

# Ni Sheng



Position : Professor/Dean  
Faculty : School of Business / Macau Environmental  
Research Institute  
Email Address : nis@must.edu.mo  
Telephone : (853) 8897-2870

**Research Area:** Environmental Management and Policy,  
Low-Carbon Circular Economy

**Teaching Area:** Statistics, Decision Modeling, Operations  
Management

## ***Educational Background***

2006 - 2007	Postdoctoral Scholar / University of California, Berkeley
2002 - 2005	PhD / The University of Hong Kong
1998 - 2000	MEng / Nanyang Technological University, Singapore
1991 - 1995	BSc / Civil Engineering, Minor in Computer Applications / Zhejiang University

## ***Working Experience***

2013 - Present	Assistant Dean, Vice Dean, Executive Vice Dean, Dean / School of Business / Macau University of Science and Technology
2007 - Present	Assistant Professor / Associate Professor / Professor / Macau University of Science and Technology
2005 - 2006	Research Associate / The University of Hong Kong
2000 - 2002	Research Engineer / Data Storage Institute, National University of Singapore

## ***Recent Awards***

2022	The 6th Outstanding Achievement Awards for Macao Research in Humanities and Social Sciences –3rd Prize
2019	The 5th Outstanding Achievement Awards for Macao Research in Humanities and Social Sciences – Outstanding Prize
2016	Macao Science and Technology Awards - Science and Technology Progress Award - 3rd Prize (Macao SAR), 2016 澳門科學技術獎勵 - 科技進步獎三等獎 (唯一完成人)
2014	BOC Research Excellence Award (Macau University of Science and Technology)

## ***Selected Publications***

1. Chen C, Wen ZG, **Sheng N**, Song QB. Uneven agricultural contraction within fast-urbanizing urban agglomeration decreases the nitrogen use efficiency of crop production. *Nature Food*, 2024, 5: 390-401. (SCIE, 2023 IF 23.6, ranking 1/173=0.6%, Q1)
2. Wang HX, **Sheng N**, Song QB, Xu LJ, Bai J. Exploring the potential carbon emissions and net-zero path of international flights: A case study in Macao. *Journal of Environmental Sciences*, 2025, 156: 288-299. (SCIE, Q1)
3. Zheng XY, Lan YK, Wei XY, **Sheng N**, Shao XF. Green Credit Guidelines and Financial Resilience: Implications for green innovation in heavily polluting enterprises. *Journal of Environmental Management*, 2025, 378, 124573. (SCIE, Q1)
4. Ke JC, Zhao SJ, Guo YZ, Song QB, **Sheng N**, Li JH. Cross-city insights on sustainable consumption: consistency and disparities in willingness to buy and pay for green air conditioners. *Frontiers of Environmental Science & Engineering*, 2025, 19, 53. (SCIE, Q1)
5. Guo YZ, **Sheng N**, Ke JC, Song QB, Li JH. Promoting the sustainable development of the low-carbon tourism industry from the perspective of tourists' carbon capability. *Environment Development and Sustainability*, 2025 Jun. (SCIE, Q2)
6. Lin Y, Lv HY, Ke JC, Song QB, **Sheng N**, Chen C, Wen ZG. Dynamic nitrogen metabolism in urban environments: Cross-sectoral and cross-media insights for sustainable management. *Resources Environment and Sustainability*, 2025, 19, 100193. (ESCI, Q1)
7. Zhao SJ, Chan KL, **Sheng N**, Song QB, Li JH. Identifying key factors of sustainable consumption: a case on coffee consumers' WTA and WTP for oat-cups instead of one-time use cups. *Environment Development and Sustainability*, 2024 Nov. (SCIE, Q2)
8. Cai KH, Guo YL, **Sheng N**, Wang L, He X, Song QB, Chen C, Wen ZG. What influences different stakeholders' willingness to accept and pay for reusable tableware? Evidence from a CVM survey of Guangdong-Hong Kong-Macao GBA. *Environmental Impact Assessment Review*, 2025, 110, 107671. (SSCI, Q1)
9. Ke JC, **Sheng N**, Song QB, Yuan WY, Li JH. Empirical evidence on the characteristics and influencing factors of carbon emissions from household appliances operation in the Pearl River Delta region, China. *Applied Energy*, 2024, 376, 124191. (SCIE, Q1)
10. Shao CW, Bhar R, Colwell DB, **Sheng N**, Wei XY. Variance dynamics and term structure of the natural gas market. *Energy Economics*, 2024, 137, 107780. (SSCI, Q1)
11. Zhao SJ, Chan KM, **Sheng N**, Song QB, Li JH. Reducing carbon footprint of typical coffee consumption from the whole lifecycle viewpoint. *Environmental Impact Assessment Review*, 2024, 106, 107476. (SSCI, Q1)

12. Xu LJ, Zhang JL, **Sheng N**, Long YQ, Yuan WY, Wang C, Song QB. How to motivate residents' intentions and behaviors to purchase photovoltaic power? A discrepancy study in Guangdong-Hong Kong-Macao GBA. *Energy Reports*, 2024, 11: 1088-1099. (SCIE, Q2)
13. Wan YY, **Sheng N**, Wei XY, Su HY. Study on the spatial spillover effect and path mechanism of green finance development on China's energy structure transformation. *Journal of Cleaner Production*, 2023, 415: 137820. (SCIE, Q1)
14. Dai BL, **Sheng N**, Huang J, Mu FH, Chen X, Li T, Xu JM, He YL. Inland waterway traffic noise prediction model: a comparison. *International Journal of Environmental Science and Technology*, 2023, published online. (SCIE, Q3)
15. Zhang ZK, **Sheng N**, Zhao DQ, Cai KH, Yang GM, Song QB. Are residents more willing to buy and pay for electric vehicles under the "carbon neutrality"? *Energy Reports*, 2023, 9: 510-521. (SCIE, Q2)
16. Wan YY, **Sheng N**. Clarifying the relationship among green investment, clean energy consumption, carbon emissions, and economic growth: a provincial panel analysis of China. *Environmental Science and Pollution Research*, 2022, 29(6): 9038-9052. (SCIE, Q1)
17. Hsiao YL, **Sheng N**, Fu SZ, Wei XY. Evaluation of contagious effects of China's wind power industrial policies. *Energy*, 2022, 238: 121760. (SCIE, Q1)
18. Cai KH, Xie YF, Song QB, **Sheng N**, Wen ZG. Identifying the status and differences between urban and rural residents' behaviors and attitudes toward express packaging waste management in Guangdong Province, China. *Science of the Total Environment*, 2021, 797: 148996. (SCIE, Q1)
19. Hsiao YL, Wei XY, **Sheng N**, Shao CW. A joint test of policy contagion with application to the solar sector. *Renewable & Sustainable Energy Reviews*, 2021, 141:110762. (SCIE, Q1)
20. Chen C, Yao Z, Wen ZG, **Sheng N**. Impact of city characteristics on its phosphorus metabolism in the bay area: A comparative analysis of cities in the Greater Bay Area of China. *Journal of Cleaner Production*, 2021, 286:124925. (SCIE, Q1)
21. Hsiao YL, Ai D, Wei XY, **Sheng N**. The contagious effect of China's energy policy on stock markets: The case of the solar photovoltaic industry. *Renewable Energy*, 2021, 164:74-86. (SCIE, Q1)
22. Hsiao YL, Ou YL, **Sheng N**, Wei XY. Measuring contagion effects of nuclear energy policies and events. *International Journal of Energy Research*, 2021, 45:11510-11525. (SCIE, Q1)
23. Chen H, Li XY, Lu XR, **Sheng N**, Zhou W, Geng HP, Yu SW. A multi-objective optimization approach for the selection of overseas oil projects. *Computers & Industrial Engineering*, 2021, 151:106977. (SCIE, Q1)
24. Dai BL, **Sheng N**, Zhao W, Mu FH, He LY. Evaluation of urban inland waterway traffic noise using a modified Nord 2000 prediction model. *Environmental Research*, 2020, 185: 109437. (SCIE, Q1)

25. Dai BL, **Sheng N**, He YL, Mu FH, Xu JM, Zhu AF. Development of an inland waterway traffic noise prediction model considering water surface adsorption and embankment shielding influences. *International Journal of Environmental Science and Technology*, 2019, 16: 5927-5936. (SCIE, Q3)
26. Zhu LC, Song QB, **Sheng N**, Zhou X. Exploring the determinants of consumers' WTB and WTP for electric motorcycles using CVM method in Macau. *Energy Policy*, 2019, 127: 64-72. (SSCI/SCIE, Q1)
27. **Sheng N**, Tang UW. Grydehoj A. Urban morphology and urban fragmentation in Macau, China: island city development in the Pearl River Delta megacity region. *Island Studies Journal*, 2017, 12: 199-212. (SSCI, Q3)
28. **Sheng N**, Zhou X, Zhou Y. Environmental impact of electric motorcycles: Evidence from traffic noise assessment by a building-based data mining technique. *Science of the Total Environment*, 2016, 554: 73-82. (SCIE, Q1)
29. **Sheng N**, Tang UW. The first official city ranking by air quality in China - A review and analysis. *Cities*, 2016, 51: 139-149. (SSCI, Q1)
30. Dai BL, **Sheng N**, He YL, Xu JM, Zhu AF. An inland waterway traffic noise prediction model for environmental assessment in China. *International Journal of Environmental Science and Technology*, 2016, 13: 1235-1244. (SCIE, Q3)
31. Choy KL, **Sheng N**, Lam HY, Lai IKW, Chow KH, Ho GTS. Assess the effects of different operations policies on warehousing reliability. *International Journal of Production Research*, 2014, 52: 662-678. (SCIE, Q1)
32. **Sheng N**, Tang UW. Zhuhai. *Cities*, 2013, 32: 70-79. (SSCI, Q1)
33. **Sheng N**, Tang UW. Risk assessment of traffic-related air pollution in a world heritage city. *International Journal of Environmental Science and Technology*, 2013, 10: 11-18. (SCIE, Q3)
34. **Sheng N**, Tang UW. A building-based data capture and data mining technique for air quality assessment. *Frontiers of Environmental Science & Engineering*, 2011, 5: 543-551. (SCIE, Q4)
35. Tang UW, **Sheng N**. Macao. *Cities*, 2009, 24: 220-231. (SSCI, Q1)
36. **Sheng N**, Li SF. A multi-scale non-equilibrium molecular dynamics algorithm and its applications. *International Journal of Applied Mechanics*, 2009, 1: 405-420. (SCIE)
37. Li SF, **Sheng N**. On multiscale non-equilibrium molecular dynamics simulations. *International Journal for Numerical Methods in Engineering*, 2010, 83(8-9): 998-1038. (SCIE)
38. Wu D, Lo SH, **Sheng N**, Sze KY. Universal three-dimensional connection hexahedral elements based on hybrid-stress theory for solid structures. *International Journal for Numerical Methods in Engineering*, 2010, 81(3): 307-334. (SCIE)
39. **Sheng N**, Li SF. A non-equilibrium multiscale simulation of shock wave propagation. *Mechanics Research Communications*, 2008, 35: 10-16. (SCIE)

40. Li SF, **Sheng N**, Liu XH. A non-equilibrium multiscale simulation paradigm. *Chemical Physics Letters*, 2008, 451: 293-300. (SCIE)
41. Liu XH, Li SF, **Sheng N**. A cohesive finite element for quasi-continua. *Computational Mechanics*, 2007, 42: 543-553. (SCIE)
42. **Sheng N**, Sze KY, Cheung YK. Trefftz solutions for piezoelectricity by Lekhnitskii's formalism and boundary-collocation method. *International Journal for Numerical Methods in Engineering*, 2006, 65: 2113-2138. (SCIE)
43. **Sheng N**, Sze KY. Multi-region Trefftz boundary element method for fracture analysis in plane piezoelectricity. *Computational Mechanics*, 2006, 37: 381-393. (SCIE)
44. Sze KY, **Sheng N**. Polygonal finite element method for nonlinear constitutive modeling of polycrystalline ferroelectrics. *Finite Elements in Analysis & Design*, 2005, 42: 107-129. (SCIE)
45. Jin WG, **Sheng N**, Sze KY, Li J. Trefftz indirect methods for plane piezoelectricity. *International Journal for Numerical Methods in Engineering*, 2005, 63: 139-158. (SCIE)

### ***Research Projects***

2023 - 2026	Researches on Metabolic Mechanism of Multi-source Solid Waste and its Reduction Routine Optimization of Pollution and Carbon Emissions in Guangdong-Hong Kong-Macao Greater Bay Area (Funded by FDCT-NSFC, Principal Investigator)
2017 - 2018	Island City Land Reclamation and Urban Fragmentation in Macau (Funded by Faculty Research Grant, M.U.S.T., Principal Investigator)
2013 - 2015	High-Resolution Traffic Noise Mapping in the Macao Peninsula (Funded by FDCT, Principal Investigator)
2014 - 2015	Road Traffic Noise Prediction Model for Macao (Funded by Faculty Research Grant, M.U.S.T., Principal Investigator)
2012 - 2013	Impacts of Environmental Elements on Residential Property Values in Macao (Funded by Macau Foundation, Principal Investigator)
2012 - 2013	Survey for Residential Status in the Neighborhood of Kou Lou (Project commissioned by the Land, Public Works and Transport Bureau, Macao SAR)
2010 - 2011	Survey for Residential Status in the Neighborhood of Barra (Project commissioned by the Land, Public Works and Transport Bureau, Macao SAR)
2010 - 2011	Public Environmental Awareness Survey in Macao (Project commissioned by the Environmental Protection Bureau, Macao SAR)
2009 - 2010	Survey for Residential Status in the Neighborhood of Ha Wan (Project commissioned by the Land, Public Works and Transport Bureau, Macao SAR)
2009 - 2010	Environmental Economic Assessment of Macao Light Rail Transit System (Project commissioned by the Transportation Infrastructure Office, Macao SAR)