

Dr. You Yu

Personal Information

Birth: Sep. 22th 1990

Gender: Male

Institute: School of Biomedical Engineering, ShanghaiTech University, Shanghai, China.

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Professional Experience

04/2022 –	Assistant Professor	School of Biomedical Engineering, ShanghaiTech University, Shanghai, China.
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Education

12/2017 – 03/2022	Medical Engineering, California Institute of Technology, CA, USA	Advisor: <i>Prof. Wei Gao</i> (Willens Scholar, Associate Editor of Science Advances)
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Postdoctoral Fellow

09/2012 – 11/2017	Analytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Jilin, China	Advisor: <i>Prof. Shaojun Dong</i> (Member of The World Academy of Sciences)
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Ph.D.

08/2008 – 07/2012	Chemistry, College of Chemistry, Jilin University, Jilin, China
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B.S.

Publications (H-index: 19; Citations > 2100)

1. Yiru Zhou[†], Yao Tang[†], You Yu*, Technological trends in medical robotic sensing with soft electronic skin, **Sensors & Diagnostics**, 2024, 3, 218-237.

*Featured in **Sensors & Diagnostics Emerging Investigators** themed collection*

2. Changhao Xu, Yu Song, Juliane R. Sempionatto, Samuel A. Solomon, You Yu, Hnin Y. Y. Nyein, Roland Yingjie Tay, Jiahong Li, Wenzheng Heng, Jihong Min, Alison Lao, Tzung K. Hsiai, Jennifer A. Sumner, Wei Gao*, A physicochemical-sensing electronic skin for stress response monitoring, **Nature Electronics**, 2024, 7, 168-179.

*Highlighted in "Stress monitoring with wearable technology and AI", **Nat. Electron.**, 2024, 7, 98-99.*

3. You Yu, Jiahong Li, Samuel A. Solomon, Jihong Min, Jiaobing Tu, Wei Guo, Changhao Xu, Yu Song, Wei Gao*, All-printed soft human-machine interface for robotic physicochemical sensing,

Science Robotics, 2022, 7, eabn0495.

Featured on Journal Cover.

Highlighted in Caltech News, Scientific American, The Independent, Daily Beast and more.

4. A. Hashemi Talkhooncheh, You Yu, A. Agarwal, W. Kuo, K. C. Chen, M. Wang, G. Hoskuldottir, W. Gao, A. Emami, A biofuel-cell-based energy harvester with 86% peak efficiency and 0.25-V minimum input voltage using source-adaptive MPPT, *IEEE Journal of Solid-State Circuits (JSSC)*, 2021, 56, 715-728.

Best student paper award in IEEE Custom Integrated Circuits Conference (**CICC**), 2020

5. You Yu, Joanna Nassar, Changhao Xu, Jihong Min Yiran Yang, Adam Dai, Rohan Doshi, Adrian Huang, Yu Song, Rachel Gehlhar, Aaron D. Ames, Wei 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", *Nat. Electron.*, 2020, 3, 235.

Hot Paper (top 0.1%); Most cited article of Science Robotics published in 2020.

Highlighted in Caltech News, Yahoo News, The Engineer, SF Gate, CNET, Inside Science, Sina Tech, Tencent news and more.

6. Yu Song, Jihong Min, You Yu, Haobin Wang, Yiran Yang, Haixia Zhang, Wei Gao*, Wireless battery- free wearable sweat sensor powered by human motion, **Science Advances**, 2020, 6, eaay9842

Hot Paper (top 0.1%) in Web of Science.

7. Heather Lukas, Changhao Xu, You Yu, Wei Gao*, Emerging telemedicine tools for remote COVID- 19 diagnosis, monitoring, and management, **ACS Nano**, 2020, 14, 16180-16193.

Highlighted in *ACS Virtual Issue* on "Advances in COVID-19 Testing".

8. R. M. Torrente-Rodríguez, Jiaobing Tu, Yiran Yang, Jihong Min, Minqiang Wang, Yu Song, You Yu, Changhao Xu, Cui Ye, W IsHak, Wei Gao*, Investigation of cortisol dynamics in human sweat using a graphene-based wireless mHealth system, *Matter*, 2020, 2, 921-937.

Hot Paper (top 0.1%) in Web of Science.

Highlighted in Physics World, Xinhua, Yahoo News and more.

9. You Yu, Hnin Yin Yin Nyein, Wei Gao*, Ali Javey*, Flexible electrochemical bioelectronics: the rise of in situ bioanalysis, **Advance Materials**, 2019, 1902083.

Featured on Journal Frontispiece of Special Issue: Flexible Hybrid Electronics

10. He Zhang, You Yu, Lingling Zhang, Shaojun Dong*, Water/oxygen circulation System-based fuel-free bio-photoelectrochemical Cells by integrating a Ni:FeOOH/BiVO₄ photoanode, **Angew. Chem. Int. et.**, 2018, 6,1563-1567
11. Xiaowei Zhang, Yin Jing, Qingfeng Zhai, You Yu, Huanhuan Xing, Jing Li*, Erkang Wang*, Point-of- care diagnoses: flexible patterning technique for self-powered wearable sensors, **Analytical Chemistry**, 2018, 90, 20, 11780-11784.
12. Miao Xu, Liang Huang, Youxing Fang, Lei Han, You Yu, Shaojun Dong*, The unified ordered mesoporous carbon supported Co-based electrocatalysts for full water splitting, **Electrochimica Acta**, 2018, 20, 412-420.

13. Yujie Han, You Yu, Lingling Zhang, Liang Huang, Junfeng Zhai, Shaojun Dong*, Facile synthesis of Ni based metal-organic frameworks wrapped MnO₂ nanowires with high performance toward electrochemical oxygen evolution reaction, **Talanta**, 2018, 15, 154-161.
14. You Yu, Junfeng Zhai, Yong Xia, Shaojun Dong*, Single wearable sensing energy device based on photoelectric biofuel cells for simultaneous analysis of perspiration and illuminance, **Nanoscale**, 2017, 9, 11846 – 11850.
15. He Zhang, Lingling Zhang, Yujie Han, You Yu, Miao Xu, Xueping Zhang, Liang Huang, Shaojun Dong*, RGO/Au NPs/N-doped CNTs supported on nickel foam as an anode for enzymatic biofuel cells. **Biosensors Bioelectronics**, 2017, 97, 34-40.
16. You Yu, Yanchao Han, Miao Xu, Lingling Zhang, Shaojun Dong*, Automatic illumination compensation device based on a photoelectrochemical biofuel cell driven by visible light, **Nanoscale**, 2016, 8, 9004-9008.
17. You Yu, Miao Xu, Lu Bai, Lei Han, Shaojun Dong*, Recoverable hybrid enzymatic biofuel cell with molecular oxygen-independence, **Biosensors Bioelectronics**, 2016, 75, 23–27.
18. You Yu, Miao Xu, Shaojun Dong*, Photoenergy storage and power amplification strategy in membrane- less photoelectrochemical biofuel cells, **Chemical Communication**, 2016, 52, 6716-6719.
19. You Yu, Yujie Han, Baohua Lou, Lingling Zhang, Lei Han, Shaojun Dong*, A miniature origami biofuel cell based on a consumed cathode, **Chemical Communication**, 2016, 52, 13499-13502.
20. Hui Zhang, You Yu, Lingling Zhang, Yiwen Zhai and Shaojun Dong*, Self-powered fluorescence display devices based on a fast self-charging/recharging battery (Mg/Prussian blue). **Chemical Science**, 2016, 7, 6721-6727.
21. Lei Han, Miao Xu, Yujie Han, You Yu, Shaojun Dong*, Core–shell-structured tungsten carbide encapsulated within nitrogen-doped carbon spheres for enhanced hydrogen evolution. **ChemSusChem**, 2016, 9, 2784-2787.
22. Xiaowei Zhang, Baohua Lou, Dongyue Li, Wei Hong, You Yu, Jing Li* and Erkang Wang*, A universal method for the preparation of functional ITO electrodes with ultrahigh stability, **Chemical Communication**, 2015, 51, 6788-6791.
23. Miao Xu, Lei Han, Yujie Han, You Yu, Junfeng Zhai and Shaojun Dong*, Porous CoP concave polyhedron electrocatalysts synthesized from metal–organic frameworks with enhanced electrochemical properties for hydrogen evolution. **Journal of Materials Chemistry A**, 2015, 3, 21471-21477.

Chapters

1. You Yu Shaojun Dong*, Self-powered electrochemical biosensors, in: Bioelectrochemistry: Design and Applications of Biomaterials (Chapter 9), Edited by Serge Cosnier, De Gruyter, 2019, P167-188.

Research Interest

Wearable Devices, Biosensors, Flexible Bioelectronics, Human-machine interface, Biofuel cells, Electrochemistry, Electrocatalysis

Honors and Awards

1. 02/2024 Tencent Robotics X Program
2. 01/2024 Shanghai Science & Technology 35 under 35 (S&T 35)
3. 10/2023 NSFC for Excellent Young Scientists Program
4. 06/2023 Sensors & Diagnostics Emerging Investigators Award (RSC)
5. 12/2022 Young Scientist Award by China Association for Science and Technology (CAST)
6. 10/2022 Shanghai Pujiang Talent Program
7. 08/2022 MINE Young Scientist Award by Microsystems & Nanoengineering (NPG)
8. 05/2017 Outstanding Student in CIAC, CAS (Top 10%)
9. 05/2015 Outstanding Student in CIAC, CAS (Top 10%)

Research Grants

Serving as the Principal Investigator (PI) for projects funded by National Natural Foundation of China (NSFC), Science and Technology commission of Shanghai (STCSM), Shanghai Pujiang Program, Tencent Robotics X Program.

Invited Talks

1. 14th CCS National Conference on Analytical Chemistry, Shenzhen, Nov 2023.
2. 19th International Symposium on Electroanalytical Chemistry, Changchun, Aug 2023.
3. Innovation and Applications on Flexible Electronics, Suzhou, May 2023.
4. SATOL 2022 Science series talk No. 37. Aug 2022
5. MINE 2022 Young Scientists Forum by Microsystems & Nanoengineering, Aug 2022.
6. CIAC Electroanalytical chemistry lecture series, Jun 2022.
7. NPU 8th Aoxiang Forum for Distinguished Young Scholars, Dec 2021.
8. CIAC 1st Forum for Distinguished Young Scholars, Dec 2021.

Conference

1. You Yu, Dan Wen, Lu Bai, Shaojun Dong*, A bienzymatic biofuel cell based on single-walled carbon nanohorns, In The fourteenth International Symposium on Electroanalytical Chemistry Symposium on Electroanalytical Chemistry (14th ISEC), Changchun, P.R. China, 2013, p157.
2. You Yu, Dan Wen, Shaojun Dong*, Study on an Enzymatic Biofuel Cell Based on Two-Substrates of Glucose and Ethanol, In The Twelfth National Conference on Electroanalytical Chemistry, Guilin, P.R. China, 2014, p364.
3. You Yu, Miao Xu, Junfeng Zhai, Shaojun Dong, * An Oxygen-independent Hybrid Enzymatic Biofuel Cell based on MnO₂ Cathode, In The fifteenth International Symposium on Electroanalytical Chemistry Symposium on Electroanalytical Chemistry (15th ISEC), Changchun, P.R. China, 2015, p399.
4. You Yu, Miao Xu, Lu Bai, Lei Han, Shaojun Dong*, Rechargeable Hybrid Biofuel Cell with Oxygen- independence, The Twelfth National Symposium on Electroanalytical Chemistry, Wuhan, P.R. China, 2015, p844.
5. You Yu, Junfeng Zhai, Shaojun Dong*, A photoelectric biofuel cell based on perspiration and illumination, In The thirteenth National Conference on Electroanalytical Chemistry Nanchang,

China, 2017, p342.

Professional Activities

1. Guest editor of Micromachines, Special issue: “Development and Application of Biofuel Cells and Related Sensors”.
2. Guest editor of Frontiers in Medical Technology, “Soft Electronics for Wearable and Implantable Medical Care”.

Graduates and Postdocs supervised

Current students: Guohui Wang, Yiru Zhou, Hongqi Jiang, Xinran Luo, Jingqi Li, Jingyao Song (M.S.), Yuanyuan Chen, Yi Lu (M.S.), Zhong Dong (M.S.).

Undergraduates: Xuanqi Rao, Yao Tang.

Postdocs Fellow: Qian Cheng (Ph.D., Fudan University).

Undergraduates Alumni: Zihuan Bai (CMU MS program)

Visiting Scholar: Guangyang Sun (UIUC)