Curriculum Vitae

Personal Information

Name **Chaoyu Yang**
Born March 26th, 1992 – Henan, China
Address No. 1, Jinlian Road, Wenzhou, Zhejiang, China
Mobile +86 152 0551 5027
Email yu0326@mail.ustc.edu.cn

Education

Sep. 2015 – Jun. 2020 Ph.D. in Mechanical Engineering (*Advisor*: Prof. Xiaorong Xu & Prof. Ting Si)
University of Science and Technology of China (USTC), Hefei, Anhui

Sep. 2011 – Jun. 2015 B.S. in Mechanical Engineering (*Advisor*: Prof. Xiaorong Xu)
University of Science and Technology of China (USTC), Hefei, Anhui

Research Experience

Jun. 2020 – Present A-level postdoctoral fellow (*Advisor*: Prof. Yuanjin Zhao)
Wenzhou Institute, University of Chinese Academy of Sciences (WIUCAS), Wenzhou, Zhejiang

Experience in Research Projects

Sep. 2022 – Present Hemline microfibers for flexible liquid transport
Leader

Sep. 2021 – Apr. 2022 Bio-inspired jellyfish particles from piezoelectric microfluidics for water decontamination
Leader

Jun. 2020 – Jan. 2022 Developing piezoelectric microfluidics for the generation of programmable spindle-knot microfibers
Leader

Jun. 2019 – Jun. 2020 High-throughput generation of tailorable double emulsions from piezoelectric flow focusing
Leader

Sep. 2018 – Jun. 2019 Development of atomizing nozzles for direct atomisation of high viscosity substances
Leader

Jul. 2018 – Oct. 2019 Encapsulation of hemoglobin in polymer microcapsules to serve as the functional materials for dolid tissue-simulating phantom
Assistant

Oct. 2018 – Apr. 2019 Study on controlled and sustained release of pesticide microcapsules with electrospray and flow-focusing
Leader

Sep. 2018 – Jun. 2019 Manipulation of jet breakup length and droplet size in axisymmetric flow focusing upon actuation
Leader

May 2016 – Mar. 2017 Multiplex coaxial flow-focusing for producing multi-compartment Janus microcapsules
Co-leader

Research Interests

- Fluid dynamics
- Nature-inspired engineering
- Microfluidics
- Droplet
- Wettablity

Strengths

Technical skills

- Adept in techniques, microfluidics, 3D Flow-focusing, piezoelectric control.
- Adept in devices and systems design and innovation, especially for the improvement of technological process and active technology for droplet preparation.
- Master instruments: Confocal microscope, Scanning electron microscope, High-speed photography...
- Software Tools: SolidWorks, C4D, Fluent, UG, AutoCAD, CorelDraw, Photoshop, Premiere, and Origin.
- I am responsible, cheerful, honest, optimistic, self-motivated, ambitious and healthy, with strong ability to adapt and learn, preparedness to work hard. I like the team cooperation, but I also can work independently.

Fundings

2022 **Youth Foundation of National Natural Science Foundation of China**, 2023-2025

2022 **71th fellowship of China Postdoctoral Science Foundation**, 2022-2024

Grants, Honours & Awards

2022 A-level postdoctoral fellow of WIUCAS, 2020-2022

2021 Outstanding individual, UCAS

2019 Guanghua Education Scholarship, USTC

2019 **Tang Lixin Scholarship (60/15000)**, Tang Lixin Education Development Fundation

2019 Best Oral Presentation Award, The 11th Experimental Fluid Mechanics Conference

2019 First-class Academic Scholarship, USTC

2018 First-class Academic Scholarship, USTC

2017 **National Scholarship for Graduate Students**, Ministry of Education of the People's Republic of China *(The highest scholarship)*

2016 First-class Academic Scholarship, USTC

2015 First-class Academic Scholarship, USTC

2014 "859" Scholarship, USTC

2013 Outstanding Student Scholarship, USTC

2012 Di Ao Scholarship, USTC

2012 Won III Prize of Electromagnetics Competition, USTC

2011 Outstanding Student Scholarship, USTC

Extra-curricular Activities

2017 Won II prize in Photography competition in 2017 College competition, USTC

2016 **Excellent Assistant**, USTC

2016 Excellent Volunteer, Chinese Academy and Science

2015 **Excellent Student Cadre**, USTC

2015 Gold Chef, 2nd Cuisine & Culture Festival

Publications & Academic Activities

Papers

o **Chaoyu Yang**, Yunru Yu, Yuanjin Zhao* and Luoran Shang*. "Bio-inspired jellyfish microparticles from microfluidics". ***Research***, 2023, 6, 0034.

o **Chaoyu Yang**, Yunru Yu, Xiaocheng Wang, Yan Zu*, Yuanjin Zhao* and Luoran Shang*. "Bioinspired stimuli-responsive spindle-knotted fibers for droplet manipulation". ***Chemical Engineering Journal***, 2022: 138669.

- **Chaoyu Yang**, Yunru Yu, Xiaocheng Wang, Luoran Shang* and Yuanjin Zhao*. "Programmable knot microfibers from piezoelectric microfluidics". ***Small***, 2022, 18(5): 2104309.
- **Chaoyu Yang**, Yunru Yu, Xiaocheng Wang, Qiao Wang and Luoran Shang*. "Cellular fluidic-based vascular networks for tissue engineering". ***Engineered Regeneration***, 2021, 2: 171-174.
- **Chaoyu Yang**, Ran Qiao, Kai Mu, Zhiqiang Zhu, Ronald X Xu and Ting Si*. "Manipulation of jet breakup length and droplet size in axisymmetric flow focusing upon actuation". ***Physics of Fluids***, 2019, 31(9): 091702. **(Editor's Pick)**
- Qiang Wu#, **Chaoyu Yang**#, Guangli Liu, Wanghuai Xu, Zhiqiang Zhu, Ronald X Xu* and Ting Si*. "Multiplex coaxial flow focusing for producing multicompartment Janus microcapsules with tunable material compositions and structural characteristics". ***Lab on a Chip***, 2017, 17 (18), 3168-3175. **(Co-first author)**
- Qiang Wu#, **Chaoyu Yang**#, Jianxin Yang, Guangli Liu, Zhiqiang Zhu, Ronald X Xu* and Ting Si*. "Photopolymerization of complex emulsions with irregular shapes fabricated by multiplex coaxial flow focusing". ***Applied Physics Letters***, 2018, 112 (7), 071601. **(Co-first author)**
- Xirong Lin#, **Chaoyu Yang**#, Tianli Han, Jinjin Li, Zhonghua Chen, Haikuo Zhang, Kai Mu, Ting Si* and Jinyun Liu*. "A graphene oxide scaffold-encapsulated microcapsule for polysulfide-immobilized long life lithium–sulfur batteries". ***Lab on a Chip***, 2022, 22, 2185-2191. **(Co-first author)**
- Mengfei Zhu#, **Chaoyu Yang**#, Tianli Han, Chaoquan Hu, Yong Wu, Ting Si* and Jinyun Liu*. "A graphene oxide scaffold-encapsulated microcapsule for polysulfide-immobilized long life lithium–sulfur batteries". ***Materials Chemistry Frontiers*** , 2022, 5 (12), 4565-4570. **(Co-first author)**
- Fengjing Zhong#, **Chaoyu Yang**# , Qiang Wu, Shiyu Wang, Lei Cheng, Pankaj Dwivedi, Zhiqiang Zhu*, Ting Si and Ronald X Xu. "Preparation of pesticide-loaded microcapsules by liquid-driven coaxial flow focusing for controlled release". ***International Journal of Polymeric Materials and Polymeric Biomaterials***, 2019: 1-8. **(Co-first author)**
- Xiaocheng Wang, Yunru Yu, **Chaoyu Yang**, Changmin Shao, Keqing Shi, Luoran Shang*, Fangfu Ye*, Yuanjin Zhao*Microfluidic 3D printing responsive scaffolds with biomimetic enrichment channels for bone regeneration". ***Advanced Functional Materials***, 2021, 13 (14), 16677-16687.
- Xiaocheng Wang, Yunru Yu, **Chaoyu Yang**, Luoran Shang*, Yuanjin Zhao*, Xian Shen*. "Dynamically responsive scaffolds from microfluidic 3D printing for skin flap regeneration". ***Advanced Science***, 2022, 2201155
- Xiaocheng Wang, **Chaoyu Yang**, Yunru Yu and Yuanjin Zhao*. "In situ 3D bioprinting living photosynthetic scaffolds for autotrophic wound healing". ***Research***,2022.
- Zhiqiang Zhu, Fangsheng Huang, **Chaoyu Yang**, Ting Si* and Ronald X Xu*. "On-demand Generation of Double Emulsions Based on Interface Shearing for Controlled Ultrasound Activation". ***ACS applied materials & interfaces***, 2019, 11 (43), 40932-40943
- Yunru Yu, Xiaocheng Wang, **Chaoyu Yang**, and Luoran Shang*. "Twisted fiber batteries for wearable electronic devices". ***Smart Materials in Medicine***, 2022: 3, 1-3.
- Liang Shi, Jie Cao, Chaoyu Yang, Xiaocheng Wang, Keqing Shi*, Luoran Shang*. "Hierarchical magnetic nanoparticles for highly effective capture of small extracellular vesicles". ***Journal of Colloid and Interface Science***, 2022, 615: 408-416.
- Ye J, **Yang C Y**, Gan Q, et al. "A portable fluorescence microscopic imaging system for cholecystectomy". ***International Society for Optics and Photonics.*** , 9696: 96960M. **Conference Publications**

Patents

- Ting Si, **Chaoyu Yang**, Qiao Wu, Zhiqiang Zhu, "Device and method for producing drug-loaded microcapsules", Chinese Invention Patent, SN: CN106924046A, 2017.07.
- **Yang C Y**, "Structure of coaxial needle for micro-encapsulation instrument", Chinese Invention Patent, SN: CN108852848A, 2018.11.

- Si T, **Yang C Y**, "Spraying device for fine atomization", Chinese Invention Patent, SN: CN108031579A, 2018.01.
- Si T, Huang F S, Wu Q, Zhu Z Q, **Yang C Y**, "Device and method for active droplet fabrication with embedding piezoelectricstack disturbance", Chinese Invention Patent, SN: CN107013440A, 2017.08.
- Si T, Huang F S, Wu Q, Zhu Z Q, **Yang C Y**, "Device and method for active droplet fabrication based on liquid driven flow-focusing jet disturbance", Chinese Invention Patent, SN: CN107029640A, 2017.08.
- Si T, Huang F S, Wu Q, Zhu Z Q, **Yang C Y**, "Device and method for active droplet fabrication based on piezoelectric buzzer disturbance", Chinese Invention Patent, SN: CN107070293A, 2017.08.
- Si T, Huang F S, Wu Q, Zhu Z Q, **Yang C Y**, "Device and method for active droplet fabrication based on piezoelectric tube disturbance", Chinese Invention Patent, CN: 107100831A, 2017.08.

Conferences Attended

27th Dec. 2019 The 1st Annual Conference of Graduate School of Engineering Science, University of Science and Technology of China, Anhui, China.

6th-9th Dec. 2019 Microfluidic Technology Application Innovation Forum -2019, Xiamen University, Xiamen, China.

25th-28th Aug. 2019 Chinese Conference of Theoretical and Applied Mechanics (CCTAM)-2019, Hangzhou International Conference Center, Hangzhou, China.

11th-14th Jul. 2019 Experimental Fluid Mechanics-2019, Tianjin Shehuishan International Conference Center, Tianjin, China.

9th-11th Dec. 2017 Microfluidic Technology Application Innovation Forum -2017, Tsinghua University, Shenzhen, China.

2nd-5th Jul. 2017 International Symposium of Biomedical Micro/Nanotechnology (ISBM)-2017, University of Science and Technology of China, Hefei, China.

13rd-16th Aug. 2017 Chinese Conference of theoretical and Applied Mechanics (CCTAM)-2017, Beijing International Conference Center, Beijing, China.

20th-22nd Apr. 2017 China Biomedical Engineering Conference-2017, Beijing Conference Center, Beijing, China.

2nd-4th Dec. 2016 Frontier Symposium on Lab-on-a-Chip, Shanghai Nanxiang Business Center, Shanghai, China.

Presentations & Postors

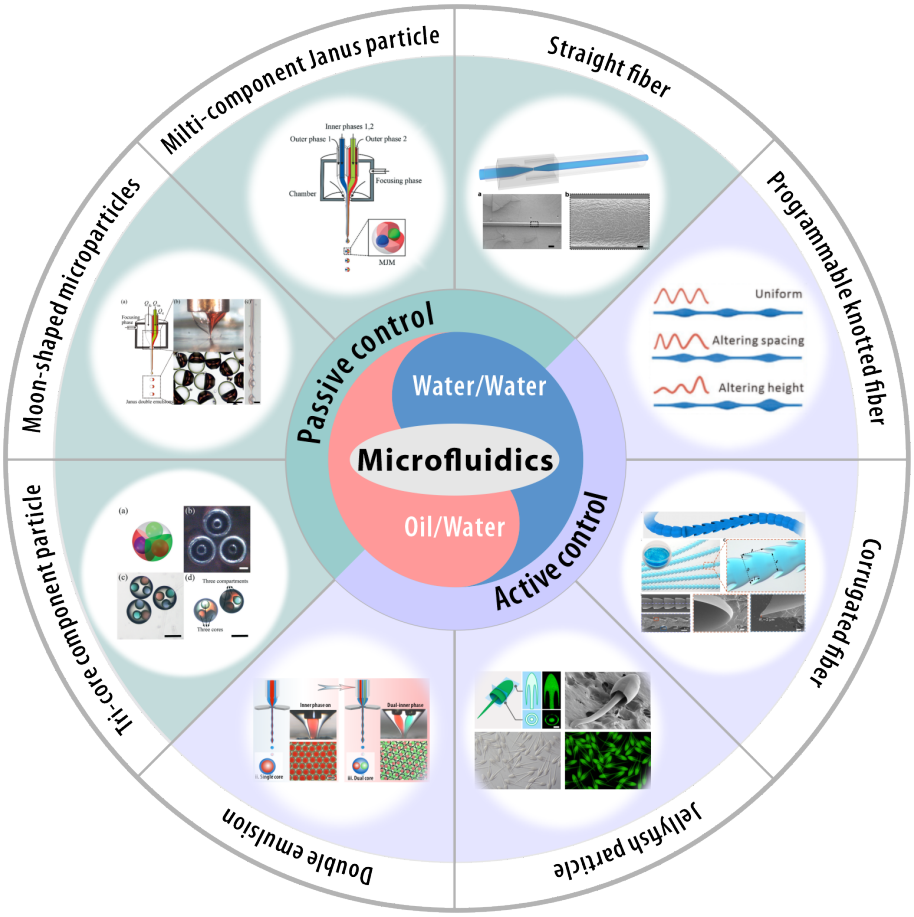
27th Dec. 2019 "Research on High-throughput On-demand monodispersed droplet generation". **Poster Presentation** The 1st Annual Conference of Graduate School of Engineering Science, University of Science and Technology of China, Anhui, China.

6th-9th Dec. 2019 "Investigation on High-throughput Droplet Preparation Technology upon Actuation". **Poster Presentation** in Microfluidic Technology Application Innovation Forum -2019, Xiamen University, Xiamen, China.

25th-28th Aug. 2019 "Multiplex coaxial flow-focusing for producing multicompartment Janus microcapsules". **Oral Presentation** in Chinese Conference of theoretical and Applied Mechanics (CCTAM)-2019, Hangzhou International Conference Center, Hangzhou, China.

11th-14th Jul. 2019 "Experiment on Response of Axisymmetric Flow-focusing upon Actuation". **Oral Presentation** in Experimental Fluid Mechanics-2019, Tianjin Shehuishan International Conference Center, Tianjin, China.

2nd-5th Jul. 2017 "Multiplex coaxial flow-focusing for producing multicompartment Janus microcapsules". **Poster Presentation** in International Symposium of Biomedical Micro/Nanotechnology (ISBM)-2017, University of Science and Technology of China, Hefei, China.


Milti-component Janus particle
Straight fiber
Programmable knotted fiber
Corrugated fiber
Jellyfish partile
Double emulsion
Tri-core component particle
Moon-shaped microparticles
Passive control
Active control
Water/Water
Microfluidics
Oil/Water
Uniform
Altering spacing
Altering height