Curriculum Vitae

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WORKING & EDUCATION EXPERIENCES

July.2022 - Present   Postdoc researcher   Supervisor: Prof. Po-Chun Hsu
Pritzker School of Molecular Engineering
The University of Chicago, USA

May.2022 – July.2022   Postdoc researcher   Supervisor: Prof. Po-Chun Hsu
Department of Mechanical Engineering and Materials Science
Duke University, USA

Aug.2020 - May.2022   Postdoc researcher   Supervisor: Prof. Taesung Kim
Department of Mechanical Engineering, **Ulsan National Institute of Science and Technology** (**UNIST**), South Korea

Nov.2017 - Jun.2018   Joint Training Ph.D.   Supervisor: Prof. Xiang Yang Liu
Department of Physics，**National University of Singapore** (**NUS**), Singapore

Mar.2016 - Nov.2017   Joint Training Ph.D.   Supervisor: Prof. Xiang Yang Liu
Research Institute for Soft Matter and Biomimetics, **Xiamen University** (**XMU**), Xiamen, China

Sep.2014 - Jun.2020   M.S.- Ph.D. candidate   Supervisor: Prof. Weidong Yu
Department of Textiles and Materials, **Donghua University** (**DHU**), Shanghai, China

PUBLISHED PAPERS (40, first or corresponding author: 15)

1. ***Wu RH***, *et al.* Industrial fabrication of 3D braided stretchable hierarchical interlocked fancy-yarn triboelectric nanogenerator for self-powered smart fitness system. ***Adv. Energy Mater.*** 2022: 2201288. (2021 IF: **29.6**)

2. ***Wu RH***, *et al.* Full-fiber auxetic-interlaced yarn sensor for sign-language translation glove assisted by artificial neural network. ***Nano-Micro Letters*** 2022, 14(1): 1-14. (2021 IF: **23.6**)

3. ***Wu RH***, *et al.* From mesoscopic functionalization of silk fibroin to smart fiber devices for textile electronics and photonics. ***Adv. Sci.*** 2021, 2103981. (2021 IF: **17.5**)

4. Ma LY[†], ***Wu RH***[†], A. B. Patil, *et al.* Machine-fabricated 3d honeycomb structured flame-retardant triboelectric fabric for fire escape and rescue. ***Adv. Mater***. 2020, 32(38), 2003897 ([†]Co-first author.) (2020 IF: **30.8**)

5. ***Wu RH***, *et al.* Spider-inspired regenerated silk fibroin fiber actuator via microfluidic spinning. ***Chem. Eng. J*** 2022, 444: 136556. (2021 IF: **16.7**)

6. ***Wu RH***, *et al.* Silk Composite electronic textile sensor for high space precision 2D combo temperature-pressure sensing. ***Small***. 2019, 15(31): 1901558. (2020 IF: **13.2**)

7. ***Wu RH***, *et al.* Graphene decorated carbonized cellulose fabric for physiological signal monitoring and energy harvesting. ***J. Mater. Chem. A***. 2020, 8(25): 12665-12673. (2020 IF: **12.7**)

8. Ma LY[†], ***Wu RH***[†], *et al.* Acid and alkali-resistant textile triboelectric nanogenerator as smart protective suit for liquid energy harvesting and self-powered monitoring in high-risk environment. ***Adv. Func. Mater***. 2021: 2102963. ([†] Co-first author.) (2021 IF: **19.9**)

9. Dong X, Liu Q, Liu S, ***Wu RH****, et al. Silk Fibroin Based Conductive Film for Multifunctional Sensing and Energy Harvesting[J]. ***Adv. Fiber Mater.***, 2022: 1-9. (Corresponding author) (2021 IF: **12.9**)

10. ***Wu RH***, *et al.* Fibrous inductance strain sensors for passive inductance textile sensing. ***Mater. Today phys***. 2020,100243. (2020 IF: **10.4**)

11. ***Wu RH***, *et al.* Microfluidic approaches for fabricating intelligent fiber devices: importance of shape characteristics. ***Lab Chip*** 2021, 21 (7): 1217-1240. (2021 IF: **7.5**)

12. ***Wu RH***[†], Ma LY[†], *et al.* All-textile electronic skin enabled by high elastic spacer fabric and conducting fibers. ***ACS App. Mater. Interfaces***. 2019, 11(36): 33336-33346. (2019 IF: **8.7**)

13. ***Wu RH***, *et al.* A facile method to prepare a wearable pressure sensor based on fabric electrodes for human motion monitoring. ***Text. Res. J***. 2019, 89(23-24): 5144-5152. (2019 IF: **1.9**)

14. Ma LY[†], ***Wu RH***[†], *et al.* All-in-one fibrous capacitive humidity sensor for human breath monitoring. ***Text. Res. J***. 2021,91(3-4):398-405. ([†] Co-first author.) (2021 IF: **2.4**)

15. ***Wu RH***，Ma LY, Zhang YF, Liu XY, Yu WD. Strain sensor based on silver nanowires coated yarn with chain stitch structure. ***J. Text. Res***. 2019,40(12):45-49.

16. ***Wu RH***, *et al.* 3D microfluidic platform for shape programmable fiber spinning. (Manuscript in preparation)

17. Ma LY, ***Wu RH***, *et al.* Full-Textile Wireless Flexible Humidity Sensor for Human Physiological Monitoring. ***Adv. Func. Mater***. 2019, 29(43): 1904549. (2020 IF: **18.3**)

18. Chen ZY, ***Wu RH***, *et al.* 3D Upper Body Reconstruction with Sparse Soft Sensors. ***Soft Robot.*** 2020, 8(2), 226-239. (2020 IF: **8.0**)

19. Zhang YF, ***Wu RH***, *et al.* Enhanced mechanical performance of biocompatible silk fibroin films through mesoscopic construction of hierarchical structures. ***Text. Res. J.*** 2021, 91(9-10): 1146-1154. (2020 IF: **1.8**)

20. Shi CY, Hu F, ***Wu RH***, *et al.* New silk road: from mesoscopic reconstruction/ functionalization to flexible meso‐electronics/photonics based on cocoon silk materials. ***Adv. Mater***. 2021: 2005910. (2020 IF: **30.8**)

21. Ma LY, Zhou MJ, ***Wu RH***, *et al.* continuous and scalable manufacture of hybridized nano-micro triboelectric yarns for energy harvesting and signal sensing. ***ACS Nano***. 2020, DOI: 10.1021/acsnano.0c00524. (2020 IF: **15.8**)

22. Lin, ZF, Meng Z, Miao H, ***Wu RH***, *et al.* biomimetic salinity power generation based on silk fibroin ion-exchange membranes. ***ACS nano***, 15.3 (2021): 5649-5660. (2020 IF: **15.8**)

23. Ma LY, Liu Q, ***Wu RH***, A. B. Patil, *et al.* carbon nanotubes seeded silk fibroin hybrid electronic fibers and applied to remote respiration condition monitoring. ***Small.*** 2019. DOI: 10.1002/smll.202000203. (2019 IF: **11.5**)

24. Hou C, Xu ZJ, Qiu W, ***Wu RH***, Wang YN, Xu QC, *et al.* A biodegradable and stretchable protein-based sensor as artificial electronic skin for human motion detection. ***Small***. 2019;15(11). (2019 IF: **11.5**)

25. Patil A B, Huang Y, Ma L, **_Wu RH_**, _et al._ An efficient disposable and flexible electromechanical sensor based on a novel and stable metal carbon composite derived from cocoon silk. **_Biosens. Bioelectron_**. 2019, 142: 111595. (2019 IF: **10.2**)

26. Patil A B, Meng Z, **_Wu RH_**, _et al._ Tailoring the meso-structure of gold nanoparticles in keratins-based activated carbon toward high-performance flexible sensor. **_Nanomicro Lett_**. 2020. 12(1):1-11 (2020 IF: **16.4**)

27. Bae, JY, Chae Y, Park JG, **_Wu RH_** _et al._ direct single-step printing of conductive grids on curved surfaces using template-guided foaming. **_ACS Appl. Mater. Interfaces_** 2021. (2020 IF: **8.7**)

28. Zhang, Yifan, Tu H, **_Wu RH_**. Programing performance of silk fibroin superstrong scaffolds by mesoscopic regulation among hierarchical structures. **_Biomacromolecules._** 2020,21(10): 4169-4179. (2020 IF: **6.9**)

29. Ma LY, Patil A B, **_Wu RH_**, _et al._ A capacitive humidity sensor based on all-protein embedded with gold nanoparticles@ carbon composite for human respiration detection. **_Nanotechnology_**, 2021, 32(19): 19LT01. (2020 IF: **3.8**)

30. Patil A B, Zheng CB, Ma LY, **_Wu RH_**, _et al._ Flexible and disposable gold nanoparticles-N-doped carbon-modified electrochemical sensor for simultaneous detection of dopamine and uric acid." **_Nanotechnology_**, 2020, 32(6): 065502. (2020 IF: **3.8**)

31. Liu Q, Meng ZH, **_Wu RH_**, _et al._ A novel facile and green synthesis protocol to prepare high strength regenerated silk fibroin/sio_2 composite fiber. **_Fibers Polym._** 2019, 20(10):2222-6. (2019 IF: **1.7**)

32. Li F, Xu J, **_Wu RH_**, _et al._ Preparation and photocatalytic activity of nano-TiO_2 loaded on polyester fiber. **_Journal of Xi'an Polytechnic University_**, 2013,27(3):301-306.

33. Hou C, Zhang F, Chen C, Zhang Y, **_Wu RH_**, _et al._ Wearable hydration and pH sensor based on protein film for healthcare monitoring. **_Chemical Papers_** 2021: 1-8. (2020 IF: **1.9**)

34. Z Zhu, S Guo, Y Qin, X Chen, **_Wu RH_**, _et al._ Robust elbow angle prediction with aging soft sensors via output-level domain adaptation. **_IEEE Sensors Journal_**. 2021. (2020 IF: **3.3**)

35. Zhang W, Liu X, Lin Y, L Ma, L Kong, G Min, **_Wu RH_**, et al. Palladium nanoparticles/wool keratin-assisted carbon composite-modified flexible and disposable electrochemical solid-state pH sensor[J]. **_Chinese Physics B_**, 2022, 31(2): 028201. (2020 IF: **1.49**)

36. **_Wu RH_**, Zhang YF, Ma LY, et al. A facile method to prepare conductive fabric and its application in pressure sensor. Sino-Africa International Symposium on Textiles and Apparel. 2018,1-4.

37. **_Wu RH_**, Ma LY, Zhang YF, et al. A wearable pressure sensor based on facilely prepared carbonized woven cotton fabric. Sino-Africa International Symposium on Textiles and Apparel. 2018,192-196.

38. Ma LY, **_Wu RH_**, et al. Flexible humidity sensor based on silk fibroin and carbonized wool keratin. Sino-Africa International Symposium on Textiles and Apparel, 2020, 2-5.

39. Ma LY, **_Wu RH_**, et al. Structural and mechanical properties of silk biomaterials plasticized by glycerol. Sino-Africa International Symposium on Textiles and Apparel. 2020.

40. Mengane S K, **_Wu RH_**, et al. Metal Nanoparticles: Ligand-Free Approach Towards Coupling Reactions[J]. Current Chinese Science, 2022, 2(1): 7-37.

GRANTED PATENTS (13)

1. Liu XY, **_Wu RH_** and Ma LY. Stretchable yarn sensor and preparation method thereof. CN108896199B.

2. Liu XY, **_Wu RH_** and Ma LY. Wearable breath detection device and breath measurement method. CN109730679B.

3. Liu XY, ***Wu RH*** *et al.* Virtual fitting device based on deep learning. CN212345491U.
4. Liu XY, ***Wu RH*** *et al.* Intelligent glove for temperature detection. CN209421005U.
5. Liu XY, ***Wu RH*** and Ma LY. Speech recognition device based on vibration sensor. CN209433864U.
6. Liu XY, ***Wu RH*** and Ma LY. Sensor for human action detection: CN209916006U.
7. Liu XY, Ma LY and ***Wu RH***. A mask for real-time detection of respiratory signals. CN209420996U.
8. Liu XY, Ma LY and ***Wu RH***. Yarn-like humidity sensor. CN109239139B.
9. Zhang H, Yang Z, Liu Y, Xu J and ***Wu RH***. Photocatalytic Degradation of Harmful Gases for Textile Materials. CN203572761U.
10. Liu XY, Patil A. B. and ***Wu RH***, *et al.* Flexible stripped uric acid sensor capable of detecting body fluid in real time, and preparation method thereof. CN109765283B.
11. Liu XY, Patil A.B., Ma LY and ***Wu RH***. Yarn-shaped uric acid sensors capable of detecting body fluid in real time and preparation method thereo. CN109765284 B.
12. Liu XY, Patil A. B., Ma LY and ***Wu RH***, *et al.* Protein-based nitrogen-doped carbon/metal nanoparticle composite material and preparation method thereof. CN109888211B.
13. Liu XY, Patil A. B., Yang L, Liu Q, Meng Z, Ma LY, ***Wu RH***. Flexible strip-shaped pH sensor capable of detecting body fluid in real time, and preparation method thereof. CN109765285B.

PARTICIPATED PROJECTS (3):
1. National Key Research and Development Program (2016YFC0802802): Flexible composite functional fabric and its high efficiency protection mechanism.
2. Xiamen Science and Technology Project (3502Z20183012): Development of silk-based intelligent medical sensing system for body temperature detecting, heart rate monitoring and big data.
3. Basic Research Project of Shenzhen Knowledge Innovation Project (20180502101936919): Digital diagnosis of chronic diseases based on wearable biosensors.

CONFERENCES, PRESENTATIONS (11):
1. Oral presentation in 24th Korean MEMS (Micro Electro Mechanical Systems) conference and awarded by "**Best oral presentation award**" in Jeju, South Korea (2022).
2. Oral presentation in fiber annual academic conference in Busan, South Korea (2021).
3. Attended international forum on material science, entitled 'Xiamen Soft Matter Forum 2017, Mesoscale assembly bioinspired material, flexible devices' held at Xiamen, China on 2nd and 3rd November 2017.
4. Poster presented in China Biomaterials Conference at Nanchang, China (2018).
5. Poster presented in Xiamen Soft Matter Forum 2018-Flexible Electronics, Internet of Things and big data, Xiamen, China (2018) and awarded by **Best Poster Award**.
6. Oral presentation in Textile Science and Engineering Graduate Talent Training Seminar and awarded by **Third Prize for Oral Presentation** in Donghua University, Shanghai, China (2019).
7. Paper presented in Sino-Africa International Symposium on Textiles and Apparel, The Federal Democratic Republic of Ethiopia (2018).
8. Poster presented in Conference- Fundamentals of Bio-inspired Soft Matters, Hybrid Materials and Flexible Electronic, Xiamen, China (2019) and awarded by **Best Poster Award**.
9. Paper presented in Sino-Africa International Symposium on Textiles and Apparel, Shanghai, China (2019).
10. Poster presented in International Carbon Materials Conference, Shanghai, China (2016).
11. Attended 2016 China textile academic conference in Shanghai, China.

HONORS AND AWARDS (10) ：
1. Awarded **Outstanding Graduate Student** by Donghua University (2020).
2. Awarded **Doctoral National Scholarship** 2019 by **Ministry of Education**, **the people's republic of China**, the highest national honor level that doctoral students can receive, awarded to only **top 0.2%**. (RMB 30,000)
3. Awarded International Visiting Program 2017 for Excellent Doctoral Students. (RMB 60,000)
4. Awarded First-class Academic Scholarship (**FAS**) from 2014-2018 for four times by Donghua University.
5. Awarded Junior Doctoral Fellowship (**JDF**) 2014 by Donghua University.
6. Awarded **Outstanding Graduate Student** by Xi'an Polytechnic University (2014).
7. Awarded **Sangma Principal Scholarship** (2013), the highest social honor level that college students can receive, awarded to only **top 0.1%** (RMB 10,000).
8. Awarded 2012 **National Scholarship**, by **Ministry of Education**, **the people's republic of China**, the highest national honor level that college students can receive, awarded to only **top 0.2%** (RMB 8,000).
9. Awarded 2011 National Encouragement Scholarship, by **Ministry of Education**, **the people's republic of China** (RMB 5,000).
10. Awarded First-class Academic Scholarship from 2010-2013 for six times by Xi'an Polytechnic University.

TEACHING AND MENTORING EXPERIENCE (6):
1. Teaching assistant of the undergraduate course "Textile Materials" in the second semester of 2019 in Donghua University.
2. Teaching assistant of the graduate course "Polymer Physics" in the second semester of 2016 in Donghua University.
3. Teaching assistant of English undergraduate course "Silk Fibres that make a difference in our world" in the first semester of 2018 in National University of Singapore.
4. Lecture of "Scientific tools that make your researcher easier" in Donghua University in 2019.
5. Assistance in mentoring graduate student on master thesis "Preparation and Properties of Regenerated Silk Fibroin-Based Composite Functional Materials".
6. Assistance in mentoring graduate student on Ph.D. thesis "Research on Flexible Sensor and Nanogenerator Based on Composite Core-sheath Yarn".

References

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Prof. Xiang Yang Liu College of Ocean and Earth Sciences, Xiamen University Department of Physics, National University of Singapore E-mail: liuxy@xmu.edu.cn Website: https://www.physics.nus.edu.sg/~Biophysics/BioContactus.html Relationship: Prof. Liu was my supervisor when I worked in National University of Singapore and Xiamen University.	
Prof. Weidong Yu Director of Textile Material Technology and Fiber Soft Matter Lab Department of Textile Donghua University Shanghai 201620, China E-mail: wdyu@dhu.edu.cn Website: http://texcol.dhu.edu.cn/_s58/ywd/list.psp Relationship: Prof. Yu is my M.S. - Ph.D. supervisor.	
Prof. Po-Chun Hsu Director of Hsu Research Group Pritzker School of Molecular Engineering, The University of Chicago Email: pochun.hsu@uchicago.edu Website: https://pochunhsu.group/ Relationship: Prof. Hsu is my current postdoctoral supervisor in Duke University and The University of Chicago.	

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