

陈国谦

gqchen@pku.edu.cn



学位

北京大学，力学系流体力学专业，理学博士
1989
华中科技大学，能源动力工程系热能工程专业，工学硕士
1985
华中科技大学，能源动力工程系热能工程专业，工学学士
1982

工作经历

北京大学，力学系，教授 2000-
沙特国王阿卜杜拉大学，卓越研究中心，高引用杰出教授（Highly-Cited Distinguished Professor）
2013-
澳门科技大学，澳门环境研究院，特聘杰出教授
（Guest Distinguished Professor） 2020-
北京师范大学，环境学院，（生态经济学科）兼职教授 1997-2006
北京大学，中国可持续发展研究中心/环境中心，教授 1996-2000
香港大学，土木工程系，访问教授 1995-2000
美国匹兹堡大学，机械工程系，访问教授 1993- 1995
北京航空航天大学，航空发动机系，副教授/教授 1991- 1993
中国科学院力学所，高速空气动力学实验室，助理研究员 / 副研究员
1989- 1991

近期主要奖项和荣誉

爱思唯尔中国高被引学者（Elsevier Most Cited Chinese Researcher，力学、环境和地理），2016-2021
ISI 全球高被引学者（ISI Highly Cited Researcher，数学、生态和跨学科），2002-2012，2013，2014，2019
爱思唯尔擎天神奖（Elsevier Atlas Award） 2018
汤森路透高引用研究人员奖（Thomson Reuters Highly Cited Researchers Award（2002-2014）） 2014
汤森路透中国引文桂冠奖（Thomson Reuters China Citation Laureates（2002-2014）） 2014
国家科学技术进步奖（National Award for Science and Technology Progress，2nd Prize，2/11） 2012
爱思唯尔经济学期刊论文中国大陆最高引用奖
（Elsevier Award for Most-Cited Mainland China Economics Journal Paper） 2009

研究领域

- 全球气候变化与系统生态学
- 碳中和/碳排放系统核算/可持续性科学
- 可再生能源资源
- 能源政策
- 全球供应链与区域经济

- 环境资源系统投入产出分析
- 系统生命周期分析
- 生态热力学/生态经济学
- 环境生态模拟
- 环境流体力学
- 计算流体力学
- 微生物流体力学

期刊编辑

在 58 种国际期刊中担任主编、副主编或编辑委员，如：

- Communications in Nonlinear Science and Numerical Simulation, Elsevier, Editor-in-chief 2003-2013
- Journal of Hydrodynamics, Elsevier, Deputy Editor 2000-2016
- Frontiers of Earth Science, Springer, Associate editor 2014-
- Energy Policy, Elsevier, Advisory editorial member 2006-
- Ecological Indicators, Elsevier, Editorial member 2007-

组织国际会议

担任 200 多个国际会议的主席或委员会成员，如：

- Chair, International Joint Conference on Energy and Environmental Engineering, Oslo, Norway, June 26-28, 2021;
- Chair, International Joint Conference on Environmental Engineering and Biotechnology, Jeju Island, South Korea, Oct 15-17, 2021
- Chair, 2018 International Workshop on Earth and Environmental Sciences, Hangzhou, China, June 15-17, 2018
- Chair, 2017 International Conference on Economics, Management Engineering and Marketing, Xiamen, China, October 20th-22nd, 2017
- Honorary Chair, 2010 International Conference on Advances in Energy Engineering, Beijing, China, June 19-20, 2010

主旨演讲&全会报告

获邀在 300 多个国际会议做主旨演讲或全会报告，如：

- Keynote Speech, An overview of the carbon-neutrality and renewability of concentrating solar power technology in context of China's carbon peak by 2030, 2021 International Joint Conference on Energy and Environmental Engineering, Oslo, Norway, June 26-28, 2021.
- Keynote Speech, Regional trade imbalance in terms of energy, 2018 International Workshop on Earth and Environmental Sciences, Hangzhou, China, June 15-17, 2018.
- Invited Speech, Energy review for the globalized world economy: Sources, supply chain and sinks, Environment, Climate Change and Global Warming, Oxford Round Table, University of Oxford, Oxford, U.K., July 22-25, 2015.
- Keynote Speech, Energy consumption of nations: A SEIOS for the globalized economy, 2011 International Conference on Information Technology and Energy Engineering, Beijing, China, January 23, 2011.
- Keynote Speech, Energy induced carbon dioxide emissions by the world economy: A systems ecological input-output simulation of the global trading network, 2010 International Conference on Advances in Energy Engineering, Beijing, China, June 19-20, 2010.

期刊论文

共发表 400 余篇期刊论文。

截至 2022 年 5 月 30 日，ISI 引文：10510; ISI H-index：61; 40 篇 ESI 高被引论文。

近期主要论文 (TOP ISI 期刊平台):

- *Renewable & Sustainable Energy Reviews* (Q1, IF:14.982, ranking 7/114 in ENERGY & FUELS)
- *Water Resources Research* (Q1, IF:5.240, 11/98 in WATER RESOURCES)
- *Nature Communications* (Q1, IF:14.919, 4/73 in MULTIDISCIPLINARY SCIENCES)
- *Applied Energy* (Q1, IF:9.746, 6/143 in ENGINEERING, CHEMICAL)
- *Energy Policy* (Q1, IF:6.142, 19/376 in ECONOMICS)
- *Communications in Nonlinear Science and Numerical Simulation* (Q1, IF:4.260, 11/108 in MATHEMATICS, APPLIED)
- *Environmental Research Letters* (Q1, IF:6.793, 33/247 in ENVIRONMENTAL SCIENCES)
- *Energy and Buildings* (Q1, IF:5.879, 9/136 in ENGINEERING, CIVIL)
- *Renewable Energy* (Q1, IF:8.001, 16/114 in ENERGY & FUELS)
- *Journal of Fluid Mechanics* (Q1, IF: 3.627, 4/34 in PHYSICS, FLUIDS & PLASMAS)
- *Journal of Hydrology* (Q1, IF: 5.722, 11/136 in ENGINEERING, CIVIL)
- *International Journal of Engineering Science* (Q1, IF: 8.843, 1/170 in ENGINEERING, MULTIDISCIPLINARY)
- *Land Use Policy* (Q1, IF:5.398, 23/125 in ENVIRONMENTAL STUDIES)
- *International Journal of Heat and Mass Transfer* (Q1, IF:5.584, 10/133 in ENGINEERING, MECHANICS)
- *Journal of Cleaner Production* (Q1, IF:7.246, 19/265 in ENVIRONMENTAL SCIENCES)
- *Science of the Total Environment* (Q1, IF: 7.963, 25/274 in ENVIRONMENTAL SCIENCES)
- *Environmental Science & Technology* (Q1, IF: 9.028, 20/274 in ENVIRONMENTAL SCIENCES)
- *Agriculture Ecosystems & Environment* (Q1, IF: 5.567, 1/58 in AGRICULTURE, MULTIDISCIPLINARY)
- *Ecological Economics* (Q1, IF:5.389, 28/376 in ECONOMICS)
- *Atmospheric Chemistry and Physics* (Q1, IF: 6.133, 25/305 in ENVIRONMENTAL SCIENCES)

- [1] Wang BH, Jiang WQ, **Chen GQ***. Gyrotactic trapping of micro-swimmers in simple shear flows: a study directly from the fundamental Smoluchowski equation. *Journal of Fluid Mechanics*. 2022; 939: A37.
- [2] Guo JL, **Chen GQ***. Solute Dispersion From a Continuous Release Source in a Vegetated Flow: An Analytical Study. *Water Resources Research*. 2022; 58(4): e2021WR030255.
- [3] Wang BH, Jiang WQ, **Chen GQ***. Cross-channel distribution and streamwise dispersion of micro-swimmers in a vertical channel flow: A study on the effects of shear, particle shape, and convective inertial torque. *Physics of Fluids*. 2022; 34(1):011904.
- [4] Guo JL, Jiang WQ, **Chen GQ***, Li Z, Alharbi NS, Wakeel M. Solute dispersion in an open channel turbulent flow: Solution by a generalized model. *Journal of Hydrology*. 2022; 604:127239.
- [5] Long J, Wu XF, Yang Q*, **Chen GQ**, Liu ZH, Huang JL, Ba SS*. Tracing energy-water-greenhouse gas nexus in national supply chains: China 2017. *Journal of Cleaner Production*. 2022; 352:131586.
- [6] Debnath S*, Jiang WQ*, Guan MY, **Chen GQ**. Effect of ring-source release on dispersion process in Poiseuille flow with wall absorption. *Physics of Fluids*. 2022; 34(2):027106.
- [7] Wang BH, Jiang WQ, **Chen GQ***. Vertical distribution and longitudinal dispersion of gyrotactic microorganisms in a horizontal plane Poiseuille flow. *Physical Review Fluids*. 2021; 6(5):054502.
- [8] Jiang WQ, **Chen GQ***. Transient dispersion process of active particles. *Journal of Fluid Mechanics*, 2021; 927: A11.
- [9] Ma R, Zhang B, Guo YX, Li K, Zhao XL, Lindner S, Guan CH, **Chen GQ**, Gan YJ, Meng J. Mitigation potential of global ammonia emissions and related health impacts in the trade network. *Nature Communications*, 2021; 12, 6308.

- [10] Kan SY, Chen B., Han M., Hayat T, Alsulami, H, **Chen GQ***. China's forest land use change in the globalized world economy: Foreign trade and unequal household consumption. *Land Use Policy*, 2021; 103, 105324.
- [11] Wu XD, Li CH, Guo, JL, Wu XF, Meng, J, **Chen, GQ***. Extended carbon footprint and emission transfer of world regions: With both primary and intermediate inputs into account. *Science of The Total Environment*, 2021; 775, 145578.
- [12] Fan Y, Wu XD, Shao L, Han MY, Chen B, Meng J, Wang P*, **Chen GQ***. Can constructed wetlands be more land efficient than centralized wastewater treatment systems? A case study based on direct and indirect land use. *Science of The Total Environment*, 2021; 770, 144841.
- [13] Wu XD, Li CH, Shao L, Meng J, Zhang LX, **Chen GQ***. Is solar power renewable and carbon-neutral: Evidence from a pilot solar tower plant in China under a systems view. *Renewable and Sustainable Energy Reviews*, 2021; 138, 110655.
- [14] Li CH, Wu XD, **Chen GQ***, Han MY, Chen K, Yangzong C, Dan L, Ahmed A, Hayat T. Pastureland use of China: Accounting variations from different input-output analyses. *Land Use Policy*, 2021; 109, 105597.
- [15] Mukisa N, Zamora R, Lie TT, Wu X, Chen G. Multi criteria analysis ranking of solar photovoltaic modules manufacturing countries by an importing country: A case of Uganda. *Solar Energy*. 2021 Jul 15; 223:326-45.
- [16] Liu SY, Wang ZY, Han MY, Wang GD, Hayat T, **Chen GQ***. Energy-water nexus in seawater desalination project: A typical water production system in China. *Journal of Cleaner Production*, 2021; 279, 123412.
- [17] Wu XD, Shao L, **Chen GQ***, Han M, Chi Y., Yang Q., ... & Wakeel, M. Unveiling land footprint of solar power: A pilot solar tower project in China. *Journal of Environmental Management*, 2021; 280, 111741.
- [18] Yang, Q., Zhou, H., Bartocci, P., Fantozzi, F., Mašek, O., Agblevor, F. A., ... **Chen GQ**, ... & McElroy, M.B. Prospective contributions of biomass pyrolysis to China's 2050 carbon reduction and renewable energy goals. *Nature communications*, 2021; 12(1), 1-12.
- [19] Mukisa N, Zamora R, Lie TT, Wu XF, **Chen GQ**. Multi criteria analysis ranking of solar photovoltaic modules manufacturing countries by an importing country: A case of Uganda. *Solar Energy*. 2021; 223:326-45.
- [20] Wu XD, Guo JL, **Chen GQ***, Wu XF, Meng J, Alhodaly M, Wakeel M. Energy use flows in the supply chains of the world economy: A full account of both primary and intermediate inputs. *Journal of Cleaner Production*. 2021:128621.
- [21] Li YL, Chen B, **Chen GQ***, Wu XF. The global oil supply chain: The essential role of non-oil product as revealed by a comparison between physical and virtual oil trade patterns. *Resources, Conservation and Recycling*. 2021; 175:105836.
- [22] Li YL, Chen B, Li CH, Li Z, **Chen GQ***. Energy perspective of Sino-US trade imbalance in global supply chains. *Energy Economics*, 2020; 92, 104959.
- [23] Wu XD, Guo JL, Li CH, **Chen GQ***, Ji X*. Carbon emissions embodied in the global supply chain: Intermediate and final trade imbalances. *Science of the Total Environment*, 2020; 707, 134670.
- [24] Li YL, Chen B, **Chen GQ***, Meng J, Hayat T. An embodied energy perspective of urban economy: a three-scale analysis for Beijing 2002–2012 with headquarter effect. *Science of The Total Environment*. 2020; 732:139097.
- [25] Liu YT, Chen B, **Chen GQ***, Li Z, Meng J, Tasawar H. Globalized energy-water nexus through international trade: The dominant role of non-energy commodities for worldwide energy-related water use. *Science of The Total Environment*. 2020 Sep 20; 736:139582.

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- [28] Kan SY, Chen B, Meng J, **Chen GQ***. An extended overview of natural gas use embodied in world economy and supply chains: Policy implications from a time series analysis. *Energy Policy*. 2020; 137:111068.
- [29] Jiang WQ, **Chen GQ***. Dispersion of gyrotactic micro-organisms in pipe flows. *Journal of Fluid Mechanics*, 2020; 889.
- [30] Li YL, Chen B, **Chen GQ***. Carbon network embodied in international trade: global structural evolution and its policy implications. *Energy Policy*. 2020; 139:111316.
- [31] Guo JL, Jiang WQ, **Chen GQ***. Transient Solute Dispersion in Wetland Flows With Submerged Vegetation: An Analytical Study in Terms of Time-Dependent Properties. *Water Resources Research*, 2020; 56(2): e2019WR025586.
- [32] Guo JL, Jiang WQ, Zhang LZ, Li Z, **Chen GQ***. Effect of bed absorption on contaminant transport in wetland channel with rectangular cross-section. *Journal of Hydrology*, 2019; 578:124078.
- [33] Liu, SY, Zhang JJ, Han MY, Yao YX, **Chen GQ***. Multi-scale water use balance for a typical coastal city in China. *Journal of Cleaner Production*, 2019; 236: 117505.
- [34] Jiang WQ*, **Chen GQ***. Dispersion of active particles in confined unidirectional flows. *Journal of Fluid Mechanics*, 2019; 877: 1-34
- [35] Kan, SY, Chen B, **Chen GQ***. Worldwide Energy Use across Global Supply Chains: Decoupled from Economic Growth? *Applied Energy*, 2019; 250: 1235–45.
- [36] Wu XD, Ji X, Li CH, Xia XH, **Chen GQ***. Water Footprint of Thermal Power in China: Implications from the High Amount of Industrial Water Use by Plant Infrastructure of Coal-Fired Generation System. *Energy Policy*, 2019; 132: 452–61.
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- [40] Jiang WQ, **Chen GQ***. Solute transport in two-zone packed tube flow: Long-time asymptotic expansion. *Physics of Fluids*, 2019; 31:4.
- [41] Wu, XD, Guo JL, Meng J, **Chen GQ***. Energy Use by Globalized Economy: Total-Consumption-Based Perspective via Multi-Region Input-Output Accounting. *Science of Total Environment*, 2019; 662: 65-76.
- [42] Han, MY, **Chen GQ***, Dunford M*. Land Use Balance for Urban Economy: A Multi-Scale and Multi-Type Perspective. *Land Use Policy*, 2019; 83: 323-333.
- [43] Wu, XD, Guo JL, Ji X, **Chen GQ***. Energy Use in World Economy from Household-Consumption-Based Perspective. *Energy Policy*, 2019; 127: 287-298.
- [44] Li, YL, Han MY, Liu SY, **Chen GQ***. Energy Consumption and Greenhouse Gas Emissions by Buildings: A Multi-Scale Perspective. *Building and Environment*, 2019; 151:240-250.

- [45] Liu SY, Zhang GX, Han MY, Wu XD, Li YL, Chen K, Meng J, Shao L, Wei WD, **Chen GQ***. Freshwater costs of seawater desalination: Systems process analysis for the case plant in China. *Journal of cleaner production*, 2019; 212: 677-686.
- [46] Jiang, WQ, **Chen GQ***. Environmental Dispersion in Layered Wetland: Moment Based Asymptotic Analysis. *Journal of Hydrology*, 2019; 569: 252–64.
- [47] Kan, SY, Chen B, Wu XF, Chen ZM, **Chen GQ***. Natural Gas Overview for World Economy: From Primary Supply to Final Demand via Global Supply Chains. *Energy Policy*. 2019; 124: 215-225.
- [48] Jiang WQ, **Chen GQ***. Solution of Gill’s generalized dispersion model: Solute transport in Poiseuille flow with wall absorption. *International Journal of Heat and Mass Transfer*, 2018; 127: 34-43.
- [49] Guo JL, Jiang WQ*, Zeng L., **Chen GQ***. Environmental transport in wetland channel with rectangular cross-section: Analytical solution by Chatwin’s asymptotic expansion. *Journal of Hydrology*, 2018; 565: 224-236.
- [50] Wu XD, Guo JL, Han MY, **Chen GQ***. An overview of arable land use for the world economy: From source to sink via the global supply chain. *Land Use Policy*, 2018; 76: 201-214.
- [51] Li G., Jiang WQ, Wang P., Guo JL., Li Z.*, **Chen GQ***. Concentration moments based analytical study on Taylor dispersion: open channel flow driven by gravity and wind. *Journal of Hydrology*. 2018; 562: 244-253.
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- [53] Guo JL, Wu XD, Jiang WQ*, **Chen GQ***. Contaminant transport from point source on water surface in open channel flow with bed absorption. *Journal of Hydrology*. 2018; 561: 295-303.
- [54] Han MY*, **Chen GQ***, Li YL. Global water transfers embodied in international trade: Tracking imbalanced and inefficient flows. *Journal of Cleaner Production*. 2018; 184: 50-64.
- [55] Wu XF, **Chen GQ***. Coal use embodied in globalized world economy: From source to sink through supply chain. *Renewable and Sustainable Energy Reviews*. 2018; 81: 978-993.
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- [61] Wu XF, **Chen GQ***. Global primary energy use associated with production, consumption and international trade. *Energy Policy*. 2017; 111: 85-94.
- [62] Wang P, **Chen GQ***. Concentration distribution for pollutant dispersion in a reversal laminar flow. *Journal of Hydrology*, 2017; 551: 151-161.
- [63] Li G., Wang P., Jiang WQ, Zeng L., Li Z.*, **Chen GQ***. Taylor dispersion in wind-driven current. *Journal of Hydrology*. 2017; 555: 697-707.
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- [75] Wu XD, Xia XH, **Chen GQ***, Wu XF, Chen B. Embodied energy analysis for coal-based power generation system-highlighting the role of indirect energy cost. *Applied Energy*. 2016; 184:936-50.
- [76] Wang P, **Chen GQ***. Solute dispersion in open channel flow with bed absorption. *Journal of Hydrology*, 2016; 543: 208-217.
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- [85] Wang P, **Chen GQ***. Solute dispersion in open channel flow with bed absorption. *Journal of Hydrology*. 2016; 543:208-17.
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(* ——通讯作者)