



Carlos Diaz Marin

Assistant Professor of Energy Science and Engineering
Energy Science & Engineering

Bio

BIO

Carlos Diaz-Marin is an Assistant Professor in the Stanford Doerr School of Sustainability. He leads the Diaz Energy Lab on Theory and Advanced materials (DELTA) Group, which studies and leverages soft matter for applications in energy, water, and sustainability. The group integrates fundamental studies of material-molecule/ion interactions, synthesis, characterization, modeling, and device demonstration, while guided by technoeconomic analyses, for applications such as water production from air, carbon capture, building energy efficiency, biomass utilization, critical mineral recovery, and electrochemistry.

Before coming to Stanford, Carlos was an ARPA-E ORISE Fellow at the Advanced Research Projects Agency - Energy (ARPA-E) within the US Department of Energy, helping develop research funding programs in high-risk, high-reward energy and sustainability technologies. Carlos obtained his MS and PhD in Mechanical Engineering at MIT and double undergraduate degrees in Mechanical Engineering and Physics from the University of Costa Rica.

ACADEMIC APPOINTMENTS

- Assistant Professor, Energy Science & Engineering

PROFESSIONAL EDUCATION

- PhD, Massachusetts Institute of Technology , Mechanical Engineering (2024)
- MS, Massachusetts Institute of Technology , Mechanical Engineering (2021)
- BS, Universidad de Costa Rica , Physics (2019)
- BS, Universidad de Costa Rica , Mechanical Engineering (2018)

LINKS

- Lab Website: <https://deltagroup.stanford.edu/>
- Google Scholar: <https://scholar.google.com/citations?user=HZIVUUoAAAAJ&hl=en>

Teaching

COURSES

2025-26

- Mass and Energy Transport in Porous Media: ENERGY 120, ENGR 120 (Win)
- Sustainability of AI and Advanced Computing: ENERGY 185, ENERGY 285 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Rebecca Grekin, Muhammad Aadil Khan

Postdoctoral Faculty Sponsor

Yoseph Guta, He Shan

Doctoral Dissertation Advisor (AC)

Peter Bazianos, Kim Cheng, David Machbitz

Master's Program Advisor

Garin Gross

Doctoral (Program)

Kelvin Green

Publications

PUBLICATIONS

- **Flipping the switch: carbon-negative and water-positive data centers through waste heat utilization** *ENERGY & ENVIRONMENTAL SCIENCE*
Diaz-Marin, C. D., Berquist, Z. J.
2025
- **Capillary Transfer of Self-Assembled Colloidal Crystals.** *Nano letters*
Díaz-Marín, C. D., Li, D., Vázquez-Cosme, F. J., Pajovic, S., Cha, H., Song, Y., Kilpatrick, C., Vaartstra, G., Wilson, C. T., Boriskina, S., Wang, E. N.
2023