

JIANHAO QIAN

University of Science and Technology of China (USTC), Hefei, Anhui, China

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EDUCATION

- University of Science and Technology of China** (Project 985) *September 2019 - Present*
Ph.D. in Mechanics
Advisors: Prof. Fengchao Wang, Prof. Hengan Wu
- Dalian University of Technology** (Project 985) *September 2015 - June 2019*
B.S. in Mechanics

RESEARCH INTERESTS

gas-solid interaction; free molecular flow; Knudsen theory; solution diffusion; molecular separation

SKILLS

- Simulation and Analysis:** LAMMPS, CP2K, Gaussian 16, POTFIT, Python
- Experimental Techniques:** 2D Material Transfer, Lithography, Atomic Layer Deposition, Reactive Ion Etching, Wet Etching, Atomic Force Microscopy, Scanning Electron Microscopy, Keithley 2636B

HONORS AND AWARDS

- 2019: Grand Prize** at the 13th International Nanoscience Student Conference
- 2021: National Scholarship**, the highest honor for university students in China, awarded to only 0.2% of applicants
- 2023: Best Oral Presentation Award** at the 3rd National Forum of PhD Students on Mechanics, China's top conference for doctoral students in the field, only 22 students nationwide won this award.

EXPERIENCE

- 2021-2022** President of USTC Photography Club

PUBLICATIONS

(# denotes equal contribution, * denotes the corresponding author)

- 7 **Qian, J.**; Wu, H.*; Wang, F.* A generalized Knudsen theory for gas transport with specular and diffuse reflections. *Nat. Commun.* 2023, accepted
- 6 Wang, R.#; **Qian, J.#**; Chen, X.; Low, Z.-X.*; Chen, Y.; Ma, H.; Wu, H.-A.; Doherty, C. M.; Acharya, D.; Xie, Z.; Hill, M. R.; Shen, W.; Wang, F.*; Wang, H.* Pyro-layered heterostructured nanosheet membrane for hydrogen separation. *Nat. Commun.* 2023, 14 (1), 2161.
- 5 **Qian, J.**; Wu, H.*; Wang, F.* Molecular geometry effect on gas transport through nanochannels: Beyond Knudsen theory. *Appl. Surf. Sci.* 2023, 611, 155613.
- 4 Wang, F.; **Qian, J.**; Fan, J.; Li, J.; Xu, H.; Wu, H.* Molecular transport under extreme confinement. *Sci. China Phys. Mech. Astron.* 2022, 65 (6), 264601.
- 3 Li, Y.#; Yu, Y.#; **Qian, J.**; Wu, H.*; Wang, F.* Anomalous ion transport through angstrom-scale pores: Effect of hydration shell exchange on ion mobility. *Appl. Surf. Sci.* 2021, 560, 150022.

- 2 **Qian, J.**; Li, Y.; Wu, H.*; Wang, F.* Surface morphological effects on gas transport through nanochannels with atomically smooth walls *Carbon* 2021, 180, 85–91.
- 1 Yan, Y.#; Zhou, X.#; Feng, S.#; Lu, Y.#; **Qian, J.**; Zhang, P.; Yu, X.; Zheng, Y.; Wang, F.; Liu, K.; Lin, S.* Direct current electricity generation from dynamic polarized water–semiconductor interface *J. Phys. Chem. C* 2021, 125 (26), 14180–14187.