

BIOGRAPHY

Jun Zheng received the B.E. and Ph.D. degrees in Electrical Engineering from Southwest Jiaotong University (SWJTU), Chengdu, China. She is currently working at State Key Laboratory of Rail Transit Vehicle System at SWJTU. In 2013, She was awarded the Endeavour Research Fellowship of Australian Government as a Visiting Honorary Fellow at the Institute for Superconducting & Electronic Materials (ISEM) at the University of Wollongong (UOW). From 2015 to 2016, she visited and worked again at the ISEM at the UOW. She has presided 14 research projects including the National Hi-Tech R&D Program, the National Science Foundation of China, the Science and Technology Innovation Talents Project of Sichuan Province, etc.

Up to now, she has authored or co-authored over 100 scientific papers. She has granted 37 China patents, 2 US patents and 1 Germany patent. She joins in the editorial board of three academic journals (*Actuators, Superconductivity, and Frontiers in Electronic Materials*). In addition, she has been invited as the member of the Organizing Committee of the 9th Chinese Symposium on Magnetic Suspension Technology, the Program Committee of International Symposium on Intelligent Technology for Future Transportation (ITFT2024), the Experts Committee of the National Magnetic Materials and Devices, the IEEE China Council Council on Superconductivity Chapter, and the Scientific Program Committee of the 2nd International Electronic Conference on Actuator Technology.

RESEARCH EXPERIENCES (13 PI AND 8 PARTICIPANT)

Here is the list of selected PI projects in the 5 past years.

1. *Damping characteristics of high-temperature superconducting levitator and state recognition of its typical failure states under thermal-vibration coupling*
Principal Investigator, the National Science Foundation of China (NSFC), 2024.01-2027.12
2. *The influence and regulation of the inhomogeneous distribution of superconductor's flux pinning centers on practical electromagnetic performances*
Principal Investigator, Sichuan Provincial Central Government Special Fund for Guiding Local Science and Technology Development, 2022.08-2023.08
3. *Research on superconducting levitation, guidance and propulsion integration and its on-board cryogenic electromagnetic system*
Principal Investigator, the Science and technology Innovation Talents Project of Sichuan Province, 2022.01-2023.12
4. *Fundamental research on the air dynamics-magnetic force-thermal effect of the low-pressure tube superconducting Maglev*
Principal Investigator, the Introduction Project of High-level oversea Talents, Ministry of Science and Technology of China, 2021.01-2022.12
5. *Studies on temperature rise characteristics of bulk superconductor under the magnetic field irregularity excitation of magnet tracks and the effect on high-speed maglev applications*
Principal Investigator, the National Science Foundation of China (NSFC), 2021.01-2024.12
6. *HTS maglev engineering cryogenic system technology*
Principal Investigator, Enterprise project, 2021.01-2022.12
7. *Cooperation research of simulation, design, and optimization of the air dynamics-magnetic force-thermal effect of the low-pressure tube superconducting Maglev*
Principal Investigator, the Science & Technology Program in Chengdu City, 2020.01-2021.12
8. *Experiment and theory of the ETT-HTS Maglev dynamics*
Principal Investigator, the Science & Technology Key Program in Sichuan Province, 2019.01-2020.01

AWARDS AND HONORS

2022	Outstanding Associate Editor, Frontiers in Electronic Materials
2021	Best Paper Award, the Annual Conference of National Electrical Theory and New Technology, Jul. 30-Aug. 1, 2021
2020	Best Invited Speech Award, The 3 rd symposium on Applied Superconductivity of IEEE China Council of Superconductivity Chapter (CCCSC), Dec. 20-21, 2020.
2019	High-Level Oversea Talent in Sichuan Province
2018	Reserve Candidate for Academic and Technological Leaders in Sichuan Province
2016	13 th Tien Yow Jeme Railway Science and Technology Special Awards – the Youth Award
2015	TANGLIXIN Awards for Merit Scholars of Southwest Jiaotong University
2013	Endeavour Research Fellowship of Australia Government

PRESENTATIONS (*in the 5 past years*)

1. The 11th Asian Conference on Applied Superconductivity and Cryogenics / 3rd Asian International Cryogenic Materials Conference (ACASC-Asian ICMC 2023), Shanghai, China, Oct. 29-Nov. 1, 2023. **(Oral)**
2. International Conference on Frontier Materials 2023 (ICFM2023), China, Oct. 13-17, 2023. **(Invited Oral)**
3. The 11th China Symposium of Magnetic Levitation Technology and Vibration Control (CSMLTVC11), Changsha, China, 4-7 August, 2023. **(Invited Oral)**
4. 2021 Symposium of Development on Applied Superconductivity and Electromagnetic Devices, Virtual, 23 December 2021. **(Invited Oral)**
5. The 12th International Workshop on Processing and Application of Superconducting Bulk Materials (PASREG 2021), Virtual, Shanghai, Nov. 11-14, 2021. **(Invited Oral, Session Chair)**
6. the Annual Conference of National Electrical Theory and New Technology in 2021, Haerbin, China, July 30-August 1, 2021. **(Oral)**
7. The 7th international workshop on Numerical Modelling of High Temperature Superconductors, Virtual (Nancy, France), 22nd-23rd June 2021.
8. The 3rd symposium on Applied Superconductivity of IEEE China Council of Superconductivity Chapter (CCCSC), Huzhou, China, Dec. 20-21, 2020. **(Invited Oral)**
9. 2020 IEEE International Conference on Applied Superconductivity and Electromagnetic Devices (ASEMD), Virtual, Tianjin, China, October 16-18, 2020. **(Oral)**
10. The 15th National Symposium on Superconductivity, Wuhan, June 3-5, 2019. **(Session Chair, Oral)**
11. The 12th International Conference on New Theories, Discoveries, Applications of Superconductors and Related Materials, Oxford, UK, April 1-5, 2019. **(Session Chair, Oral)**

PUBLICATIONS

Here is the list of the selected papers in the 5 past years.

- [1] **Jun Zheng***, Sanchun Nie, Hailian Jing, Yuchen He, Mingming Li, Yadong Ma and Zhentao Ding,

- Potential and Electro-mechanical Coupling Analysis of a Novel HTS Maglev System Employing DoubleSided Homopolar Linear Synchronous Motor, *IEEE Transactions on Intelligent Transportation Systems*. May 2024. (Early Access)
- [2] Peng Pang, **Jun Zheng***, Yonghai Zhao, Le Xu, Chenling Xian. Thermal-vibration correlation study for high-temperature superconducting maglev intelligent monitoring based on back propagation neural network analysis, *Superconductor Science and Technology*, 37: 025011, January 2024.
- [3] Yanxing Cheng, Li Wang, Huan Huang, Xiaoning Liu, **Jun Zheng***. Theoretical characterization and its application of electromagnetic anisotropy in high-temperature superconducting bulks under rotated postures, *Superconductor Science and Technology*, 37: 065007, May 2024.
- [4] Hanlin Zhu, **Jun Zheng***, Shangqiang Fu, Huan Huang, Haitao Li, Numerical Mutual Inductance Model Based on Spatial Fourier Decomposition for Racetrack Coils in EDS System, *IEEE Transactions on Energy Conversion*, May 2024. (Early Access)
- [5] Wuyang Lei, Zigang Deng*, **Jun Zheng**. A non-contact measuring method for the joint size and geometry irregularity of Halbach permanent magnet guideway in the high-temperature superconducting maglev system, *Measurement*, 227: 114306, 15 March 2024.
- [6] **Jun Zheng***, Peng Pang, Peng Wen. Working temperature threshold analysis for HTS maglev system based the novel thermal-dynamic levitation force coupling measurement device, *Measurement*, 220: 113364, October 2023.
- [7] **Jun Zheng***, Yeying Bao, Wuyang Lei, Xiaoning Liu, Yanxing Cheng, Compound effect of adjacent HTS bulks' anisotropy and inhomogeneity on maglev performances in an applied magnetic field, *Materials Today Communications*, 34: 105122, March 2023.
- [8] **Jun Zheng***, Zihan Wang, Shixin Zhang and Wuyang Lei. Vertical nonlinear damping experiments and identification of high temperature superconducting levitation above permanent magnet track. *IEEE Transactions on Instrumentation and Measurement*, 2023, DOI: 10.1109/TIM.2023.3280509.
- [9] Xuanbo Wang, **Jun Zheng***, Xu Zhang, Kehong Ren, Xiaoning Liu. Pumping sequence effect on levitation and guidance forces of YBCO bulks for evacuated tube transportation. *Cryogenics*, 133:103714, June 2023.
- [10]Xuanbo Wang, **Jun Zheng***, Yingyu Rao, Yong Zhang, Zigang Deng, Xiao Hu. Aerodynamic load analyses of less-emission HTS maglev train in evacuated tube transport system, *Frontiers in Energy Research*, Sec. Sustainable Energy Systems, volume 11, 2023.
- [11]Shi-Cheng He and **Jun Zheng***, "Analysis of Stray Magnetic Field of Superconducting Magnets inside Superconducting Electrodynamic Suspension Carriages," *2023 IEEE International Conference on Applied Superconductivity and Electromagnetic Devices (ASEMD)*, Tianjin, China, 2023, pp. 1-2.
- [12]Hong-Fu Shi, **Jun Zheng***, Yang Chen, Shi-Cheng He. Tube Design of Integrated EDS Evacuated Tube Transportation System, *2023 IEEE International Conference on Applied Superconductivity and Electromagnetic Devices (ASEMD)*, Tianjin, China, 2023, pp. 1-2.
- [13]Hengda Li, Hanlin Zhu, Huan Huang, Haitao Li, Zigang Deng, **Jun Zheng***, A new suppression strategy of pitching vibration based on the magnetic-electric-mechanical coupling dynamic model for superconducting EDS transport system, *Mechanical System and Signal Processing*, 188: 110039, 2023.
- [14]Hongfu Shi, Zhihao Ke, **Jun Zheng***, Yuqing Xiang, Kehong Ren, Peng Lin, et al., An Effective Method to Improve the Levitation-Propulsion Performance of Radial Permanent Magnet Electrodynamic Wheel for Maglev Car Application, *IEEE Transactions on Vehicular Technology*, 15 March 2023.
- [15]**Jun Zheng***, Minghui Wei, Siyi Quan, Yicheng Feng, Peng Wen, Review on thermal-related measurement methods for superconducting devices and prospect for high-speed maglev transportation application, *Superconductivity*, 3: 100020, 7 Sep. 2022.
- [16]Yicheng Feng, **Jun Zheng***, Zigang Deng, Wuyang Lei, Zili, Wang. Double-layer quasi-Halbach guideway with NdFeB and ferrite materials for HTS Maglev. *Journal of Alloys and Compounds*, vol 929, 167342, 25 December 2022.

- [17]Xu Zhang, **Jun Zheng***, Jianxin Liu, Jing Li, Weihua Zhang, Nan Chen, et al., High-temperature superconducting guidance force enhancement by a novel permanent magnet guideway for maglev curve negotiation, *Journal of Alloys and Compounds*, 902, 163809, 5 May 2022.
- [18]Hanlin Zhu, Huang Huan, **Jun Zheng***, Hongfu Shi, Yuqing Xiang, Kaiwen Li, A numerical calculation model of multi-magnet-array and 8-shaped null-flux coil for permanent magnet EDS vehicle system, *IEEE Transactions on Magnetics*, 58(5): 8300311, May 2022.
- [19]Yanxing Cheng, **Jun Zheng***, Huan Huang, Yeying Bao, Nan Chen, Zigang Deng. Levitation characteristics of high-temperature superconducting bulks of different orientations and arrays. *IEEE Transaction on Applied Superconductivity*, 32(6): 3601205, Sept. 2022.
- [20]Ye Hong, **Jun Zheng***, Zhichuan Huang, Jiwang Zhang, Dynamic response simulations of the HTS bulk over an actual permanent magnet guideway using different E - J relationships. *Journal of Superconductivity and Novel Magnetism*, 35:1049-1058, Online 28 Jan 2022.
- [21]**Jun Zheng***, Nan Chen, Weifeng Zhang, Zigang Deng, Modelling study on high temperature superconducting bulk's growth anisotropy effect on magnetization and levitation properties in applied magnetic fields, *Superconductor Science and Technology*, 34(3): 035011, Feb. 2021.
- [22]Yeying Bao, **Jun Zheng***, Ruixue Sun, Zigang Deng, Magnetic force characteristics enhancement by a novel permanent magnetic levitation (PML) analysis method for hybrid maglev, *Journal of Magnetism and Magnetic Materials*, 529: 167888, 6 March 2021.
- [23]Yanxing Cheng, **Jun Zheng***, Huan Hang, Zigang Deng, A reconstructed three-dimensional HTS bulk electromagnetic model considering J_c spatial inhomogeneity and its implementation in a bulks combination system, *Superconductor Science and Technology*, 34, 125017, 12 Nov 2021.
- [24]Yang Chen, Xu Zhang, **Jun Zheng***, Gino D' Ovidio, The Single-peak and "V" Shaped Combined Permanent Magnet Guideway for High-Temperature Superconducting Magnetic Levitation, *IEEE Transaction on Applied Superconductivity*, vol. 31, no 8, 3603104, Nov. 2021.
- [25]**Jun Zheng***, Ruixue Sun, Haitao Li, Xinxin Zheng and Zigang Deng, A manned hybrid maglev vehicle applying permanent magnetic levitation (PML) and superconducting magnetic levitation (SML), *IEEE Transactions on Applied Superconductivity*, vol. 30, no. 1, 3600107, Jan. 2020.
- [26]Yang Chen, **Jun Zheng***, Zigang Deng, Gino D' Ovidio, A "V" shaped magnet guideway evaluated for high temperature superconducting Maglev, *2020 IEEE International Conference on Applied Superconductivity and Electromagnetic Devices (ASEMD)*, Tianjin, China, October 16-18, 2020.
- [27]Z. Deng, **J. Zheng**, W. Wang, Y. Yuan, W. Lei, J. Zhao, et al., The New High-Temperature Superconducting Maglev Vehicle Developed in ASCLab, *2020 IEEE International Conference on Applied Superconductivity and Electromagnetic Devices (ASEMD)*, Tianjin, 2020.
- [28]Binjie Zhao, Zigang Deng, Zunxiang Hu, Yu Liu, Shuai Zhang and **Jun Zheng**, Levitation Force Characteristics of High-Temperature Superconducting Bulks in a High Magnetic Field, *IEEE Transactions on Applied Superconductivity*, vol. 30(4), pp.6800305, Jun 2020.
- [29]Haitao Li, Di Liu, Ye Hong, Jinbo Yu, **Jun Zheng** and Zigang Deng, Modeling and Identification of the Hysteresis Nonlinear Levitation Force in HTS Maglev System, *Superconductor Science and Technology*, vol. 33, pp. 054001, May 2020.