

Nelson Fumo
Associate Professor of Mechanical Engineering

Education

B.S.M.E.	Mechanical Engineering	Univ. del Tachira, Venezuela	1984
M.S.M.E.	Mechanical Engineering	Univ. of Florida, USA	1999
Ph.D.	Mechanical Engineering	Mississippi State Univ., USA	2008

Academic Experience

University of Texas at Tyler, Associate Professor, Mechanical Engineering	August 2011 – Present
Mississippi State University, Assistant Research Professor,	August 2008 – July 2011
University of Tachira, Professor	June 1989 – July 2006
Mississippi State University, Graduate Research Assistant	August 2006 – August 2008
University of Florida, Graduate Research Assistant	May 1998 – August 1999

Non-Academic Experience

Independent Consulting Engineering,	September 1984 – June 1989
-------------------------------------	----------------------------

Current Membership in Professional Organizations

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

Honors, Awards, Grants

- H1. 2015-2016 Mechanical Engineering Department Outstanding Faculty Member
- A1. 2024-2025 Innovation in Teaching Award (ITA), The University of Texas at Tyler
- A2. 2018-2019 Teaching and Learning Awards (TLA), The University of Texas at Tyler
- A3. 2017-2018 Teaching and Learning Awards (TLA), The University of Texas at Tyler
- G1. Community Energy Innovation Prize - Collegiate Track, Residential Energy Assessment for Equity in Energy, Department of Energy, Concept Phase \$15,000, Progress Phase \$20,000, Impact Phase \$45,000 (team winner of final phase), 2023-2024.
- G2. Sponsored Research Grant in evaporative cooling, PORTACOOOL (Center, TX), \$9,000, 2023-2024. Nelson Fumo PI.
- G3. Service agreement for consulting in HVAC controls (renewal), HVAC Manufacturing (Athens, TX), \$17,030, Spring 2021. Nelson Fumo PI.
- G4. Service agreement for consulting in HVAC controls, HVAC Manufacturing (Athens, TX), \$51,090, 2019-2020. Nelson Fumo PI.
- G5. TRANE Residential Heating and Cooling Research Lab at The University of Texas at Tyler, Five-year Research Agreement, \$300,000, 2017-2022. Michael McGinnis Director and Nelson Fumo Principal Investigator.
- G6. Phase II – TxAIRE House 2 Ground Source Heat Pump, ASHRAE Senior Undergraduate Project Grant, \$5,000, academic year 2016-2017. Nelson Fumo PI.
- G7. Auto Self-Balanced Zoning System, ASHRAE Senior Undergraduate Project Grant, \$4,590, academic year 2016-2017. Nelson Fumo PI.
- G8. Ground-Source Heat Pump (GSHP) - Phase I (at TxAIRE Research Houses), Industry (TRANE and EMA) and UT Tyler, \$13,110, Jan 1, 2016-Jan 1, 2017. Nelson Fumo PI.
- G9. OpenStudio Building Energy Model for the Research Center Baltimore (RCB). CRISTAL-USA. \$9,000. August 2015. Nelson Fumo PI.
- G10. Building Energy Simulation Center, UT Tyler office of Sponsored Research, \$7,722. September 2015 – May 2015. Nelson Fumo PI.

Service to the Profession and to the community

1. Editor-in-Chief of the Energy Reports Journal of Elsevier. January 2018 – Present
2. Student Activities Chair, ASHRAE East Texas Chapter September 2011 – Present
3. Technology Committee, Tyler Chamber of Commerce April 2021 – 2022
4. Energy Committee, Tyler Chamber of Commerce August 2012 – 2021
5. ASHRAE Technical Committee TC 7.6 Building Energy Performance March 2015 - 2017
6. Reviewer for publishers (Books) [CRC Press - Taylor & Francis Group, Springer Nature, Elsevier]
7. Reviewer for the Department of Energy (ARPA Vision, Office of Clean Energy Demonstrations, and Technology Commercialization Fund)

Principal Publications and Presentations (last five years):

Refereed Journals

1. Nelson Fumo, Manoj Bhandari, and Jason LeRoy, “Ducted Heat Pump vs. Multisplit Heat Pump.” ASHRAE Journal, July 2024.
2. Jose Luis Rodriguez and Nelson Fumo (2024), “Simultaneous Thermal Zoning and Demand Control Ventilation,” Energy Reports Journal, Volume 11, June 2024, Pages 4412-4422. <https://doi.org/10.1016/j.egyr.2024.04.025>.
3. Giovanni Cerrato and Nelson Fumo (2023), “Performance of photocatalytic oxidizing air cleaners in different experimental setups – a review.” Energy Reports, Volume 11, June 2024, Pages 1412-1419. <https://doi.org/10.1016/j.egyr.2024.01.009>.
4. Giovanni Cerrato and Nelson Fumo, “The By-Product of Ozone from Electrostatic Air Cleaners.” American Journal of Undergraduate Research, Vol. 19, Issue 4 (March 2023). <https://doi.org/10.33697/ajur.2023.071>.
5. Manoj Bhandari and Nelson Fumo (2022). “A review of ductless mini split HVAC system.” Energy Reports, Volume 8, November 2022, Pages 5930-5942. <https://doi.org/10.1016/j.egyr.2022.03.209>.
6. Jose Rodriguez and Nelson Fumo (2021). “Zoned heating, ventilation, and air-conditioning residential systems: A systematic review.” Journal of Building Engineering 43 (2021) 102925. <https://doi.org/10.1016/j.jobe.2021.102925>.
7. Nelson Fumo, Maria Josefina Torres, and Kayla Broomfield (2021). “A multiple regression approach for calibration of residential building energy models.” Journal of Building Engineering 43 (2021) 102874. <https://doi.org/10.1016/j.jobe.2021.102874>.
8. Koukouni P. Kone and Nelson Fumo (2020). “Dehumidification performance of a variable speed heat pump and a single speed heat pump with and without dehumidification capabilities in a warm and humid climate.” Energy Reports 6 (2020) 1696–1701. <https://doi.org/10.1016/j.egyr.2020.06.024>.

Refereed Conference Proceedings and Presentations

1. Nelson Fumo, “The JUMP into STEM - The Second Experience,” ASEE Gulf Southwest Section 2024 Annual Conference, West Texas A&M University, Canyon, TX March 10-12, 2024. (Accepted)
2. Nelson Fumo, “The JUMP into STEM Experience,” ASEE Gulf Southwest Section 2023 Annual Conference, University of North Texas, Denton, TX March 15-17, 2023.
3. Manoj Bhandari and Nelson Fumo, “Comparison Study of a Traditional Ducted Heat Pump and a Multi Split Heat Pump.” 19th International Refrigeration and Air Conditioning Conference at Purdue, July 10 - 14, 2022. Paper #2178.
4. Nelson Fumo, “Engineering Project Development through Sequence of Courses.” American Society for Engineering Education, Annual Conference 2020, “ASEE’S Virtual Conference, June 22-26, 2020. Paper ID #28277.

Invited Contributions and Professional Seminars/Workshops

1. Fumo, N. (2023). La administración de energía - La herramienta de gestión integral de sistemas de refrigeración y aire acondicionado. ASHRAE Colombia Chapter. Online - Virtual presentation: ASHRAE.
2. Fumo, N. (2020, January). Air Conditioning System Dehumidification Performance. ASHRAE East Texas Chapter January Technical Meeting. TRANE Technologies: ASHRAE East Texas Chapter.