Eduardo González-Mora | full CV

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In a nutshell

PhD in Energy Systems with a background in thermofluids, my current research focuses on **concentrated solar power (CSP)**, **solar heat for industrial processes (SHIP)**, and **engineering thermodynamics modeling**. I am an Adjunct Professor and Postdoctoral Research Fellow at UAEMéx, sponsored by the Mexican Council of Science and Technology (COMECyT), and a member of the National System of Researchers in México (SNII-1). To date, I have authored 50 scientific publications (cited 170+ g). I am fluent in Spanish and English, and intermediate in Portuguese and Esperanto. My goal is to contribute to 100% renewable energy for all, used in a democratic, efficient, and conscientious way, through research, teaching, and consulting.

Education

Universidad Autónoma del Estado de México **México**
PhD Energy Systems, with honors *2020-2023*
Dissertation: *Comparative study of a conceptual direct steam generation solar power plant using PTC and optimized LFR*
Supervisor: PhD Ma. Dolores Durán-García

Appalachian State University **USA**
Academic exchange *2022*
Research: *Solar radiation exergy modeling*
Supervisor: PhD Ram Poudel

Universidad Autónoma del Estado de México **México**
MSc Energy Systems, with honors *2017-2019*
Dissertation: *2E analysis of different configurations of direct steam generation solar plants using Fresnel reflectors*
Supervisor: PhD Ma. Dolores Durán-García

Universidad Europea del Atlántico **Spain**
MSc Renewable Energies *2016-2017*
Dissertation: *Optogeometric design and environmental impact assessment - life cycle analysis of a CPC solar concentrator for wastewater treatment*
Supervisor: Dr. Ann Sibelle Rodríguez Mininni

Universidad Internacional Iberoamericana **Puerto Rico**
MSc Management and Environmental Auditing *2016-2017*
Dissertation: *Optogeometric design and environmental impact assessment - life cycle analysis of a CPC solar concentrator for wastewater treatment*
Supervisor: Dr. Ann Sibelle Rodríguez Mininni

Instytut Technnologii Eksploatacji - Panstwowy Instytut Badawczy **Poland**
Academic exchange *2015*
Workshop: *10th Polish-Mexican Summer Workshop in Tribology*

Politechnika Krakowska. im Tadeuza Kosciuszki. Mechaniczny **Poland**
Academic exchange *2015*
Workshop: *Advanced Production Engineering Workshop*

Universidad Autónoma del Estado de México **México**
BSc Mechanical Engineering, with honors *2010-2015*
Dissertation: *Design and development of a CPC solar concentrator for the sterilisation of surgical material*
Supervisor: PhD Eduardo A. Rincón Mejía

Professional experience

Universidad Autónoma del Estado de México **México**
Postdoctoral Research Fellow, Consejo Mexiquense de Ciencia y Tecnología (COMECyT) *2024-present*
AESCo project

- Solar heat for industrial processes (SHIP)
- Advanced energy, cooling and multigeneration systems

Universidad Autónoma del Estado de México **México**
Research Assistant, Solid Biofuels Cluster *2019-2021*
Biofuels project

- English translation and writing editing
- Literature review

Consulting Services **México**
Independent, Engineering projects *2017-present*
Energy sector

- Feasibility assessment of solar thermal installations
- Overhaul of photovoltaic systems

Universidad Nacional Autónoma de México **México**
Technical documentary researcher, SECIHTI/5310/2025 *2025-present*
Agricultural irrigation technologies

- Inventory of renewable energy technologies for agricultural irrigation systems
- Decision matrix for the selection of irrigation technologies

Universidad Autónoma del Estado de México **México**
Research Assistant, Academic Staff *2013-2014*
Polymer degradation project

- Design and preliminary analysis of a CPC for polymer photo-thermo degradation

Grants & Awards

Grants

COMECYT: Postdoctoral fellowship, 2024-2025
CONACYT: PhD's studies grant, 2020-2023

CONACYT: Master's studies grant, 2017-2019
FUNIBER: Master's studies grant, 2016-2017
UAEMéx: "Yurrieta Valdés" grant, 2014-2015

Awards

ISES: Best Poster Award (Solar World Congress 2025), 2025.
SECIHTI: National System of Researchers (SNII) Level 1, 2025-2026.
UAEMéx: "Ignacio Manuel Altamirano Basilio " Award (PhD), 2024
UAEMéx: Honours course in PhD, 2023
UAEMéx: "Ignacio Manuel Altamirano Basilio " Award (Master's degree), 2020
UAEMéx: Honours course in Master's Degree, 2019
INEL: 2nd Place in XXVI National Thesis Awards, 2017
UAEMéx: Honours course in Bachelor's, 2016

Academic stays

Universidad Nacional de Educación a Distancia **Spain**
Department of Energy Engineering, Escuela Técnica Superior de Ingenieros Industriales *2025*

- **Teaching**: Lectures to thermodynamics students entitled: 'Graphical methods of entropy interaction'.
- **Research**: Discussion and debate meetings with department researchers on new lines of work in the field of thermodynamics.

Teaching activities

Universidad Autónoma del Estado de México **México**
Adjunt Professor, Engineering Faculty *2017-present*

- Solar concentration (undergraduate), 2017-present
- Continuum mechanics (undergraduate), 2018-2020
- Trigeneration and advanced cycles (undergraduate), 2019-2024
- Turbomachinery (undergraduate), 2019
- Thermal systems design (undergraduate), 2020-present
- Advanced power cycles (undergraduate), 2024
- Thermodynamics (undergraduate), 2024
- Science, technology and society (undergraduate), 2025
- Nonimaging optics for solar concentrators (master's), 2025
- Collegiate Activities
  - Curricular redesign for the Sustainable Energy Systems Engineering program committee (ISES), 2023-2024

- Curricular design for the Master's in Energy and Materials program committee, 2024
- Secretary of Thermofluids Academy, 2022-present
- President of the Renewable Energy Sources Academy, 2019-2022
- Secretary of the Renewable Energy Sources Academy, 2018-2019

○ Supervision

- Ximena Noemi C. S. (Undergraduate). Under review. *Supervision*.
- José Daniel L. D. (Undergraduate). Ongoing. *Supervision*.
- Marco Antonio G. M. (Master's). In progress. *Co-supervision*.

Publications (Last 3 years)

Journal articles

1. González-Mora, E. & Duran-García, M. D. (2025). *Thermo-Hydraulic Modelling Framework for Pressure –Property –Performance Analysis of Organic Fluids in Direct Vapour Generation*. International Journal of Thermofluids, Elsevier. **Under review**.
2. González-Mora, E. (2025). *A framework for teaching the efficiency of realistic work extractors from thermal reservoirs*. European Journal of Physics, IOP. DOI: 10.1088/1361-6404/ae22aa
3. González-Mora, E., Poudel, R. & Duran-García, M. D. (2025). *Endoreversible description of photothermal Vuilleumier refrigeration machines*. Journal of Non-Equilibrium Thermodynamics, Walter de Gruyter GmbH. DOI: 10.1515/jnet-2025-0094
4. González-Mora, E. (2025). *A Rational Efficiency Definition for Heat Exchangers*. System Research in Energy, NAS of Ukraine. DOI: 10.15407/srenergy2025.04.123.
5. González-Mora, E. & Durán-García, M.D. (2025). *Energía solar concentrada para procesos industriales: un recurso estratégico hacia la sostenibilidad*. CIENCIA ergo-sum, UAEM. DOI: 10.1016/j.ijft.2024.100793
6. González-Mora, E. & Duran-García, M. D. (2024). *Finite-Time Thermodynamics Efficiency Modeling Insights of Direct Steam Generation Solar Power Plants with Linear Fresnel Reflectors*. International Journal of Thermofluids, Elsevier. DOI: 10.1016/j.ijft.2024.100793
7. González-Mora, E. & Duran-García, M. D. (2024). *Assessing Parabolic Trough Collectors and Linear Fresnel Reflectors Direct Steam Generation Solar Power Plants in Northwest México*. Renewable Energy, Elsevier. DOI: 10.1016/j.renene.2024.120375
8. González-Mora, E. & Duran-García, M. D. (2024). *Alternative approach for the thermodydraulic modeling of direct steam generation in parabolic trough solar collectors*. Journal of Thermal Science and Engineering Applications, ASME. DOI: 10.1115/1.4064819
9. Duran García, M. D., Jiménez García, J., García-Vallejo, M., González-Mora, E. & Weber, B. (2023). *Impact of Cost of Solid Biofuels on the Viability of their Application to Generate Process Heat in Mexico: A case of study*. Biofuels, Bioproducts & Biorefining, Wiley. DOI: 10.1002/bbb.2500.

10. González-Mora, E., Poudel, R, & Duran García, M. D. (2023). *A Generalized Maximum Work Rate Extraction Model for Solar Exergy in a Solar Power Plant*. Journal of Non-Equilibrium Thermodynamics, Walter de Gruyter GmbH. 48(1) DOI: *10.1515/jnet-2022-0080*

Conference papers

1. González-Mora, E., Akbarov, R. & López-Duarte, J.D. (2025). *Optical study of a low-scale high radiative flux solar furnace*. In SWC 2025, Fortaleza, Brazil.

2. González-Martínez, M.A. Durán-García, M.D. & González-Mora, E. (2025). *Design of a compact Fresnel system for optimization of industrial processes*. In SWC 2025, Fortaleza, Brazil.

3. González-Mora, E.. *Performance analysis of a high-temperature Kalina cycle integrated with parabolic trough collectors for CSP in México*. In SWC 2025, Fortaleza, Brazil.

4. González-Mora, E. & Durán-García, M.D. (2025). *Technical assessment of solar assisted refrigeration using parabolic trough collectors in a mexican pharmaceutical facility*. In SWC 2025, Fortaleza, Brazil.

5. González-Mora, E. (2025). *On the upper bound efficiencies of special combinations of heat sources and work extractors*. In ECOS2025, Paris, France.

6. González-Mora, E., Durán-García, M.D., & Lentz-Herrera, A.E. (2025). *Expected year performance and economic evaluation for the integration of a small-scale PTC in a tequila company*. In ECOS2025, Paris, France.

7. Durán-García, M.D., Weber, B., Chavez, A. González-Mora, E., Ponce-Salmerón, C. & Martínez-Cienfuegos, I. (2025). *Environmental impact of energy systems & energy-water nexus*. In ECOS2025, Paris, France.

8. González-Mora, E., Durán-García, M.D. (2025). *Parametric analysis for direct vapour generation of organic fluids*. In 14 CNiT, Zaragoza, Spain.

9. González-Mora, E., Poudel, R., & Durán-García, M.D. (2025). *Endoreversible thermodynamic analysis of photothermal Vuilleumier refrigeration machines for sustainable cooling applications*. In 14 CNiT, Zaragoza, Spain.

10. González-Mora, E., Lentz-Herrera, A.E. & Durán-García, M.D. (2024). *Performance analysis of a hybrid solar-gethermal power plant in México*. In Eurosun 2024, Limassol, Cyprus.

11. González-Mora, E., Durán-García, M.D. & Lentz-Herrera, A.E. (2024). *A comprehensive analysis of solar heating for industrial processes (SHIP) integration in a Mexican food industry*. In ECOS2024, Rhodes, Greece.

12. Durán-García, M.D., González-Mora, E. & Lentz-Herrera, A.E. (2024). *Exergy maps as a tool for assessing solar energy potential in Mexico*. In ECOS2024, Rhodes, Greece.

13. González-Mora, E., Lentz-Herrera, A.E. & Durán-García, M.D. (2024). *Propuesta de hibridación solar de la central geotérmica Cerro Prieto*. In CIES-2024 XIX Congreso Ibérico y XV Congreso Iberoamericano de Energía Solar, Évora, Portugal.

14. González-Mora, E. & Rincón-Mejía, E.A.(2024). *Diseño de un horno solar de alto flujo a baja escala*. In CIES-2024 XIX Congreso Ibérico y XV Congreso Iberoamericano de Energía Solar, Évora, Portugal.

15. Durán-García, M.D., Lentz-Herrera, A.E.,González-Mora, E. & González, J.(2024). *Estimación de la radiación solar en México empleando datos satelitales*. In CIES-2024 XIX Congreso Ibérico y XV Congreso Iberoamericano de Energía Solar, Évora, Portugal.

16. Rincón-Mejía, E.A., Islas-Espinoza, M. & González-Mora, E. (2023). *The Tolokatsin 2022, a sustainable solar oven*. In CONSOLFOOD 2023, La Coruña, Spain.

17. González-Mora, E., & Durán-García, M.D. (2023). *Alternative Methodology for Modeling Direct Steam Generation in Parabolic Collectors: A Study Case in Northeast Mexico*. In ECOS2023, Las Palmas de Gran Canaria, Spain. DOI: 10.52202/069564-0136.

18. González-Mora, E., & Rincón-Mejía, E.A. (2023). *A simple truncation criterion in CPCs using constructal theory*. In ECOS2023, Las Palmas de Gran Canaria, Spain. DOI: 10.52202/069564-0152.

19. González-Mora, E., & Durán-García, M.D. (2022). *Validation of an Alternative Methodology for Direct Steam Generation Modelling in Parabolic Collectors*. In Eurosun 2022, Kassel, Germany.

20. González-Mora, E., Poudel, R., & Durán-García, M. D. (2022). *Maximum work rate extractable from the sun*. In Thermodynamics 2.0. Boone, North Carolina, USA.

21. González-Mora, E. (2022). *Optimal truncation criterion for compound parabolic collectors: a thermodynamic justification*. In Thermodynamics 2.0. Boone, North Carolina, USA.

22. González-Mora, E., & Durán-García. (2022). *Propuesta de eliminación del coeficiente convectivo h para el modelado de flujo bifásico en concentradores parabólicos*. In CIES2022-XVIII Congresso Ibérico y XIV Congresso Iberoamericano de Energía Solar. Universitat de les Iles Balears, Palma, España.

23. González-Mora, E., & Rincón-Mejía. (2022). *Aplicaciones potenciales de un novedoso concentrador de óptica anidólica*. In CIES2022-XVIII Congresso Ibérico y XIV Congresso Iberoamericano de Energía Solar. Universitat de les Iles Balears, Palma, España.

Book chapters

1. González-Mora, E., & Lentz-Herrera, A.E., & Durán-García, M.D. (2025). *A Comparative Annual Analysis of Therminol VP1 and Direct Steam Generation for Hybrid Solar-Geothermal Power at Cerro Prieto*. In Vitalii Babak and Artur Zaporozhets (Eds.), Systems, Decision and Control in Energy VIII. Springer. **Under review**.

2. González-Mora, E., & Lentz-Herrera, A.E., & Durán-García, M.D. (2025). *Integrating Solar Concentration Fields for Heat Supply in a Mexican Food Industry: Design and Expected Performance*. In Vitalii Babak and Artur Zaporozhets (Eds.), Systems, Decision and Control in Energy VII. Springer. DOI: 10.1007/978-3-031-90466-0_20.

3. González-Mora, E., & Durán-García, M.D., & Lentz-Herrera, A.E. (2024). *Transitioning to Direct Steam Generation in a Mexican Integrated Solar Combined Cycle for Enhanced Efficiency*. In Vitalii Babak and Artur Zaporozhets (Eds.), Systems, Decision and Control in Energy VI (pp. 399-419). Springer. DOI: 10.1007/978-3-031-67091-6_18.

4. Rincón-Mejía, E.A., Islas, M. & González-Mora, E. (2024). *Potencial y límites de la energía solar*. In Luca Ferrari, Omar Masera and Alejandra Straffon (Ed.) Transición energética justa y sustentable (pp. 289-312). CONACyT.

5. González-Mora, E., & Durán-García, M.D. (2024). *Aplicación de "La nueva ingeniería" en el modelado de un reflector Fresnel para la generación directa de vapor*. In Ma. de Lourdes Najera López and Rosa Maria Valdovinos (Eds.) Contribuciones a la Ingeniería y Ciencias del Agua (pp. 123-150). UAEMéx. DOI: 10.5281/zenodo.13138475

6. González-Mora, E., Poudel, R., & Durán-García, M.D. (2023). *Calculation of solar radiation exergy as a first input stage for biological systems*. In Albert Reimer (Ed.), Horizons in World Physics (pp. 231-258). Volume 310 Nova Press.

7. González-Mora, E., & Durán-García, M.D. (2022). *Approaching a LFR direct steam generation power plant towards an endoreversible heat engine*. In Artur Zaporozhets (Ed.), Advanced Energy Technologies and Systems (pp. 21-44). Springer. DOI: 10.1007/978-3-030-85746-2_2

Current projects

AESCo - Solar heat
The AESCo project aims to harness solar energy using established technologies like PTC and LFR while pioneering new solutions. It focuses on meeting Mexico's industrial heat needs (SHIP) with a thorough evaluation to ensure viability. (Postdoctoral Fellowship)

Direct steam generation for CSP with linear concentrators
Analyze the technical feasibility of using linear concentrators for direct steam generation for concentrated solar power plants in México. The work was developed as part of the PhD research where a thermo-hydraulic model were developed.

Thermodynamic modeling and constructal law
Development of thermodynamic models for different applications for their design and implementation, minimizing entropy generation and application of constructal law.

Nonimaging optics
Design, improvement and evolution of anidolic optics systems for different applications (mainly CPCs using optimal truncation criteria).

Personal skills

Languages

Spanish: Mother-tongue
English: Fluent — *TOEFL ITP 647, 2020*
Esperanto: Intermediate — *Duolingo course, 2021*
Portuguese: Intermediate — *Duolingo course, 2021*
Italian: Beginner — *Duolingo course, 2022*
Russian: Beginner — *Duolingo course, 2022*

Other skills

IT: scripting and mathematical programming (EES, Mathcad, Matlab), generative AI, CAD (AutoCad, Inventor), LaTeX, gnuplot, Microsoft Office

Technical: optimization, energy modeling, research
Organizational: project management
Relational: teaching, presentations

Courses, Licenses & Certifications (Last 3 years)

Statistical Thermodynamics Specialization: Coursera (Certificate ID: D9SY8KKPN2E, 2024)
Generative AI for Everyone: Coursera (Certificate ID: U86GN4XGKT5V, 2024)
BC-OC-ai: AI Applications and Prompt Engineering: edX (Certificate ID: fc5e8b070df94e838ca2c92c5b74ebd6, 2024)
aiprompt: AI Prompt Engineering for Beginners: edX (Certificate ID: d42967093ebf4963bfeb554e6e624c43, 2024)
Inteligencia Artificial centrada en el ser humano: Coursera (Certificate ID: 7VSMB6L76AHH, 2024)
IA generativa en el aula: Coursera (Certificate ID: GRWUQ65Z4QZB, 2023)
MATLAB Fundamentals: Mathworks (2023)
MATLAB Onramp: Mathworks (2023)
Research metrics: Elsevier (2022)
Fundamentals of Concentrating Solar Thermal (CST) Applications and Next Technologies: 2nd SolarTwins Summer School. GÜNAM ODAK, Concentrated Solar Thermal Res. Lab. (2022)

Associations

International Solar Energy Society, ISES — **Germany**
1310504 — *2013-present*
- Young ISES

American Society of Mechanical Engineers, ASME — **USA**
100691970 — *2013-present*
- Solar energy division, Heat transfer division & Advanced Energy Systems Division

Asociación Española de Energía Solar, AEDES — **Spain**
2018-present

International Association for the Integration of Science and Engineering, IAISAE — **USA**
2024

American Solar Energy Society, ASES — **USA**
300002869 — *2016-2017*

Engineering for Change, E4C — **USA**
Volunteer — *2014-present*

Editorial and Peer Review Experience

Processes — **MDPI**
Giancarlo Cravoto, Ed. — *2025-present*
Guest Editor: "Toward Net-Zero Industry: Sustainable Processes, Renewable Energy Solutions, and Innovative Thermal Management"

Renewable Energy — **Elsevier**
Soteris Kalogirou, Ed. — *2019-present*

Reviewer: Solar thermal energy, Solar concentration, solar cookers

Solar Energy **Elsevier**
Ranga Pitchumani, Ed. *2019-present*
Reviewer: Solar thermal energy, Solar concentration

Applied Thermal Engineering **Elsevier**
Christos Markides, Ed. *2024-present*
Reviewer: Solar thermal energy

Energies **MDPI**
Enrico Sciubba, Ed. *2024*
Reviewer: Renewable Energy, Solar thermal energy, Thermodynamics

Philosophical Transactions A. Special Issue **Royal Society**
Umit Gunes, Ed., Thermodynamics 2.0: Bridging the Natural and Social Sciences *2023*
Reviewer: Thermodynamics

Conference Organization

Thermodynamics 2.0 Conference **Boone, USA**
IAISAE, Member of the Organizing Committee *2024-present*

Other interests

Music: drummer | Writing & reading | Traveling

References

Available upon request from FI-UAEMéx, Appalachian State University, Petroleum Development Oman, Pontificia Universidad Católica de Chile, Universitat de Lleida, Universidad Carlos III de Madrid, IMDEA energía, The National Academy of Sciences of Ukraine, Universidad Autónoma de la Ciudad de México, Universidad Nacional de Educación a Distancia, Instituto de Energías Renovables (UNAM), Instituto de Ingeniería (UNAM), Universidade do Algarve.

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