epidermal Electronics", *DF Con (Diabetic Foot Global Conference)*, Los Angeles, CA, Oct. 17, 2020.
64. N. Lu, "Mechanics of Nano-Bubbles and Nano-Tents Formed by 2D Materials", *Keynote talk at the Society of Engineering Science 56th Annual Technical Meeting*, Washington University, St. Louis, MO, Oct. 15, 2019.
65. N. Lu, "Wireless Electronic Tattoos", the 16th US-Korea Forum on Nanotechnology, UCSD, CA, Sep. 23, 2019.
66. N. Lu, "Wireless Electronic Tattoos", Apple Park, Cupertino, CA, Sep. 11, 2019.
67. N. Lu, "Wireless Electronic Tattoos", *the 12th International Workshop of Structural Health Monitoring (IWSHM 2019)*, Stanford, CA, Sep. 10, 2019.
68. N. Lu, "Wireless Electronic Tattoos", Department of Electrical Engineering, Stanford University, CA, Sep. 9, 2019.
69. N. Lu, "In-Plane and Out-of-Plane Deformation of 2D Materials and 2D-Materials-based Bioelectronics", Department of Mechanical Engineering, Stanford University, CA, Sep. 9, 2019.
70. N. Lu, "Wireless Electronic Tattoos", School of Public Health, University of Texas Health Science Center at Houston, Houston, TX, Aug. 27, 2019.
71. N. Lu, "Wireless Electronic Tattoos", *The 12th International Conference on Intelligent Robotics and Applications*, Shenyang, China, Aug. 9, 2019.
72. N. Lu, "Wireless Electronic Tattoos", Faculty of Applied Science and Textiles, Hong Kong Polytechnic University, Hong Kong, China, Jul. 3, 2019.
73. N. Lu, "In-Plane and Out-of-Plane Deformation of 2D Materials and 2D-Materials-Based Bioelectronics", Department of Biomedical Engineering, City University of Hong Kong, Hong Kong, China, Jul. 2, 2019.
74. N. Lu, "Wireless Electronic Tattoos", The 5th International Symposium of Flexible and Stretchable Electronics 2019 and The 5th International Workshop on Soft Machines and Mechanics 2019 (ISFSE-IWSMM 2019), Southern University of Science and Technology, Shenzhen, China, Jun. 29, 2019.
75. N. Lu, "Wireless Electronic Tattoos", Advanced Manufacturing of Materials and Devices Workshop, Nanyang Technological University, Singapore, Jun. 26, 2019.
76. N. Lu, "Nanobubbles and Nanotents Formed by 2D Materials", 10th International Conference on Materials for Advanced Technologies (ICMAT 2019), Singapore, Jun. 26, 2019.

77. *N. Lu*, "Modular and Reconfigurable Wireless E-Tattoos", 10th International Conference on Materials for Advanced Technologies (ICMAT 2019), Singapore, Jun. 25, 2019.
78. *N. Lu*, "In-Plane and Out-of-Plane Deformation of 2D Materials and 2D-Materials-Based Bioelectronics", Institute of Mechanics, Chinese Academy of Science, Beijing, China, Jun. 17, 2019.
79. *N. Lu*, "In-Plane and Out-of-Plane Deformation of 2D Materials and 2D-Materials-Based Bioelectronics", School of Aeronautic Science and Engineering, Beihang University, Beijing, China, Jun. 17, 2019.
80. *N. Lu*, "Mechanics of Nano-Bubbles and Nano-Tents Formed by 2D Materials", 2019 Tsinghua Engineering Science Workshop, Tsinghua University, Beijing, China, Jun. 16, 2019.
81. *N. Lu*, "Wireless Energy Transfer for E-Tattoos", Nanoenergy and Nanosystems 2019, Beijing, China, Jun. 15, 2019.
82. *N. Lu*, "Wireless Electronic Tattoos", Los Alamos National Laboratory, Los Alamos, NM, Jun. 10, 2019.
83. *N. Lu*, "In-Plane and Out-of-Plane Deformation of 2D Materials and 2D-Materials-Based Bioelectronics", Los Alamos National Laboratory, Los Alamos, NM, Jun. 6, 2019.
84. *N. Lu*, "In-Plane and Out-of-Plane Deformation of 2D Materials and 2D-Materials-Based Bioelectronics", Sandia National Laboratories, Los Alamos, NM, Jun. 5, 2019.
85. *N. Lu*, "2D-Materials based Epidermal and Implantable Conformal Bioelectronics", 46th International Conference on Metallurgical Coatings and Thin Films (ICMCTF), San Diego, CA, May 20, 2019.
86. *N. Lu*, "Making Use of Nano-Bubbles and Nano-Tents Formed by 2D Materials", Materials Research Society (MRS) Spring Meeting, Phoenix, AZ, Apr. 26, 2019.
87. *N. Lu*, "Cut-Solder-Paste" Process for the Rapid Prototyping of Wireless and Reconfigurable Electronic Tattoos", Materials Research Society (MRS) Spring Meeting, Phoenix, AZ, Apr. 24, 2019.
88. *N. Lu*, "Wireless Electronic Tattoos", Franklin Institute Award Symposium Honoring Prof. John Rogers, Temple University, Philadelphia, PA, Apr. 10, 2019.
89. *N. Lu*, "Nanobubbles and Nanotents Formed by 2D Materials", 6th Korean Symposium on Graphene and 2D Materials, Buyeo, Korea, Mar. 29, 2019.
90. *N. Lu*, "Mechanics, Manufacture, and Validation of Electronic Tattoos", Department of Materials Science & Engineering, Seoul National University, Seoul, Korea, Mar. 27, 2019.
91. *N. Lu*, "Mechanics, Manufacture, and Validation of Electronic Tattoos", Korea Advanced Institute of Science & Technology (KAIST), Daejeon, Korea, Mar. 25, 2019.
92. *N. Lu*, "Mechanics, Manufacture, and Validation of Electronic Tattoos", Department of Photonics and Nanoelectronics, Hanyang University, Ansan, Korea, Mar. 20, 2019.
93. *N. Lu*, "Mechanics, Manufacture, and Validation of Electronic Tattoos", School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea, Mar. 14, 2019.
94. *N. Lu*, "Mechanics, Manufacture, and Validation of Electronic Tattoos", Department of Mechanical Engineering, Yonsei University, Seoul, Korea, Mar. 13, 2019.
95. *N. Lu*, "Mechanics, Manufacture, and Validation of Electronic Tattoos", Department of Mechanical Engineering, University of Melbourne, Melbourne, Australia, Dec. 14, 2018.
96. *N. Lu*, "Nanobubbles and Nanotents Formed by 2D Materials", 4th International Conference on Two-Dimensional Materials and Technologies, Melbourne, Australia, Dec. 13, 2018.
97. *N. Lu*, "Mechanics, Manufacture, and Validation of Electronic Tattoos", Department of Chemical Engineering, Monash University, Melbourne, Australia, Dec. 12, 2018.
98. *N. Lu*, "2D Materials based Epidermal and Implantable Conformal Bioelectronics", ASME International Mechanical Engineering Congress and Exposition (IMECE), Pittsburgh, PA, Nov. 14, 2018.
99. *N. Lu*, "Mechanics, Manufacture, and Validation of Electronic Tattoos", Department of Materials Science and Engineering, University of Tennessee, PA, Oct. 2, 2018.
100. *N. Lu*, "Mechanics, Manufacture, and Validation of Electronic Tattoos", Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania, PA, Sep. 18, 2018.
101. *N. Lu*, "Electronic Tattoos – The Most Multifunctional and Imperceptible Wearables", WNCG (Wireless Networking and Communications Group) Seminar, University of Texas at Austin, TX, Sep. 7, 2018.
102. *N. Lu*, "Electronic Tattoos – The Most Multifunctional and Imperceptible Wearables", USAISR, San Antonio, TX, Sep. 5, 2018.

103. *N. Lu*, "Mechanics of Nanobubbles and Nanotents formed by 2D Materials", Gordon Research Conference Two Dimensional Electronics Beyond Graphene, Stonehill College, Easton, MA, June 7, 2018.
104. *N. Lu*, "Electronic Tattoos – The Most Multifunctional and Imperceptible Wearables", Brooke Army Medical Center, San Antonio, TX, May 30, 2018.
105. *N. Lu*, "Electronic Tattoos – The Most Multifunctional and Imperceptible Wearables", NextFlex Flexinar, Austin, TX, May 23, 2018.
106. *N. Lu*, "Electronic Tattoos – The Most Multifunctional and Imperceptible Wearables", Department of Communication Sciences and Disorders, University of Texas at Austin, Austin, TX, May 3, 2018.
107. *N. Lu*, "Electronic Tattoos – The Most Intimate and Imperceptible Wearables", Technology Collaboration Center Wearable Technologies Workshop, NASA Johnson Space Center, Houston, TX, Apr. 24, 2018.
108. *N. Lu*, "Electronic Tattoos – The Most Intimate and Imperceptible Wearables", Workshop on Technologies to Measure Behaviors & Health in Everyday Life, Austin, TX, Apr. 20, 2018.
109. *N. Lu*, "Mechanics and Functionalities of Graphene Electronic Tattoos (GETs)", Materials Research Society (MRS) Spring Meeting, Phoenix, AZ, Apr. 6, 2018.
110. *N. Lu*, "Mechanics, Manufacture, and Applications of Electronic Tattoos", Department of Mechanical and Aerospace Engineering, California Institute of Technology, Los Angeles, CA, Apr. 5, 2018.
111. *N. Lu*, "Mechanics, Manufacture, and Applications of Electronic Tattoos", Department of Mechanical and Aerospace Engineering, University of California at Los Angeles, Los Angeles, CA, Apr. 4, 2018.
112. *N. Lu*, "Mechanics of Transfer-Printing Ultrathin Nanomembranes including 2D Materials", Materials Research Society (MRS) Fall Meeting, Boston, MA, Nov. 29, 2017.
113. *N. Lu*, "The Most Intimate and Imperceptible Wearables – E-Tattoos", Saint-Gobain, Marlborough, MA, Nov. 28, 2017.
114. *N. Lu*, "Low-Cost Manufacture and Multi-Faceted Applications of Electronic Tattoos", Materials Research Society (MRS) Fall Meeting, Boston, MA, Nov. 27, 2017.
115. *N. Lu*, "Low-Cost Manufacture and Multi-Faceted Applications of Electronic Tattoos", ASME International Mechanical Engineering Congress and Exposition (IMECE), Tampa, FL, Nov. 8, 2017.
116. *N. Lu*, "E-Tattoos for Mobile Sensing and Therapy", plenary talk at 2nd World Congress on Electroporation, Norfolk, VA, Sep. 27, 2017.
117. *N. Lu*, "Super-Expandable Adaptive Sensor Network (SEASN) Enabled by Piezoelectric Polymer Serpentes", A Joint Meeting of: The 4th "Multifunctional Materials for Defense" Workshop, Arlington, VA, Aug. 29, 2017.
118. *N. Lu*, "Bioelectronics – Wearables and Implantables", plenary talk at SPIE Optics + Photonics, San Diego, CA, Aug. 6, 2017.
119. *N. Lu*, "Multiparametric Epidermal Physiological Sensing System (MEPSS)", ONR Biomaterials and Bionanotechnology Program Review, Arlington, VA, Aug. 4, 2017.
120. *N. Lu*, "E-Tattoos for Mobile Sensing and Therapy", World IP Day, Austin, TX, May 3, 2017.
121. *N. Lu*, "E-Tattoos for Mobile Sensing and Therapy", MRS/Kavli Workshop on Stretchable & Flexible Bioelectronics, Phoenix, AZ, Apr. 22, 2017.
122. *N. Lu*, "Epidermal Electronics for Mobile Sensing and Therapy", Keynote presentation at 2017 SPIE Smart Structures/NDE 2017 Nano-, Bio-, Info-Tech Sensors and 3D Systems conference, Portland, OR, Mar. 27, 2017.
123. *C. Bybee*, *G. Georgiou*, *M. Repko*, *N. Lu* "Transforming Ideas Into Ventures", 2017 SXSW Tech Industry Panel, Austin, TX, Mar. 11, 2017.
124. *N. Lu*, "Bio-Electronics Interface", Center for Nonlinear Dynamics Seminar, University of Texas at Austin, Austin, TX, Feb. 20, 2017.
125. *N. Lu*, "Epidermal Electronics for Mobile Sensing and Therapy", Ming Hsieh Department of Electrical Engineering Seminar, University of Southern California, Los Angeles, CA, Feb. 14, 2017.
126. *N. Lu*, "Cut-and-Paste Manufacture of Transparent and Stretchable Epidermal Sensors Based on Large Area CVD Graphene", Materials Research Society (MRS) Fall Meeting, Boston, MA, Nov. 28, 2016.
127. *N. Lu*, "Epidermal Electronics for Mobile Sensing and Therapy", Materials Science and Engineering Seminar, University of Houston, Houston, TX, Nov. 18, 2016.
128. *N. Lu*, "Cut-and-Paste Fabrication of 2D Materials for Transparent and Stretchable Epidermal Sensor System", ASME International Mechanical Engineering Congress and Exposition (IMECE), Phoenix, AZ, Nov. 15, 2016.
129. *N. Lu*, "Adhesion Enhanced by Micro-Surface Craters under Large Deformation", 53rd Annual Technical Meeting of Society of Engineering Science (SES), the University of Maryland, College Park, MD, Oct. 3, 2016.

130. *N. Lu*, "Epidermal Electronics for Sensing and Therapy", UT Learning Activities for Mature People (LAMP), Sep. 26, 2016.
131. *N. Lu*, "Tattoo-like, long-term electromyography sensors for quantifying muscle fatigue and recovery", XXI International Society of Electrophysiology and Kinesiology (ISEK) Congress, Chicago, IL, Jul. 6, 2016.
132. *N. Lu*, "Epidermal Electronics for Sensing and Therapy", Machinery Failure Prevention Technology (MFPT) 2016 Conference, Dayton, OH, May 25, 2016.
133. *N. Lu*, "Epidermal Electronics for Sensing and Therapy", NanoEngineering Department, University of California, San Diego, California, Apr. 27, 2016.
134. *N. Lu*, "Cut-and-Paste Manufacture of Multifunctional Epidermal Electronic Systems", SPIE Defense, Security, and Sensing (DSS) 2016, Baltimore, Maryland, Apr. 19, 2016.
135. *N. Lu*, "Epidermal Electronics for Sensing and Therapy", Hopkins Extreme Materials Institute (HEMI), Johns Hopkins University, Maryland, Apr. 18, 2016.
136. *N. Lu*, "Cut-and-Paste Manufacture of Long-Term, Multimodal Epidermal Electronic Systems", Materials Research Society (MRS) Spring Meeting, Phoenix, Arizona, Mar. 31, 2016.
137. *N. Lu*, "Mechanics at Bio-Electronics Interfaces", International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Mechanics of Stretchable Electronics, Hangzhou, China, Mar. 17-18, 2016.
138. *N. Lu*, "Cut-and-Paste Manufacture of Multifunctional Epidermal Electronic Systems", Flex Conference, Mar. 2, 2016.
139. *N. Lu*, "Epidermal Sensor Systems for Body Hacking", BodyHacking Con, Austin, TX, Feb. 20, 2016.
140. *N. Lu*, "Mechanics and Materials of Bio-Integrated Electronics", (The Academy of Medicine, Engineering and Science of Texas) TAMEST 2016 Conference, Dallas, TX, Jan. 20-22, 2016.
141. *N. Lu*, "Adhesion Enhanced by Octopus-Inspired Miniaturized Suction Cups", 250th American Chemical Society National Meeting & Exposition, Boston, MA, Aug. 18, 2015.
142. *N. Lu*, "Mechanics and Manufacture of Bio-Integrated Electronics", Workshop of Soft Machines and Mechanics, Xi'an, Shanxi, China, June 18, 2015.
143. *N. Lu*, "Super-Expandable Adaptive Sensor Network (SEASN) Enabled by Piezoelectric Polymer Serpentes (PPS)", AFOSR M⁴ 2015 Annual Grantees'/Contractors' Meeting, June 2-5, 2015.
144. *N. Lu*, "Mechanics of the Manufacture, Stretchability, and Bio-Integration of Stretchable Electronics", University of Waterloo, Waterloo, Ontario, Canada, Apr. 15, 2015.
145. *N. Lu*, "Mechanics of the Manufacture, Stretchability, and Bio-Integration of Stretchable Electronics", University of Science and Technology of China, Hefei, China, Jan. 6, 2015.
146. *N. Lu*, "Mechanics of the Manufacture, Stretchability, and Bio-Integration of Stretchable Electronics", Huazhong University of Science and Technology, Wuhan, China, Jan. 5, 2015.
147. *N. Lu*, "Mechanics of the Manufacture, Stretchability, and Bio-Integration of Stretchable Electronics", Tsinghua University, Beijing, China, Dec. 26, 2014.
148. *N. Lu*, "Mechanics in Bio-Integrated Electronics", Institute of Mechanics, Chinese Academy of Science, Beijing, China, Dec. 24, 2014.
149. *N. Lu*, "Mechanics in Bio-Integrated Electronics", Shuangqing Workshop, Beijing, China, Dec. 23, 2014.
150. *N. Lu*, "Mechanics of the Manufacture, Stretchability, and Bio-Integration of Stretchable Electronics", Peking University, Beijing, China, Dec. 19, 2014.
151. *N. Lu*, "Split of Neutral Axis", 51st Annual Technical Meeting of Society of Engineering Science, Purdue University, West Lafayette, IN, Oct. 2, 2014.
152. *N. Lu*, "Bio-Inspired Flexibility and Adhesion", University of Maryland (UMD) Workshop on Distributed Sensing, Actuation, and Control for Bio-inspired Soft Robotics, College Park, MD, Sep. 11, 2014.
153. *N. Lu*, "Mechanics of the Manufacture and Bio-Integration of Stretchable Electronics", Department of Mechanical and Aerospace Engineering, Rutgers University–New Brunswick, NJ, Sep. 10, 2014.
154. *N. Lu*, "Bio-Integrated Electronics", International Conference on Integrated Circuit Design & Technology (ICICDT), Austin, TX, May 28-30, 2014.
155. *N. Lu*, "Mechanics and Materials of Flexible Electronics and Photonics", SPIE DSS 2014, Baltimore, Maryland, May 5-9, 2014.
156. *N. Lu*, "Mechanics and Materials of Bio-Integrated Electronics", Workshop On Soft Robotics/Active Skins & Related Technologies, Las Vegas, Nevada, Feb. 7, 2014.
157. *N. Lu*, "Stretchability of Stiff Membranes on Deformable Substrates", Texas Materials and Modeling Network, Houston, TX, Dec. 14, 2013.
158. *N. Lu*, "Mechanics and Materials of Bio-Integrated Electronics", Army Research Laboratory, Adelphi, MD, Dec. 12, 2013.

159. *N. Lu*, "Mechanics and Materials of Bio-Integrated Electronics", Chevron Centennial Lecture Series at the Department of Mechanical Engineering, University of Texas at Austin, Nov. 8, 2013.
160. *N. Lu*, "Bio-Integrated Electronics", Lakeway Men's Breakfast Club, Lakeway, TX, Oct. 9, 2013.
161. *N. Lu*, "Bio-Integrated Electronics", 2013 US Frontiers of Engineering Symposium, Wilmington, Delaware, Sep. 19-21, 2013.
162. *N. Lu*, "Mechanics and Materials of Bio-Integrated Electronics", Department of Materials Science and Engineering, University of Delaware, Delaware, Sep. 18, 2013.
163. *N. Lu*, "Bio-Integrated Electronics", 3M, Austin, Mar. 14, 2013.
164. *N. Lu*, "Bio-Integrated Electronics", Air Force Research Laboratory, San Antonio, May 14, 2013.
165. *N. Lu*, "Bio-Integrated Electronics", IBM, Austin, Apr. 2, 2013.
166. *N. Lu*, "Epidermal Electronics", 2013 Netexplo, Paris, France, Feb. 14, 2013.
167. *N. Lu*, "Epidermal Electronics", Emerging Information and Technology Conference-Bio 2012, Princeton, New Jersey, Oct. 27, 2012.
168. *N. Lu*, "Bio-Integrated Electronics", Technology Review's annual EmTech Conference, Massachusetts Institute of Technology, Boston, MA, Oct. 25, 2012.
169. *N. Lu*, "Mechanics and Materials of Bio-Integrated Electronics", Department of Mechanical Engineering, Boston University, Boston, MA, Oct. 24, 2012.
170. *N. Lu*, "Mechanics and Materials of Bio-Integrated Electronics", Department of Aerospace Engineering, Iowa State University, Ames, IA, Sep. 26, 2012.
171. *N. Lu*, "Epidermal Electronic Systems", Materials Research Society (MRS) Spring Meeting, San Francisco, California, Apr. 10, 2012.
172. *N. Lu*, "Mechanics and Materials of Bio-Integrated Electronics", Department of Mechanical Engineering, University of Nevada at Reno, Nevada, Mar. 27, 2012.
173. *N. Lu*, "Bio-Integrated Soft Electronics", Electronic Materials and Applications 2012 Conference, Orlando, Florida, Jan. 20, 2012.
174. *N. Lu*, "Flexible Electronics: Mechanics and Bio-Medical Applications", Department of Mechanical Engineering & Materials Science, Washington University at St. Louis, April 29, 2011.
175. *N. Lu*, "Flexible Electronics: Mechanics and Bio-Medical Applications", Sibley School of Mechanical and Aerospace Engineering, Cornell University, April 18, 2011.
176. *N. Lu*, "Flexible Electronics: Mechanics and Bio-Medical Applications", Department of Mechanical and Aerospace Engineering, Rutgers University–New Brunswick, April 11, 2011.
177. *N. Lu*, "Flexible Electronics: Mechanics and Bio-Medical Applications", Department of Aerospace Engineering and Engineering Mechanics, UT Austin, March 22, 2011.
178. *N. Lu*, "Flexible Electronics: Mechanics and Bio-Medical Applications", Department of Mechanical and Industrial Engineering, Northeastern University, March 18, 2011.

Other Major Presentations

1. Y. Rao, S. Qiao, Z. Dai, and **N. Lu**, "Mechanics and Application of Elastic Wetting: Substrate-Supported Droplets Confined by Soft Elastic Membranes", the 19th U.S. National Congress on Theoretical and Applied Mechanics, Austin, TX, Jun. 23, 2022.
2. Z. Li, K. Ha, S. Kim, H. Huh, Z. Wang, C. Block, S. Bhattacharya, and **N. Lu**, "Hybrid Response Pressure Sensor (HRPS) for Wearable and Robotic-Finger-based Pulse Wave Sensing", the 19th U.S. National Congress on Theoretical and Applied Mechanics, Austin, TX, Jun. 22, 2022.
3. S. Kim, J. Wells, N. Lazarus, and **N. Lu**, "An unobstructive hand band with a stretchable magnetic backplane for high-power wireless charging", the 19th U.S. National Congress on Theoretical and Applied Mechanics, Austin, TX, Jun. 21, 2022.
4. Z. Wang, H. Jang, E. Kim, S. Kim, X. Yang, S. Kang, K.-H. Ha, R. Wang, Y. Rao, and **N. Lu**, "Wearable Graphene E-Tattoos for Ambulatory Electrodermal Activity (EDA) Monitoring", the 19th U.S. National Congress on Theoretical and Applied Mechanics, Austin, TX, Jun. 21, 2022.
5. S. Bhattacharya, P. Tan, C. Block, and **N. Lu**, "Real-Time Tracking of Cardiac Time Intervals with Chest-Laminated Wireless E-Tattoos", IEEE Healthcare innovation point of care conference, Houston, TX, Mar. 11, 2022.
6. K. Ha, **N. Lu**, "Hybrid Response Pressure Sensors", 2021 Fall MRS In-Person Meeting, Symposium EQ15 Soft Matter Materials and Mechanics for Haptic Interfaces, Boston, MA, Dec. 1, 2021.
7. Y. Rao, S. Qiao, Z. Dai, and **N. Lu**, "Elastic Wetting", Society of Engineering Science (SES) 57th annual technical meeting online, Sep. 21, 2020.
8. H. Jang, **N. Lu**, "2D-Materials-based Epidermal and Implantable Bioelectronics", The Minerals, Metals & Materials Society 149th Annual Meeting & Exhibition, San Diego, Feb. 25, 2020.

9. D. A. Sanchez, Z. Dai, **N. Lu**, "Mechanics and Characterization of Trapped Matter in 2D Material Nanoblisters," Materials Research Society (MRS) Fall Meeting, Boston, MA, Dec. 2, 2019.
10. Z. Dai, **N. Lu**. "Understanding the Bending Behaviors of Multilayer 2D Materials", 2018 ASME International Mechanical Engineering Congress & Exposition (IMECE), Pittsburgh, PA, Oct. 2018
11. L. Wang, **N. Lu**, "Crater-enabled Dry adhesion", 2018 ASME International Mechanical Engineering Congress & Exposition Pittsburgh, PA, Oct. 2018
12. Z. Dai, D. Sanchez, **N. Lu**. "Mechanics of Nanobubbles and Nanotents Formed by Two-Dimensional Materials", 18th U.S. National Congress of Theoretical and Applied Mechanics (USNC/TAM), Chicago, IL, June 2018.
13. D. A. Sanchez, Z. Dai, **N. Lu**, "Measuring and Modeling Liquid-Filled 2D Material Nanobubbles," 45th Conference on the Physics & Chemistry of Surfaces & Interfaces, Kona, HI, Jan. 2018.
14. S. Liu, T. Ha, **N. Lu**, "Analytical solutions to nonbuckling serpentine ribbons", 2017 ASME International Mechanical Engineering Congress & Exposition (IMECE), Tampa, FL, Nov. 2017.
15. Z. Dai, D. Sanchez, P. Wang, R. Huang, **N. Lu**. "Experimental Measurements and Mechanics Modeling of Liquid-filled Blisters Covered by 2D Materials", Society of Engineering Science 54th annual technical meeting, Northeastern University, Boston, MA, Jul. 26, 2017.
16. L. Wang, **N. Lu**, "A Thin Elastic Membrane Conformed to a Soft and Rough Substrate subjected to Stretching/Compression", Society of Engineering Science 54th annual technical meeting, Northeastern University, Boston, MA, Jul. 26, 2017.
17. **N. Lu**, "'Cut-and-Paste' Manufacture of Transparent and Stretchable Epidermal Sensors Based on Large Area CVD Graphene", Society of Engineering Science 53rd Annual Technical Meeting, the University of Maryland, College Park, MD, Oct. 4, 2016.
18. S. Qiao, **N. Lu**, "Stress analysis for nanomembranes under stamp compression", Society of Engineering Science 53rd Annual Technical Meeting, the University of Maryland, College Park, MD, Oct. 3, 2016.
19. S. Qiao, **N. Lu**, "Adhesion enhanced by octopus-Inspired micro-surface craters", Society of Engineering Science 53rd Annual Technical Meeting, the University of Maryland, College Park, MD, Oct. 4, 2016.
20. L. Wang, **N. Lu**, "Effect of surface tension on the molding and deformation of micro-surface craters", Society of Engineering Science 53rd annual technical meeting, the University of Maryland, College Park, MD, Oct. 4, 2016.
21. L. Wang, **N. Lu**, "Conformability of a Thin Elastic Membrane Laminated on a Soft Substrate with Slightly Wavy Surface", Society of Engineering Science 53rd annual technical meeting, the University of Maryland, College Park, MD, Oct. 5, 2016.
22. **N. Lu**, "Thickness Ratio and d33 Effects on Flexible Piezoelectric Unimorph Energy Conversion and Actuation", 24th International Congress of Theoretical and Applied Mechanic, Montreal, Canada, Aug. 24, 2016.
23. D. A. Sanchez, Y. Yu, **N. Lu**, "Work of Adhesion between Soft Elastomers of Different Mixing Ratios," Materials Research Society (MRS) Spring Meeting, Phoenix, AZ, Apr. 1, 2016.
24. **N. Lu**, "Low Cost, High Throughput 'Cut-and-Paste' Manufacture of Multiparametric Epidermal Sensor Systems (ESS)", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 18, 2015.
25. **N. Lu**, "Thickness Effects on Piezoelectric Unimorph Responses under Various Boundary/Loading Conditions", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 18, 2015.
26. S. Qiao, **N. Lu**, "Octopus-inspired miniaturized suction cups for enhanced adhesion", 2015 ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 18, 2015.
27. S. Yang, **N. Lu**, "Indium Tin Oxide (ITO) Serpentine Ribbons on Soft Substrates Stretched beyond 100%", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 18, 2015.
28. S. Yang, **N. Lu**, "Stretchability of freestanding and polymer-supported serpentine thin films", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 17, 2015.
29. **N. Lu**, C. Brennan, E. Yu, "Interface Adhesion between 2D Materials and Elastomers Measured by Buckle Delamination", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 16, 2015.
30. S. Qiao, **N. Lu**, "Octopus-Inspired Miniaturized Suction Cups for Enhanced Adhesion", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 16, 2015.
31. **N. Lu**, "'Cut-and-Paste' Manufacture of Multiparametric Epidermal Sensor Systems (ESS)", 52nd Annual Technical Meeting of Society of Engineering Science, Texas A&M University, College Station, TX, Oct. 27, 2015.
32. **N. Lu**, "Stretchability of Polymer-Bonded and Polymer Embedded Serpentes", 52nd Annual Technical Meeting of Society of Engineering Science, Texas A&M University, College Station, TX, Oct. 27, 2015.

33. **N. Lu**, "Interface Adhesion between 2D Materials and Elastomers Measured by Buckle Delamination", 52nd Annual Technical Meeting of Society of Engineering Science, Texas A&M University, College Station, TX, Oct. 26, 2015.
34. **N. Lu**, "Noninvasive, long-term wearable, multiparametric epidermal sensor systems (ESS)", 2015 Biomedical Engineering Society Annual Meeting, Tampa, FL, Oct. 9, 2015.
35. T. Ha, **N. Lu**, "Thickness Effects on Piezoelectric Unimorphs under Various Boundary Conditions", APS March Meeting 2015, San Antonio, Mar. 5, 2015.
36. C. Brennan, E. Yu, **N. Lu**, "Interface adhesion between 2D materials and elastomers measured by buckle delamination", APS March Meeting 2015, San Antonio, Mar. 3, 2015.
37. **N. Lu**, "Stretchability of freestanding and polymer-supported serpentine thin films", APS March Meeting 2015, San Antonio, Mar. 3, 2015.
38. **N. Lu**, "Closed-Form Solutions for Bonded Elastically Compressible Layers", 51st Annual Technical Meeting of Society of Engineering Science, Purdue University, West Lafayette, IN, Oct. 2, 2014.
39. **N. Lu**, "Measurement of Adhesion between Soft Elastomers", 51st Annual Technical Meeting of Society of Engineering Science, Purdue University, West Lafayette, IN, Oct. 2, 2014.
40. K. Liechti, S. Palvadi, **N. Lu**, "Extraction of Rate-Dependent Traction-Separation Relations", 51st Annual Technical Meeting of Society of Engineering Science, Purdue University, West Lafayette, IN, Oct. 2, 2014.
41. S. Yang, **N. Lu**, "Stretchability of Freestanding and Polymer-supported Serpentine Thin Films", 51st Annual Technical Meeting of Society of Engineering Science, Purdue University, West Lafayette, IN, Oct. 1, 2014.
42. L. Li, H. Lin, S. Qiao, Y. Zou, S. Danto, D. Musgraves, K. Richardson, **N. Lu**, and J. Hu, "Chalcogenide Glass Based Flexible Photonics", International Symposium on Non-Oxide and New Optical Glasses (ISNOG 2014), Jeju, Korea, August 24~28, 2014.
43. S. Yang, **N. Lu**, "Stretchability of Polymer-Supported ITO Serpentine Thin Films", ASME International Mechanical Engineering Congress and Exposition, San Diego, CA, Nov. 18, 2013.
44. S. Qiao, **N. Lu**, J. Hu, "3-D monolithic flexible glass photonics", ASME International Mechanical Engineering Congress and Exposition, San Diego, CA, Nov. 18, 2013.
45. S. Qiao, **N. Lu**, "Split of Neutral Axis in Multilayered Laminates with Large Elastic Mismatches", Thirteenth Pan-American Congress of Applied Mechanics, May 23, 2013.
46. Y. Yu, **N. Lu**, "Measurement of PDMS-PDMS Interface Adhesion for Different Cross-Linking Densities and UVO Surface Treatment", Thirteenth Pan-American Congress of Applied Mechanics, May 23, 2013.
47. S. Yang, **N. Lu**, "Stretchability of Polymer-supported ITO Serpentine Thin Films", Thirteenth Pan-American Congress of Applied Mechanics, May 22, 2013.
48. **N. Lu**, S. Yang, "Stretchability of Polymer-Supported ITO Serpentine Thin Films", 50th Annual Technical Meeting of Society of Engineering Science, Brown University, July 29, 2013.
49. **N. Lu**, S. Qiao, "Wrinkling of Thin PDMS Films on Ecoflex Substrates", 50th Annual Technical Meeting of Society of Engineering Science, Brown University, July 30, 2013.
50. **N. Lu**, "Highly Stretchable Serpentine-Shaped Electrodes", Materials Research Society (MRS) Fall Meeting, Nov. 26, 2012.
51. **N. Lu**, "Highly Sensitive Skin-Mountable Strain Gauges Based Entirely on Elastomers", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 14, 2012.
52. **N. Lu**, "A Compact JKR Apparatus to Measure Soft-Soft Adhesion", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 13, 2012.
53. **N. Lu**, "Mechanics of Serpentine in Stretchable Electronics", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 13, 2012.
54. S. Yang, **N. Lu**, "Mechanics of Sensitivity and Stretchability of Si-Based Strain Gauges", ASME International Mechanical Engineering Congress and Exposition, Houston, TX, Nov. 9, 2012.
55. **N. Lu**, "Highly Sensitive Skin-Mountable Strain Gauges Based Entirely on Elastomers", 49th Annual Technical Meeting of Society of Engineering Science, Georgia Technology Institute, Atlanta, GA, Oct. 10, 2012.
56. **N. Lu**, "Mechanics of Serpentine", 49th Annual Technical Meeting of Society of Engineering Science, Georgia Technology Institute, Atlanta, GA, Oct. 10, 2012.
57. **N. Lu**, J. Rogers, "Mechanics of Flexible and Stretchable Strain Gauges Based on Si Nanomembranes", 23rd International Congress of Theoretical and Applied Mechanics, Beijing, China, Aug. 26, 2012.

58. **N. Lu**, D.-H. Kim, R. Ghaffari, J. Rogers, "Multifunctional Balloon Catheters with Capabilities in Cardiac Electrophysiological Mapping and Ablation Therapy", ASME International Mechanical Engineering Congress and Exposition, Denver, CO, November 2011.
59. **N. Lu**, S. M. Won, J. Rogers, "Array of Ultrathin, Single Crystalline Silicon Strain Sensors on Flexible and Stretchable Substrates", ASME International Mechanical Engineering Congress and Exposition, Denver, CO, November 2011.
60. **N. Lu**, John Rogers, "Strain and Tactile Sensing Based on Electrically Conductive Rubbers", ASME International Mechanical Engineering Congress and Exposition, Denver, CO, November 2011.
61. **N. Lu**, Z. Suo, and J. Vlassak, "The Effect of Film Thickness on the Failure Strain of Polymer-supported Metal Films", Materials Research Society (MRS) Fall Meeting, Boston, MA, December 2009.
62. **N. Lu**, Z. Suo, and J. Vlassak, "Ductility of Thin Metal Films on Polymer Substrates", NSF CMMI Research and Innovation Conference, Honolulu, HI, June 2009.
63. **N. Lu**, X. Wang, Z. Suo, and J. Vlassak, "Concurrent Grain Growth, Strain Localization, and Interface Debonding in Metal Films on Polymer Substrates under Uniaxial Tension", Materials Research Society (MRS) Fall meeting, Boston, MA, December 2008.
64. **N. Lu**, X. Wang, Z. Suo, and J. Vlassak, "Experimental Investigation of Stretchable Metal Films on Polymer Substrates" ASME International Mechanical Engineering Congress and Exposition, Boston, MA, October 2008.
65. **N. Lu**, X. Wang, Z. Suo, and J. Vlassak, "Highly Stretchable Cu films on Kapton Substrates", 8th International Conference on Fundamentals of Fracture, Hong Kong, January 2008.
66. **N. Lu**, J. Yoon, and Z. Suo, "Debonding Analysis of Periodic Thin-film Islands Patterned on Flexible Substrates", Materials Research Society Fall Meeting, Boston, MA, November 2007.
67. **N. Lu**, J. Yoon, Z. Zhang, and Z. Suo, "K-field Analysis of Bimaterial Orthogonal Corner in Electronic Devices", Materials Research Society Fall Meeting, Boston, MA, November 2007.

PATENTS:

A. Patents Issued

1. J. A. Rogers, M. Ying, A. Bonifas, and **N. Lu**, "Appendage Mountable Electronic Devices Conformable to Surfaces," Patent #10,052,066, granted Aug. 21, 2018.
<http://www.google.com/patents/WO2013149181A1?cl=en>
2. **N. Lu**, S. X. Yang, and P. L. Wang, "Epidermal Sensor System and Process," Patent # 10,492,703, granted Dec. 3, 2019.
<http://www.google.com.gt/patents/WO2015148957A1?cl=en>

B. Patent Applications

1. **N. Lu**, K. Diller, A. Stier, A. Mark, "Flexible, Stretchable Epidermal Heater with on-Site Temperature Feedback Control", PCT/US2017/060328, US16/347,906, filed on Nov. 7, 2017.
<https://patents.google.com/patent/US20190281666A1/en>
2. **N. Lu**, D. Akinwande, S. K. Ameri, "Nanomaterial epidermal sensors," PCT/US2017/030057, US20200054273A1, filed on Apr. 28, 2017.
<https://patents.google.com/patent/WO2018199977A1/en>
3. **N. Lu**, T. Ha, P. Wang, "Dual-Mode Epidermal Cardiogram Sensor," PCT/US2018/033861, US201762509954P, filed on May. 23, 2017.
<https://patents.google.com/patent/WO2018231444A2/en>
4. **N. Lu**, H. Jeong, "Wireless, Wearable, And Soft Biometric Sensor," PCT/US2018/036201, US62/516,309, filed on Jun. 7, 2017.
<https://patents.google.com/patent/WO2018226786A1/en>
5. **N. Lu**, K. Ha, "Highly Sensitive Hybrid Response Capacitive Pressure Sensor," PCT/US2018/036201, filed on July 28, 2021.
6. **N. Lu**, K. Ha, "Highly Sensitive Stretchable Hybrid Response Pressure Sensor", US63/419,459, filed on Oct. 26, 2022

FUNDED EXTERNAL GRANTS and CONTRACTS (21 Grants Total)

Role and Co-Investigators	Title	Agency	Grant Total	My Share	Grant Period
PI Hongyu Miao (Co-PI), Craig Rusin (Co-PI), Shaolan Li (Co-PI)	ASCENT: Multimodal chest e-tattoo with customized IC and deep learning algorithm for tracking and predicting progressive pneumonia	National Science Foundation (NSF)	\$1,500,000	\$411,337	9/15/2021-9/14/2025
Subaward PI Elizabeth Ledwosinska (PI)	STTR Phase I: Ingestible capsule for vital signs and biomarker monitoring	Army Research Office	\$225,000	\$49,950	11/15/2020-07/14/2021
PI	Wireless e-tattoos for digitizing human body	Army Futures Command	\$1,524,000	\$1,441,000	09/24/2020-09/23/2023
Subaward PI Pulin Wang (PI)	STTR Phase I: Ambulatory, beat-to-beat blood pressure tracking enabled by wireless, tri-mode electronic tattoos	National Science Foundation (NSF)	\$224,876	\$68,818	03/15/2020-11/30/2020
PI Edward Coyle (Co-PI)	Wireless E-Tattoos for Multimodal Biometric Sensing under Exercise and Extreme Temperatures	Office of Naval Research (ONR)	\$620,000	\$479,707	06/15/2020-05/31/2024
PI	A Safe and Unobstructive Tattoo-Like Palm Sticker for the Wireless Charging of Handheld Devices	Army Research Laboratory (ARL)	\$230,000	\$230,000	02/01/2019-06/30/2020
PI	Mechanical Simulation of Micro-optical Resonator Cavity Device for Environmental Effect Study	Army Research Laboratory (ARL)	\$298,162	\$298,162	09/15/2018-01/14/2021
PI	Freeform Manufacture of Soft Electronics and Soft Actuators	ONR (DURIP)	\$337,104	\$337,104	07/01/2018-06/30/2019
PI Kenneth Liechti (Co-PI) Gregory Rodin (Co-PI)	Mechanics of Miniature Surface Craters for Reversible Adhesion	National Science Foundation (NSF)	\$479,629	\$239,814	09/01/2017-08/31/2020
Subcontract PI Deji Akinwande (Subcontract Co-I)	EAGER: Design of Motion-Artifact Robust Electronic Tattoos and Software Reconfiguration Methodologies for Bio-impedance Sensing	National Science Foundation (NSF)	\$300,000 \$225,977 (Subaward total)	\$225,977	09/01/2017-08/31/2022

Subcontract PI Nan Sun (Subcontract Co- I)	SCH: Ubiquitous rehabilitation to improve movement after neurologic injury	National Institute of Health (NIH)	\$1,500,000 \$369,696 (Subaward total)	\$184,848	11/01/2015 – 10/31/2019
PI	Multiparametric epidermal physiological sensing system (MEPSS)	Office of Naval Research (ONR)	\$547,335	\$547,335	11/01/2015 – 12/31/2018
PI Nan Sun (Co-PI) ECE	Stretchable Planar Antenna Modulated by Integrated Circuit (SPAMIC) for the Near Field Communication (NFC) of Epidermal Electrophysiological Sensors (EEPS)	National Science Foundation (NSF)	\$380,433	\$190,000	08/01/2015 – 07/31/2018
PI Deji Akinwande (Co-PI) ECE	EAGER: Two-Dimensional Materials Based Epidermal Active EEG Sensors (2DEAS)	National Science Foundation (NSF)	\$160,000	\$80,000	08/01/2015 – 07/31/2017
PI	Super-Expandable Adaptive Sensor Network (SEASN) Enabled by Piezoelectric Polymer Serpentine (PPS)	Air Force Office of Scientific Research (AFOSR)	\$360,000	\$360,000	06/01/2015 – 05/31/2018
PI	Design and Fabrication of Utmost Stretchable/Deployable Physiological Sensor Networks	3M Non-Tenured Faculty Award	\$45,000	\$45,000	06/01/2014 – 05/31/2017
PI	CAREER: Flexoelectricity of Nanomaterials on Deformable Substrates	National Science Foundation (NSF)	\$400,000	\$400,000	02/01/2014-01/31/2019
PI Ken Liechti (Co- PI)	Adhesion Mechanics of Bio-Electronics Interface	National Science Foundation (NSF)	\$360,780	\$190,000	06/01/2013-05/31/2016
PI	In situ SEM Investigation of Graphene on Deformable Substrates	Haythornthwaite Foundation Research Initiation Grant	\$20,000	\$20,000	11/13/2012
Co-PI Roger Bonnecaze (PI) ChemE 33 other Co-PIs	"Engineering Research Center" Nanomanufacturing Systems for Mobile Computing and Energy Technologies (NASCENT)	National Science Foundation (NSF)	\$18,500,000	\$250,000	10/01/2012- 10/01/2022
Total			\$28,012,319	\$6,049,052	

PH.D. SUPERVISIONS COMPLETED:

Name	Thesis Title	Year	Department	Co-Supervisor	University
Hsiao-Yu Chang	Graphene and III-V Channel Metal-Oxide-Semiconductor Field-Effect Devices for Post-Si CMOS Applications	2015	Electrical and Computer Engineering	Deji Akinwande (ECE)	UT Austin
Shixuan Yang	Mechanics and Applications of Stretchable Serpentine Structures	2016	Aerospace Engineering and Engineering Mechanics	None	UT Austin
Christopher Brennan	Piezoelectricity and Flexoelectricity in 2D Transition Metal Dichalcogenides	2018	Electrical and Computer Engineering	Edward Yu (ECE)	UT Austin
Shutao Qiao	Fluid-Induced Large Deformation at Soft Material Interfaces with Blisters and Craters	2018	Aerospace Engineering and Engineering Mechanics	None	UT Austin
Taewoo Ha	Flexible and Stretchable Piezoelectric Bio-Integrated Sensors and Energy Harvesters Based on Polyvinylidene Fluoride (PVDF)	2018	Electrical and Computer Engineering	None	UT Austin
Liu Wang	Mechanics of Crater-Enabled Dry Adhesives	2019	Aerospace Engineering and Engineering Mechanics	None	UT Austin
Hyoyoung Jeong	Modular and Reconfigurable Wireless E-Tattoo Platform for Mobile Physiological Sensing	2019	Electrical and Computer Engineering	None	UT Austin
Zhaohe Dai	Mechanics of Bubbles and Tents Formed by 2D Materials	2020	Aerospace Engineering and Engineering Mechanics	None	UT Austin
Daniel A. Sanchez	The Mechanics and Chemistry of 2D Material Bubbles	2021	Materials Science and Engineering	None	UT Austin
Siyi Liu	Mechanics of Conformable Electronics Achieved through Water-Assisted Transfer	2022	Aerospace Engineering and Engineering Mechanics	None	UT Austin
Xiangxing Yang	Low Power Circuit Design Techniques for Edge Computing	2022	Electrical and Computer Engineering	Nan Sun (ECE)	UT Austin
Hongwoo Jang	Graphene E-Tattoos: Design, Fabrication, Characterization, and Applications as Wearable Sensors	2022	Materials Science and Engineering	None	UT Austin
Kyoungho Ha	Hybrid Response Pressure Sensors as an Electronic Skin for Bio-Sensing and Soft Robotics	2022	Mechanical Engineering	None	UT Austin

M.S. SUPERVISIONS COMPLETED:

Name	Thesis Title	Year	Department	Co-Supervisor	University
Yu, Yalin	Measurement of adhesion between soft elastomers with different mixing ratios	2014	Engineering Mechanics	None	UT Austin
Ha, Taewoo	Analysis of Piezoelectric Thin Film Energy Harvester for Biomedical Application	2014	Electrical and Computer Engineering	John Zhang (ECE)	UT Austin
Luke Nicolini	Development and Analysis of Stretchable Electronics in Biopotential Monitoring	2016	Materials Science and Engineering	Dragan Djurdjanovic (ME)	UT Austin
Andrew Stier	Smart Epidermal Heater with On-Site Temperature Feedback Control	2016	Electrical and Computer Engineering	None	UT Austin
Sotiris Komodromos	Extraction of useful signals from noise using advanced time-frequency analysis in Enhanced Oil Recovery	2017	Aerospace Engineering and Engineering Mechanics	Dragan Djurdjanovic (ME)	UT Austin
Kanika Deoli	Mobile Core Hydration Sensing using Bio-Impedance of Arm	2021	Electrical and Computer Engineering	None	UT Austin
Seungmin Kang	Wearable sensors for IOMT and mobile core hydration sensor for HCI in battlefield	2021	Biomedical Engineering	None	UT Austin

PH.D. and M.S. IN PROGRESS:

Student Name	Co-Supervisor	Degree	Start Date	Date Reached Candidacy	Date Expected to Reach Candidacy	Expected Graduation Date
Yifan Rao	None	PhD	09/2018	05/2021		05/2023
Sarnab Bhattacharya	None	PhD	09/2018			05/2023
Jonathan Wells	None	PhD	09/2019			05/2024
Sangjun Kim	None	PhD	09/2019			05/2024
Philip Tan	None	PhD	09/2020			05/2025
Heeyong Huh	Luis Sentis (ASE)	PhD	09/2020			05/2025
Zhengjie Li	None	PhD	09/2020			05/2025
Susmita Gangopadhyay	None	PhD	01/2022			
Jordon A Kashanchi	None	MS	09/2021			
Hyonyoung Shin	Luis Sentis (ASE)	PhD	08/2022			
Sungmin Sun	None	PhD	08/2022			

POSTDOCS:

Postdoc Name	Co-Supervisor	Institution Awarding PhD	Date of PhD	Start Date	Completion Date	Placement
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Shideh Kabiri Ameri	Deji Akinwande (ECE)	Tufts University	08/2015	10/2015	08/2018	Assistant Professor at Queen's University, Canada
Hengkan Ni	None	UIUC	05/2017	01/2019	01/2020	Research Fellow at ARL
Luize Scalco De Vasconcelos	None	Purdue University	12/2020	03/2021	05/2022	Apple
Zheliang Wang	None	Johns Hopkins University	12/2021	01/2022	N/A	N/A
Pukar Maharjan	None	Kwangwoon University	02/2021	01/2022	N/A	N/A

RESEARCH ASSOCIATES:

Name	Institution Awarding PhD	Date of PhD	Start Date	Completion Date	Placement
Hongbian Li	Nanjing University	06/2008	06/2022	n/a	n/a

VITA

Dr. Nanshu Lu received her B.Eng. from the Department of Engineering Mechanics at Tsinghua University, Beijing, in 2005. She received her Ph.D. degree in Mechanics of Materials under Prof. Zhigang Suo's supervision from Harvard University in June, 2009. Her Ph.D. dissertation is titled "Mechanics of hard films on soft substrates". With the Beckman Postdoctoral Fellowship, she spent two years as a postdoctoral researcher in Prof. John Rogers group at the University of Illinois Urbana-Champaign (UIUC). She joined the Department of Aerospace Engineering and Engineering Mechanics at the University of Texas at Austin (UT-Austin) as Assistant Professor in August, 2011. She became Associate Professor with tenure in September 2017. She received Temple Foundation Endowed Teaching Fellowship in Engineering #1 starting September 2018. She will be promoted to Full Professor in September 2022.

Dr. Lu currently holds courtesy appointments in the Departments of Biomedical Engineering (BME), Electrical and Computer Engineering (ECE), Mechanical Engineering (ME), Texas Materials Institute (TMI), as well as the Wireless Networking and Communications Group (WNCG) and at UT-Austin. She is now leading a multidisciplinary research group to advance the mechanics, materials, electronics, and bio-integration of soft electronics. Her lab is currently working on five major research thrusts: 1) thin film mechanics; 2) nano & 2D materials; 3) manufacture and transfer of soft electronics; 4) bio-electronics interface; and 5) soft bioelectronics systems. Representative work of her group includes mechanics of metal, ceramic thin films and 2D materials, epidermal electronics, graphene e-tattoos (GETs), "cut-solder-paste" manufacture of wireless e-tattoos, and hybrid response pressure sensing e-skins.

Dr. Lu has published more than 100 peer-reviewed journal articles with more than 20,000 citations according to Google Scholar as of Aug. 4, 2022, with some in high impact journals such as Science, Science Advances, Nature, Nature Nanotechnology, Nature Materials, Nature Photonics, Advanced Materials, Proceedings of the National Academy of Sciences of the United States of America (PNAS), Physical Review Letters (PRL), Nano Letters, ACS Nano, and so on. Her current h-index is 54. She is enlisted as one of the Web of Science Highly Cited Researchers since 2020. She has 2 granted and 5 pending patents. She has presented more than 160 invited talks at major conferences including three times at the National Academy of Engineering Frontier of Engineering (NAE FoE) symposia, the National Academy of Medicine Emerging Leaders Forum, the Academy of Medicine, Engineering and Science of Texas (TAMEST) annual conference, Materials Research Society (MRS) meetings, ASME International Mechanical Engineering Conference & Exposition (IMECE), International Union of Theoretical and Applied Mechanics (IUTAM) Symposium, Society of Engineering Science (SES) technical meetings, SPIE conferences, and peer institutes. Her research has been highlighted by news media such as Nature News, Science Online, NSF Science360 News, MIT

Technology Review, CNN News, BBC News, NPR, IEEE Spectrum, ASME, NNI podcast and so on. She has been honored with the NSF CAREER award, the Air Force Office of Scientific Research (AFOSR) and Office of Naval Research (ONR) Young Investigator Programs, the MIT's Technology Review 35 under 35 (TR 35), the iCANx/ACS Nano Rising Star lectureship, the Snow Lectureship at the Churchill conferences on the deformation, yield and fracture of polymers (DYFP), and the Thomas J.R. Hughes Young Investigator Award from the Applied Mechanics Division (AMD) of the American Society of Mechanical Engineers (ASME). She is a senior member of IEEE. Dr. Lu was also selected as one of the five great innovators on campus by UT Austin Central Communications in 2016 and one of the five world-changing women at UT Austin in 2019.

Dr. Lu has graduated 5 Engineering Mechanics Ph.D., 5 ECE Ph.D., 1 MSE Ph.D. and 1 ME Ph.D. students. 3 of them are tenure-track faculty right now. She has also supervised 1 postdoctoral researcher who is now Assistant Professor at Queen's University, Canada. She is currently supervising 1 research associate, 3 postdoctoral researchers, and 9 Ph.D. students – 6 in ECE, 2 in ASE/EM, and 1 in ME. In addition, she has supervised more than 70 undergraduate research assistants (URAs), including 27 females, 7 Hispanic & Black, and 3 LGBTQ+. About half of the URAs went on to graduate school after college.

Dr. Lu has been very active in serving the community. She became a member of ASME in 2008. She was the founding Associate Editor of Soft Robotics (IF= 6.160) and is now Associate Editor for the Journal of Applied Mechanics (IF = 2.17) and for Nano Letters (IF=11.19). She is on the Editorial Board of Sensors. She has been the chair of the ASME Applied Mechanics Division "Integrated Structures" Technical committee since 2012. She has organized more than ten symposia and tracks at international conferences and has served as the proposal reviewer for many federal agencies and the technical reviewer for many mechanics, materials, and multidisciplinary journals. She has served as the Chair of Asian/Asian American Faculty and Staff Association (AAAFSA) and the Chair of Women in Engineering Program (WEP) Committee at UT-Austin.

A handwritten signature in black ink, appearing to read "Wamshudu". The signature is written in a cursive, flowing style.