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: Li-ion Batteries

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, The National Technological Institute of Mexico Yucatan, Mexico

B.Eng. in Mechanical Engineering

2014 - 2019

• Advisor: Prof. Pedro J. Herrera-Franco

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, multiphysics 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

| Awards |
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| AND |
| Honors |

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

Skills

Languages: Spanish, English.

Programming: Python, MATLAB.

Academic Services Reviewer for: Materials Research Express, Engineering Research Express, Physica Scripta.

ORGANIZATIONS American Physical Society (APS) - Computational Physics Division American Society of Mechanical Engineers (AMSE) - Applied Mechanics Division