



謝文斌 副研究員

Wen-Pin Hsieh Associate Research Fellow with tenure

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研究領域：實驗高壓物理、地球物理、超快光學、實驗凝態物理

Research interests:

Experimental high pressure physics, Geophysics, Ultrafast optics,

Condensed matter physics

[學歷]

2011: 美國伊利諾大學香檳校區 物理博士

2005: 國立台灣大學 物理系碩士

2004: 國立台灣大學 物理系學士

[經歷]

2018/06- 迄今 中央研究院 地球科學研究所 長聘副研究員

2019/08- 迄今 國立台灣大學 地質科學系 合聘副教授

2018/08- 迄今 國立中央大學 地球科學系 兼任副教授

2013/10-2018/06 中央研究院 地球科學研究所 助研究員

2011/08-2013/10 美國史丹福大學及 SLAC 國家加速器實驗室 博士後研究員

2008/06-2011/07 美國伊利諾大學 研究助理

2007/08-2008/05 美國伊利諾大學 教學助理

[榮譽]

- 科技部吳大猷先生紀念獎 Ta-You Wu Memorial Award, Ministry of Science and Technology, 2019
- 中央研究院年輕學者研究著作獎 Academia Sinica Research Award for Junior Research Investigators, 2018

- 傑出人才發展基金會第六屆年輕學者創新獎 Young Scholars' Creativity Award, Foundation for the Advancement of Outstanding Scholarship, 2018
- 科技部優秀年輕學者研究計畫 Outstanding Junior Investigators Research Program, Ministry of Science and Technology, 2018-2021
- 中央研究院前瞻計畫 Career Development Award, Academia Sinica, 2017-2021
- 中央研究院重要研究成果 Significant Research Achievements of Academia Sinica, 2017, 2018
- Invited speaker, the 4th International Conference on Matter and Radiation at Extremes, 2019
- Invited speaker, the 26th International Conference on High Pressure Science and Technology, 2017
- Invited speaker, the 1st Asia-Pacific workshop on lithosphere and mantle dynamics, 2016
- Ovshinsky Student Travel Award, APS Division of Materials Physics, 2011
- Taiwan Merit Scholarship, National Science Council, Taiwan, ROC, 2006
- Graduate Thesis Award, The Physical Society of the Republic of China, 2006
- Dean's Award for the Best Master Thesis, College of Science, NTU, 2005

[著作]

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1. Wen-Pin Hsieh, B. L. Sheu, and Y. L. Wang, "Emission properties of a dual point emitter based on In-Bi alloy," *Appl. Phys. Lett.* **83**, 2277 (2003).
2. Wen-Pin Hsieh and Y. L. Wang, "Prolonged electron emission as a method to fabricate a stable and bright dual ion/electron point source," *Appl. Phys. Lett.* **87**, 194107 (2005).
3. Wen-Pin Hsieh*, B. Chen, J. Li, P. Keblinski, and David G. Cahill, "Pressure tuning of the thermal conductivity of the layered muscovite crystal," *Phys. Rev. B* **80**, 180302(R) (2009). (*Selected as Editor's Suggestion*)

4. Wen-Pin Hsieh*, Mark D. Losego, Paul V. Braun, Sergei Shenogin, Pawel Koblinski, and David G. Cahill, “Testing the minimum thermal conductivity model for amorphous polymers using high pressure,” *Phys. Rev. B* **83**, 174205 (2011).
5. Bin Chen, Wen-Pin Hsieh, David G. Cahill, Dallas Trinkle, and Jie Li, “Thermal conductivity of compressed H₂O to 22 GPa: A test of the Leibfried-Schlömann equation,” *Phys. Rev. B* **83**, 132301 (2011).
6. Wen-Pin Hsieh* and David G. Cahill, “Ta and Au(Pd) alloy metal film transducers for time-domain thermorefectance at high pressures,” *J. Appl. Phys.* **109**, 113520 (2011).
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7. Wen-Pin Hsieh*, Austin Lyons, Eric Pop, Pawel Koblinski, and David G. Cahill, “Pressure tuning of the thermal conductance of weak interfaces,” *Phys. Rev. B* **84**, 184107 (2011).
8. Gregory Hohensee, Wen-Pin Hsieh, Mark D. Losego, and David G. Cahill, “Interpreting picosecond acoustics in the case of low interface stiffness,” *Rev. Sci. Instrum.* **83**, 114902 (2012).
9. D. Allen Dalton, Wen-Pin Hsieh, Gregory Hohensee, David G. Cahill, and A. F. Goncharov, “Effects of mass disorder on the lattice thermal conductivity of MgO periclase: Implication for the deep Earth heat flow,” *Sci. Rep.* **3**, 2400 (2013).
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10. Wen-Pin Hsieh*, Peter Zaldan, M. Wuttig, Aaron Lindenberg, and Wendy L. Mao, “High pressure Raman spectroscopy of phase change materials,” *Appl. Phys. Lett.* **103**, 191908 (2013).
11. Wen-Pin Hsieh*, Mariano Trigo, David Reis, G. Artioli, Lorenzo Malavasi, and Wendy L. Mao, “Evidence for photo-induced monoclinic metallic VO₂ under high pressure,” *Appl. Phys. Lett.* **104**, 021917 (2014). *Highlighted in* <http://simes.stanford.edu/highlights/creation-of-a-novel-high-pressure-transient-states-new-light-on-the-insulator-to-metal-transition-in-vo2/>

After joining Academia Sinica

12. Wen-Pin Hsieh* and Yu-Hsiang Chien[†], “High pressure Raman spectroscopy of H₂O-CH₃OH mixtures,” *Sci. Rep.* **5**, 8532 (2015).
13. R. B. Wilson, Brent A. Apgar, Wen-Pin Hsieh, Lane W. Martin, and David G. Cahill, “Thermal conductance of strongly bonded metal-oxide interfaces,” *Phys. Rev. B* **91**, 115414 (2015).

14. Wen-Pin Hsieh*, “Thermal conductivity of methanol-ethanol mixture and silicone oil at high pressures,” *J. Appl. Phys.* **117**, 235901 (2015).
15. Wen-Pin Hsieh* and Frédéric Deschamps, “Thermal conductivity of H₂O-CH₃OH mixtures at high pressures: implications for the dynamics of icy super-Earths outer shells,” *J. Geophys. Res. Planets*, **120**, 1697 (2015).
16. Yun-Yuan Chang[†], Wen-Pin Hsieh*, Eh Tan, and Jiuhua Chen, “Hydration-reduced lattice thermal conductivity of olivine in Earth’s upper mantle,” *Proc. Natl. Acad. Sci. USA*, **114**, 4078 (2017).
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17. Wen-Pin Hsieh*, Frédéric Deschamps, Takuo Okuchi, and Jung-Fu Lin*, “Reduced lattice thermal conductivity of Fe-bearing bridgmanite in Earth’s deep lower mantle,” *J. Geophys. Res. Solid Earth*, **122**, 4900 (2017). (*Selected as a featured article in JGR*)
18. Zhen-Yu Juang, Chien-Chih Tseng, Yumeng Shi, Wen-Pin Hsieh, Sou Ryuzaki, Noboru Saito, Chia-En Hsiung, Wen-Hao Chang, Yenny Hernandez, Yu Han, Kaoru Tamada, and Lain-Jong Li*, “Graphene-Au nanoparticle based vertical heterostructures: a novel route towards high-ZT thermoelectric devices,” *Nano Energy* **38**, 385 (2017).
19. Wen-Pin Hsieh*, Frédéric Deschamps, Takuo Okuchi, and Jung-Fu Lin*, “Effects of iron on the lattice thermal conductivity of Earth’s deep mantle and implications for mantle dynamics,” *Proc. Natl. Acad. Sci. USA*, **115**, 4099 (2018).
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20. Keng-Hsien Chao[†] and Wen-Pin Hsieh*, “Thermal conductivity anomaly in (Fe_{0.78}Mg_{0.22})CO₃ siderite across spin transition of iron,” *J. Geophys. Res. Solid Earth*, **124**, 1388 (2019).
21. Jihoon Jeong, Xianghai Meng, Ann Rockwell, Seth Bank, Wen-Pin Hsieh, Jung-Fu Lin*, and Yaguo Wang*, “Picosecond transient thermoreflectance for thermal conductivity characterization,” *Nanoscale and Microscale Thermophysical Engineering* **23**, 211 (2019).
22. Daniel Olaya, Chien-Chih Tseng, Wen-Hao Chang, Wen-Pin Hsieh, Lain-Jong Li, Zhen-Yu Juang*, and Yenny Hernandez*, “Cross-plane thermoelectric figure of merit in graphene-C₆₀ heterostructures at room temperature,” *FlatChem* **14**, 100089 (2019).
23. Xianghai Meng, Tribhuwan Pandey, Jihoon Jeong, Suyu Fu, Jing Yang, Ke Chen, Akash Singh, Feng He, Xiaochuan Xu, Jianshi Zhou, Wen-Pin Hsieh, Abhishek K. Singh, Jung-Fu Lin*, and Yaguo Wang*, “Thermal conductivity enhancement in MoS₂ under extreme strain,” *Phys. Rev. Lett.*, **122**, 155901 (2019).

24. Frédéric Deschamps* and Wen-Pin Hsieh, “Lowermost mantle thermal conductivity constrained from experimental data and tomographic models,” *Geophys. J. Int.* **219**, S115 (2019).
25. Deniz P. Wong*, Masoud Aminzare, Ta-Lei Chou, Chin-Sheng Pang, Yi-Ren Liu, Tzu-Hsien Shen, Benjamin K. Chang, Hsiang-Ting Lien, Sun-Tang Chang, Chia-Hua Chien, Yang Yuan Chen, Ming-Wen Chu, Yaw-Wen Yang, Wen-Pin Hsieh, Gerda Rogl, Peter Franz Rogl, Yohei Kakefuda, Takao Mori, Mei-Yin Chou, Li-Chyong Chen*, and Kuei-Hsien Chen*, “Origin of band modulation in GeTe-rich Ge-Sb-Te thin film,” *ACS Appl. Electron. Mater.* **1**, 2619 (2019).
26. Jen-Kai Wu[†], Mario Hofmann, Wen-Pin Hsieh, Szu-Hua Chen, Zhi-Long Yen, Sheng-Kuei Chiu, Yi-Ru Luo, Chih-Chieh Chiang, Ssu-Yen Huang, Yuan-Huei Chang*, and Ya-Ping Hsieh*, “Enhancing thermoelectric properties of 2D Bi₂Se₃ by 1D texturing with graphene,” *ACS Appl. Energy Mater.* **2**, 8411 (2019).
27. Wen-Pin Hsieh*, Takayuki Ishii, Keng-Hsien Chao[†], Jun Tsuchiya, Frédéric Deschamps, and Eiji Ohtani*, “Spin transition of iron in δ -(Al,Fe)OOH induces thermal anomalies in Earth’s mantle,” *Geophys. Res. Lett.*, **47**, e2020GL087036 (2020).
28. Bo-Wei Shih[†], Wen-Pin Hsieh, Jing-Jong Shyue, Feng-Yu Tsai*, “Enhanced thermoelectric properties of atomic-layer-deposited Hf:Zn¹⁶O/¹⁸O superlattice films by interface-engineering,” *Ceramics International* **46**, 7122 (2020).
29. Enrico Marzotto^{†*}, Wen-Pin Hsieh*, Takayuki Ishii, Keng-Hsien Chao[†], Gregor J. Golabek, Marcel Thielmann, and Eiji Ohtani*, “Effect of water on lattice thermal conductivity in ringwoodite and its implications for the thermal evolution of descending slabs,” *Geophys. Res. Lett.*, **47**, e2020GL087607 (2020).
30. Wen-Pin Hsieh*, Alexander F. Goncharov*, Stephane Labrosse, Nicholas Holtgrewe, Sergey S. Lobanov, Irina Chuvashova, Frédéric Deschamps, and Jung-Fu Lin*, “Low thermal conductivity of iron-silicon alloys at Earth’s core conditions with implications for the geodynamo,” *Nat. Commun.*, **11**, 3332 (2020).

Highlighted in

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