CURRICULUM VITAE

Geng Yuhao
Research Fellow
School of Materials Science and Technology

Academic Qualifications

2022	PhD (Chemical Engineering and Technology), Tsinghua University, China
2017	BSc (Chemical Engineering and Industrial Bioengineering), Tsinghua University, China
2017	BSc (Business Management, Dual degree), Tsinghua University, China

Professional Qualifications / Memberships

2018 - Present	The Chemical Industry and Engineering Society of China	China

Summary of Working Experience

Oct 2022 - Present Research Fellow, School of Materials Science and Engineering, NTU

Academic Honours and Awards

Year	Academic Honour / Award
2022	Doctoral Forum Best Speaker Award, 14th GCCES
2022	Excellent Doctoral Thesis, Tsinghua University
2022	Outstanding Doctoral Graduate of Beijing, China
2022	Zijing Tsinghua Scholar, China
2021	Youth Presentation Award at the UK-China International Particle Technology Forum Ⅷ
2020	Excellent Poster Award, 11th CCPT

RESEARCH SUMMARY

Key Areas of Research

- Microfluidics technology
- Functional complex coacervate
- Micro-reaction system & functional nanomaterials

Research Funding

<For Co-PI grants, or where grants are from larger block grants to NTU, pls indicate both share of grant and total grant amount, e.g. "300,000 (600,000)".>

Internal Grants

Role	Year	Project Title	Amount (S$)	Source of Grant
Awardee	2023	WiEST Development Grant	3,000	J&K Gouw Foundation, Micron, College of Engineering and College of Science

Publications *(in reverse chronological order, starting with the most recent)*

Bold	Denotes main author (the person who has made the most scientific/ intellectual contribution)
Underline	Denotes 1st academic author (only one 1st faculty author for each publication and this refers to a faculty and not a student. Faculty can be the 1st academic author if he is the main supervisor or co-supervisor. Being the 1st academic author, faculty name should be preceded by student/ research staff (can be more than one) and that faculty's student/research staff is the first author.)
^	Denotes corresponding author
~	Denotes PI/ Supervisor/Team Lead
§	Denotes equal contributions of authorship

Note:

- *The symbols only apply to FAR candidate (except for the students*/researcher**/ other student and research staff+)*
- *Schools may adopt part of the legend for publications deemed relevant, and advise the FAR candidate to use the symbols that are appropriate and relevant for their disciplines. If in doubt, please check with FAR Secretariat.*

Journal Papers

2023

1. **Wu, X.**; Liu, H.; Geng, Y.; Liu, X.; Wu, G.^; Xu, J^~. Interface-Engineered Molybdenum Disulfide/Porous Graphene Microfiber for High Electrochemical Energy Storage. *Energy Storage Materials* **2023**, *54*, 30–39. https://doi.org/10.1016/j.ensm.2022.10.012.
2. **Huang, X.**; Geng, Y.; Liu, H.; Chen, Z.^; Xu, J.^~ Research Progress on New Functional Nanoparticles Prepared by Microfluidic. *CIESC Journal* **2023**, *74* (1), 355–364. https://doi.org/10.11949/0438-1157.20220935.

2022

3. **Geng, Y.**; Guo, J.; Wang, H.; Ling, S. D.; Chen, Z.; Chen, S.^; Xu, J. ^~ Large-Scale Production of Ligand-Engineered Robust Lead Halide Perovskite Nanocrystals by a Droplet-Based Microreactor System. *Small* **2022**, *18* (19), 2200740. https://doi.org/10.1002/smll.202200740.
4. **Geng, Y.**; Guo, J.; Ling, S. D.; Wu, X.; Liu, H.; Chen, Z.; Chen, S.^; Xu, J. ^~ A Nano-Liter Droplet-Based Microfluidic Reactor Serves as Continuous Large-Scale Production of Inorganic Perovskite Nanocrystals. *Sci. China Mater.* **2022**, *65* (10), 2746–2754. https://doi.org/10.1007/s40843-022-2052-4.
5. **Liu, H.**; Wu, X.; Geng, Y.; Li, X.; Xu, J. ^~ Microfluidic-Oriented Synthesis of Enriched Iridium Nanodots/Carbon Architecture for Robust Electrocatalytic Nitrogen Fixation. *Green Energy & Environment* **2022**, S2468025722001327. https://doi.org/10.1016/j.gee.2022.09.001.

2021

6. **Zhao, X.** [§]**; Geng, Y.** [§]**;** Tian, Z.; Xu, J. ^~ Application of CdSe@ZnS Quantum Dot Fluorescence Sensor in Detection of Copper Ion Pollution in Water. *CIESC Journal* **2021**, *72* (2), 1142–1148. https://doi.org/10.11949/0438-1157.20200324.
7. **Cheng, Y.**; Ling, S. D.; Geng, Y.; Wang, Y.^; Xu, J. ^~ Microfluidic Synthesis of Quantum Dots and Their Applications in Bio-Sensing and Bio-Imaging. *Nanoscale Adv.* **2021**, *3* (8), 2180–2195. https://doi.org/10.1039/D0NA00933D.

2020

8. **Geng, Y.**; Ling, S.; Huang, J.; Xu, J. ^~ Multiphase Microfluidics: Fundamentals, Fabrication, and Functions. *Small* **2020**, *16* (6), 1906357. https://doi.org/10.1002/smll.201906357.
9. **Wang, C.** [§]**; Geng, Y.** [§]; Sun, Q.; Xu, J.^~; Lu, Y. ^~ A Sustainable and Efficient Artificial Microgel System: Toward Creating a Configurable Synthetic Cell. *Small* **2020**, *16* (51), 2002313. https://doi.org/10.1002/smll.202002313.
10. **Geng, Y.**; Huang, J.; Tan, B.; Xu, Y.; Li, P.; Xu, J. ^~ Efficient Synthesis of Dodecylbenzene Sulfonic Acid in Microreaction Systems. *Chemical Engineering and Processing - Process Intensification* **2020**, *149*, 107858. https://doi.org/10.1016/j.cep.2020.107858.
11. **Ling, S. D.**; Geng, Y.; Chen, A.; Du, Y. ^~; Xu, J. ^~ Enhanced Single-Cell Encapsulation in Microfluidic Devices: From Droplet Generation to Single-Cell Analysis. *Biomicrofluidics* **2020**, *14* (6), 061508. https://doi.org/10.1063/5.0018785.

2019

12. **Huang, J.**; Geng, Y.; Wang, Y.; Xu, J. ^~ Efficient Production of Cyclopropylamine by a Continuous-Flow Microreaction System. *Ind. Eng. Chem. Res.* **2019**, *58* (36), 16389–16394. https://doi.org/10.1021/acs.iecr.9b02438.
13. **Zhang, S.**; Yan, H.; Geng, Y.; Wang, K.; Xu, J. ^~ Equilibrium Morphology of Gas–Liquid Janus Droplets: A Numerical Analysis of Buoyancy Effect. *Chinese Journal of Chemical Engineering* **2018**, *26* (10), 2121–2126. https://doi.org/10.1016/j.cjche.2018.06.007.
14. **Ge, X.-H.**; Geng, Y.-H.; Chen, J.; Xu, J.-H. ^~ Smart Amphiphilic Janus Microparticles: One-Step Synthesis and Self-Assembly. *ChemPhysChem* **2018**, *19* (16), 2009–2013. https://doi.org/10.1002/cphc.201700838.

2018

15. **Geng, Y.-H.**; Ge, X.; Zhang, S.-B.; Zhou, Y.-W.; Wang, Z.-Q.; Chen, J.^; Xu, J.-H. ^~Microfluidic Preparation of Flexible Micro-Grippers with Precise Delivery Function. *Lab Chip* **2018**, *18* (13), 1838–1843. https://doi.org/10.1039/C8LC00293B.

2017

16. **Zhang, S.-B.**; Ge, X.-H.; Geng, Y.-H.; Luo, G.-S.; Chen, J.; Xu, J.-H. ^~ From Core-Shell to Janus: Microfluidic Preparation and Morphology Transition of Gas/Oil/Water Emulsions. *Chemical Engineering Science* **2017**, *172*, 100–106. https://doi.org/10.1016/j.ces.2017.06.031.
17. **Ge, X.**; Geng, Y.; Zhang, Q.; Shao, M.; Chen, J.; Luo, G.; Xu, J. ^~ Four Reversible and Reconfigurable Structures for Three-Phase Emulsions: Extended Morphologies and Applications. *Sci Rep* **2017**, *7* (1), 42738. https://doi.org/10.1038/srep42738.

Working Papers / Pipeline

1. **Yuhao Geng**[§] , Haoyang Hu[§] , Yongqi Jia, Xintong Huang, Tian Yang, Runzhe Liang, Zhuo Chen, Zhihong Yuan*, Jianhong Xu*, Synthesis of $CsPbBr_3$ in Micro Total Reaction System: Fast Operation Space Mapping and Subsecond Growth Process Monitoring, [J]. *Small Methods*, 2023. Under Review.

2. **Geng Yuhao**, Preparation of Inorganic Halide Perovskite Nanocrystals in Micro-reaction Systems, [M]. Tsinghua University Press, 2023. In preparation.
3. **Geng Yuhao**, Yu Jing^~, Progress in the Construction of Functional Complex Coacervate Systems Using Microfluidics. In preparation.

Innovation

Patents Filed

- Lu, Y.; Wang, C.; Xu, J.; **Geng, Y.** A Method for Improving Protein Synthesis in Cell-Free Systems. CN111926029A.

Patents Granted

- Xu, J.; Huang, J.; **Geng, Y**. A Continuous Preparation Method of Cyclopropylamine. CN109836334B.
- Xu, J.; **Geng, Y.**; Huang, J. A Method for Synthesizing Dodecyl Benzene Sulfonic Acid in a Circulating Microreactor. CN109912462A.