Jesus Alejandro Rodriguez Morales

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Education

Department of Aerospace Engineering and Applied Mechanics, Tongji University — Shanghai, China

D.Eng. in Mechanics — 2024 - 2028 *(expected)*

- Advisor: Prof. Ying Zhao
- Research area: Computational Physics

Department of Aerospace Engineering, Nanjing University of Aeronautics and Astronautics — Nanjing, China

M.Eng. in Mechanics — 2021 - 2024

- Advisor: Prof. Huiyu Sun
- Research area: Shape memory polymer composites

Department of Mechanical Engineering, National Technological Institute of Mexico — Yucatan, Mexico

B.Eng. in Mechanical Engineering — 2014 - 2019

- Advisor: Prof. Pedro J. Herrera-Franco

Journal Publications

1. Hao Duan, Jianping Gu, Huiyu Sun, Hao Zeng, and **Jesus A. Rodriguez-Morales**. "A thermodynamic constitutive model based on uncoupled physical mechanisms for polymer-based shape memory composites and its application in 4D printing". *Applied Mathematical Modelling*, vol. 141, p. 115926, May 2025. 10.1016/j.apm.2025.115926
2. **Jesus A. Rodriguez-Morales**, Chentong Gao, and Huiyu Sun. "Tensile strength prediction of fiber-reinforced polymer composites through layered interphase and chemical bonding: A semi-empirical micromechanical model". *European Journal of Mechanics A/Solids*, vol. 111, p. 105533, May-June 2025. 10.1016/j.euromechsol.2024.105533
3. Hao Duan, Huiyu Sun, **Jesus A. Rodriguez-Morales**, and Xinyuan Bai. "Insight into the synergistic-relaxation effects in amorphous polymer: Thermodynamic modeling, multi-physics simulation and application in 4D printing". *Polymer*, vol. 315, p. 127786, Dec. 2024. 10.1016/j.polymer.2024.127786
4. **Jesus A. Rodriguez-Morales**, Hao Duan, Jianping Gu, Hao Zeng, Huiyu Sun. "Insight into constitutive theories of 4D printed polymer materials: A review". *Smart Materials and Structures*, vol. 33, no. 7, p. 073005, June 2024. 10.1088/1361-665X/ad523c

Conference Proceedings

1. Viviana Lorena Robalino Espinoza, **Jesus A. Rodriguez-Morales**, and Xuefeng Yin. "Modeling specular and dispersive multipath propagation in on-chip wireless communication channels". *Proceedings of the 13th International Academic Conference for Graduates, NUAA*, p. 115-121, Nov. 2025.
2. **Jesus A. Rodriguez-Morales**, Chentong Gao, Jinlong Zhou, Viviana Lorena Robalino Espinoza. "El rol de algoritmos de aprendizaje automático en la inferencia de relaciones constitutivas y parámetros de impresión de materiales poliméricos impresos en 4D: Una descripción general". *Proceedings of the National Congress of Space Activities (CONACES)*, p. 45-55, Nov. 2024. (In Spanish)

Awards and Honors

- **Shanghai Government Scholarship (A)**, Tongji University — 2024.09
- **Best Presentation**, "Zhi-Hong" International Summer School at SJTU — 2022.06
- **Chinese Government Scholarship**, Ministry of Science and Technology — 2021.09
- **FUNED-Santander Fellowship**, FUNED — 2019.05

Skills

Languages: Spanish, English.
Programming: `Python`, `MATLAB`.

Academic Services

Reviewer for: *Materials Research Express*,
Engineering Research Express,
Physica Scripta.

Organizations

Chinese Society of Theoretical and Applied Mechanics (CSTAM)
American Physical Society (APS) - Computational Physics Division
American Society of Mechanical Engineers (ASME) - Applied Mechanics Division