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Department of Mechanical Engineering
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SUMMARY

Enthusiastic researcher focusing on micro-nano mechanics and modelling-guided design of nano-architected materials toward sustainable future. In recent five years, has published **12 first/corresponding-author papers** in JCR Q1 journals, such as *Matter* (sister journal to *Cell*), *Nature Materials*, *Science Advances*, *Journal of the American Chemical Society*, *Advanced Materials*, *ACS Nano*, *Nano Letters* (2), *Nano Research* (cover paper) and *Extreme Mechanics Letters*, partly featured with research highlights, news & views in top journals such as *Nature Materials* and *Nature Synthesis*.

(i) Academic qualifications

- 2019.9 -- 2024.6 Ph.D. in Solid Mechanics
University of Science and Technology of China (USTC), Hefei, China
Advisor: Prof. [HengAn Wu](#) and Prof. [Shu-Hong Yu](#)
- 2015.9 -- 2019.6 B.E. in Civil Engineering
Xiamen University (XMU), Xiamen, China
Advisor: Prof. [Jing Gao](#) and Prof. [Dongdong Wang](#)

(ii) Academic positions

- 2026.1 – present Postdoctoral Fellow
The University of Hong Kong (HKU), Hong Kong, China
Supervisor: Prof. [Yang Lu](#)
- 2025.9 – 2025.12 Postdoctoral Research Associate
The University of Hong Kong (HKU), Hong Kong, China
Supervisor: Prof. [Yang Lu](#)
- 2025.2 -- 2025.8 Postdoctoral Research Assistant
City University of Hong Kong (CityU), Hong Kong, China
Supervisor: Prof. [Steven Wang](#) and Prof. [Yang Lu](#)
- 2024.7 -- 2025.2 Postdoctoral Research Fellow
University of Science and Technology of China (USTC), Hefei, China
Supervisor: Prof. [HengAn Wu](#)

(iii) Five most representative publications in recent five years (More in [Google Scholar](#))

- Y.Z. Hou#**, Z.M. Han#, Y.B. Zhu*, J. Xia, J.H. Li, K.P. Yang, Z.Z. He, R.Z. Song, Q.F. Guan, Y. Lu, S.H. Yu* and H.A. Wu*, *Artificial Kink Defects Enable High-Efficiency Degradation of Nanocellulose via Mechanochemical Activation*. **Matter**, 2025, 8, 102212. (sister journal to *Cell*, JCR Q1, IF=18.4)
- J.Y. Zhu#, F. Li#, **Y.Z. Hou# (Co-First Author)**, H. Li, D.X. Xu, J.Y. Tan, J.H. Du, S.G. Wang, Z.B. Liu, H.A. Wu, F.C. Wang, Y. Su* and H.M. Cheng*, *Near-room-temperature Water-mediated Densification of Bulk van der Waals Materials from Their Nanosheets*. **Nature Materials**, 2024, 23, 604–611. (JCR Q1, IF=38.5)
- S.M. Chen#, G.Z. Wang#, **Y.Z. Hou# (Co-First Author)**, X.N. Yang, S.C. Zhang, H.L. Gao*, Y.B. Zhu*, H.A. Wu and S.H. Yu*, *Hierarchical and reconfigurable interfibrillar interface of bioinspired Bouligand structure enabled by moderate orderliness*. **Science Advances**, 2024, 10, ead11884. (JCR Q1, IF=12.5)
- Y.Z. Hou#**, Q.F. Guan#, J. Xia#, Z.C. Ling, Z.Z. He, Z.M. Han, H.B. Yang, P. Gu, Y.B. Zhu*, S.H. Yu* and H.A. Wu*, *Strengthening and Toughening Hierarchical Nanocellulose via Humidity-Mediated Interface*. **ACS Nano**, 2021, 15, 1310-1320. (JCR Q1, IF=16.0, Citation=160)

5. **Y.Z. Hou**, J. Xia*, Z.Z. He, Y.B. Zhu and H.A. Wu*, *Molecular levers enable anomalously enhanced strength and toughness of cellulose nanocrystal at cryogenic temperature*. **Nano Research**, 2023, 16, 8036–8041. (Cover Paper, JCR Q1, IF=9.6)

(iv) Professional qualifications, prizes and awards

- **Xiaomi Young Talents Program**, 2024
(7 young scholars in the field of mechanics in China under the age of 40)
- **Postdoctoral Fellowship Program of China Postdoctoral Science Foundation**, 2024
(the highest honor for postdoctoral researchers in Chinese mainland)
- **Baosteel Outstanding Student Special Prize**, 2023
(10 doctoral students in China, the only winner of USTC in the past 7 years)
- **National College Student Person of the Year, nomination**, 2023
(30 college students in China, the only winner of USTC in the past 4 years)
- **Chinese Academy of Sciences (CAS) President Prize**, 2024
(the highest award given by the Chinese Academy of Sciences to postgraduates)
- **National Scholarship for Postgraduates (Doctor)**, 2023
- **National Scholarship for Postgraduates (Master)**, 2021
- **National Scholarship for Undergraduate**, 2017
- **Outstanding Doctoral Thesis Award of Anhui Province**, China, 2025
- **Outstanding Doctoral Thesis Award of USTC**, 2024
- **Top-10 Outstanding College Student of Anhui Province**, China, 2022
- **Outstanding Graduates of Anhui Province**, China, 2024
- **Outstanding Graduates of USTC**, 2024
- **Outstanding Graduates of XMU**, 2019
- **Excellent Presentation Award of the National Academic Forum for Doctoral Students in Mechanics**, 2021
- **National II Prize of Zhou Peiyuan Mechanics Competition for College Students**, 2017
(Top-1 in Fujian Province, the highest-level mechanics competition in China)
- **National Xu Zhilun Mechanics Outstanding Student Award**, 2018
(the highest honor given by the CSTAM to mechanics students in China)
- **Most Feasible X-Idea Solution Award of the International Nanoscience Student Conference**, 2019

(v) International Conference

1. **Session Chair**, *17th World Congress on Computational Mechanics (WCCM)*, Munich, Germany, July 19-24, 2026
2. **Session Chair & Featured Speech**, *the 31th International Conference on Computational & Experimental Engineering and Sciences (ICCES)*, Changsha, China, May 25-29, 2025.
3. **Invited Speech**, *the 30th International Conference on Computational & Experimental Engineering and Sciences (ICCES)*, Singapore, August 3-6, 2024.
4. **Oral Presentation**, *the 14th International Conference on Computational Methods (ICCM)*, Ho Chi Minh City, Vietnam, August 6-10, 2023.

(vi) Academic Influence of Publications (First/Corresponding-Author)

- ✧ Selected as the Outstanding Advancement of the Strategic Priority Research Program of CAS
- ✧ Highly cited in key figures and texts by renowned scholars, including 8 China/US/Europe Academicians, in journals like *Nature Sustainability*, *Nature Reviews Bioengineering* and *Chemical Reviews* (4).
- ✧ Featured in research highlights, news & views in journals such as *Nature Materials* and *Nature Synthesis*.
- ✧ Widely publicized and reported by authoritative media such as People's Daily, Science Daily, China Science News, the CAS official website, the American Association for the Advancement of Science (AAAS) and PhysOrg.

List of First/Corresponding-Author Papers:

[Matter 2025](#), [Nature Materials 2024](#), [Science Advances 2024](#), [Journal of the American Chemical Society 2025](#),
[Advanced Materials 2024](#), [ACS Nano 2021](#), [Nano Letters 2024](#), [Nano Letters 2023](#), [Nano Research 2023](#),
[Extreme Mechanics Letters 2025](#), [Mechanics of Materials 2024](#), [Carbohydrate Polymers 2021](#)