

Shixian Liu



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Research Interests: Micro- and Nanoscale Heat Transfer
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EDUCATION

Bauman Moscow State Technical University, <i>Ph.D. Candidate</i>	2023.9 – Present
• Thermal Physics and Theoretical Heat Engineering (CSC International Cooperation Program)	
Bauman Moscow State Technical University, <i>M.Sc.</i>	2021.9 - 2023.7
• Nuclear Power and Thermal Physics (CSC International Cooperation Program)	
Moscow Power Engineering Institute, <i>B.Sc.</i>	2019.9 - 2021.7
• Nuclear Power and Thermal Physics (CSC Outstanding Undergraduate International Exchange Program)	
North China Electric Power University, <i>B.Sc.</i>	2017.9 - 2021.7
• Nuclear Engineering and Nuclear Technology	

ACADEMIC ACHIEVEMENTS

Journal Publications:

1. Liu S., Zhang G., Yin F., Barinov A.A., Khvesuk V.I., Yang N. Temperature Dependence of Specific Heat Capacity of Nanostructures via Neural Evolution Potential. *J. Appl. Phys.*, 2025. [Under Review]
2. Liu S.[#], Zong Z.[#], Yin F., Khvesuk V.I., Yang N. Quantifying Particle and Wave Effects in Phonon Transport of Pillared Graphene Nanoribbons. *Int. J. Therm. Sci.*, 2025, **217**, 110067. [Q1] [IF 5.0]
3. Liu S., Khvesuk V.I. Temperature Fluctuations in Quantum Dots: Insights from a T3/2 Heat Capacity Model. *Phys. Lett. A*, 2025, **534**, 130261. [Q2] [IF 2.6]
4. Liu S., Yin F., Khvesuk V.I. Investigating Anisotropic Three-Phonon Interactions in Graphene’s Thermal Conductivity Using Monte Carlo Method. *Int. J. Thermophys.*, 2025, **46**(2), 22. [Q2] [IF 2.9]
5. Liu S., Barinov A.A., Yin F., Khvesuk V.I. Determination of Thermal Properties of Unsmooth Si Nanowires. *Chin. Phys. Lett.*, 2024, **41**(1), 016301. [Q1] [IF 4.2]
6. Liu S., Yin F., Melikhov V.I., Melikhov O.I. Validation of the STEG code using experiments on Two-Phase flow across horizontal tube bundles. *Nucl. Eng. Des.*, 2022, **399**, 112048. [Q1] [IF 2.1]

Program Patents:

1. **Program for Calculating Phonon Dispersion and Heat Capacity in Graphene and GNRs**
Liu S. & Barinov A.A. RU2024661690 Matlab 2024.05.21
2. **Program for Solving the Dispersion Relations of Elastic Waves in Nanowires**
Liu S. & Barinov A.A. RU2023615635 Matlab 2023.04.14

Academic Conferences:

- **2025: 18-AVTIFG** (Moscow, Russia)
- **2024: VI-MMMSEC** (Moscow, Russia); **8-WTT** (Lanzhou, China); **17-MIF** (Minsk, Belarus)
- **2023: 66-MIPT, V-MMMSEC** (Moscow, Russia); **17-AVTIFG** (Novosibirsk, Russia)
- **2022: RNKT-8** (Moscow, Russia)

TECHNICAL SKILLS

Computational Skills

- **Programming Languages:** Matlab, Python, Fortran
- **Simulation and Computational Tools:** VASP, QE, GULP, phono3py, ShengBTE, NEP, GPUMD etc.