

HOLKAN VAZQUEZ SANCHEZ

PhD Candidate Environmental Science and Engineering



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🌐 Holkan Vazquez Sanchez

EXPERIENCE

- **Assembly and Process Engineer** (SEPT 2018 - AUG 2019)
Jatco (Japanese Transmission Company)
📍 Aguascalientes, Mexico
Full-time engineer. **Planned improvements projects on assembly line.** Achieved new technologies integration for process automation taking into consideration high-quality standards. Worked in team with other departments (maintenance, production, design and quality) to increase the performance of the assembly line.
- **Experience Logistics Assistant** (OCT 2016 - DEC 2017)
Tecnológico de Monterrey | Innovation and Development Direction
📍 Aguascalientes, Mexico
Part-time assistant. **Coordinated educational activities for enterprises** with a multidisciplinary team of 10 people. Achieved a completion from open to close period of 3 courses. Worked actively with other Departments and Directions within the campus.

EDUCATION

- **(PhD) Environmental Science and Engineering**
King Abdullah University of Science and Technology (KAUST)
AUG 2021 - MAY 2026 📍 Thuwal, Saudi Arabia
Thesis: "Integrated sustainability assessment of novel energy storage technologies"
- **(MBA) Master of Business Administration**
Universidad del Valle de México (UVM)
JAN 2020 - DEC 2021 📍 Mexico City, Mexico
Major in sustainability development and circular economy business.
- **(MSc) Master of Science in Engineering Sciences**
Tecnológico de Monterrey
AUG 2019 - JUL 2021 📍 Mexico City, Mexico
Thesis: "A life cycle assessment of a binary-cycle geothermal power plant in Mexico"
- **(BSc) Bachelor of Science in Mechatronics Engineering**
Tecnológico de Monterrey
AUG 2014 - DEC 2018 📍 Aguascalientes, Mexico
Mention of Excellence, Best grade of 2018 class.
National Prize CENEVAL-EGEL, undergraduate final exam.
- **Automotive and Aeronautics Design Program**
École Supérieure des Techniques Aéronautiques et de Construction Automobile (ESTACA)
JAN 2018 - MAY 2018 📍 Montigny-le-Bretonneux, France
Student exchange program.
- **Technician in Mechatronics Engineering**
Centro de Bachillerato Tecnológico, Industrial y de Servicios (CBTis) #168 "Francisco I. Madero"
AUG 2011 - MAY 2014 📍 Aguascalientes, Mexico
High school degree.

STRENGTHS

- Teamwork
- Problem analysis
- Good communication skills
- Flexibility and adaptation to change

COMPUTER SKILLS

- Python
- MATLAB
- PostgreSQL
- Solidworks
- CATIA
- SimaPro
- LCA for Experts (GaBi)
- GREET
- Brightway
- Activity Browser

LANGUAGES

Spanish



English TOEFL IBT: 100 pts



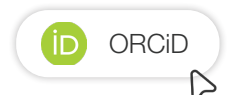
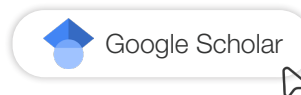
French DELF B2



IN ADDITION

Academic Publications

Visit the links below:

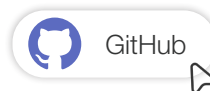


Developed Software



e-Hydrogen Cost Optimizer

A desktop application to perform TEA and LCA of e-hydrogen production worldwide.



AS FIRST AUTHOR

- **Techno-economic optimization of e-hydrogen production in Saudi Arabia**
Vazquez-Sanchez, H., Echegoyen-Lopez, M., Kyritsis D.C., Kosco J., Morales, M. G., & Sarathy, S. M.
[Next Energy, 2026](#) [doi](#)
- **A life cycle assessment of e-hydrogen production in Saudi Arabia**
Vazquez-Sanchez, H., Okeke, I. J., Singh, E., Baaqel, H., Saville, B. A., MacLean, H. L., & Sarathy, S. M.
[International Journal of Hydrogen Energy, 2025](#) [doi](#)
- **A techno-economic analysis of a thermally regenerative ammonia-based battery**
Vazquez-Sanchez, H., Nagaraja, S. S., Cross, N. R., Hall, D. M., & Sarathy, S.M.
[Applied Energy, 2023](#) [doi](#)
- **A life cycle assessment of a binary-cycle geothermal power plant in Mexico**
Vazquez-Sanchez, H. & Santoyo-Castelazo, E.
[Instituto Tecnológico y de Estudios Superiores de Monterrey, 2021](#) [doi](#)

AS CO-AUTHOR

- **Abiotic Stress-Triggered Nanocarriers for Seed Nanoprimer and Early-Stage Plant Development**
Aguilar Perez, K. M., Mriden, M., Sharma, V., Hannouche, K., Maatouk, B., Fang, F., Raji, M., Vazquez-Sanchez, H., & Khashab, N. M.
[ACS Nano, 2025](#) [doi](#)
- **Minimizing renewable hydrogen costs at producer's terminal gate with alkaline electrolyser, proton exchange membrane, and their co-installment: A regional case study in China**
Hong, F. T., Lin, H., Vazquez-Sanchez, H., Xue, X., Li, Y., Zhang, L., & Sarathy, S. M.
[International Journal of Hydrogen Energy, 2024](#) [doi](#)
- **Optimizing islanded green ammonia and hydrogen production and export from Saudi Arabia**
Florez, J., AlAbbad, M., Vazquez-Sanchez, H., Morales, M. G., & Sarathy, S. M.
[International Journal of Hydrogen Energy, 2024](#) [doi](#)
- **Hydrocarbon-based membranes cost-effectively manage species transport and increase performance in thermally regenerative batteries**
Cross, N. R., Vazquez-Sanchez, H., Rau, M. J., Lvov, S. N., Hickner, M. A., Gorski, C. A., Nagaraja, S. S., Sarathy, S. M., Logan, B. E., & Hall, D. M.
[Electrochimica Acta, 2023](#) [doi](#)
- **Integrated Sustainability Assessment Framework of Industry 4.0 from an Energy Systems Thinking Perspective: Bibliometric Analysis and Systematic Literature Review.**
Vallarta-Serrano, S. I., Santoyo-Castelazo, E., Santoyo, E., García-Mandujano, E. O., & Vázquez-Sánchez, H.
[Energies, 2023](#) [doi](#)

