Curriculum Vitae

Yu Song

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City University of Hong Kong
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EXPERIENCE

07/2024–present	Presidential Assistant Professor of Biomedical Engineering City University of Hong Kong
02/2021–05/2024	Postdoctoral Scholar in Medical Engineering, California Institute of Technology Mentor: Prof. Wei Gao
09/2020–12/2020	Research Scientist in Cardiac Rehabilitation, Peking University Third Hospital Collaborator: Prof. Wei Zhao

EDUCATION

09/2015–07/2020	Ph.D. in Microelectronics & Solid-state Electronics, Peking University Advisor: Prof. Haixia (Alice) Zhang
09/2018–01/2020	Joint Ph.D. in Medical Engineering, California Institute of Technology Mentor: Prof. Wei Gao
09/2011–07/2015	B.Eng. in Electronic Science & Technology, Huazhong Uni. of Science & Technology Advisor: Prof. Xiaofei Yang

RESEARCH INTERESTS

bioelectronics, wearable biosensors, digital medicine, energy harvesters, advanced manufacturing

HONORS & AWARDS

- 2024 **Forbes 30 under 30 Asia**
- 2024 Outstanding Reviewer Award, Microsystems & Nanoengineering
- 2024 Sensors Travel Award, Sensors Journal
- 2023 **World's Top 2% Scientist**, Stanford University & Elsevier Scopus
- 2022 **World's Top 2% Scientist**, Stanford University & Elsevier Scopus
- 2021 Outstanding Paper Award, Microsystems & Nanoengineering
- 2020 **Excellent doctoral dissertation**, Chinese Institute of Electronics
- 2020 **Excellent doctoral dissertation**, China Education Society of Electronics
- 2020 Championship, iCANX graduate academic league
- 2020 Graduates with Honors, Peking University
- 2020 Chenming Hu Scholarship, Peking University
- 2019 **Leadership Scholarship**, Committee of 100, USA
- 2018/2017 **National Scholarship**, Peking University
- 2019/2018/2017 **Principal Scholarship**, Peking University
- 2019 Tang Lixin Scholarship, Peking University
- 2019 Nominee of Best Poster Prize, 2019 MRS Spring Meeting
- 2018 **Academic Top 10 Graduate Student**, School of EECS, Peking University
- 2018 CSC scholarship, China Scholarship Council
- 2017/2016 Merit Student, Peking University

- 2017 **IMT Scholarship**, Peking University
- 2017 Best Poster Award, MAN2017 Conference
- 2015 Graduates with Honors, Huazhong University of Science & Technology
- 2014 Samsung Scholarship, Huazhong University of Science & Technology
- 2014/2013/2012 **National Scholarship**, Huazhong University of Science & Technology
- 2014/2013/2012 Merit Student, Huazhong University of Science & Technology
- 2012 **Excellent Award Student**, Huazhong University of Science & Technology

PUBLICATIONS (> 70 papers, > 6,800 citations, H-index: 37, Google Scholar–06/2024)

†Authors contributed equally, *Corresponding authors

Peer-Reviewed Journal Publications (17 first-author papers)

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

1. C Xu†, **Yu Song**†, J Sempionatto, S Solomon, Y Yu, Y Nyein, R Tay, J Li, A Lao, T Hsiai, J Sumner, W Gao*. An artificial intelligence-reinforced physicochemical sensing electronic skin for stress assessment, ***Nature Electronics***, 2024, 7, 168-179.
   https://www.nature.com/articles/s41928-023-01116-6
   *Highlighted in "Stress monitoring with wearable technology and AI", **Nature Electronics**, 2024, 7, 98-99.*
2. **Yu Song**†, R Tay†, J Li, C Xu, J Min, E Sani, G Kim, W Heng, I Kim, W Gao*. 3D-printed epifluidic electronic skin for machine learning-powered multimodal health surveillance, ***Science Advances***, 2023, *9*, eadi6492.
   https://www.science.org/doi/full/10.1126/sciadv.adi6492
   Highlighted in IEEE Spectrum.
3. R Tay†, **Yu Song**†, D Yao, W Gao*. Direct-ink-writing 3D-printed bioelectronics, ***Materials Today***, 2023, 71, 135-151.
4. 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.
   https://www.nature.com/articles/s41587-019-0321-x
   *Highlighted in "Mass-producing wearable sensors: No sweat", Editor's Choice, **Science Translational Medicine**, 2019, 11, eaaz9766.*
5. **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.
   https://www.science.org/doi/full/10.1126/sciadv.aay9842
6. L Miao†, **Yu Song**†, Z Ren, C Xu, J Wan, H Wang, H Guo, Z Xiang, M Han*, H Zhang*. 3D temporary-magnetized soft robotic structures for enhanced energy harvesting, ***Advanced Materials***, 2021, *33*, 2102691.
   https://onlinelibrary.wiley.com/doi/full/10.1002/adma.202102691
   *Selected in **Wiley Hot Topic: Robotics**.*
7. **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 from all ACS publications).*
8. **Yu Song**, J Min, W Gao*. Wearable & implantable electronics: moving toward precision therapy, ***ACS Nano***, 2019, *13*, 12280−12286.
9. **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.

10. **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.
11. **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.
12. **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. **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**, 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.
15. **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.
16. **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.
17. **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.
18. W Heng, S Yin, J Min, C Wang, H Han, E Sani, J Li, **Yu Song**, H Rossiter, W Gao*. A smart mask for exhaled breath condensate harvesting and analysis, ***Science***, 2024, in press.
19. 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 wireless patch for the monitoring of C-reactive protein in sweat, ***Nature Biomedical Engineering***, 2023, *7*, 1293-1306.
    https://www.nature.com/articles/s41551-023-01059-5
20. J Min, S Demchyshyn, J Sempionatto, **Yu Song**, B Hailegnaw, C Xu, Y Yang, S Solomon, C Putz, L Lehner, J Schwarz, C Schwarzinger, M Scharber, M Kaltenbrunner, W Gao*. An autonomous wearable biosensor powered by a perovskite solar cell, ***Nature Electronics***, 2023, *6*, 630-641.
    *Highlighted in "Continuous sweat monitoring on the go", **Nature Electronics**, 2023, 6, 557.*
    *Featured on **Journal Cover**.*
    https://www.nature.com/articles/s41928-023-00996-y
21. 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.
    *Featured on **Back Scatter** of **Physics Today**.*
22. J Min, **Yu Song**, W Gao*. Microcracked conductors for wearable sensors, ***Nature Electronics***, 2022, *5*, 717-718.
23. 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.

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24. 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**.*
https://www.science.org/doi/full/10.1126/scirobotics.abn0495
25. 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.
26. H Wang, M Han, **Yu Song**, H Zhang*. Design, manufacturing and applications of wearable triboelectric nanogenerators, ***Nano Energy***, 2021, *81*, 105627.
27. 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.
28. 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 "Electronic skins sweat it out", Research Highlight, **Nature Electronics**, 2020, 3, 235.*
29. 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.
*See Preview article "Don't Sweat It: The Quest for Wearable Stress Sensors", **Matter**, 2020, 2, 795-797.*
30. 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.
31. 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.
32. 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, *12*, 22357–22364.
33. 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).*
34. H Chen, **Yu Song**, X Cheng, H Zhang*. Self-powered electronic skin based on the triboelectric generator, ***Nano Energy***, 2019, *56*, 252-268.
35. 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.
36. 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.
37. 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.
38. 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.
39. 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.

40. 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.
41. 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.
42. 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.
43. 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.
44. 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.
45. X Chen, **Yu Song**, Z Su, H Chen, X Cheng, 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****.*
46. 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.
47. 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.
48. 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.
49. 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.
50. 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.
51. 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.
52. 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.
53. 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.
54. 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.
55. 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.
56. 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.

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

1. 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, *IEEE International Conference on Micro Electro Mechanical Systems (MEMS) 2019*, 950-953, Seoul, Korea.
2. **Yu Song**, Z Song, H Chen, X Chen, H Zhang*. Wearable stretchable double-sided micro-supercapacitor with porous conductive elastomers, *IEEE MEMS 2018*, 608-611, Belfast, UK.
3. **Yu Song**, X Chen, H Chen, X Cheng, J Zhang, Z Su, L Miao, Q Yuan, H Zhang*. Freestanding solid-state micro-supercapacitor based on laser-patterned nanofibers, *IEEE MEMS 2017*, 809-812, Las Vegas, USA.
4. **Yu Song**, X Cheng, H Chen, M Han, X Chen, H Zhang*. Highly compressible solid-state supercapacitor with folded paper-based electrode, *IEEE International Conference on Nano/Micro Engineered and Molecular Systems (NEMS) 2016*, 536-539, Sendai, Japan.
5. H Wang, Z Xiang, J Wan, **Yu Song**, H Zhang*. Double-sided laser-induced graphene based smart bracelet for sensing and energy, *IEEE MEMS 2021*, 34-37, Online.
6. 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, *International Conference on Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS) 2019*, 2488-2491, Berlin, Germany.
7. H Guo, X Chen, H Wu, **Yu Song**, H Chen, H Zhang*. Stretchable location sensor based on transparent AgNWs electrodes, *IEEE NEMS 2018*, 373-376, Singapore.
8. 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, *IEEE NEMS 2018*, 567-571, Singapore.
9. H Chen, Z Song, **Yu Song**, X Chen, L Miao, Z Su, H Zhang*. Fingerprint-inspired triboelectrific sliding sensor, *IEEE MEMS 2018*, 878-881, Belfast, UK.
10. J Huang, **Yu Song**, X Chen, X Zhang, L Miao, H Chen, J Brugger, H Zhang*. Flexible fabric-based wearable solid-state supercapacitor, *IEEE NEMS 2017*, 169-172, 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, *IEEE NEMS 2017*, 114-117, Los Angeles, USA.
12. X Chen, **Yu Song**, H Chen, J Zhang, X Cheng, B Meng, H Zhang*. Stretchable thin-film generator with dual working modes for body motion energy harvesting, *IEEE MEMS 2017*, 869-872, Las Vegas, USA.
13. 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, *IEEE MEMS 2017*, 1025-1028, Las Vegas, USA.
14. 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, *IEEE MEMS*, 2017, 1036-1039, Jan. 22-26, Las Vegas, USA.
15. X Cheng, L Miao, H Chen, **Yu Song**, Z Su, X Chen, H Zhang*. Triboelectrification based active sensor for liquid flow and bubble detecting, *IEEE MEMS*, 2017, 845-848, Jan. 22-26, Las Vegas, USA.
16. 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, *IEEE MEMS 2016*, 1252-1255, Shanghai, China.
17. J Zhang, M Shi, H Chen, M Han, **Yu Song**, H Zhang*. Ultra-sensitive transparent and stretchable pressure sensor with single electrode, *IEEE MEMS 2016*, 173-176, Shanghai, China.
18. X Cheng, X Chen, B Meng, M Han, **Yu Song**, H Zhang*. A flexible and wearable generator with fluorocarbon plasma induced wrinkle structure, *IEEE MEMS 2016*, 1181-1184, Shanghai, China.
19. M Shi, J Zhang, M Han, **Yu Song**, H Zhang*. A single-electrode wearable triboelectric nanogenerator based on conductive & stretchable fabric, *IEEE MEMS 2016*, 1228-1231, Shanghai, China.

Books (1 first-author book, 3 chapter-author books)

1. **Yu Song**, Wei Gao, Haixia Zhang. *Integrated Smart Micro-Systems Towards Personalized Healthcare*, Wiley-VCH, 2022. ISBN: 978-3-527-34940-1. https://www.wiley.com/en-us/Integrated+Smart+Micro-Systems+Towards+Personalized+Healthcare-p-9783527833481
2. **Yu Song**. chapter on Characterization of Triboelectric Nanogenerators, in book *Flexible and Stretchable Triboelectric Nanogenerator Devices: Toward Self-powered Systems*, Wiley-VCH, 2019. ISBN:9783527345724.
3. **Yu Song**. chapter on Skin-interfaced Sweat Biosensors, in book *Frontier Technologies for Integrated Micro/Nano Systems*, Peking University Press, 2023. ISBN 978-7-301-33236-8. (Chinese)
4. **Yu Song**. chapter on Flexible electronics with multidimensional perception, in book *Frontier Technologies for Integrated Micro/Nano Systems*, Peking University Press, 2023. ISBN 978-7-301-33236-8. (Chinese)

PATENTS

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

1. H Zhang, H Wang, **Yu Song**, J Cui, X Chen. All-laser-induced graphene-based self-powered sensing microsystem, Chinese Patent, ZL202010761347.3.
2. H Zhang, **Yu Song**, H Chen, L Miao, X Cheng. Porous conductive elastomer based piezoresistive pressure sensors, Chinese Patent, ZL201810377273.6. (*Sold to a start-up company*)
3. H Zhang, **Yu Song**, H Wang, X Chen, H Chen. Stretchable micro-supercapacitor based on CNT-PDMS conductive elastomers, Chinese Patent, ZL201810377271.7.
4. H Zhang, **Yu Song**, X Chen, H Chen, Z Su. Freestanding solid-state micro-supercapacitor based on laser-patterned process, Chinese Patent, ZL201610953666.8.
5. H Zhang, **Yu Song**, X Cheng, J Huang, X Chen. Integrated self-charging power unit with flexible supercapacitor and triboelectric nanogenerator, Chinese Patent, ZL201610267181.3.
6. H Zhang, **Yu Song**, B Meng, X Cheng, H Chen. An integrated flexible self-charging power cell based on piezo-supercapacitor, Chinese Patent, ZL201610006934.5.
7. H Zhang, H Wu, Z Su, M Shi, L Miao, **Yu Song**, H Chen. Self-powered noncontact electronic skin for motion sensing, Chinese Patent, ZL201711104078.8.
8. H Zhang, Z Su, X Cheng, H Chen, **Yu Song**. Stretchable elastomers with porous structure, Chinese Patent, ZL201611148045.9.
9. H Zhang, X Cheng, L Miao, **Yu Song**. LC oscillating based power management module for triboelectric nanogenerator, Chinese Patent, ZL201710172291.6.
10. H Zhang, X Cheng, L Miao, **Yu Song**, H Chen. Triboelectrification based active sensor for liquid flow and bubble detecting, Chinese Patent, ZL201611074146.6.

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

1. W Gao, **Yu Song**. Systems and methods for powering autonomous sweat sensor, US Patent, US17/486,724.
2. W Gao, **Yu Song**. 3D-printed electronic skin for machine learning-powered health surveillance, US Patent.
3. H Zhang, H Wang, X Chen, J Wan, **Yu Song**. Free reconfigurable system based on standard modules and magnetic interconnection, Chinese Patent, CN202010758940.2.
4. H Zhang, **Yu Song**, H Wang, L Miao, J Wan. Stamp-assisted micro-supercapacitors with general flexible substrates, Chinese Patent, CN201910151950.7.
5. H Zhang, **Yu Song**, H Chen, Z Su, X Cheng. Compressible supercapacitor based on conductively porous sponge, Chinese Patent, CN201710880784.5.
6. H Zhang, Z Su, **Yu Song**. A CNT-based stretchable electrode, Chinese Patent, CN201710146108.5.

7. H Zhang, **Yu Song**, J Huang, J Zhang, L Miao. Fabric-based wearable self-charging power cloth, Chinese Patent, CN201710035582.0.
8. H Zhang, X Chen, **Yu Song**, H Chen, J Zhang. A stretchable triboelectric nanogenerator, Chinese Patent, CN201610910635.4.

PROFESSIONAL ACTIVITIES

Invited Talks

25. Shanghai Jiaotong University, Micro/Nano Electronics, Shanghai, May 2024.
24. ShanghaiTech University, Biomedical Engineering, Shanghai, May 2024.
23. Zhejiang University, Biomedical Engineering, Hangzhou, May 2024.
22. Huazhong University of Science and Technology, Aerospace Engineering, Wuhan, May 2024.
21. Huazhong University of Science and Technology, Integrated Circuits, Wuhan, May 2024.
20. Harbin Institute of Technology, Optoelectronics Engineering, Weihai, May 2024.
19. Shenzhen University, Biomedical Engineering, Shenzhen, Feb 2024.
18. Hong Kong University of Science and Technology, Mechanical Engineering, Hong Kong, Feb 2024.
17. National University of Singapore, Biomedical Engineering, Singapore, Jan 2024.
16. The University of Hong Kong, Biomedical Engineering, Hong Kong, Jan 2024.
15. The Chinese University of Hong Kong, Biomedical Engineering, Hong Kong, Jan 2024.
14. Southeast University, Electrical Engineering, Nanjing, Dec 2023.
13. Westlake University, Biomedical Engineering, Hangzhou, Dec 2023.
12. City University of Hong Kong, Biomedical Engineering, Hong Kong, Nov 2023.
11. National University of Singapore, Materials Science and Engineering, Singapore, Nov 2023.
10. Beijing Institute of Nanoenergy and Nanosystems, CAS, Virtual, Dec 2021.
9. iCANX Talks-Breaking, Virtual, Nov 2021.
8. Nanyang Technological University, Materials Science and Engineering, Singapore, Apr 2021.
7. National University of Singapore, Electrical and Computer Engineering, Singapore, Apr 2021.
6. Sun Yat-sen University, Electronic and Information Technology, Virtual, Dec 2020.
5. Huazhong University of Science and Technology, Electrical Engineering, Wuhan, Dec 2020.
4. Shenzhen University, Optical Electronic Engineering, Shenzhen, Dec 2020.
3. Shandong University, Electrical Engineering, Jinan, Oct 2020.
2. Beijing Jiaotong University, Electrical Engineering, Beijing, Oct 2020.
1. University of Electronic Sci. & Tech. of China, Flexible Electronics, Chengdu, Sep 2020.

Invited Guest Editor

Biosensors, Special issue: *Advance in Wearable Biosensors for Healthcare Monitoring*, 2023.
Frontiers in Carbon, Special issue: *Graphene-Based Solutions for Next Generation of Wearable devices*, 2023.

Independent Reviewer of Over 30 International Journals, including

Advanced Functional Materials, ACS Nano, Nano Micro Letters, Nano Energy, Advanced Science, ACS Sensors, Biosensors and Bioelectronics, ACS Applied Materials & Interfaces, Microsystems & Nanoengineering, npj Flexible Electronics, Applied Materials Today, Cyborg and Bionic Systems, Scientific Reports, IEEE Transaction on Nanotechnology, Advanced Materials Interfaces, Sensors & Diagnostics, Sensors & Actuators A: Physical, Nanomaterials, Biosensors, Polymer, Electronics, Molecules, Sensors, Synthetic Metals, International Journal of Human-Computer Interaction, Journal of Materials Science & Technology, Optics and Laser Technology, Chemical Engineering Science, Journal of Microelectromechanical Systems, Review of Scientific Instruments, Journal of Energy Storage, HardwareX, etc.