YANG SHEN

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EDUCATION

Tsinghua University *2021-current*
Ph.D. student, School of Aerospace Engineering
Overall GPA: 3.98/4.00 (top 10%)
Research issues: multiscale electrothermal simulation and optimization of GaN HEMTs

Tsinghua University *2017-2021*
Bachelor degree, School of Aerospace Engineering
Overall GPA: 3.65/4.00 (top 20%)
Thesis: study on thermophysical properties of aviation kerosene RP-3 at supercritical pressures

EXPERIENCE

Tsinghua University 2022.9 - 2023.1
Teaching Assistant *Beijing, China*

· Assisted in the instruction of an engineering thermodynamics course.

Beijing Computational Science Research Center (CSRC) 2020.7 - 2020.9
Intern *Beijing, China*

· Sovled regularized 13-moment equations for rarefied gas flow.

Institute of Fluid Mechanics, Tohuku University 2019.7 - 2019.9
Intern *Sendai, Japan*

· Applied inverse analysis to investigate the concentration-dependent diffusion coefficient in ethanol-water systems.

TECHNICAL STRENGTHS

Programming & scientific computing	Anaconda-Python (4 years+), C/C++
Phonon Monte Carlo simulation	Python with MPI and Numba, etc.
Device electrothermal simulation	Comsol, Sentaurus TCAD
Usage and configuration of computing platforms	Linux
Typesetting document	Latex

AWARDS AND RECOGNITIONS

Qinghua Du scholarship (2022)
Buxuan Wang-Zengyuan Guo second excellent poster award on national heat and mass transfer conference (2022)
Scholarship for future scholar, Tsinghua University (2021)
Excellent paper award on 21st national conference on combustion and heat & mass Transfer (2021)
Excellent graduation thesis of SAE, Tsinghua University (2021)
Excellent academic scholarship, Tsinghua University (2019, 2020)

SCI-INDEXED PUBLICATIONS

1. Y. Shen, X.S. Chen, L. Wei, B.Y.Cao. Two-Temperature Principle for Self-Heating Induced Electrical Degradation and Reliability of GaN HEMTs. In preparation for IEEE Electron Device Letters.
2. Y. Shen, H.A. Yang, B.Y. Cao. Near-junction phonon thermal spreading in GaN HEMTS: a comparative study of simulation techniques by full-band phonon Monte Carlo method. International Journal of Heat and Mass Transfer, 2023, accepted.
3. Y. Shen, X.S. Chen, Y.C. Hua, H.L. Li, L. Wei, B.Y. Cao. Bias dependence of non-Fourier heat spreading in GaN HEMTs. IEEE Transactions on Electron Devices, 2022, 70(2):409-417.
4. Y. Shen, Y.C. Hua, H.L. Li, S.L. Sobolev, B.Y. Cao. Spectral thermal spreading resistance of wide-bandgap semiconductors in ballistic-diffusive regime. IEEE Transactions on Electron Devices, 2022, 69(6): 3047-3054
5. Y. Shen, Y.B. Liu, B.Y. Cao. C4+ surrogate models for thermophysical properties of aviation kerosene RP-3 at supercritical pressures. Energy & Fuels, 2021, 35(9): 7858-7865
6. Z.K. Liu, Y. Shen, H.L. Li, B.Y. Cao, Observation of ballistic-diffusive thermal transport in GaN transistors using thermoreflectance thermal imaging. Rare Metals, 2023, accepted.
7. H.L. Li, Y. Shen, Y.C. Hua, S.L. Sobolev, B.Y. Cao. Hybrid Monte Carlo-diffusion studies of modeling self-heating in ballistic-diffusive regime for GaN HEMTs. Journal of Electronic Packaging-Transactions of the ASME, 2023, 145: 011203