**Dr. Minda Ma (马敏达)**

**Elsevier** Highly Cited Chinese Researcher (2021-2025)

World’s Top 2% Scientist by Stanford University (2023-2024)

Professor, ***Chongqing University***, Chongqing, China

Affiliate Faculty, ***Lawrence Berkeley National Laboratory***,Berkeley, USA

Shuimu Tsinghua Scholar, ***Tsinghua University***, China

Homepage: https://buildings.lbl.gov/people/minda-ma

https://chongjian.cqu.edu.cn/info/1556/6706.htm

Google Scholar: <https://scholar.google.com/citations?user=240qUyIAAAAJ&hl=en>

E-mail：maminda@lbl.gov | minda.ma@cqu.edu.cn

### Education Background

* Sep 2012-Jun 2016, BEng, Department of Construction Management, *Chongqing University*, China
* Sep 2016-Jun 2020, PhD in Management Science, Department of Construction Management, *Chongqing University*, China

### Work Experience

* Professor, Department of Building Technology, School of Architecture and Urban Planning, ***Chongqing University***, China (since Sep 2023)
* Postdoctoral Researcher, Building Technology and Urban Systems Division, ***Lawrence Berkeley National Laboratory***, USA (Sep 2022–Sep 2023)

\* Affiliate Faculty, Building Technology and Urban Systems Division, *Lawrence Berkeley National Laboratory*, USA (since Sep 2023)

* Postdoctoral Researcher & Shuimu Tsinghua Scholar, School of Science, ***Tsinghua University***, China (Jul 2020–Jul 2022)
* Young Editorial Member of ***Nexus*** (Cell Press Partner Journal) since May 2025
* Young Editorial Member of ***Advances in Applied Energy*** (JCR Q1, IF: 13.8) since Sep 2024
* Young Editorial Member of ***Applied Energy*** (JCR Q1, IF: 11.0) since Oct 2022
* Panel Chair of **CUE2025** (Supported by ***Applied Energy***, IF: 11.0)
* Session Chair of **CUE2020, 2021, 2022, 2023, 2024 & 2025** (Supported by ***Applied Energy***, IF: 11.0)
* Session Chair of **ICAE2024** (Supported by ***Applied Energy***, IF: 11.0)
* Section Editor of ***Buildings*** (IF: 3.1) since Mar 2021
* Young Editorial Member of ***Petroleum Science*** (IF: 6.0) since Oct 2022

### Research Interests

* High resolution calculation of global building emissions
* Carbon neutrality assessment of building end-use activity
* Embodied emission monitoring of building materials
* Decarbonization technology of building energy system
* Cost-effective analysis for net-zero carbon building

### Awards & Honors

* Oct 2024, World’s Top 2% Scientist, ***Stanford University***
* Oct 2023, World’s Top 2% Scientist, ***Stanford University***
* Mar 2025, Elsevier Highly Cited Chinese Researcher, ***Elsevier*** Sci. Publisher B.V.
* Mar 2024, Elsevier Highly Cited Chinese Researcher, ***Elsevier*** Sci. Publisher B.V.
* Mar 2023, Elsevier Highly Cited Chinese Researcher, ***Elsevier*** Sci. Publisher B.V.
* Apr 2022, Elsevier Highly Cited Chinese Researcher, ***Elsevier*** Sci. Publisher B.V.
* Apr 2021, Elsevier Highly Cited Chinese Researcher, ***Elsevier*** Sci. Publisher B.V.
* May 2025, Nexus 2025 Highly Cited Paper Award, ***Cell Press***
* Apr 2024, Advances in Applied Energy 2023 Highly Cited Paper Award, ***Elsevier*** Sci. Publisher B.V.
* Jul 2022, Applied Energy 2020 Highly Cited Paper Award, ***Elsevier*** Sci. Publisher B.V.
* Jan 2020, Shuimu Tsinghua Scholar, *Tsinghua University*
* Dec 2019, Qian Yi (Academician of CAS) Environmental First Award, *Tsinghua University*
* Dec 2020, Most Influential International Academic Papers Award of China (TOP 100)
* Jul 2019, Fellow of Ryoichi Sasakawa Young Leaders Fellowship Fund, Japan

### Selected Project & Publications

1. **Projects accomplished or in progress (Role: Project Leader)**

[1] **National Planning Office of Philosophy and Social Science (CN)**, Key measures and implementation pathways for deep decarbonization of buildings towards the high-quality development, 24BJY129, 2024-2026

[2] **Support program for research start-ups by overseas Chongqing students returning to China (CN)**, Digital intelligence-driven analysis for achieving carbon neutrality in building operations, cx2024040, 2024-2027

[3] **New Chongqing Talent Attraction Program (Excellent Youth Special Project) (CN)**, Technology pathway to achieve the carbon neutrality in China’s building operations, CSTB2024YCJH-KYXM0043, 2024-2027

[4] **Chongqing Postdoctoral Scholarship Program (CN)**, Near-real-time monitoring on the global carbon emissions, 2311013528872000, 2024-2025

[5] **National Planning Office of Philosophy and Social Science (CN)**, Provincial allocation of building carbon emissions under the constraint of carbon neutral goal, 21CJY030, 2021-2023

[6] **China Postdoctoral Science Foundation (First-class funding)**, Compensation effect of healthy buildings on the public health damaged by the air pollution, 2020M680020, 2020-2022

[7] **Beijing** **Natural Science Foundation (CN)**, Allocation of building carbon emissions in Jing-Jin-Ji region with the carbon neutrality target, 8224085, 2022-2023

1. **Representative papers** (2018 to present)

[1] Zhang S, **Ma M \* (Lead Contact)**, Zhou N \*, Yan J, Feng W, Yan R, et al. Estimation of Global Building Stocks by 2070: Unlocking Renovation Potential. ***Nexus*** **(Cell Press Partner Journal)** 2024; 1(3):100019. ***This paper was selected as the cover paper for Volume 1, Issue 3 of Nexus, and has been listed as a Nexus Highly Cited Paper.*** (Times Cited: 55)

[2] **Ma M**, Zhou N \*, Feng W, Yan J. Challenges and Opportunities in the Global Net-Zero Building Sector. ***Cell Reports Sustainability*** 2024; 1(8):100154. ***This paper has been recognized as an Annual Highlight Paper by Cell Reports Sustainability.*** (Times Cited: 56)

[3] **Ma M**, Zhang S, Liu J, Yan R, Cai W, Zhou N, et al. Building floorspace and stock measurement: A review of global efforts, knowledge gaps, and research priorities. ***Nexus*** **(Cell Press Partner Journal)** 2025;2(3):100075. (Times Cited: 2)

[4] Xiang X, Zhou N, **Ma M \***, Feng W \*, Yan R. Global transition of operational carbon in residential buildings since the millennium. ***Advances in Applied Energy* (IF: 13.8)** 2023; 11:100145. (Times Cited: 116) ***This paper is named in Advances in Applied Energy 2023 Highly Cited Paper Award and it is selected as an Editors’ Choice paper in 2024.***

[5] Wang Y, **Ma M \***, Zhou N, Ma Z. Paving the way to carbon neutrality: Evaluating the decarbonization of residential building electrification worldwide. ***Sustainable Cities and Society* (JCR Q1, IF: 12.0)** 2025;130:106549. (Times Cited: 1)

[6] Yan R, Zhou N, **Ma M \***, Mao C\*. India's residential space cooling transition: Decarbonization ambitions since the turn of millennium. ***Applied Energy* (JCR Q1, IF: 11.0)** 2025;391:125929. (Times Cited: 6)

[7] Deng Y, **Ma M \***, Zhou N, Zou C, Ma Z, Yan R, et al. Provincial allocation of China's commercial building operational carbon toward carbon neutrality. ***Applied Energy* (JCR Q1, IF: 11.0)** 2025;384:125450. **ESI HIGHLY CITED PAPER** **(Times Cited: 18)**

[8] Wang T, **Ma M \***, Zhou N, Ma Z. Toward net zero: Assessing the decarbonization impact of global commercial building electrification. ***Applied Energy* (JCR Q1, IF: 11.0)** 2025;383:125287. **ESI HIGHLY CITED PAPER** **(Times Cited: 18)**

[9] Deng Y, **Ma M \***, Zhou N, Ma Z, Yan R, Ma X. China's plug-in hybrid electric vehicle transition: An operational carbon perspective. ***Energy* *Conversion* and *Management* (JCR Q1, IF: 10.9)** 2024;320:119011. **ESI HIGHLY CITED PAPER** **(Times Cited: 36)**

[10] Yuan H, **Ma M \***, Zhou N, Xie H, Ma Z, Xiang X, Ma X. Battery electric vehicle charging in China: Energy demand and emissions trends in the 2020s. ***Applied Energy* (JCR Q1, IF: 11.0)** 2024;365:123153. **ESI HIGHLY CITED PAPER** **(Times Cited: 85)**

[11] Yan R, **Ma M \***, Zhou N, Feng W, Xiang X, Mao C \*. Towards COP27: Decarbonization patterns of residential building in China and India. ***Applied Energy* (JCR Q1, IF: 11.0)** 2023; 352:122003. **ESI HIGHLY CITED PAPER** **(Times Cited: 72)**

[12] Zhang S, Zhou N, Feng W, **Ma M \***, Xiang X, You K. Pathway for decarbonizing residential building operations in the US and China beyond the mid-century. ***Applied Energy* (JCR Q1, IF: 11.0)** 2023; 342:121164. **ESI HIGHLY CITED PAPER** **(Times Cited: 81)**

[13] Yan R, Chen M, Xiang X, Feng W, **Ma M \***. Heterogeneity or illusion? Track the carbon Kuznets curve of global residential building operations. ***Applied Energy* (JCR Q1, IF: 11.0)** 2023; 346:121441. **ESI HIGHLY CITED PAPER** **(Times Cited: 88)**

[14] Chen L, **Ma M \***, Xiang X. Decarbonizing or illusion? How carbon emissions of commercial building operations change worldwide. ***Sustainable Cities and Society* (JCR Q1, IF: 12.0)** 2023; 96:104654. **ESI HOT PAPER & ESI HIGHLY CITED PAPER** **(Times Cited: 92)**

[15] Zou C, **Ma M \***, Zhou N, Feng W, You K, Zhang S. Toward carbon free by 2060: A decarbonization roadmap of operational residential buildings in China. ***Energy* (JCR Q1, IF: 9.4)** 2023; 277:127689. **ESI HIGHLY CITED PAPER** **(Times Cited: 97)**

[16] **Ma M \***, Chen M \*, Feng W, Huo J. What decarbonized the residential building operation worldwide since the 2000s. ***Petroleum Science* (JCR Q1, IF: 6.0)** 2022; 19 (6):3194-3208. **ESI HOT PAPER & ESI HIGHLY CITED PAPER** **(Times Cited: 52)**

[17] **Ma M**, Ma X, Cai W, Cai W \*. Low carbon roadmap of residential building sector in China: Historical mitigation and prospective peak. ***Applied Energy* (JCR Q1, IF: 11.0)**2020; 273:115247. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 277) *This paper ranks the 8th place in the Global ESI Highly Cited Papers of APEN in the last three years and it is named in Applied Energy 2020 Highly Cited Paper Award.***

[18] Xiang X, **Ma M \***, Ma X, Chen L, Cai W, Feng W, Ma Z. Historical decarbonization of global commercial building operations in the 21st century. ***Applied Energy* (JCR Q1, IF: 11.0)** 2022; 322:119401. **ESI HOT PAPER & ESI HIGHLY CITED PAPER** **(Times Cited: 168)**

[19] Zhang S, **Ma M \***, Xiang X, Cai W, Feng W, Ma Z. Potential to decarbonize the commercial building operation of the top two emitters by 2060. ***Resources, Conservation and Recycling* (JCR Q1, IF: 11.2)** 2022;185:106481. **ESI HOT PAPER & ESI HIGHLY CITED PAPER** **(Times Cited: 113)**

[20] **Ma M**, Feng W, Huo J, Xiang X \*. Operational carbon transition in the megalopolises’ commercial buildings. ***Building and Environment* (JCR Q1, IF: 7.6)** 2022; 226:109705.

**ESI HOT PAPER & ESI HIGHLY CITED PAPER** **(Times Cited: 84)**

[21] Li K, **Ma M \***, Xiang X, Feng W, Ma Z \*, Cai W, Ma X. Carbon reduction in commercial building operations: A provincial retrospection in China. ***Applied Energy* (JCR Q1, IF: 11.0)** 2022; 306:118098. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 194)**

[22] Zhang S, **Ma M \***, Li K, Ma Z \*, Feng W, Cai W. Historical carbon abatement in the commercial building operation: China versus the US. ***Energy Economics* (JCR Q1, IF: 14.2)** 2022; 105:105712. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 103)**

[23] Chen M, **Ma M \***, Lin Y, Ma Z \*, Li K. Carbon Kuznets curve in China’s building operations: Retrospective and prospective trajectories. ***Science of The Total Environment* (JCR Q1, IF: 8.0)**2022; 803:150104. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 103)**

[24] Chen L, Cai W \*, **Ma M \***. Decoupling or delusion? Mapping carbon emission per capita based on the human development index in Southwest China. ***Science of The Total Environment* (JCR Q1, IF: 8.0)** 2020; 741:138722. **ESI HIGHLY CITED PAPER (Times Cited: 130)**

[25] Yan R, Xiang X, Cai W \*, **Ma M \***. Decarbonizing residential buildings in the developing world: Historical cases from China. ***Science of The Total Environment* (JCR Q1, IF: 8.0)** 2022; 847:157679. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 82)**

[26] Xiang X, Ma X, Ma Z \*, **Ma M \***. Operational Carbon Change in Commercial Buildings under the Carbon Neutral Goal: A LASSO-WOA Approach. ***Buildings*** (JCR Q2, IF: 3.1) 2022; 12:54. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 49)**

[27] Xiang X, Ma X, Ma Z \*, **Ma M \***, Cai W. Python-LMDI: A Tool for Index Decomposition Analysis of Building Carbon Emissions. ***Buildings*** (JCR Q2, IF: 3.1) 2022; 12:83. **ESI HIGHLY CITED PAPER (Times Cited: 70)**

[28] Sun Z, Ma Z \*, **Ma M \***, Cai W, Xiang X, Zhang S, Chen M, Chen L. Carbon Peak and Carbon Neutrality in the Building Sector: A Bibliometric Review. ***Buildings*** (JCR Q2, IF: 3.1) 2022; 12:128. **ESI HIGHLY CITED PAPER (Times Cited: 89)**

[29] **Ma M \***, Ma X, Cai W, Cai W \*. Carbon-dioxide mitigation in the residential building sector: A household scale-based assessment. ***Energy Conversion and Management* (JCR Q1, IF: 10.9)**2019; 198:111915. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 224)**

[30] **Ma M \***, Cai W, Cai W \*. Carbon abatement in China’s commercial building sector: A bottom-up measurement model based on Kaya-LMDI methods. ***Energy* (JCR Q1, IF: 9.4)** 2018; 165:350-368. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 164)**

[31] **Ma M**, Yan R, Du Y, Ma X, Cai W \*, Xu P. A methodology to assess China’s building energy savings at the national level: An IPAT–LMDI model approach. ***Journal of Cleaner Production* (JCR Q1, IF: 9.7)** 2017; 143:784-793. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 160)**

[32] **Ma M**, Cai W, Cai W \*, Dong L \*. Whether carbon intensity in the commercial building sector decouples from economic development in the service industry? Empirical evidence from the top five urban agglomerations in China. ***Journal of Cleaner Production* (JCR Q1, IF: 9.7)** 2019; 222:193-205. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 166)**

[33] **Ma M**, Cai W \*. What drives the carbon mitigation in Chinese commercial building sector? Evidence from decomposing an extended Kaya identity. ***Science of The Total Environment* (JCR Q1, IF: 8.0)**2018; 634:884-899. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 176)**

[34] **Ma M**, Cai W \*, Wu Y. China Act on the Energy Efficiency of Civil Buildings (2008): A decade review. ***Science of The Total Environment* (JCR Q1, IF: 8.0)** 2019; 651:42-60. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 141)**

[35] **Ma M**, Cai W \*. Do commercial building sector-derived carbon emissions decouple from the economic growth in Tertiary Industry? A case study of four municipalities in China. ***Science of The Total Environment* (JCR Q1, IF: 8.0)** 2019; 650:822-834. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 148)**

[36] **Ma M**, Yan R, Cai W \*. Energy savings evaluation in public building sector during the 10th–12th FYP periods of China: an extended LMDI model approach. ***Natural Hazards*** (JCR Q2, IF: 3.3) 2018; 92:429-441. **ESI HIGHLY CITED PAPER (Times Cited: 47)**

[37] **Ma M**, Yan R, Cai W \*. An extended STIRPAT model-based methodology for evaluating the driving forces affecting carbon emissions in existing public building sector: evidence from China in 2000–2015. ***Natural Hazards*** (JCR Q2, IF: 3.3) 2017; 89:741-756. (Times Cited: 110)

[38] Liang Y, Cai W \*, **Ma M \***. Carbon dioxide intensity and income level in the Chinese megacities’ residential building sector: Decomposition and decoupling analyses. ***Science of The Total Environment* (JCR Q1, IF: 8.0)** 2019; 677:315-327. **ESI HOT PAPER & ESI HIGHLY CITED PAPER (Times Cited: 152)**

1. **Database (Project Leader)**

Global Building Emissions (GLOBE) Database. Available at https://globe2060.org/

**Bio of Minda Ma**

Dr. Minda Ma is a Full Professor in the Department of Building Technology at Chongqing University (China), and an Affiliate Faculty Member in the Building Technology & Urban Systems Division, Energy Technologies Area, at Lawrence Berkeley National Laboratory (LBNL), USA. His research focuses on building energy efficiency, decarbonization of the building and power sectors, building electrification, and electric vehicle (EV) household charging.

Dr. Ma has been conducting postdoctoral research at LBNL since September 2022. Prior to this, he was a Shuimu Tsinghua Scholar (Senior Postdoctoral Fellow) at Tsinghua University from 2020 to 2022. Dr. Ma has received multiple international recognitions. He was named among the World’s Top 2% Scientists by Stanford University in 2023 and 2024, and has been selected as a Highly Cited Researcher by Elsevier for five consecutive years (2021–2025).

At Berkeley Lab, Dr. Ma leads the Global Building Emissions (GLOBE) Database project (https://globe2060.org/), a comprehensive multi-regional dataset designed to monitor global energy consumption, emissions trends, and building stock dynamics. The GLOBE framework and related outputs have been featured in leading journals including Cell Reports Sustainability (2024, Annual Research Highlight), Nexus (2024, Cover Paper & Highly Cited Paper Award; 2025), Advances in Applied Energy (2023, Highly Cited Paper), Resources, Conservation and Recycling (2022), Applied Energy (10 publications between 2020–2025), Sustainable Cities and Society (2023, 2025), and Energy Conversion and Management (2024).

Dr. Ma serves as an Assistant Editor for Advances in Applied Energy (JCR Q1), and as a Young Editorial Member for Nexus, Applied Energy (JCR Q1), and Petroleum Science (JCR Q1). He is also an Associate Editor for Buildings (JCR Q2). In recent years, he has chaired or co-chaired sessions and panels at several high-level international conferences, including the Cell Press Nexus Forum 2025 (Hong Kong), the 16th International Conference on Applied Energy (ICAE2024) (Niigata, Japan), and the 11th Applied Energy Symposium: Low-Carbon Cities and Urban Energy Systems (CUE2025) (Kitakyushu, Japan), as well as earlier editions of the CUE series (2020–2024).