

Dr. Victor Velazquez Martinez

Universidad Veracruzana

Industrial Engineering

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Education

- ☐ Ph.D. 2020. New Mexico State University, Industrial Engineering.
- ☐ M.S. 2013. Universidad Cristobal Colon, Industrial Engineering.
- ☐ B.S. 2003. Universidad Veracruzana, Clinical Chemistry.

Academic Experience

- ☐ Industrial Engineering, Universidad Veracruzana, Veracruz, Mexico, Professor, 2014 – present.
- ☐ Mechanical Engineering, Universidad Veracruzana, Veracruz Mexico, Professor, 2011 – present.
- ☐ Electrical Engineering, Universidad Veracruzana, Veracruz Mexico, Professor, 2011 – present.
- ☐ Electronic Engineering, Universidad Veracruzana, Veracruz Mexico, Professor, 2010 – present.
- ☐ Industrial Engineering, New Mexico State University, Teacher Assistant 2020.
- ☐ High School, Colegio de Bachilleres de Veracruz, Veracruz, Mexico, Biology Lecturer, 2010-2011.

Non-Academic Experience

- ☐ Industrial Engineering, New Mexico State University, Teacher Assistant, 2020
- ☐ Plant & Environmental Science, New Mexico State University, Research Assistant, 2019
- ☐ Folklorico Dance Teacher, Universidad Veracruzana, teacher of dance courses for students, 2011–2015.
- ☐ BioMedics Laboratory, Veracruz, Mexico, former Chemist (Hematology, Immunology), 2007
- ☐ Cultural Ambassador, Tourism Department of Veracruz, 1998–2010.

Honors and Awards

- ☐ Member of the research group “Cuerpo Academico CA-515 “Energy, Materials, Engineering”, Universidad Veracruzana, 2019 - Present.
- ☐ Member of Sociedad de Ingenieros, College of Engineering, New Mexico State University
- ☐ Member of Latinos in Science and Engineering (MAES)
- ☐ Member of Advancing Chicanos/Hispanics & Native Americans in Science (SACNAS)
- ☐ Director of the Academy of Economy and Administration, Universidad Veracruzana, Veracruz, Mexico, 2015 – 2016
- ☐ Member of the Review Committee of course content to accredit the educational programs of Industrial, Electrical, and Mechanical Engineering departments by CACEI, 2015 – 2016.

Professional Development Activities

- ☐ Collaboration with the research group “Electrical Power Systems” of Universidad de Colima, 2019-Present.

RESEARCH

Research Interests

- ☐ Agro-industrial waste management
- ☐
- ☐ Deep Learning. Lean manufacturing and Six Sigma projects
- Materials and new products from Industrial byproducts

Dr. Velazquez Martinez has developed agro-industrial waste research projects to generate food additives and nutraceuticals. These projects optimize the reuse of byproducts such as sugarcane bagasse, citrus, and coffee waste generated by several metric tons yearly. Also, Deep learning has been an approach to identify patterns of alarms and the consequent failure or shutdown of gas turbines used for oil companies. These patterns will help propose the preventive maintenance schedule to reduce failures, costs, and human resources invested in repairing the equipment.

Refereed Journal Articles

- Velazquez-Martinez, V., Valles-Rosales, D., Rodriguez-Uribe, L., Laguna-Camacho, J.R., Lopez-Calderon, H.D., Delgado, E. 2022. "Effect of Different Extraction Methods and Geographical Origins on the Total Phenolic Yield, Composition, and Antimicrobial Activity of Sugarcane Bagasse Extracts". *Frontiers in Nutrition*. DOI: 10.3389/fnut.2022.834557
- Velazquez-Martinez, V., Quintero-Quiroz, J., Rodriguez-Uribe, L., Valles-Rosales, D., Reyes-Jaquez, D., Klasson, T., Delgado, E. 2022. "Effect of glandless cottonseed meal protein and maltodextrin as microencapsulating agents on spray-drying of sugarcane bagasse phenolic compounds". *Journal of Food Science*. DOI: 10.1111/1750-3841.16032
- Velazquez-Martinez, V., Villagran-Villegas, L.Y., Patino-Ortiz M., Patino-Ortiz, J. Valles-Rosales, D., Marquina-Chavez, A. 2021. "Solar Light Bulbs: Effect of the Volume and Shape of the Pet Bottles on the Luminous Flux". *Defect and Diffusion Forum*. DOI: 10.4028/www.scientific.net/DDF.412.3
- Villagran-Villegas, L.Y., Siordia-Vasquez, X., Patino-Ortiz M., Velazquez-Martinez, V., 2021. "Methodology to carry out an analysis of damage caused by wear of axial compressor blades on a marine gas turbine". *Journal of Technical Invention*. DOI: 10.35429/JOTI.2021.15.5.1.7
- Velazquez-Martinez, V., Delgado, E., Valles-Rosales, Rodriguez-Uribe, L., Holguin, O., D., Quintero-Quiroz, J., Reyes-Jaquez, D., Rodríguez-Borbón, M.I., Villagran-Villegas, L.Y. 2020. "Antimicrobial activity, shelf-life stability and effect of maltodextrin and gum arabic on the encapsulation efficiency of sugarcane bagasse bioactive compounds.". *Foods Journal*. DOI: 10.3390/foods10010116
- Quintero-Quiroz, J., Velazquez, V., Corrales-Garcia, L.L., Torres, J.D., Delgado, E., Ciro, G., Rojas, J. 2020. "Use of Plant Proteins as Microencapsulating Agents of Bioactive Compounds Extracted from Annatto Seeds (*Bixa orellana* L.)". *Antioxidants*. DOI: 10.3390/antiox9040310
- Villagran-Villegas, L.Y., Patiño-Ortiz, M., Hernandez-Gomez, L.H., Velazquez-Martínez, V. 2020. "Information system for characterizing wear images on gas turbine rotor blades". *Revista de simulacion computacional*, DOI: 10.35429/JCS.2020.11.4.27.34
- J.R.Laguna-Camacho, G.Juárez-Morales, C.Calderón-Ramón, V.Velázquez-Martínez, I.Hernández-Romero, J.V.Méndez-Méndez, M.Vite-Torres. 2015. "A study of the wear mechanisms of disk and shoe brake pads". *Engineering Failure Analysis*, 56, pp. 348-359. DOI: 10.1016/j.engfailanal.2015.01.004.

Referee Conference Proceedings

- C. Calderón-Ramón, J. Martínez- Castillo, J. E. Lopez- Calderón, V. Velázquez-Martínez, O. Cárcamo- Sarmiento, D. Torres-Hoyos. 2016. "Computational Simulation of Antennas Array with 17 elements". *IEEE International Engineering Summit, II Cumbre Internacional de las Ingenierias (IE-Summit), Boca del Rio*, pp. 1-5. DOI: 10.1109/IESummit.2016.7459761.

Non-Referee Research Conference Presentations

- 14th International (Hybrid) Conference on Advanced Computational Engineering and Experimenting, ACEX 2021. "Solar Light Bulbs: Effect of the Volume and Shape of the Pet Bottles on the Luminous Flux". July 2021. Malta.
- 2nd International Webinar on Nutrition & Health. Plenary Presentation "Antimicrobial, Shelf-Life Stability, and Effect of Maltodextrin and Gum Arabic on the Encapsulation Efficiency of Sugarcane Bagasse Bioactive Compounds" July 2021. United Kingdom.
- Velazquez-Martinez V, Delgado D, Valles-Rosales D, Quintero J, Rodriguez-Urbe L, Cooke P. 2020. "Improving shelf life of sugarcane bagasse phenolic compounds by microencapsulation". *1st International Food Research Workshop in the Chihuahua Desert Region of North America*. Las Cruces, NM. Virtual Presentation
- Velazquez-Martinez, V., Delgado, E., Valles-Rosales, Rodriguez-Urbe, L., Holguin, O. 2020. "Antimicrobial activity, shelf-life stability and effect of maltodextrin and gum arabic on the encapsulation efficiency of sugarcane bagasse phenolic compounds". NMSU Research and Creativity Week, Las Cruces, NM. Virtual Presentation
- Velazquez-Martinez, V., Delgado, E., Valles-Rosales, Rodriguez-Urbe, L., Holguin, O. 2019. "Sugar Cane Bagasse: a Byproduct as a Source of Bioactive Compounds". NMSU Research and Creativity Week, Las Cruces, NM.

Education Conference Presentations

- Velazquez-Martinez, V. "El papel del ingeniero industrial en la gestion de proyectos". 2021. Tecnologico Nacional de Mexico & Instituto Tecnologico de Durango. Webinar.
- Velazquez-Martinez, V. "Gestion de proyectos". 2021. Industrias alternativas 2021: Industria cinematográfica. Capitulo estudiantil 653 IISE UV. Universidad Veracruzana, Veracruz, Mexico. Webinar.

TEACHING

Since 2010 Teaching Experience at Universidad Veracruzana

ADVANCED INDUSTRIAL ENGINEERING TOPICS I
QUALITY CONTROL AND RELIABILITY
ERGONOMICS
PROBABILITY AND STATISTICS
METHODS ENGINEERING
CHEMISTRY
FACILITIES PLANNING AND DISTRIBUTION

PLANNING AND CONTROL OF INDUSTRIAL
PRODUCTION
DIRECTED RESEARCH
INDUSTRIAL ENGINEERING
MATERIALS SCIENCE.
TRIBOLOGY PHYSICS

Student Thesis Supervised

THESIS	DATE	STUDENT	PROGRAM
Use of Rstudio software as support in teaching probability and statistics	09/11/2023	Erick Julian Gonzalez Hernandez	Industrial Engineering
Technological innovations in the management of ergonomic analysis	07/06/2023	Janeth Abril Cid Torres	Industrial Engineering
Machine Learning for the analysis of events in gas turbines	06/18/2023	Angel Ulises Alamilla Parrilla	Industrial Engineering
Marketing plan for the marketer "SUMMUM foods and raw materials" located in the city of Poza Rica, Veracruz	09/02/2022	Eduardo San Martín Carmona	Industrial Engineering
Wear analysis on 4700 H.P. gas turbine blades.	05/31/2021	Javier Domínguez Guerrero	Mechanical Engineering
Improvement proposals through analysis in the production area from Little Caesars pizza Poza Rica, Veracruz	12/05/2016	Juan Daniel Hernández Ramírez	Industrial Engineering
Analysis of quality in the company's administrative processes Hemart distributions S.A. of C.V.	04/27/2016	Sergio Jesus Brizuela Rangel	Industrial Engineering
Application of quality tools to improve the production process of injection in the company Poliformas S.A. of C.V.	03/09/2016	Amairani Albino Canales	Industrial Engineering
Analysis and implementation of the 5 S in the company Servicios Tecnicos Petroleros Nacionales	03/07/2016	Ana María Villegas Castillo	Industrial Engineering
Proposal for a medical alarm system for private hospitals	03/04/2016	Karen Margarita Herrera Cruz	Mechanical Engineering
Improvement opportunities through Lean Manufacturing in the production area of the ice company Hielo Veracruzano S.A. of C.V.	03/03/2016	Germán Homero Dolores Rodríguez	Industrial Engineering
Application of the 5 S methodology and generation of manual operations in the production area of JN ALUMM	03/02/2016	Jessica Monroy Asiain	Industrial Engineering
Cost-benefit effect in the implementation of a system of photovoltaic pumping in the crop fields of the ejido La Laja, municipality of Tepetzintla, Veracruz	03/02/2016	Marvin Eduardo Antonio Romero	Industrial Engineering
Analysis of stoppages in the production process and proposals for improvement in water bottling company BONAFONT	03/02/2016	Judith Jimenez Sanchez	Industrial Engineering
Improvement proposal to reduce time and waste in model changes using the SMED tool in Poliformas S.A. of C.V.	03/01/2016	Amelia Yazmin Cabrera Alvarez	Industrial Engineering
Analysis and improvement proposals based on lean manufacturing tools for producing polyethylene bags size 20x30 from the company BOLSYPAST, bags and plastics Veracruz, S.A. of C.V.	03/01/2016	Felix Eduardo Baltazar Rivera	Industrial Engineering
Proposal for improvement in the production process of the "La Tortilleria Sevillana" using Lean Manufacturing tools	02/25/2016	Arlette De Luna Raga	Industrial Engineering
Application of quality tools for the company warehouse industrial gases and safety equipment from Coatzintla	02/25/2016	Gabriela Guadalupe Castro Chena	Industrial Engineering
Analysis and improvement proposals by VSM, 5S, and maintenance autonomous and preventive in the company Distribuidora Cervecera del Golfo S.A. of C.V.	10/14/2015	Luis Antonio García Salas	Industrial Engineering
Analysis of different shapes and capacities of plastic bottles on the light efficiency of the solar bulb	01/30/2015	Victor Manuel Taylor García	Industrial Engineering
Analysis and proposal for improvement in the production process of Ice cream in the company "GAYA"	01/30/2015	Elizabeth Valdez Rodríguez	Industrial Engineering
Application of quality techniques and tools for improvement in the production process of the company Molinos del Golfo S.A. of C.V.	01/30/2015	Alejandro Ovando González	Industrial Engineering