Baowen Li (*Dr.rer.nat*)
Rennie Family Endowed Professor
Department of Mechanical Engineering
University of Colorado Boulder
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Education

- Ph. D (Dr.rer.nat) (1992) Physics, Carl-von-Ossietzky Universitat Oldenburg, Germany
- M. Sci (1989) Acoustics, Institute of Acoustics, Chinese Academy of Science, China
- B. Sci (1985) Physics, Nanjing University, China

Academic Experience

8/2015 -	**Rennie Family Endowed Professor,** Department of Mechanical Engineering, University of Colorado, Boulder
2/2014 – 4/2015	Visiting Professor at Department of Mechanical Engineering, UC Berkeley
9/2014 – 10/2014	[#1] **Russell Severance Springer Visiting Professor of Mechanical Engineering, UC Berkeley.**
1/2007 - 8/2015	Professor of Physics, NUS
7/2003 - 12/2006	Associate Professor (with tenure) of Physics, NUS
7/2000 - 6/2003	Assistant Professor of Physics, NUS
3/1998 - 6/2000	Visiting Research Scholar, Hong Kong Baptist University (HKBU)
9/1998 - 2/1999	Post-doctoral Teaching Fellow, HKBU
6/1996 – 8/1998	Research Associate I, HKBU
4/1993 - 6/1996	Post-doctoral Associate, University of Maribor, Slovnina
8/1990 - 3/1993	Research Assistant, Car von Ossietzky Universitat Oldenburg
8/1986 - 1/1990	Research Assistant, Chinese Academy of Science, Beijing

Administrative position:

11/2017 – 07/2018	**Founding Director, Interdisciplinary Research Theme (IRT)-** Quantum Integrated Sensors System, College of Engineering and Applied Science, CU Boulder
10/2008 - 6/2011	**Executive Director,** NUS Graduate School for Integrative Sciences and Engineering, Singapore
01/2006 – 08/2015	**Founding Director** Center for Computational Science and Engineering (CCSE) Faculty of Science, NUS
07/2005 – 08/2006	**Deputy Head**, Department of Physics, NUS
05/2007 - 09/2008	NGS EXCO member, NUS

Professional Recognition: Honors and Awards

- 2017 Elected Member of Academia Europaea (the Academy of Europe) (MAE).
- 2017 Brillouin Medal, IPS (International Phononics Society).

[1] *The Springer Professorship is an appointment held at the Department of Mechanical Engineering, UC Berkeley, in which a renowned professor in a field of mechanical engineering from some other institutions, either domestic or international, is nominated by the mechanical engineering faculty to visit the department. This person is chosen for his/her experience, eminence and high level of expertise in his/her field. Recipients in the past including many members of National Academy of Engineering, the USA, such as Professors Sanjoy K. Mitter and Gang Chen (Chair of Department of Mechanical Engineering) from MIT, Howard R. Baum from NIST, Bolder, Professor Sia Nemat-Nasser from UCSD, Manfred Morari from ETH (Zurich) and many more.*

- 2014/2015 [#1]**Russell Severance Springer Professor** of Mechanical Engineering, University of California, Berkeley
- 2013 Fellow of APS (American Physical Society)
- 2008 Outstanding Scientist, Faculty of Science, National University of Singapore (NUS)
- 2007 World Scientific Medal and Prize, Institute of Physics, Singapore,
- 2005 [#2]National Science Award, Singapore
- 2005 [#3]Achievement in Asia Award, International Organization of Chinese Physicists and Astronomers (OCPA)
- 2004 Temasek Young Investigator Award, NUS-DSTA
- 2003 NUS 2003 Young Researcher Award
- 2012 National Professorship, National 1,000 Talent Program, China
- 2011 Visiting Chair Professor, Department of Physics, Tongji University, China
- 2007 – 2011Guest Professor of Beijing Normal University, China
- 2007- 2009 Con-current Professor of Nanjing University, China
- 2007 – 2015 Visiting Professor of Centre of Quantum Control, Fudan University.
- 2006 – 2009 Advisory Professor, East China Normal University, Shanghai, China
- 2005 – 2007 Guest Professor, Huazhong University of Science and Technology, China
- 1990 - 1993 Max-Planck Scholarship, the Max-Planck Society, Germany.
- 1992 Award for Progress in Science and Technology, the 3rd Rank, The Chinese Academy of Science, Beijing, China.

Research Interests:

- Phononics: Manipulating and Controlling Heat Flow with Electronic Analogs
- Quantum sensing
- Heat transfer and thermal management
- Probing Techniques/Methods of Phonons/Heat
- Acoustical and Thermal Meta-materials
- Acoustic Waves in Random/Turbulent Media
- Quantum Computation and Quantum Memory by Phonons
- Complex Networks
- Inverse Scattering problem

Research Grants Awarded

As Main (single) PI

08/2019-07/2021 "Earthquake Hazard Reduction in Civil Lifelines through Seismic Invisibility", NIST $US648,350 (Pending).

11/2018 –10/2021 "Interdisciplinary Research theme: Quantum Integrated Sensors System sensing", College of Engineering and Applied Sciences, CU Boulder, US$800,000.

01/2016 - 12/2018 "*Systemic risk and Dynamics of Financial networks*", S$ 479,750, Ministry of Education, Singapore (Awarded but declined because transfer to CU Boulder)

08/2012 – 07/2015 *Theoretical and Experimental Study of thermal transport in 2D nanoscale* Systems, 545, 854S$, Ministry of Education, Singapore

05/2012 - 04/2014 *Manipulating Heat Flow through 3 Dimensional Nanoscale Phononic Crystal Structure*, The Asia Office of Aerospace R& D, US Air Force, US$ 50,000.

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[2] *The highest honor bestowed on exceptional research scientists in Singapore for their excellent achievements in science. Given annually, the awards are presented to recognize and celebrate outstanding and invaluable contributions by individuals or teams to the research and development landscape in Singapore. It changed to President's Science Awards since 2009.*

[3] *This is a prestigious award for physicists originally from China. Recipients in the past include Prof. Hongjun Gao (2008, Vice-president of The University of Chinese Academy of Sciences), Prof. Jie Zhang (2004, former President of Shanghai Jiaotong University), Prof. En-ge Wang (2002-2003, former President of Peking University), Prof Jian-guo Hou (2001-2002, former president of USTC), Prof. Qingshi Zhu (1994, former President of USTC, and SUSTC), Prof. Zhongcan Ouyang (1993, former director of Institute of Theoretical Physics, CAS). All of them are member of Chinese Academy of Science.*

10/2011 – 09/2014 *Thermal transport through semiconductor and metal interfaces*
907,577 S$. Ministry of Education, Singapore

02/2011 - 08/2012 *Managing thermal transport with core/shell nanowires*
The Asia Office of Aerospace R& D, US Air Force, US$ 38,000

12/2010 – 11/2012 *Thermal transport in nanostructures*, S$1,000,000, NUS Endowment fund.

09/2010 - 07/2013 *Si and SiGe Nanowire Cooler for Hot Spots in Integrated Circuits*
SERC (Science and Engineering Research Council), A*STAR, 476,840S$

07/2008 - 12/2009 *Improve thermoelectric efficiency of silicon nanowires*
The Asia Office of Aerospace R& D, US Air Force, US$ 38,000

11/2007 – 10/2010 *Theoretical and experimental study of thermal devices*, S$1,000,000, NUS Endowment fund.

06/2007 – 05/2010 *Thermal diode, thermal transistor, and phonon computer*, S$380,000, Ministry of Education, Singapore.

04/2006 – 03/2009 *Organization and Dynamics of Complex Networks*, S$172,820
Faculty Research Grant, NUS

08/2004 - 07/2007 *Controlling heat flow at molecular level through nonlinear dynamics*
S$700,000, Temasek Young Investigator Award (TYIA) 2004
Defense Science and Technology Agency (DSTA)

07/2004-06/2007 *Effect of quantum chaos on quantum computing*, S$124,500
Faculty Research Grant, NUS

05/2004-04/2006 *Theoretical study of thermal insulator and thermal rectifier*, S$136,500
Faculty Research Grant, NUS

05/2002-04/2005 *Transport in incommensurate and quasi-periodic Systems*, S$146,100
Faculty Research Grant, NUS

07/2001-06/2004 *Thermal conduction in nonlinear lattices*, S$64,150.
Faculty Research Grant, NUS

11/2000-11/2003 *Quantum chaos in mesoscopic systems*, S$134,635
Faculty Research Grant, NUS

As Co-PI

01/2016- 12/2019, **"Theoretical Prediction on Hybrid Thermoelectric Materials for Ambient Applications, (my share S$ 1,850,000) (transferred to NUS colleague J-S Wang, because of my move to CU Boulder**.)

09/2007–08/2009 "Numerical Studies and Mathematical Analysis of Bose-Einstein Condensation S$135,240. PI: A/P Bao Weizhu (Math)

07/2006-07/2008 Simulation and experimental study of Ras-MAPK pathway, S$ 185,385
PI: Prof. Chen Yu Zong (pharmacy),
co-PI: A/P Low Boon Chuan (DBS)

07/2006 -06/2009 Heat transport in mesoscopic systems, $ 166,400
PI: Prof. Wang Jian-Sheng (Physics)

06/2006 – 05/2008 Silk formation and the correlation to biomolecular network, S$ 172,253
PI: Prof. Liu Xiang-yang (physics)
Co-PI: Assist/P Yan Jie (Physics)

Teaching

a) University of Colorado, Boulder

MCEN5020 *Methods of Engineering Analysis (I)* (August – Dec, 2018)
MCEN5228 *Phononics and Thermal Metamaterials* (Jan – May 2018)
MCEN 5228 *Phononics and thermal Mematatierals* (Jan – May 2017)
MCEN 5228 *Phononics and thermal Mematatierals* (Aug – Dec 2017)
MCEN3022 *Thermodynamics* (Aug- Dec 2016)

b) National University of Singapore (2000-2015)

FMS1209, *Science of Solar and Thermal Energy* (2013)
GEM2505, *Taming Chaos* (2013)

PC 2132, *Classical Mechanics* (2008 - 2009)
PC2134/PC2174, *Mathematical Methods in Physics II/I* (Undergraduate) (2000-2006)
PC4243 *Atomic and Molecular Physics II* (Undergraduate) (2007)
PC5210. *Advanced Dynamics* (Postgraduate)
PC1131/1132, *Physics Lab*
Engineering Physics Lab
Waves and Oscillation (Singapore Physics Olympiad team training, the team won 1 gold and 2 bronze medals)

c) Hong Kong Baptist University (1996-2000)

Electromagnetic Waves and Radiations
Dynamics of Particle Systems

Students supervised

a. UROPS (Undergraduate Research Opportunities Programme in Science) Students

Mr Ang Kay Yong, Jeremy
Mr Adrea Dewanto
Mr Tang Ing Wei
Mr. Zhang Song
Mr. Shi Wen-Yuan

b. Honor Project Students （Undergraduate）

Mr. Wong Shiong Wei (A+) (2001/2002)
Mr. Ang Kay Yong, Jeremy (A) (2002/2003)
Ms Chow Lee Lee (B+) (2002/2003)
Mr Ong Zhun Yong (A) (2003/2004)
Mr. Pan Zheng Tao (B+) (2004/2005)
Mr. Andreas Dewanto (A-) (2004/2005)

c. Postgraduate Students

Ph. D students

1) Miss Lan, Jinghua (July 2002- May 2007) (IHPC, A*STAR), "Theoretical Study of Thermal Diode"
2) Mr. Li, Nianbei (July 2003 – July 2007) (Full Professor at Tongji University). "Effective Phonon Theory of Heat Conduction in 1D Nonlinear Chains"
3) Mr Zhang, Tianhui (July 2004 – July 2008) (Soochow University) (so-supervised with Liu XY) "Mechanism of colloidal sphere self-assembly"
4) Mr Yang, Nuo (Aug 2004- Aug 2008) (Full Professor, Tongji Universty): "Thermal transport in low dimensional graded structures and in silicon nanowires"
5) Mr Dario Poletti (August 2005 – April 2009) (Assistant Professor, STUD) "Directed transport in Bose-Einstein condensate". (co-supervised with Y Kivsha at ANU, Australia)
6) Mr Wu, Xiang (Aug 2006- July 2010) (MNC, Singapore): "Physical Mechanism of silk strength and design of ultra-strong silk" (Co-supervised with Liu XY)
7) Mr. Yao, Dong Lai (August 2006 –July 2011) (Funder of a company) "The novelty and surface-to-volume-ratio dependent electron band structure in semiconductor nanowire"
8) Mr. Chen, Jie (August 2007- July 2011) (Physics) (ETH Fellow) "Theoretical investigation on thermal properties of silicon based nanostructures". Young 1,000 Talent Professor.
9) Mr. Zhang, Li Fa (August 2007 –July 2011) (Postdoc TU Austin) "Phonon Hall effect in two-dimensional lattices" (co-supervised with Wang J-S)
10) Ms. Ni, Xiaoxi (August 2007 – July 2011) (A financial company in Singapore) "Thermal transport in carbon nanostructures".

11) Ms. Shi, Lihong (August 2007 - July 2011) (Faculty at Jiangnan University) "Electrical-thermal transfer and energy conversion in semiconductor nanowires"
12) Mr. Ren, Jie (August 2007 – July 2011) (Director fellowship at LANL) "Non-equilibrium energy transport in time-dependent driven systems", Young 1,000 Talent Professor.
13) Bui Cong Tinh (August 2007 – July 2011) (Postdoc at NUS) "Thermal transport properties of individual nanowires". (co-supervised with John T Thong at ECE, NUS)
14) Mr. Liu, Sha (August 2008 – Aug 2012) (RF at NUS) "Anomalous heat conduction and anomalous energy diffusion"
15) Mr. Lee, Hwang sheng (August 2008 – Aug 2012) (I2R, A*STAR) "Nanostructured Phosphate-based Electrode Materials for Lithium Batteries" (co-supervised with Alani Balaya, Tay Ah Ong, Andrew from ME, NUS)
16) Miss Ma, Jing (August 2008 – Aug 2012) (A financial Company, Singapore), "Metabolic network based essential gene analysis"
17) Mr. Zhang, Xun (August 2008 – Aug 2012) (DBS Bank)"Computational Analysis of sexual dimorphism in gene expression"
18) Mr. Feng, Ling (Jan 2009 – Jan 2013) (NUS Research Fellow) Econophysics and Agent-Based Modeling of Financial Market"
19) Mr. Bijay Kumar Agarwalla (Jan 2009 – Jan 2013) (Postdoc at UC Riverside) Study of full-counting statistics in heat transport in transient and steady state and quantum fluctuation theorem" (co-supervised with Wang J.-S)
20) Mr. Wang, Jiayi (August 2008 – July 2013)(Research Fellow at NUS) Investigation of thermal conduction in graphene, (co-supervised with Thong J. T L)
21) Miss Liu, Dan (August 2009 - July 2014)(Research Fellow at NUS) . Probing Heat Transport in Nanostructures Using Electron Beam Technique, (co-supervised with Thong J. T L) (Defended on 25 July 2014)
22) Miss Yang, Lina (August 2010 – July 2014) (Postdoc in University of Colorado, Boulder), Thermal transport in 2D and 3D nanoscale phononic crystals.
23) Mr Zhou, Hangbo (August 2011 – August 2015),
24) Mr. Xu, Wen (August 2012- August 2015) (Physics) (Transferred to Prof Yuanping Feng after 3 years supervision
25) Miss Bai, Xue (August 2012- August 2017) (NGS) (co-supervision with Prof. John Thong)
26) Mr. Qiao, Zhi (August 2012- August 2017) (NGS) (Transferred to Prof Ben Chen after 3 years supervision)
27) Mr Zhao, Jiajun (August 2012 – August 2015) (ECE) (co-supervision with Dr. Chengwei Qiu)
28) Mr. Peng, Jiebin (August 2013 – August 2015)(Physics) (Transferred to Prof Jiansheng Wang after 2 years supervision)
29) Mr. Zhao, Yunshan (August 2013 – Nov 2017) (physics) (Co-supervision with Prof John Thong)
30) Miss Ma, Sijuan (August 2014 - August 2015) (Physics) (transferred to Prof. Choy-Heng Lai after one year supversion).
31) Mr. Hu, Shiqian (August 2012 - 2017) (Physics, Tongji University)
32) Mr. Adili (August 2012 - 2018) (Physics, Tongji University)
33) Miss Lu, Tingyu (August 2013 - 2018) (Physics, Tongji University)
34) Mr. Wang, Biao (August 2013 - 2018) (Physics, Tongji University)
35) Mr. Zheng, Xu (August 2017 -) (Physics, CU Boulder)

Exchange Ph. D students:

1) Mr Kezhao Xiong (from East China Normal University) (Oct 2017 – March 2019)
2) Mr Wang, Liwei (from Nanjing University) (Oct 2016 – Oct 2017)
3) Mr Qian, Feng(from Nanjing University) (Sept 2016 – Sept 2017)
4) Mr. Xu, Yong (from Qinghua University) (Aug 2007 – August 2008) (now professor at Qinghua University)

Master students

1) Mr. Dario Poletti (July 2004 - March 2005) "Dynamics of BEC in infinite potential well"
2) Mr. Lo, Wei Chung (January 2005- December 2006) "Simulation study on a microscopic model for thermal transistor"

3) Mr. Imam Makhfudz (Jan 2007 – Dec 2009) " Quantum molecular dynamics study of thermal transport in spin junction system" (Co-supervised with Wang J. S)
4) Miss Schreya Dilpkumar Shah (Jan 2008 – March 2010) Behavior Of Bright-Dark Solitons Under Trapping Potential
5) Ms. Zhang, Kaiwen (August 2007 – July 2013) "Investigation of electric and thermoelectric properties of graphene nanoribbon"
6) Mr. Zhao, Xiangmin (August 2009- July 2013) "Investigation of graphene as a potential thermoelectric material"

d**. Postdoctoral Research Fellows**

1) Dr. Wang, Jiao (July 2000 - Oct. 2003) (Full professor at Xiamen University)
2) Dr. Wang, Wenge (Feb. 2002 – June 2007) (Full professor USTC)
3) Dr. A Garcia-Garcia (July - Aug. 2002, June-July 2004)
4) Dr. Zeng, Zhaoyang (Feb. 2002 - Aug. 2003) (Now, Head of department of physics, Jianxi Normal University, China)
5) Dr. Zhang, Gang (Nov. 2002 - Jan. 2005) (Full Professor at Peking University)
6) Dr. Qiu, Rongke (Feb. 2003 - Jan 2004) (Now at Shengyang Insttitute of Metal Research, CAS)
7) Dr. Shanguan, Wangzuo (Sept 2003 - Feb 2004)
8) Dr. Wang, Lei (Oct. 2003 – Dec 2007) (Full professor, Renming University)
9) Dr. Zou, Weidong (Feb 2005 – July 2006) (Full Professor and Vice Dean at Jimei University, Xiamen)
10) Dr. Liang, Lihong (March 2005 – August 2007) (Institute of Mechanics, CAS, Beijing)
11) Dr. Wu, Gang (October 2005 – Nov 2007) (PI at IHPC-A*STAR)
12) Dr. Yan, Yonghong (October 2006 – Dec 2008) (Professor at Shaoxing University)
13) Dr. Li, Nianbei (August 2007 – Oct 2008) (Full Professor, Tongji University)
14) Dr. Yang, Huijie (Feb 2007 – Feb 2010) (Full Professor at Shanghai University of Sci and Tech)
15) Dr. Tang, Yunfei (October 2007 – Oct 2009)
16) Dr. Xie, Rongguo (July 2008 – Oct 2012) (Experimental postdoc, Officer at Intellectual Property office of Singapore)
17) Dr. Xu, Xiangfan (August 2008 -) (Experimental postdoc, Full Professor at Tongji University)
18) Dr. Hur Gangok (August 2008 – Aug 2009)
19) Dr. Yang, Nuo (August 2008 - Sep 2009) (Full professor at Tongji University)
20) Dr. Xia, Minggang (August 2008 - Aug 2009) (Professor at Xian Jiaotong University)
21) Dr. Lu, Xin (October 2008 – March 2010) (Postdoc at Max Planck Institute)
22) Dr. Sarika Jalan (Nov 2008 – Nov 2010) (Assistant Professor IIT, Indore, India)
23) Dr. Ren, Jie (August 2011 – April 2012) (Director Postdoc at LANL)
24) Dr. Bui Cong Tinh (August 2011 – Sept 2012)
25) Dr. Z. Q Wang (August 2011 – March 2012)
26) Dr. Zhang, Lifa (August 2011- Feb 2012) (Postdoc at U Texas, Austin)
27) Dr. Chen, Jie (August 2011- March 2013) (ETH Fellowship)
28) Dr. Liu, Sha (August 2012 – Set 2014) (Postdoc at NUS)
29) Dr. Zhang, Xun (August 2012- June 2013) (Postdoc at NUS)
30) Dr. Wang, Jiayi (August 2012- Sept 2014) (Postdoc at NUS)
31) Dr. Lee, Sungjung (August 2012 - Aug 2013)
32) Dr. Zhu, Liyan (Sept 2012 – Sept 2014)
33) Dr. Sophia Robin Sklan (Ph. D of MIT) (March 2016- Sept 2018)
34) Dr. Ding, Ding (Ph. D of Caltech) (April-Dec 2016)
35) Dr. Yuning Guo, (Ph. D of Konstanz) (April 2018 -) (Hunt Fellowship of ASA)
36) Dr. Fengrui Hu, (Ph. D of Nanjing U) (June 2018 -)

Service to Department/University

University of Colorado, Boulder

1) Member of Personnel Committee (August – Dec 2018)
2) Member of Search Committee on Quantum Information Science and Engineering (August –Dec 2018)

3) Founding director of IRT –QISS (Quantum Integrated Sensors System) (January 2018 - July 2018)
4) Chair of Personnel Committee (August 2017 – Dec 2017)
5) Chair of Search Committee, Mechanical Engineering (Aug 2016 – May 2017)
6) Member of Department Graduate Committee (Aug -Dec 2015)
7) Member of Department Personal Committee (Aug-Dec 2015)
8) Member of Department Search Committee (Aug 2015 – May 2016)

National University of Singapore

1) Executive Director, NUS Graduate School for Integrative Sciences and Engineering (1 Oct 2008 – June 2011)
2) Director, Center for Computational Science and Engineering, Faculty of Science, NUS. (1 Jan.
3) 2006 – Aug 2015)
4) Deputy Head (Research), Department of Physics, NUS (1 July 2005- 31 August 2006).
5) NUS Graduate School EXCO member (May 2007 – Sept 2008)
6) Expert Panel Member Cross-Faculty Multidisciplinary grant (1 August 2006 -31 July 2008)
7) Expert Panel Member of University Research Committee (1 August 2006 – 31 July 2008)
8) FPTC (Faculty Promotion and Tenure Committee), Faculty of Science, NUS (1 Aug 2006 – 31
9) July 2008)
10) Task force member of Computer Center (since January 2007 – Jan 2009)
11) Chairman, Department Faculty Search Committee (Senior, ad hoc)
12) Chairman, Department Research Committee.
13) Member of Department strategic plan committee.
14) Department postgraduate programme coordinator.
15) Member of Ph.D Qualifying Examination Committee
16) Member of postgraduate programme committee,
17) Member of postgraduate and undergraduate curriculum committee.
18) Scientific committee member of NUS publishing co.
19) Supervisor of NUS Graduate School.

Service to Scientific Community

International Panel Member of Hong Kong Ph. D scholarship

a) Referee

External Reviewer:

American Chemical Society- Petroleum Research Fund
The US Army
The US Air Force
The U.S.-Israel Binational Science Foundation
Faculty Promotion Review for California Institute of Technology
Faculty Promotion Review for UC Berkeley
Faculty Promotion Review for UCSD
Faculty Promotion Review for University of Michigan
Faculty Promotion Review for Norte Dame University
Faculty Promotion Review for Purdue University
Faculty Promotion Review for Carnegie Mellon University
Faculty Promotion Review for Georgia Institute of Technology
Faculty Promotion Review for University of Washington, Seattle
Faculty Promotion Review for UCSB
Faculty Promotion Review for Toronto University
Faculty Promotion Review for ETH, Zurich
Faculty Promotion Review for Ben-Gurion University
Faculty Promotion Review for Nanyang Technology University
Faculty Promotion Review for National University of Singapore

Faculty Promotion Review for National Taiwan University
Faculty Promotion Review for Hong Kong Baptist University
Faculty Promotion Review of Huazhong University of Sci and Tech
National Natural Science Foundation, China
Cheung Kong Professor Review, MOE, China
Hong Kong Research Grant Council, China
National Research Council, Taiwan
Tan Kah Kee Science Award and Prize, China

Referee for:

Nature Nanotechnology (UK)
Nature Materials (UK)
Nature Communication (UK)
PNAS (Proceedings of National Academy of Sciences, USA)
Scientific Report (Nature Publishing)
Review of Modern Physics (USA)
Physical Review Letters (USA)
Physical Review A, B, E (USA)
Physics Report (Holland)
Applied Physics Letters (USA)
Nano Today (Holland)
Nano Letters (USA)
Nano Energy (Elswhere)
Journal of Heat Transfer (USA)
Journal of Applied Physics (USA)
Carbon (Netherland)
Europhysics Letters (Europe)
Journal of Physics A: Mathematics and General (UK)
Journal of Physics B: Atomic, Molecular & Optical Physics (UK)
Journal of Optical Physics B: Quantum and Semiclassical Optics (UK)
Inverse Problem (UK)
Nonlinearity (UK)
International Journal of Modern Physics B (World Scientific, Singapore)
International Journal of Nanoscience (World Scientific, Singapore)
Physica A (Netherland)
Journal of Applied Physics B
Solid State Communication (Netherland)
Journal of Heat and Mass Transfer
Solid Thin Film

Advisory Panel Member:
Journal Physics A: Mathematics and General.

Editorial Board member:

Scientific Report (section, Electronics, photonics, and Device Physics)
International Journal of Modern Physics B,
Modern Physics Letter B

Review about 10 papers for Nature, Nature Mat, Nature Nano, Nature Comm etc
Review about 10-15 papers yearly for Phys. Rev. Lett and Phys. Rev
Review about 10-20 papers for other journals.

b) Conference and workshop organized

As Chair and co-Chair

- PHONONs2018 + PTES2018, Joint Conference of *the 16th International Conference on Phonon Scattering in Condensed Matter* (Phonons 2018) and *the 4th International Conference on Phononics and Thermal Energy Science* (PTES 2018), May 30- June 3 2018, Nanjing (Co-Chair).
- PHONONICS 2017 - The 4th International Conference on Phononic Crystals/Metamaterials, Phonon Transport/Coupling and Topological Phononics, June 5-9, 2017, Changsha, China, (co-chair)
- The third International Conference on Phononics and Thermal Energy Science, Tongji University, May 23-28, 2016, Xi'an, China (co-Chair).
- The second International Conference on Phononics and Thermal Energy Science, Tongji University, May 26-31 2014, Shanghai, China (Chair).
- The first International Conference on Phononics and Thermal Energy Science, Tongji University, 26 August – 4 September 2013, Shanghai, China (Chair). (This conference is the expansion and continuation of TIENCS which I initiated in Singapore in 2006).
- The 3rd International Workshop on Transmission of Information and Energy in Nonlinear and Complex Systems" (TIENCS), NUS, 4-9 July. 2010, Singapore. (co-Chair)
- The 2nd International Workshop on Transmission of Information and Energy in Nonlinear and Complex Systems" (TIENCS), NUS, 4-6 June. 2008, Singapore. (Chair)
- International Conference on Frontiers of Nonlinear and Complex systems, in honor of Bambi Hu's 60th birthday, Hong Kong Baptist University, 24-26 May 2006. Hong Kong. (Chairman of the organization committee.)
- Extended workshop on "Dynamical Chaos and Nonequilibrium Statistical Mechanics: from rigorous results to application in nanosystems", Institute of Mathematical Science, NUS, 1 August - 31 September, 2006. (co-chair). Singapore
- The 1st International Workshop on Transmission of Information and Energy in Nonlinear and Complex Systems" (TIENCS), NUS, 1-4 August. 2006, Singapore. (Chair)
- An International Symposium: Looking to the next 100 years in Physics and its impact on Engineering, Life Science & Technology: Featuring the Asian Perspective, 10-12 August, 2005, Singapore.
- Dynamics Days Asia Pacific: The Third International Conference on Nonlinear Science", 30 June - 2 July, 2004 Singapore.
- International Workshop on Quantum Computation and Information", April 2-6, 2001. Singapore.

As Board member of International Committee/ Organization Committee

- PHONONICS 2015 (Paris),
- PHONONICS 2013 (Sharm El-Sheikh, Egypt)
- PHONONICS 2011 (Santa Fe, USA)
- OCPA8 (International Organization of Chinese Physicists and Astronomers) International Conference Physics and Education, 2015 (Singapore)
- OCPA9 International Conference on Frontiers of Physics and Education, 2017 (China)

Others

- Coordinator of Statistical and Nonlinear Physics of OCPA (International Organization of Chinese Physicists and Astronomers) (since 2010),

Keynote, Invited Seminar, Invited conference talks (227)

1. "Engineering thermal conductivity of nanoscale materials by defect doping", Workshop on "*Nanoscale thermal transport and heat localization*", August 30-31, 2018, Steward Blusson Quantum Matter Institute. University of British Columbia, Vancouver, Canada.

2. "Engineering thermal conductivity of nanoscale materials by defect doping", IEEE Nano 2018, The 18th International Conference on Nanotechnology. July 23-26, 2018. Cork Irelnd. (Invited but not attended because of family reason).

3. "Engineering thermal conductivity of nanoscale materials by defect doping", EMRS Meeting, France, June 18-22, 2018. Strassbourg, France (invited but not attended because of family reason).
4. "Engineering thermal conductivity of nanoscale materials by defect doping", MRS Fall Meeting, Nov 26- Dec 1, 2017. Boston
5. Phononics: Processing information and controlling heat by phonons", Department Seminar, KAUST, Oct 24, 2017
6. Anomalous heat/phonon transport in low dimensional micro/nano materials', Department of Mechanical and Aerospace Engineering, North Carolina State University, USA. Sept 22, 2017.
7. "Thermal rectification: controlling heat flux via phonons", *Wave Phenomena and Phonon Thermal Transport*" Scientific School, Oleron, France. Sept 3-8, 2017.
8. **"声子学与热超材料： 热流控制的科学",** Kunming University, Sept 5, 2017.
9. "Thermal transport control through transforming method: from thermal cloak, thermal concentrator, to thermal camouflage", School of Physics, Nanjing Normal University, July 12, 2017.
10. Anomalous heat/phonon transport in low dimensional micro/nano materials', June 7, 2017, 3:30-5pm, Hunan University, China
11. "Anomalous heat/phonon transport in low dimensional micro/nano materials', 4pm, June 2, 2017 Colloquium, School of Physics, Huazhong University of Science and Technology, China.
12. "Thermal transport control through transforming method: from thermal cloak, thermal concentrator, to thermal camouflage", 10:30-12am, School of Energy and Power, Huazhong University of Science and Technology, China
13. "Anomalous heat/phonon transport in low dimensional micro/nano materials', Colloquium, June 1, 2017, Kunming University of Science and Technology, China.
14. "Lecture 1: Anomalous heat/phonon transport in low dimensional micro/nano materials", Ecole de Physique des Houche " Son & Lumiere 2017", April 17-28, 2017, Les Houches, France
15. "Lecture 2: Phononics: processing information and controlling heat by phonons", Ecole de Physique des Houche " Son & Lumiere 2017", April 17-28, 2017, Les Houches, France
16. "Anomalous heat/phonon transport in low dimensional micro/nano materials', APS March Meeting, March 13-17, 2017, New Orlean, USA
17. Anomalous thermal properties of low dimensional materials", DDAP9 (the 9th Dynamics Days Asia Pacific), Hong Kong, Dec 14-17, 2016.
18. "Heat control by phononic thermal circiuts and Thermal metamaterials", Mechanical Engineering Graduate Series, University of California, Merced, 2–3:30pm, Nov 28, 2016.
19. "Anomalous thermal transport in 2D materials", Department of Material Science and Engineering, South University of Science and Technology of China, Nov 22 10-11 am. Shenzhen China.
20. "Heat control by phononics and Thermal metamaterials", Institute of Advanced Studies, Shenzhen University, 4-5 pm, Nov 21, 2016
21. "Anomalous thermal properties of low dimensional micro/nano materials", Institute of Advanced Materials, the Chinese Academy of Science, Shenzhen, China, Nov 21, 2016, 10am-12noon.
22. "Anomalous thermal properties of low dimensional micro/nano materials", 2016 International Forum of Trends in Advanced Manufacturing and Ultralight Micro-Nano Composite Materials, Nov 21, 2016, Shenzhen, China
23. "Anomalous thermal transport in 2D materials", Telluride Science center, Workshop on Nanoscale heat transfer. June 21-24, 2016.
24. *"Anomalous Thermal Transport / heat diffusion in nano scale systems", Workshop* on nanoscale thermal transport", May 20, 2016, Nanjing Normal University. Nanjing, China
25. "Anomalous thermal transport in 2D materials", Colloquium, School of Physics, Nanjing University, May 19, 2016 . China.
26. "Phononics: processing information and computing with phonons", NERID, VTT, Helsinki, Finland, May 16-17, 2016.

27. "Anomalous phonon transport/heat diffusion in nano scale systems", Institute of Semiconductors, the Chinese Academy of Sciences, 4-5pm, May 14, Beijing, China
28. "Anomalous thermal transport in 2D materials", Colloquium, Department of Physics Tsinghua University, 4-5pm, May 13, 2016. Beijing China.
29. "Thermal transport control through transforming method: from thermal cloak, thermal concentrator, to thermal camouflage", Colloquium, Department of Engineering Mechanics, 10-11am, May 13, 2016. Beijing China.
30. "Phononics and thermal Metamaterials", guest lecture (2 hours) to Graduate Students and Graduate School of University of Chinese Academy of Sciences, Beijing. May 11, 2016.
31. *"Anomalous phonon transport/heat diffusion in nano scale systems",* Department of Physics, Ocean University of China, May 10, 2016.
32. "Anomalous thermal transport in nanoscale", Plenary talk at National Conference on Soft Matera and Complex systems, May 7, 2016. Hangzhou, China.
33. "Phononics and Thermal Metamaterials" (Joint Colloquium), Department of Physics and Astronomy, and Department of Mechanical and Aerospace Engineering, University of Missouri, Colombia, Nov 2, 2015.
34. "Anomalous thermal transport in single layer suspended graphene", GRAPCHINA2015, Oct 28-30, 2015, Qingdao, China. (Oct 29, 2015.)
35. "Phononics and Transforming heat transfer" (Colloquium), Department of Physics, Ocean University of China, Qingdao, Oct 28, 2015.
36. "Phononics and Thermal metamaterials", Condensed matter seminar, Department of Physics, University of Colorado, Boulder, Oct 15, 2015
37. "Phononics and Thermal Metamaterials", Applied Mechanics Colloquium, Harvard School of Engineering and Applied Sciences, Oct 7, 2015.
38. "Anharmonic/nonlinear phonons and anomalous heat conduction in low dimensional systems" (Invited), The 15th Conference on Phonon Scattering in Condensed Matter (Phonons2015), University of Nottingham, UK, July 12-17, 2015.
39. "Phononics: an active control of elastic energy from Hz to THz", Keynote Speaker at "Acoustic Metamaterials and Phononic Crystals" at the ASME 2015 Applied Mechanics and Materials Conference (McMAT2015), June 29 to July 1, 2015 in Seattle, Washington.
40. "Phononics and Thermal Metamaterials" (Plenary), The 2015 International Congress on Ultrasonics, Metz, France, May 10-14, 2015.
41. "Phononics and Thermal Metamaterials" (Plenary), Mechanical Engineering, University of California, Merced, Aprilxx, 2015.
42. "Thermal circuits: active control of heat flux", Seminar at Department of Mechanical Engineering, University of Colorado, Boulder, 11 am -12 noon, 12 March, 2015.
43. "Heat control by thermal diode and thermal metamaterial", Colloquium, Department of Mechanical Engineering, Carnegie Mellon University, Pittsburg 1 -2 pm, 5 December, 2014.
44. Heat control by thermal diode and thermal metamaterial", Colloquium, Department of Mechanical and Civil Engineering, California Institute of Technology, Pasadena, 11 am - 12 noon, 13 November 2014.
45. Heat control by thermal diode and thermal metamaterial", Colloquium, Department of Aerospace and Mechanical Engineering, University of California, San Diego, 11 am - 12 noon, 10 November 2014.
46. "Anomalous Heat conduction/Diffusion in Nanoscale systems", Guest lecture at Graduate course of Heat Transfer, Department of Aerospace and Mechanical Engineering, University of California, San Diego, 11 am- 12:30 pm, 6 November, 2014.
47. "What is necessary and sufficient conditions for Fourier law of heat conduction?" Russell Severance Springer Lecture Series 5, Department of Mechanical Engineering, UC Berkeley, 3pm, 20 October, 2014.
48. "Shuttling Heat via Time-Dependent Heat Bath Temperature", Russell Severance Springer Lecture Series 4, Department of Mechanical Engineering, UC Berkeley, 3pm, 15 Oct, 2014.
49. "Anomalous Heat conduction/Diffusion in Nanoscale systems", Department of Mechanical Engineering (Prof Arun Majumdar's group), Stanford University, 4pm, 10 October, 2014.

50. "Thermal cloak and Themral metamaterials", Russell Severance Springer Lecture Series 3, Department of Mechanical Engineering, UC Berkeley, 4pm 8 October, 2014.
51. "Anomalous Heat conduction/Diffusion in Nanoscale systems", Russell Severance Springer Lecture Series 2, Department of Mechanical Engineering, UC Berkeley, 3pm, 29 Sept 2014.
52. "Control heat by thermal diode and thermal metamaterials", Texas Center for Superconductivity at the University of Houston, 11 am- 12 noon, 26 Sept 2014.
53. "Phononics", Russell Severance Springer Seminar Series 1, Colloquium, Department of Mechanical Engineering, UC Berkeley, 19 Sept 2014.
54. "Thermal diode: What else can it do besides rectifying heat flux by phonons?" Keynote Lecture at EUPHONON workshop on NanoPhononics for Thermal Transfer, Electronics, Radiation and Acoustics, 1-4 Sept 2014. Le Mans, France.
55. Manipulate/Harvest Heat Through Phononic Devices and Thermal Metamaterials", 16 May, 2014, 12 noon – 1pm, Department of Mechanical and Aerospace Engineering, UCLA.
56. Manipulate heat flow via phononic devices and thermal metamaterials. AFOSR Thermal Science Program Review workshop 8-9 May 2014. Arlington, VA.
57. How to harvest and manipulate heat energy? From thermoelectric and phononic devices to thermal metamaterials, Department Seminar, Department of Mechanical Engineering, Stanford University, 12noon – 1pm, 30 April, 2014.
58. How to harvest and manipulate heat energy? From thermoelectric and phononic devices to thermal metamaterials, Department Seminar, Department of Mechanical Engineering, UC Berkeley, 11am-12noon 16 April, 2014.
59. "Heat transfer in nonlinear systems: from anomalous phenomena to phononic devices",(**Keynote**), The 8th Conference on Nonlinear Systems and Dynamics", 11-14 Dec, 2013, IIT Indore, India.
60. "Shuttling heat via Time-Dependent Heat Bath Temperature", 2013 ASME International Mechanical Engineering Congress & Exposition, Nov 15-21, 2013 San Diego, California, USA. (20 November 2013.) **(Invited**)
61. "How to harness heat? From Phononic thermal device to thermal metamaterias", Colloquium, Department of Physics, East China Normal University, 1 Nov 2013, 10:30-12noon. Shanghai, China. Department Seminar.
62. "Theoretical and Experimental Study of Thermal transport in Graphene", (**Invited**), Chinese Physics Society (CPS) Fall meeting, 12-15 September, 2013, Xiamen, China
63. "How to harness heat? From Phononic thermal device to thermal metamaterias", Colloquium, Department of Physics, Fudan University, 10 Sept 2013, 3:30-5pm. Shanghai, China.
64. "Experimental and theoretical evidences for anomalous thermal transport in low dimensional nanoscale systems", (**Invited**) Nanophononics, 19-23 August, 2013, University of Bremen. Germany. (40 mins)
65. ""How to harness heat? From Phononic thermal device to thermal metamaterials", (**Plenary)** The 2nd National Conference on Statistical Physics and Complex Systems, 28-31 July 2013, Qiufu, China.
66. Phononics: A new science and technology of controlling heat flow and processing information with phonons", PHONONICS 2013: 2nd International Conference on Phononic Crystals/Metamaterials, Phonon Transport and Optomechanics, 2-7 June, 2013. Sharm El-Sheikh, Egypt.(Colloquium speaker)
67. Harvesting Heat by Phononic Devices and Functional Thermal Materials, Colloquium, School of Mechanical Engineering, Shanghai Jiaotong University, 29 May 2013, 2-4pm
68. "Phononics: Manipulating Heat Flow with Electronic Analogues and Beyond", 2013 International Congress on Ultrasonics, 2-6 May 2013, Singapore. (**Keynote**)
69. "Anomalous thermal transport in nanoscale systems: from simulation, experiments to theory" **Invited** talk at Energy transport in Advanced Workshop on Energy Transport in Low-Dimensional Systems: Achievements and Mysteries ,15 - 24 October 2012, ICTP, Trieste, Italy.
70. "Phononics: Manipulating heat flow with electronic analogs and beyond", **Plenary talk** at Dynamical Das Asia Pacific (DDAP7)– the 7th International Conference on Nonlinear Science 5-9 August 2012. Taipei, Taiwan. (45mins)

71. "Listen to the Noise: bridging dynamics and topology of complex networks", (**Invited**) ECT* Workshop on Spectra of Complex Networks", 23-27 July 2012, Trento, Italy. (ECT*: European Centre for Theoretical Studies of Nuclear Physics and Related Areas). (45 mins)
72. "Anomalous heat conduction in low dimensional nanostructrures", Phonons2012, 8-12 July 2012. Ann Arbor, USA.
73. "Heat and Phononics", Undergraduate Colloquium, Department of Physics, East China Normal University. 23 May 2012, Shanghai China.
74. "Anomalous heat conduction in low dimensional nanostructrures", Colloquium, Department of Physics, Zhejiang University, 18 May 2012. Hangzhou, China.
75. "Interdisciplinary Research: start from integrated Ph. D education", 105 Anniversary Talk, Tongji University. 16 May 2012. Shanghai. China
76. "Improve efficiency of thermo-electric energy conversion by nanostructued materials", China-Singapore Bilateral Symposium on Carbon-Based Nanomaterials for Energy, 10-11 May, 2012, Dalian Institute of Chemical Physics, Chinese Academy of Sciences. Dalian, China.
77. "Thermal transport in nanoscale and Phononics", Department of Physics, Southeast University, 10am -11:30am, 22 April 2012, Nanjing, China.
78. "Anomalous heat conduction in low dimensional nanostructrures", Graphene 2012, Brussels, 9-13 April 2012, Brussels, Belgium.
79. "Phononics II: shuttling heat by time-dependent bath temperatures", East China Normal University, 10 am -12 noon, 13 March 2012, Shanghai, China.
80. "Theramal transport in low dimensional nano structures", Workshop on Optics/Thermal in Nanostructures, 1-2 March 2012, USB, Zahedan, Iran
81. "Phononics II: Shuttling heat by time-dependent bath temperatures", Workshop on Optics/Thermal in Nanostructures, 1-2 March 2012, USB, Zahedan, Iran
82. "Phononics I: Controlling/manipulating heat flow with electronic analogue", Workshop on Optics/Thermal in Nanostructures, 1-2 March 2012, USB, Zahedan, Iran
83. "Anomalous heat conduction in low dimensional systems: from experiment to theory", 1st National Conference on Statistical Physics and Complex Systems, Nanjing Normal University, Nanjing, 17-19 Nov 2011.
84. "Phononics and thermal energy control" Colloquium, Talk to Undergraduate and junior graduate students. School of Physics, USTC, Hefei, 9 Nov 2011. 4pm.
85. "Thermal transport in nanoscale and Phononics" ICQD Monthly Colloquium, 8 Nov 2011. 3pm USTC, Hefei, China.
86. "Phonon coherence resonance and thermal conductivity in core/shell nanowire", Invited talk, The US AOFSR Thermal Science Grantees' Meeting, 26-28 September 2011, Arlington, VA, USA.
87. "Thermal transport in nanoscale", The 7th Sino-Singapore Joint Symposium on Frontiers of Physics, Huazhong University of Science and Technology, Wuhan, China, 21-23 September , 2011.
88. "Phononics coming to life", School Colloqium, School of Physics, Yunnan University, 19 September, 2011. Kunming, Yunnan, China.
89. "Nanoscale thermal transport and Phononics", School of Aerospace, Tsinghua University, 11am, 13 September 2011.
90. "Thermal transport in nanoscale and Phononics", Institute of Mechanics, Chinese Academy of Science, Beijing, 9 September, 2011.
91. "Thermal transport in nanoscale and Phononics", Invited Talk, China Nano 2011, Beijing, 5-9 September, 2011.
92. "Anomalous thermal transport in low dimensional nanostructures", Department of Physics, Fudan University, 3pm, 5 July 2011.
93. "Anomalous thermal transport in low dimensional nanostructures" , CMRS International Symposium on Multi-scale Materials Modelling & Shanghai International Forum on Advanced Materials- Exotic Functions through Computer Simulations Computational Material Science, Shanghai Institute of Ceramics, Chinese Academy of Science, 5pm, 4 July, 2011.
94. "Phononics:Controlling heat flow & processing information with phonons", On the Occasion of 60th Anniversary of East China Normal University, Shanghai, China, 11am, 14 June, 2011.

95. "Phononics: A new science and technology of controlling heat flow and processing information with phonons", Division of Applied Physics, California Institute of Technology, USA, 2-3pm, 2 June, 2011.
96. "Phononics: A new science and technology of controlling heat flow and processing information with phonons", Phononics2011, **Plenary lecture**, Santa Fe, USA, 29 May – 2 June, 2011.
97. "Phononics: A new science and technology of controlling heat flow and processing information with phonons", Department of Mechanical Engineering, University of California, San Diego, USA, 2-3pm, 29 April, 2011.
98. "Divergent thermal conductivity in nanostructures", Material Research Society Spring Meeting, San Francisco, 26 April, 2011, Tuesday, 1:30pm.
99. "Anomalous heat conduction in nanostructures", School of Physics, Nanjing University, Nanjing, China. 4pm, 18 March, 2011.
100. "Phononics: A new science and technology of controlling heat flow and processing information with phonons", School of Mechanical Engineering, Southeast University, Nanjing, China. 9:30-11:30am, 18 March, 2011.
101. "Anomalous heat conduction in nanostructures", Department of Physics, Tsinghua University, Beijing, China. 17 March, 2011. 4pm-6pm.
102. "Anomalous heat conduction in nanostructures", Kavli Institute of Theoretical Physics, Chinese Academy of Science, Beijing, China 10-11am, 17 March, 2011.
103. "Anomalous heat conduction in nanostructures", Department of Electronics, Peking University, Beijing, China. 4-5pm, 16 March, 2011. China
104. Phononics: A New Science and technology of harvesting thermal energy", School of Physical Science, Zhejiang Normal University, Jinghua, China. 4-5pm, 15 March, 2011.
105. "Phononics: A new science and technology of controlling heat flow and processing information with phonons", 60 mins **Keynote Lecture** at the 14th International Heat Transfer Conference. 9-13 August 2010, Washington DC. USA.
106. "Berry phase induced heat current and its impact on fluctuation dissipation theorem". Seminar at Department of Chemistry, MIT, 3-4pm, 6 August 2010.
107. "Phononics: manipulating heat flow and processing information with phonons", 60 mins seminar at Department of Mechanical Engineering, MIT, 2-3pm, 5 August 2010.
108. "Several Anomalies of heat conduction in nonlinear systems", The 24th IUPAP International Conference on Statistical Physics - StatPhys 24. Cairns, Australia, 19-23 July, 2010.
109. "Anomalous heat conduction and superdiffusion in nanostructures", Telluride Workshop on "Thermal transport in Nanoscle", Telluride Science Research Center. Telluride, Colorado, USA. 20—26 June, 2010
110. "Phononics: Manipulating and controlling heat (phonon) transport", CINT Colloquium, Los Alamos National Lab, 10:30am - 12 pm. 17 June, 2010. USA.
111. "Thermal transport in complex networks". Seminar, Department of Physics, East China Normal University, 2-3pm, 14 April 2010, Shanghai, China.
112. "Anomalous heat conduction, anomalous diffusion and heat rectification in nano structures". Invited talk at "ASME Micro/Nanoscale Heat and Mass Transfer International Conference", 18 -21 Dec. 2009, Shanghai, China.
113. "Heat/phonon conduction in nano structures and phononics". Invited talk at "Workshop on Challenges and Advances in Computational Materials Simulations and Design", Institute of Mathematical Sciences, NUS, 20-24 July 2009. 10:50am, 21 July 2009.
114. "Phononics: an application of nonlinear excitation to processing information and heat control". Invited talk at "Localized Excitation in Nonlinear and Complex Systems" (LENCOS09), Sevilla, Spain 14-17 July 2009.
115. Heat/phonon conduction in nano structures and phononics". Seminar talk at Institute of Microelectronics, A*STAR, 25 June, 2009, 3-4pm. Singapore
116. "Heat conduction in nano structures and phononics". Seminar talk at Department of Electric Engineering, University of California, Santa Cruz, the United States. 10-11:30 am, 4 June 2009.

117. "Heat conduction in nano structures and phononics". Seminar talk at Department of Mechanical Science and Engineering, University of Illinois at Urbana Champaign, the United States. 4-5:30 pm, 2 June 2009.
118. "Anomalous heat conduction, diffusion and thermal rectification in carbon nanotubes", Invited talk at the 8th International Congress on Thermal Stress, 1 – 4 June, 2009. University of Illinois at Urbana Champaign, the United States.
119. "Heat conduction in nano structures and phononics". Seminar talk at Institute of Physics, Budapest University of Technology and Economy, Evotos University, Budapest, Hungary, 15 May 2009.
120. "Heat conduction in nano structures and phononics". Seminar talk at Institute of Physics, Evotos University, Budapest, Hungary, 14 May 2009.
121. "Heat conduction in nano structures and phononics". **3 Hour** Lecture. Zhejiang Normal University. 8 April 2009.
122. "Heat conduction in nonlinear lattices" **3 hour** lecture, Zhejiang Normal University.7 April 2009.
123. "Heat conduction in nano structures and phononics". International workshop on heat conduction in low dimensional systems", 15-21 March 2009, Bangalore, India. Invited talk (1.5 hour).
124. Comparison of cellular networks by using dynamic-based measures", The first International Conference on Complex Sciences: Theory and Analysis", (Plenary talk), Feb 23-25 2009, Shanghai.
125. "Heat Conduction in nano structures", India-Singapore Joint Physics Symposium, 2009", S N Bose National Centre for Basic Sciences, Kolkata, India, 6-8 January. 2009.
126. Computation with Phonons/heat: An Application of Nonlinear Science", (100 Mins), Department of Applied Physics, Waseda University, 1:20-3:00 pm, 16 December, 2008.
127. Computation with Phonons/heat: An Application of Nonlinear Science", (100 Mins), Department of Basic Science, Graduate School of Basic Sciences, The University of Tokyo, 4:20-6m, 15 December, 2008.
128. "Phononics: A new science and technology in controlling heat flow and in processing information with phonons/heat", (90 Mins), Headquarter of Sony Co. Tokyo. 4:30-6pm, 12 December, 2008.
129. "Anomalous heat conduction and anomalous diffusion in low dimensional systems: simulation and experiment", Queen Marry College, London, 5-6pm, 20 November 2008.
130. "Computation with Phonons/heat", (60 Mins), Department of Physics and Astronomy, University College of London, 4-5pm, 19 November 2008.
131. "Anomalous heat conduction and anomalous diffusion in low dimensional systems: simulation and experiment", Edinburgh workshop on "Molecular Dynamics, Thermostats, and Convergence to Equilibrium", International Centre for Mathematical Sciences, University of Edinburgh, 12-14 November 2008.
132. "Computation with Phonons/heat", **Invited talk** (40 Mins) at The first cross-straight workshop on statistical physics and condensed matter theory. Jinghua, Zhejiang Normal University, China, 24- 26 October 2008.
133. "Computation with Phonons/heat", **Invited talk** (20 Mins) at The 9th Frontier Science Symposium, Faculty of Science, National University of Singapore, China, 15-17 October 2008.
134. "Phononics and Thermoelectrics", (60 Mins) NUS USP Seminar, 6-8pm, 9October 2008.
135. "Computation with Phonons/heat", **Invited talk** (25 Mins) at The 4th Sino-Singapore Joint Symposium on Frontiers of Physics, Suzhou, China, 23- 25 September 2008.
136. "Computation with Phonons/heat", **Invited talk** (25 Mins) at DDAP5- The Fifth International Conference in Nonlinear Science, Nara, Japan, 9 – 12 September, 2008.
137. "Phonon Transport in Nanostructures" , Lecture III (30 August) (**Invited Lecture)** (**2 hours**) First Summer School of Acoustics and Acoustic Information of Chinese Acoustical Society 25 – 31 August 2008, Institute of Acoustics, Nanjing University. China.
138. "Vibrational transport in nonlinear lattices" , Lecture II (30 August) (**Invited Lecture)** (**2 hours**) First Summer School of Acoustics and Acoustic Information of Chinese Acoustical Society 25 – 31 August 2008, Institute of Acoustics, Nanjing University. China.

139. "Phononics and thermoelectrincs" , Lecture I (29 August) (**Invited Lecture)** (**2 hours**) First Summer School of Acoustics and Acoustic Information of Chinese Acoustical Society 25 – 31 August 2008, Institute of Acoustics, Nanjing University. China.
140. "Phononics and Thermoelectrics", **Invited talk** (50 Mins) at 9'th International Symposium on Statistical Physics – "Stat-Phys", Academia Sinica, Taipei, 8-12 July, 2008.
141. "Phononics and Thermoelectrics", NUS Graduate School for Integrative Sciences and Engineering, NUS, 4 July, 2008.
142. "Computation with Phonons/Heat", East China Normal University, 17 June, 2008.
143. "Computation with Phonons/Heat", 1st ELTE-NUS Science Forum between Eotvos Lorand University and National University of Singapore, Budapest, Hungary, 21-22 May 2008.
144. "Computation with Phonons/Heat", **Colloquium (1 hour**), Kavli Institute of Theoretical Physics, Chinese Academy of Science, Beijing, 9 May 2008.
145. "Computation with Phonons/Heat", **Colloquium (1 hour)** Department of Applied Physics, Xi'an Jiaotong University, Xi'an, China, 28 April 2008.
146. "Computation with Phonons/Heat", India-Singapore Joint Symposium on Current Trends in Physics, 27 Feb – 1 March 2008. IIT Madras, India. (**Keynote 40mins**)
147. "Computation with Phonons/Heat", 19 December 2007, 3pm. Department of Physics, Fudan University, Shanghai, China.
148. "Computation with Phonons/Heat", 17 Dec 2007, 4pm. Institute of Acoustics, Department of Electronic Science and Engineering, Nanjing University, Nanjing, China.
149. "Computation with Phonons/Heat", 5 Dec 2007, 11am. International Conference of Quantum Manipulation, Baolong Hotel, Shanghai, China, 7-9 December 2007.
150. "Computation with Phonons/Heat", 13 Nov 2007, 2:15pm. Institute of Physics, Department of Physics, Carl-von-Ossietzky Universitaet Oldenburg, Germany.
151. "Computation with Phonons/Heat", 9 Nov 2007, 4pm. Focus meeting: Entropy production, transport, chaos and turbulence", 5-9 Nov 2007, in the Trimester "Statistical Physics Out of Equilibrium" 10 Sept – 14 Dec 2007. Institute of Henri Poincare. Paris France.
152. "Computation with Phonons/Heat", 7 Nov 2007, 11Am. Lab. De Acoustique, Ecole Sup. Phys. Chem. Indus, Paris, France (Prof. Mathias Fink's group.)
153. Anomalous heat conduction and control of heat flow at nanoscale: theory and experiment, 1-2 October 2007, Mini-Workshop on Computational Physics, in honor of Prof. He-Xiantu''s 70th birthday, Chinese University of Hong Kong.
154. Anomalous heat conduction and control of heat flow at nanoscale: theory and experiment, 7 Sept 2007, 4-5 pm, Institute of Advanced Study, Tsinghua University. Beijing, China.
155. Anomalous heat conduction and control of heat flow at nanoscale: theory and experiment. 4 September 2007, 10am – 12noon, Beijing Normal University, Beijing, China.
156. Thermal diode, thermal transistor and thermal logic gate: controlling of heat flow by nonlinearity. 31 May 2007, 12 – 1pm, Department of Mechanical Eng., University of California, Berkeley.
157. Anomalous heat conduction and control of heat flow at nanoscale: theory and experiment, 10:20-10:50am, 25 May, 2007. Department of Physics, Xiamen University. The third Sino-Singapore Joint Symposium on Frontiers of Physics.
158. Anomalous Heat conduction and control of heat flow at nanoscale: theory and experiment, 2:30-4pm, 23 May, 2007. Shanghai Institute of Ceramics, The Chinese Academy of Science, Shanghai.
159. Heat conduction and control of heat flow at nanoscale: theory and experiment, 3-4pm, 16 March, 2007. Department of Physics, Nanjing University.
160. Heat conduction in nanoscale structures: from anomalous heat conduction to heat control, 3:00-4:00pm, 14 March, 2007. Department of Physics, Soochow University.
161. Heat conduction in nanoscale structures: from anomalous heat conduction to heat control, 10:00-11:00pm, 9 March, 2007. Department of Physics, East China Normal University.

162. Thermal diode and thermal transistor: the art of controlling heat flow. 10:00-11:00am, 8 March, 2007. Shanghai Institute of Applied Physics, Chinese Academy of Science, China.
163. Double slit experiment revisited: demonstration of wave chaos by surface water waves", 4:40-5:30pm, 7 December, 2006. Department of Physics, Technischen Universitat Dresden, Germany.
164. Effective Phonon Theory in Nonlinear Lattices: normal vs anomalous heat conduction, International Workshop on Nonlinear Dynamics of Acoustic Modes in Finite Lattices: Localization, Equipartition, Transport, December 6-8, 2006. 9:35- 10:10 am December 7 2006., Max-Planck-Institute for Physics of Complex Systems, Dresden, Germany
165. Thermal diode and thermal transistor: Controlling heat flow through nonlinear dynamics", 12:30-1:30pm, 20 November, 2006. Centre for Quantum Information, National Cheng Kung University, Taiwan.
166. Double slit experiment revisited: demonstration of wave chaos by surface water waves", 2:00-3:00pm, 20 November, 2006. Centre for Quantum Information, National Cheng Kung University, Taiwan
167. Thermal diode and thermal transistor: Controlling heat flow through nonlinear dynamics", 4-5pm, 14 November, 2006. Department of Physics, South China University of Technology, Guangzhou, China.
168. Double slit experiment revisited: demonstration of wave chaos by surface water waves", 5:00-6:00pm, 14 November, 2006. Department of Physics, South China University of Technology, Guangzhou, China.
169. Double slit experiment revisited: demonstration of wave chaos by surface water waves", 3:05-3:35pm, 12 November, 2006. **(Invited plenary talk**). The 14th National Conference on Condensed Matter Theory and Statistical Physics, Zhongshan University, Guangzhou, 11-13 November 2006.
170. Thermal diode and thermal transistor: Controlling heat flow through nonlinear dynamics", 10-11am, 10 November, 2006. Sun-Yet Sen (Zhongshan) University, Guangzhou, China.
171. Double slit experiment revisited: demonstration of wave chaos by surface water waves", 11-12pm, November 2006. Workshop on Condensed Matter Physics and Statistical Physics. School of Physics, Nanjing Normal University. Nanjing, China.
172. Thermal diode and thermal transistor: Controlling heat flow through nonlinear dynamics", 4-5pm, 22 October 2006. University of Science and Technology of China. Hefei. China. Workshop on Frontiers of Complex Systems and theoretical Physics.
173. Double slit experiment revisited: demonstration of wave chaos by surface water waves", 11-12pm, 23 October 2006. University of Science and Technology of China. Hefei. China. Workshop on Frontiers of Complex Systems and theoretical Physics.
174. Double slit experiment revisited: demonstration of wave chaos by surface water waves. 2pm-4pm, 19 October 2006. College of Science, Jiangxi Normal University. Nanchang, China.
175. Thermal diode and thermal transistor: Controlling heat flow through nonlinear dynamics", 10am-12noon 19 October 2006. College of Science, Jiangxi Normal University. Nanchang, China.
176. Double slit experiment revisited: demonstration of wave chaos by surface water waves. 2pm-4pm, 19 October 2006. College of Science, Jiangxi Normal University. Nanchang, China.
177. Double slit experiment revisited: demonstration of wave chaos by surface water waves. East China Normal University, Shanghai, China, 10 am, 17 October. 2006
178. Heat conduction in nonlinear lattices. Waseda University, 22 September 2006. Tokyo, Japan.
179. Double slit experiment revisited: demonstration of wave chaos by surface water waves. JSPS International Conference on Quantum Mechanics and Chaos, 19-21 September 2006, Osaka City University. Japan.
180. Thermal diode and thermal transistor: Controlling heat flow through adjusting anharmonicity, "International workshop on computer simulation on heat transfer in micro and nano scale, 14-16 August 2006, Lyon, France.
181. Thermal diode and thermal transistor: The art of controlling heat flow, 3:00-4:30pm, 12 August, 2006, University of Augsburg, Germany.

182. Effective phonon theory in nonlinear lattices: normal vs anomalous heat conduction, DDAP4, Postech, Korea 12-14 July, 2006.
183. Thermal diode and thermal transistor: The art of controlling heat flow, 3:00-3:30pm, 30 June 2006, The Oversea's Chinese Physicists Conference. Taipei.
184. Thermal diode and thermal transistor: The art of controlling heat flow, 9:45-10:30am, 23 June 2006, "The 8th Taiwan International Symposium on Statistical Physics" (StatPhys-Taiwan-2006)", 21-26 June 2006, Institute of Physics, Academia Sinica, Taipei.
185. Thermal diode and thermal transistor: The art of controlling heat flow, 10-11am, 17 June 2006, Institute of Applied Physics and Computational Mathematics, Beijing, China.
186. Thermal diode and thermal transistor: The art of controlling heat flow, 3-4pm, 16 June 2006, Zhongguancun Forum on Condensed Matter Physics, Institute of Physics, the Chinese Academy of Science.
187. Thermal diode and thermal transistor: The art of controlling heat flow, 3-4pm 15 June 2006, Department of Physics, Peking University, PR China
188. Thermal diode and thermal transistor: The art of controlling heat flow, 3-4pm, 14 June 2006, Department of Physics, Tsinghua University, PR China
189. Thermal diode and thermal transistor: The art of controlling heat flow, 3-4pm, 13 June 2006, Institute of Acoustics, the Chinese Academy of Science, PR China
190. **Five lectures on workshop on"Some computational problems on statistical method in condensed matter physics" at CCAST (China Center of Advanced Science and Technology): Lecture 1:** *Heat conduction in 1D ahnarmonic (nonlinear) lattices*,3-4pm 12 June 2006; Lecture 2: *Is chaos a necessary condition for Fourier law of heat conduction*? 4:20-5:20 pm, 12 June 2006; Lecture 3: *Anomalous heat conduction and anomalous diffusion,* 10:20-11:20 am, 13 June 2006; Lecture 4: *Thermal diode and thermal transistor: The art of controlling heat flow*, 9-10am, 14 June 2006; Lecture 5: *Heat conduction in nanostructures*, 10:20-11:20 am, 14 June 2006.
191. Anomalous heat conduction in single walled carbon nanotubes, 17 Feb 2006, Department of Physics, Nanjing Normal University, PR China.

192. Thermal diode and thermal transistor: The art of controlling phonon transport, 16 Feb 2006, Institute of Acoustics, Nanjing University, PR China
193. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 25 November 2005, Department of Physics, Soochow University, PR China
194. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 24 Nove 2005, Department of Applied Physics, Tongji University, Shanghai, China.
195. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 7 October 2005, Department of Electronic and Computer Engineering, Faculty of Engineering, National University of Singapore, Singapore.
196. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 9 July 2005, National Institute of Optics, Florence, Italy.
197. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 1 July 2005, Department of Theoretical Physics, University of Geneva, Switzerland.
198. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 22 April 2005, Department of Physics, Wuhan University, Wuhan, China.
199. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 21 April 2005, Department of Physics, Huanzhong University of Science and Technology, Wuhan, China.
200. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics", 18 April 2005, Department of Physics, Xiamen University, China.
201. Quantum Chaos and Quantum Computing", 24 March 2005, Department of Physics, Nanjing Normal University, China.
202. Thermal diode and thermal transistor: controlling heat flow at ease, 24 March 2005, Department of Physics, Nanjing Normal University, China.
203. Thermal diode and thermal transistor: controlling heat flow at ease, 23 March 2005, Department of Physics, Nanjing University, China.

204. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 16 December 2004, Department of Applied Physics, Tokyo University, Japan.
205. Is chaos a necessary condition for the Fourier law of heat conduction?, 17 December 2004, Department of Applied Physics, Tokyo University, Japan.
206. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 15 December 2004, Computational Materials Research Center, Natinoal Institute of Material Science, Tsukuba, Japan.
207. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 13 December 2004, Department of Applied Physics, Waseda University, Tokyo, Japan.
208. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, "Workshop on Chaos and Nonlinear Dynamics in Quantum-Mechanical and Macroscopic Systems", 8-10 December 2004 Yukawa Institute for Theoretical Physics, Kyoto University, Japan.
209. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics", 26 November 2004, Nanoscale Materials Interfaces: Experiment, Theory and Simulation, Workshop, 25-27 Nov. 2004, Institute of Mathematical Science, NUS, Singapore.
210. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, at "The First International Workshop on Simulational Physics", 5-7 November, 2004, Hangzhou, Zhejiang University. (**Plenary talks**: 50 minutes).
211. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 9 November 2004, Department of Physics, Fudan University, PR China.
212. Thermal diode and thermal transistor: controlling heat flow through nonlinear dynamics, 10 November 2004, Department of Physics, Easter China Normal University, PR China.
213. The Third International Conference on “Condensed Matter Theory and Computational Materials" 12 - 16 July, 2004, Dalian, PR China.
214. Quantum chaos and quantum computing/computer, 16 July, 2004, Department of Physics, Huang Zhong University of Science and Technology, PR China.
215. Heat conduction in low dimensional systems, 14 May, 2004, Department of Physics, Wuhan University, PR China.
216. Is chaos a necessary and sufficient condition for Fourier law?', 9-10AM, 11 May, 2004, Department of Physics, Huang Zhong University of Science and Technology, PR China.
217. Heat conduction in one dimensional nonlinear lattices, 3-4PM, 11 May, 2004, Department of Physics, Huang Zhong University of Science and Technology, PR China.
218. Anomalous heat conduction and anomalous diffusion. 9-10AM, 12 May, 2004, Department of Physics, Huang Zhong University of Science and Technology, PR China.
219. Thermal rectifier, 3-4PM, 12 May, 2004, Department of Physics, Huang Zhong University of Science and Technology, PR China.
220. Heat conduction in single walled carbon nanotubes. 8-9PM, 12 May, 2004, Department of Physics, Huang Zhong University of Science and Technology, PR China.
221. Does heat conduction in carbon nanotubes obey the Fouriear law?", 12 noon-1PM, 8 April, 2004, Lunch time talk at Faculty of Science, NUS.
222. Quantum fidelity in a chaotic systems, NATO Advanced Research Workshop ``Quantum Chaos: Theory and Application”. June 17 -22, 2003, Como, Italy.
223. Is chaos a necessary condition for Fourier law? The First Cross-Strait Statistical Physics Meeting, August 27-31, 2003. Yanzhou, China.
224. Thermal rectifier, International Novel Materials Workshop 2002", International Centre for Materials Physics, Chinese Academy of Sciences, June 17-20, 2002.
225. How much do we know about heat conduction in 1d system?,StatPhys-Taiwan-2002: LATTICE MODELS AND COMPLEX SYSTEMS. The 2nd APCTP and 6th Taiwan International Symposium on Statistical Physics.In honor of F. Y. Wu on the occasion of his 70th birthday, May 26 - June 1, 2002. Taipei, Academia Sinica, and National Chung Hsing University, Taichung.
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Publications:

328 papers in international refereed journals including 2 *Review of Modern Physics*, 30 *Phys. Rev. Lett*, 50 *Phys Rev* E, 38 *Phys. Rev* B, 6 *Phys Rev* A, 18 *Appl. Phys Lett*, 18 *EPL*, 7 *Nano Lett*, 8 *Adv Mat*, 1 *PNAS*, 1 *Nature Material*, 2 *Nature Comm*. Citation > 16,600, H-index 70 as of Sept 13, 2018 (Google scholar). The annual citation number is more than 2,000.