Curriculum Vitae

Yu Song

Address: 1200 E California Blvd.
Pasadena, CA, US 91125
Phone: 626 517 7626; Email: yusong@caltech.edu; songyupku@pku.edu.cn
Male, 01-07-1994, CHINA; Wechat ID: Gener_17; Google Scholar

EDUCATION

- 2015-2020 Ph.D. in Microelectronics & Solid-state Electronics
  School of Electronics Engineering and Computer Science (EECS), Peking University
  No.5 Yiheyuan Road, Haidian District, Beijing, CHINA 100871
  Advisor: Prof. Haixia (Alice) Zhang
- 2011-2015 B.Eng. in Electrical Engineering
  School of Optical & Electronic Information, Huazhong Uni. of Science & Technology
  No.1037 Luoyu Road, Hongshan District, Wuhan, Hubei, CHINA 430074

EXPERIENCE

- 2021-present Postdoctoral Scholar in Medical Engineering
  Division of Engineering and Applied Science, California Institute of Technology
  1200 E California Blvd., Pasadena, CA, USA 91125
  Mentor: Prof. Wei Gao
- 2018-2020 Visiting scholar in Medical Engineering
  Division of Engineering and Applied Science, California Institute of Technology
  1200 E California Blvd., Pasadena, CA, USA 91125
  Mentor: Prof. Wei Gao

RESEARCH INTERESTS

Wearable devices, flexible electronics, biosensors, bioelectronics

HONORS & AWARDS

- 2020 **Excellent doctoral dissertation**, Chinese Institute of Electronics
- 2020 **Excellent doctoral dissertation**, China Education Society of Electronics
- 2020 Outstanding Graduates, Peking University
- 2020 Chenming Hu Scholarship, Peking University
- 2019 **Leadership Scholarship**, Committee of 100
- 2019 **Principal Scholarship**, Peking University
- 2019 Tang Lixin Scholarship, Peking University
- 2019 Nominee of Best Poster Prize, 2019 MRS Spring Meeting
- 2018 CSC scholarship, China Scholarship Council
- 2018 **Academic Top 10 Graduate Student**, School of EECS, Peking University
- 2018 **National Scholarship**, Peking University
- 2018 **Principal Scholarship**, Peking University
- 2017 Best Poster Award, MAN2017 Conference
- 2017 **IMT Scholarship**, Peking University

- 2017 **National Scholarship**, Peking University
- 2017 **Principal Scholarship**, Peking University
- 2017 Merit Student, Peking University
- 2016 Merit Student, Peking University
- 2015 Outstanding Graduate Award, Huazhong University of Science & Technology
- 2014 Merit Student, Huazhong University of Science & Technology
- 2014 **National Scholarship**, Huazhong University of Science & Technology
- 2013 Merit Student, Huazhong University of Science & Technology
- 2013 **National Scholarship**, Huazhong University of Science & Technology
- 2012 **Excellent Award Student**, Huazhong University of Science & Technology
- 2012 **National Scholarship**, Huazhong University of Science & Technology
- 2012 Merit Student, Huazhong University of Science & Technology

PUBLICATIONS (†Authors contributed equally, *Corresponding authors)

Peer-Reviewed Journal Publications (14 first-author papers)

Over 50 papers in journals including *Nature Biotechnology, Nature Electronics, Nature Biomedical Engineering, Science Robotics, Science Advances, Matter, Advanced Materials,* etc.

52. J. Tu, J. Min, **Yu Song**, C. Xu, J. Li, J. Moore, J. Hanson, E. Hu, T. Parimon, T. Wang, E. Davoodi, T. Chou, P. Chen, J. Hsu, H. Rossiter, W. Gao*. A Wearable Nanobiosensor for Automatic, Non-Invasive, and Wireless Monitoring of Systemic Inflammation, *Nature Biomedical Engineering*, 2023, *accepted*.
51. J. Min, S. Demchyshyn, J. R. Sempionatto, **Yu Song**, B. Hailegnaw, C. Xu, Y. Yang, S. Solomon, C. Putz, L. Lehner, J. F. Schwarz, C. Schwarzinger, M. Scharber, M. Kaltenbrunner, W. Gao*. Ambient light-powered battery-free lab on the skin for autonomous health monitoring, *Nature Electronics*, 2023, *accepted*.
50. E Sani, C Xu, C Wang, **Yu Song**, J Min, J Tu, S Solomon, J Li, J Banks, D. Armstrong, W Gao*. A stretchable wireless wearable bioelectronic system for multiplexed monitoring and combination treatment of infected chronic wounds, *Science Advances*, 2023, *9*, eadf7388.
49. J Min, **Yu Song**, W Gao*. Microcracked conductors for wearable sensors, *Nature Electronics*, 2022, *5*, 717-718.
48. M Wang, Y Yang, J Min, **Yu Song**, J Tu, D Mukasa, C Ye, C Xu, N Heflin, J McCune, T Hsiai, Z Li, W Gao*. A wearable electrochemical biosensor for the monitoring of metabolites and nutrients, *Nature Biomedical Engineering*, 2022, *6*, 1225-1235.
    Featured on Journal Cover.
47. Y Yu, J Li, S Solomon, J Min, J Tu, W Guo, C Xu, **Yu Song**, W Gao*. All-printed soft human-machine interface for robotic physicochemical sensing, *Science Robotics*, 2022, *7*, eabn0495.
    Featured on Journal Cover.
    Highlighted in "Electronic Skin Lets Humans Feel What Robots Do—And Vice Versa", Scientific American, Jun 2022.
46. L Miao†, **Yu Song**†, Z Ren, C Xu, J Wan, H Wang, H Guo, Z Xiang, M Han*, H Zhang*. Three-dimensional temporary-magnetized soft robotic structures for enhanced energy harvesting, *Advanced Materials*, 2021, *33*, 2102691.
    Selected in Wiley Hot Topic: Robotics
45. J Wan, H Guo, H Wang, L Miao, **Yu Song**, C Xu, Z Xiang, M Han*, H Zhang*. Magnetic, conductive textile for multipurpose protective clothing and hybrid energy harvesting, *Applied Physics Letters*, 2021,

118, 143901.

44. **Yu Song**, D Mukasa, H Zhang, W Gao*. Self-powered wearable biosensors, *Accounts of Materials Research*, 2021, *2*, 184-197.
    Selected as ACS Editors' Choice (one per day for the entire ACS portfolio).
43. C Xu, **Yu Song**, M Han*, H Zhang*. Portable and wearable self-powered systems based on emerging energy harvesting technology, *Microsystems & Nanoengineering*, 2021, *7*, 25.
42. H Wang, M Han, **Yu Song**, H Zhang*. Design, Manufacturing and Applications of Wearable Triboelectric Nanogenerators, *Nano Energy*, 2021, *81*, 105627.
41. **Yu Song**†, J Min†, Y Yu, H Wang, Y Yang, H Zhang, W Gao*. Wireless battery-free wearable sweat sensor powered by human motion, *Science Advances*, 2020, *6*, eaay9842.
    Highlighted in Caltech News, Phys.Org, etc.
40. Y Yang†, **Yu Song**†, X Bo†, J Min, O Pak, L Zhu, M Wang, A Kogan, H Zhang, T Hsiai, Z Li, W Gao*. A laser-engraved wearable sensor for sensitive detection of uric acid and tyrosine in sweat, *Nature Biotechnology*, 2020, *38*, 217-224.
    Highlighted in Caltech News, Physics World, Xinhua, Science Daily, etc.
    Highlighted in "Mass-producing wearable sensors: No sweat", Editor's Choice, Science Translational Medicine, 2019, 11, eaaz9766.
39. Y Yu, J Nassar, C Xu, J Min, Y Yang, A Dai, R Doshi, A Huang, **Yu Song**, R Gehlhar, A Ames, W Gao*. Biofuel-powered soft electronic skin with multiplexed and wireless sensing for human-machine interfaces, *Science Robotics*, 2020, *5*, eaaz7946.
    Highlighted in Caltech News, Yahoo News, The Engineer, CNET, Inside Science, SF Gate, etc.
    Highlighted in "Electronic skins sweat it out", Editor's Research Highlight, Nature Electronics, 2020, 3, 235.
38. R Torrente-Rodriguez, J Tu, Y Yang, J Min, M Wang, **Yu Song**, Y Yu, C Xu, C Ye, W IsHak, W Gao*. Investigation of Cortisol Dynamics in Human Sweat Using a Graphene-Based Wireless mHealth System, *Matter*, 2020, *2*, 921-937.
    Highlighted in Caltech News, Science Daily, Xinhua, The Engineer, Yahoo News, etc.
    See Preview article by Professor John A. Rogers from Northwestern, "Don't Sweat It: The Quest for Wearable Stress Sensors", Matter, 2020, 2, 795-797.
37. J Wan, H Wang, X Chen, L Miao, **Yu Song**, H Guo, C Xu, Z Ren, H Zhang*. A novel flexible Hybrid Electromagnetic-triboelectric Nanogenerator and its application for 3D Trajectory Sensing, *Nano Energy*, 2020, 104878 .
36. H Guo, J Wan, H Wu, H Wang, L Miao, **Yu Song**, H Chen, M Han, H Zhang*. Self-Powered Multifunctional Electronic Skin for Smart Anti-Counterfeiting Signature System, *ACS applied materials & interfaces*, 2020, DOI: 10.1021/acsami.0c03510.
35. H Wang, **Yu Song**, H Guo, J Wan, L Miao, C Xu, Z Ren, X Chen, H Zhang*. A three-electrode multi-module sensor for accurate bodily-kinesthetic monitoring, *Nano Energy*, 2020, *68*, 104316.
34. L Miao, J Wan, **Yu Song**, H Guo, H Chen, X Cheng, H Zhang*. Localized modulus-controlled PDMS substrate for 2D&3D stretchable electronics, *Journal of Micromechanics and Microengineering*, 2020, *30*, 045001.
    Selected as the "Highlight of 2020" by Editorial Board (16 articles per year).
33. **Yu Song**, J Min, W Gao*. Wearable & Implantable Electronics: Moving Toward Precision Therapy, *ACS Nano*, 2019, *13*, 12280−12286.
32. L Miao, H Guo, J Wan, H Wang, **Yu Song**, H Chen, X Chen, H Zhang*. Skin Inspired Humidity and Pressure Sensor with Wrinkle-on-Sponge Structure, *ACS applied materials & interfaces*, 2019, *11*,

39219-39227.

31. X Cheng, W Tang, **Yu Song**, H Chen, H Zhang*, Z Wang*. Power management and effective energy storage of pulsed output from triboelectric nanogenerator, *Nano Energy*, 2019, *61*, 517-532.
30. H Guo, H Wu, **Yu Song**, L Miao, X Chen, H Chen, Z Su, M Han, H Zhang*. Self-Powered Digital-Analog Hybrid Electronic Skin for Noncontact Displacement Sensing, *Nano Energy*, 2019, *58*, 121-129.
29. H Chen, **Yu Song**, X Cheng, H Zhang*. Self-powered Electronic Skin based on the Triboelectric Generator, *Nano Energy*, 2019, *56*, 252-268.
28. **Yu Song**, H Wang, X Cheng, G Li, X Chen, H Chen, L Miao, X Zhang, H Zhang*. High-efficiency self-charging smart bracelet for portable electronics, *Nano Energy*, 2019, *55*, 29-36.
27. **Yu Song**, H Chen, X Chen, H Wu, H Guo, X Cheng, B Meng, H Zhang*. All-in-one piezoresistive-sensing patch integrated with micro-supercapacitor, *Nano Energy*, 2018, *53*, 189-197.
26. H Chen, **Yu Song**, H Guo, L Miao, X Chen, Z Su, H Zhang*. Hybrid porous micro structured finger skin inspired self-powered electronic skin system for pressure sensing and sliding detection, *Nano Energy*, 2018, *51*, 496-503.
25. X Chen, H Guo, H Wu, H Chen, **Yu Song**, Z Su, H Zhang*. Hybrid generator based on freestanding magnet as all-direction in-plane energy harvester and vibration sensor, *Nano Energy*, 2018, *49*, 51-58.
24. X Chen, L Miao, H Guo, H Chen, **Yu Song**, Z Su, H Zhang*. Waterproof and stretchable triboelectric nanogenerator for biomechanical energy harvesting and self-powered sensing, *Applied Physics Letters*, 2018, *112*, 203902.
23. J Zhang, Z Song, H Guo, **Yu Song**, B Yu, H Zhang*. GPS-inspired Stretchable Self-powered Electronic Skin, *IEEE Transactions on Nanotechnology*, 2018, *17*, 460-466.
22. H Wu, Z Su, M Shi, L Miao, **Yu Song**, H Chen, M Han, H Zhang*. Self-Powered Noncontact Electronic Skin for Motion Sensing, *Advanced Functional Materials*, 2018, *28*, 1704641.
21. X Cheng, Z Song, L Miao, H Guo, Z Su, **Yu Song**, H Zhang*. Wide Range Fabrication of Wrinkle Patterns for Maximizing Surface Charge Density of a Triboelectric Nanogenerator, *Journal of Microelectromechanical Systems*, 2018, *27*, 106-112.
20. L Miao, X Cheng, H Chen, **Yu Song**, H Guo, J Zhang, X Chen, H Zhang*. Fabrication of controlled hierarchical wrinkle structure on PDMS by one-step C_4F_8 plasma treatment, *Journal of Micromechanics and Microengineering*, 2018, *28*, 015007.
19. Z Su, H Chen, **Yu Song**, X Cheng, X Chen, H Guo, L Miao, H Zhang*. Microsphere-Assisted Robust Epidermal Strain Gauge for Static and Dynamic Gesture Recognition, *Small*, 2017, *13*, 1702108.
18. Z Su, H Wu, H Chen, H Guo, X Cheng, **Yu Song**, X Chen, H Zhang*. Digitalized Self-Powered Strain Gauge for Static and Dynamic Measurement, *Nano Energy*, 2017, *42*, 129-137.
17. **Yu Song**, H Chen, Z Su, X Chen, L Miao, J Zhang, X Cheng, H Zhang*. Highly-Compressible Integrated Supercapacitor-Piezoresistance-Sensor System with CNT-PDMS Sponge for Health Monitoring, *Small*, 2017, *13*, 1702091.
16. H Chen, L Miao, Z Su, **Yu Song**, M Han, X Chen, X Cheng, D Chen, H Zhang*. Fingertip-inspired electronic skin based on triboelectric sliding sensing and porous piezoresistive pressure detection, *Nano Energy*, 2017, *40*, 65-72.
15. **Yu Song**, X Chen, J Zhang, X Cheng, H Zhang*. Freestanding Micro-Supercapacitor With Interdigital Electrodes for Low-Power Electronic Systems, *Journal of Microelectromechanical Systems*, 2017, *26*, 1055-1062.
14. **Yu Song**, J Zhang, H Guo, X Chen, Z Su, H Chen, X Cheng, H Zhang*. All-Fabric-Based Wearable Self-Charging Power Cloth, *Applied Physics Letters*, 2017, *111*, 073901.
    Featured on Journal Cover.

13. X Cheng, L Miao, **Yu Song**, Z Su, H Chen, X Chen, J Zhang, H Zhang*. High Efficiency Power Management and Charge Boosting Strategy for a Triboelectric Nanogenerator, *Nano Energy*, 2017, *38*, 438-446.
12. X Chen, **Yu Song**, Z Su, H Chen, X Cheng, J Zhang, M Han, H Zhang*. Flexible fiber-based hybrid nanogenerator for biomechanical energy harvesting and physiological monitoring, *Nano Energy*, 2017, *38*, 43-50.
    Featured on Journal Cover.
11. X Chen, **Yu Song**, H Chen, J Zhang, H Zhang*. An ultrathin stretchable triboelectric nanogenerator with coplanar electrode for energy harvesting and gesture sensing, *Journal of Materials Chemistry A*, 2017, *24*, 12361-12368.
10. H Chen, Z Su, **Yu Song**, X Cheng, X Chen, B Meng, Z Song, D Chen, H Zhang*. Omnidirectional Bending and Pressure Sensor Based on Stretchable CNT-PU Sponge, *Advanced Functional Materials*, 2017, *27*, 1604434.
9. X Chen, M Han, H Chen, X Cheng, **Yu Song**, Z Su, Y Jiang, H Zhang*. Wavy-shaped hybrid piezoelectric and triboelectric nanogenerator based on P(VDF-TrFE) nanofibers, *Nanoscale*, 2017, *9*, 1263-1270.
8. X Cheng, L Miao, Z Su, H Chen, **Yu Song**, X Chen, H Zhang*. Controlled fabrication of nanoscale wrinkle structure by fluorocarbon plasma for highly transparent triboelectric nanogenerator. *Microsystems & Nanoengineering*, 2017, *3*, 16074.
7. H Wang, M Shi, K Zhu, Z Su, X Cheng, **Yu Song**, X Chen, Z Liao, M Zhang, H Zhang*. High performance triboelectric nanogenerators with aligned carbon nanotubes. *Nanoscale*, 2016, *8*, 18489-18494.
6. **Yu Song**, X Cheng, H Chen, J Huang, X Chen, M Han, Z Su, B Meng, Z Song, H Zhang*. Integrated self-charging power unit with flexible supercapacitor and triboelectric nanogenerator, *Journal of Materials Chemistry A*, 2016, *4*, 14298-14306.
5. **Yu Song**, X Cheng, H Chen, M Han, X Chen, J Huang, Z Su, H Zhang*. Highly compression-tolerant folded carbon nanotube/paper as solid-state supercapacitor electrode, *Micro & Nano Letters*, 2016, *11*, 586-590.
4. X Cheng, **Yu Song**, M Han, B Meng, Z Su, L Miao, H Zhang*. A flexible large-area triboelectric generator by low-cost roll-to-roll process for location-based monitoring, *Sensors and Actuators A: Physical*, 2016, *247*, 206-214.
3. **Yu Song**, B Meng, X Chen, H Chen, M Han, X Cheng, H Zhang*. Fabrication and characterization analysis of flexible porous nitrogen-doped carbon-based supercapacitor electrodes, *Chinese Science Bulletin*, 2016, *61*, 1314-1322.
2. Z Yang, Y Zhang, **Yu Song**, J Wang, Y Chen, Z Zhang, N Duan, X Ruan*. Magnetic properties for the single-domain CoFe2O4 nanoparticles synthesized by the hydrothermal method, *Journal of Wuhan University of Technology-Mater. Sci. Ed.*, 2015, *30*, 1140-1146.
1. **Yu Song**, Z Zhang, N Duan, J Wang, Y Chen, B Tong, X Yang, Y Zhang*. Composition and size dependence of magnetic properties of FePt/Fe exchange-spring films. *Journal of Magnetism and Magnetic Materials*, 2014, *371*, 100-105.

EI-Indexed Conference Publications (4 first-author papers)

19. H Wang, Z Xiang, J Wan, **Yu Song**, H Zhang*. Double-Sided Laser-Induced Graphene Based Smart Bracelet for Sensing and Energy, *2021 IEEE 34th International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 34-37, Jan. 25-29, Online.
18. L Miao, J Wan, H Guo, H Wang, **Yu Song**, X Chen, H Zhang*. Kirigami Cross-Shaped 3D Buckling

Active Sensor for Detecting Stretching and Bending, *2019 20th International Conference on Solid-State Sensors, Actuators and Microsystems & Eurosensors XXXIII (TRANSDUCERS & EUROSENSORS XXXIII)*, pp. 2488-2491, Jun. 23-27, Berlin, Germany.

17. H Wang†, **Yu Song**†, L Miao, J Wan, X Chen, X Cheng, H Guo, H Zhang*. Stamp-assisted gravure printing of micro-supercapacitors with general flexible substrates, *2019 IEEE 32nd International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 950-953, Jan. 27-31, Seoul, Korea.
16. H Guo, X Chen, H Wu, **Yu Song**, H Chen, H Zhang*. Stretchable Location Sensor Based on Transparent AgNWs Electrodes, *2018 IEEE 13th Annual International Conference on Nano/Micro Engineered and Molecular Systems (NEMS)*, pp. 373-376, Apr. 22-26, Singapore, Singapore.
15. L Miao, B Meng, J Wan, H Chen, X Cheng, **Yu Song**, H Guo, H Zhang*. A Highly Sensitive Flexible Piezoresistive Sensor Based on Wrinkled CNT-PDMS, *2018 IEEE 13th Annual International Conference on Nano/Micro Engineered and Molecular Systems (NEMS)*, pp. 567-571, Apr. 22-26, Singapore, Singapore.
14. **Yu Song**†, Z Song†, H Chen, X Chen, H Guo, H Wu, X Cheng, H Zhang*. Wearable stretchable double-sided micro-supercapacitor with porous conductive elastomers, *2018 IEEE 31st International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 608-611, Jan. 21-25, Belfast, UK.
13. H Chen, Z Song, **Yu Song**, X Chen, L Miao, Z Su, H Zhang*. Fingerprint-inspired triboelectrific sliding sensor, *2018 IEEE 31st International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 878-881, Jan. 21-25, Belfast, UK.
12. J Huang, **Yu Song**, X Chen, X Zhang, L Miao, H Chen, J Zhang, B Meng, J Brugger, H Zhang*. Flexible fabric-based wearable solid-state supercapacitor, *2017 IEEE 12th Annual International Conference on Nano/Micro Engineered and Molecular Systems (NEMS)*, pp. 169-172, Apr. 9-12, Los Angeles, USA.
11. L Miao, X Cheng, **Yu Song**, H Chen, B Meng, H Zhang*. A novel multi-functional self-powered pressure sensor with hierarchical wrinkle structure, *2017 IEEE 12th Annual International Conference on Nano/Micro Engineered and Molecular Systems (NEMS)*, pp. 114-117, Apr. 9-12, Los Angeles, USA.
10. **Yu Song**, X Chen, H Chen, X Cheng, J Zhang, Z Su, L Miao, B Meng, Q Yuan, H Zhang*. Freestanding solid-state micro-supercapacitor based on laser-patterned nanofibers, *2017 IEEE 30th International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 809-812, Jan. 22-26, Las Vegas, USA.
9. X Chen, **Yu Song**, H Chen, J Zhang, Z Su, X Cheng, B Meng, H Zhang*. Stretchable thin-film generator with dual working modes for body motion energy harvesting, *2017 IEEE 30th International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 869-872, Jan. 22-26, Las Vegas, USA.
8. J Zhang, **Yu Song**, H Chen, X Cheng, X Chen, B Meng, Q Yuan, H Zhang*. Stretchable, transparent and wearable sensor for multifunctional smart skins, *2017 IEEE 30th International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 1025-1028, Jan. 22-26, Las Vegas, USA.
7. Z Su, X Chen, H Chen, **Yu Song**, X Cheng, B Meng, Z Song, H Zhang*. Bioinspired microporous elastomer with enhanced and tunable stretchability for strain sensing device, *2017 IEEE 30th International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 1036-1039, Jan. 22-26, Las Vegas, USA.
6. X Cheng, L Miao, H Chen, **Yu Song**, Z Su, X Chen, H Wang, M Zhang, H Zhang*. Triboelectrification based active sensor for liquid flow and bubble detetecting, *2017 IEEE 30th International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 845-848, Jan. 22-26, Las Vegas, USA.
5. **Yu Song**, X Cheng, H Chen, M Han, X Chen, H Zhang*. Highly compressible solid-state supercapacitor with folded paper-based electrode, *2016 IEEE 11th International Conference on Nano/Micro Engineered and Molecular Systems (NEMS)*, pp. 536-539, Apr. 16-20, Sendai, Japan.
4. H Chen, **Yu Song**, M Han, B Yu, X Cheng, X Chen, D Chen, H Zhang*. Liquid metal droplet based tube-shaped electrostatic energy harvester, *2016 IEEE 29th International Conference on Micro Electro*

Mechanical Systems (MEMS), pp. 1252-1255, Jan. 24-28, Shanghai, China.

3. J Zhang, M Shi, H Chen, M Han, **Yu Song**, X Cheng, H Zhang*. Ultra-sensitive transparent and stretchable pressure sensor with single electrode, *2016 IEEE 29th International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 173-176, Jan. 24-28, Shanghai, China.
2. X Cheng, X Chen, B Meng, M Han, M Shi, H Chen, **Yu Song**, H Zhang*. A flexible and wearable generator with fluorocarbon plasma induced wrinkle structure, *2016 IEEE 29th International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 1181-1184, Jan. 24-28, Shanghai, China.
1. M Shi, J Zhang, M Han, **Yu Song**, Z Su, H Zhang*. A single-electrode wearable triboelectric nanogenerator based on conductive & stretchable fabric, *2016 IEEE 29th International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 1228-1231, Jan. 24-28, Shanghai, China.

PRESENTATIONS

Peer-Reviewed Conference Presentations

6. **Yu Song**, H Chen, L Miao, H Zhang. All-in-One Piezoresistive-Sensing Patch Integrated with Micro-Supercapacitor, *2019 Materials Research Society Spring Meeting*, Apr. 22-26, Phoenix, USA.
5. **Yu Song**, H Chen, X Chen, H Wu, B Meng, H Zhang. All-in-one Smart Patch Integrated with Piezoresistance Sensor and Micro-supercapacitor, *2018 The 4th International Conference on Nanogenerators and Piezotronics*, May. 8-11, Seoul, Korea.
4. **Yu Song**†, Z Song†, H Chen, X Chen, H Guo, H Wu, X Cheng, H Zhang*. Wearable stretchable double-sided micro-supercapacitor with porous conductive elastomers, *2018 IEEE 31st International Conference on Micro Electro Mechanical Systems (MEMS)*, pp. 608-611, Jan. 21-25, Belfast, UK.
3. **Yu Song**, H Chen, X Chen, L Miao, H Guo, H Zhang. All-Fabric-Based Wearable Self-Charging Power Cloth, *2017 The 3rd International Conference on Nanoenergy and Nanosystems*, Oct. 21-23, Beijing, China.
2. **Yu Song**, X Chen, H Chen, H Zhang. Freestanding solid-state micro-supercapacitor based on laser-patterned nanofibers, *2017 Materials Research Society Spring Meeting*, Apr. 17-21, Phoenix, USA.
1. **Yu Song**, X Cheng, H Chen, M Han, X Chen, H Zhang*. Highly compressible solid-state supercapacitor with folded paper-based electrode, *2016 IEEE 11th International Conference on Nano/Micro Engineered and Molecular Systems (NEMS)*, pp. 536-539, Apr. 16-20, Sendai, Japan.

PATENTS

Patents Issued (5 second-inventor patents, advisor is the first inventor)

9. H Zhang, **Yu Song**, H Chen, L Miao, X Cheng. Porous conductive elastomer based piezoresistive pressure sensors, Chinese Patent, No. ZL201810377273.6.
8. H Zhang, **Yu Song**, H Wang, X Chen, H Chen. Stretchable micro-supercapacitor based on CNT-PDMS conductive elastomers, Chinese Patent, No. ZL201810377271.7.
7. H Zhang, **Yu Song**, X Chen, H Chen, Z Su. Freestanding solid-state micro-supercapacitor based on laser-patterned process, Chinese Patent, No. ZL201610953666.8.
6. H Zhang, **Yu Song**, X Cheng, J Huang, X Chen. Integrated self-charging power unit with flexible supercapacitor and triboelectric nanogenerator, Chinese Patent, No. ZL201610267181.3.
5. H Zhang, **Yu Song**, B Meng, X Cheng, H Chen. An integrated flexible self-charging power cell based on piezo-supercapacitor, Chinese Patent, No. ZL201610006934.5.
4. H Zhang, H Wu, Z Su, M Shi, L Miao, **Yu Song**, H Chen. Self-powered noncontact electronic skin for motion sensing, Chinese Patent, No. CN201711104078.8.
3. H Zhang, Z Su, X Cheng, H Chen, **Yu Song**. Stretchable elastomers with porous structure, Chinese Patent,

No. CN201611148045.9.

2. H Zhang, X Cheng, L Miao, **Yu Song**. LC oscillating based power management module for triboelectric nanogenerator, Chinese Patent, No. CN201710172291.6.
1. H Zhang, X Cheng, L Miao, **Yu Song**, H Chen. Triboelectrification based active sensor for liquid flow and bubble detecting, Chinese Patent, CN201611074146.6.

Patents Pending (3 second-inventor patents, Advisor is the first inventor)

7. H Zhang, H Wang, X Chen, J Wan, **Yu Song**. Free reconfigurable system based on standard modules and magnetic interconnection, Chinese Patent, No. CN202010758940.2.
6. H Zhang, H Wang, **Yu Song**, J Cui, X Chen. All-laser-induced graphene-based self-powered sensing microsystem, Chinese Patent, No. CN202010761347.3.
5. H Zhang, **Yu Song**, H Wang, L Miao, J Wan. Stamp-assisted micro-supercapacitors with general flexible substrates, Chinese Patent, No. CN201910151950.7.
4. H Zhang, **Yu Song**, H Chen, Z Su, X Cheng. Compressible supercapacitor based on conductively porous sponge, Chinese Patent, No. CN201710880784.5.
3. H Zhang, Z Su, **Yu Song**, X Chen. A CNT-based stretchable electrode, Chinese Patent, No. CN201710146108.5.
2. H Zhang, **Yu Song**, J Huang, J Zhang, L Miao. Fabric-based wearable self-charging power cloth, Chinese Patent, No. CN201710035582.0.
1. H Zhang, X Chen, **Yu Song**, H Chen, J Zhang. A stretchable triboelectric nanogenerator, Chinese Patent, No. CN201610910635.4.

BOOKS

English (1 first-author book, 1 chapter-author book)

2. **Yu Song**, Wei Gao, Haixia Zhang. Integrated Smart Micro-Systems Towards Personalized Healthcare, *Wiley*, January 2022.
1. **Yu Song**. Flexible and Stretchable Triboelectric Nanogenerator Devices: Toward Self-powered Systems, *Wiley*, Chapter 4: Characterization of Triboelectric Nanogenerators, 2019.

PROFESSIONAL ACTIVITIES

Journal Reviewer for *Advanced Functional Materials, ACS Nano, Nano Micro Letters, Nano Energy, Biosensors and Bioelectronics, ACS Applied Materials & Interfaces, Microsystems & Nanoengineering, Scientific Reports, IEEE Transaction on Nanotechnology, Advanced Materials Interfaces, Sensors & Diagnostics, Nanomaterials, Polymer, Electronics, Sensors & Actuators A: Physical, Journal of Materials Science & Technology, Optics and Laser Technology, Chemical Engineering Science, Journal of Microelectromechanical Systems, Journal of Energy Storage, Sensors, HardwareX.*

Conference Volunteer for 2017 IEEE 30th International Conference on Micro Electro Mechanical Systems (MEMS), 2018 IEEE 31st International Conference on Micro Electro Mechanical Systems (MEMS).

Teaching Assistant for undergraduate course: Innovative Engineering.

WORKING EXPERIENCES

- 2016 - 2017 ***Vice President***, IEEE PKU Student Council, Peking University.
- 2016 ***Assist Teacher***, Gansu Province, Tomorrow Program
- 2013 - 2014 ***Vice Chairman of Presidium***, School of Optical and Electronic Information, HUST.