

Curriculum Vitae

Alejandro Isabel Luna Maldonado, Ph.D.

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Education

- 2009** Ph.D in Agricultural Science
Kyushu University, Fukuoka, Japan
Dissertation Title: “Development of an Intelligent Robot for Production Ecosystem of Paddy”
- 2004** M.Sc. in Agroindustrial Mechanics
Autonomous Agrarian University “Antonio Narro,” Coahuila, Mexico
Thesis Title: “Design, Manufacturing, and Calibration of a Monolithic Ring Load Cell for Drawbar Testing in Agricultural Tractors”
- 1990** Bachelor’s Degree in Agricultural Engineering
Autonomous University of Nuevo León, Nuevo León, Mexico
Thesis Title: “Quality Losses during Mechanized Corn Harvesting”

Academic Positions

August 2018 – Present

Full-Time Professor, Rank C
Faculty of Agronomy, Autonomous University of Nuevo León, Nuevo León, Mexico
Courses taught: Automatic Control Systems, Thermodynamics and Heat Transfer, Design of Food Industries, Thermal Process Engineering, Seminar, Thesis Supervision, Graduate Congresses.

August 2013 – 2018

Full-Time Professor, Rank B
Faculty of Agronomy, Autonomous University of Nuevo León, Nuevo León, Mexico
Courses taught: Automatic Control Systems, Thermodynamics, Heat Transfer, Design of Food Industries, Electricity and Magnetism, Calorimetry and Optics, Thermal Process Engineering, Agricultural Mechanization, Graduate Seminar, and Thesis Supervision.

August 2009 – 2013

Full-Time Professor, Rank A
Faculty of Agronomy, Autonomous University of Nuevo León, Nuevo León, Mexico
Courses taught: Thermodynamics, Heat Transfer, Electricity and Magnetism, Calorimetry and Optics, Probability and Statistics, Graduate Seminar.

August 1993 – December 2010

Full-Time Associate Professor, Rank A – Department of Agricultural Engineering
Faculty of Agronomy, Autonomous University of Nuevo León, Nuevo León, Mexico
Courses taught: Thermodynamics I and II, Electricity and Magnetism, Electronics, and Machine Design, among others.

February 1993 – August 1993

Lecturer – Department of Agricultural Engineering
Faculty of Agronomy, Autonomous University of Nuevo León, Nuevo León, Mexico
Courses taught: Thermodynamics I and II, Electricity and Magnetism, Electronics, and Machine Design, among others.

Administrative Positions

1. Coordinator of the Bachelor's Degree Program in Food Industries Engineering (October 2017 – January 2024) Faculty of Agronomy, Autonomous University of Nuevo León, Nuevo León, Mexico
2. Coordinator of the Quality Committee for the Bachelor's Degree Program in Food Industries Engineering (October 2017 – January 2024)
Faculty of Agronomy, Autonomous University of Nuevo León, Nuevo León, Mexico
3. Head of the Engineering Laboratory (2015 – Present) Faculty of Agronomy, Autonomous University of Nuevo León, Nuevo León, Mexico
4. Graduate Studies and Research Secretary (2013) Faculty of Agronomy, Autonomous University of Nuevo León, Nuevo León, Mexico

Awards and Recognitions

Member of the National System of Researchers (SNI)

CONACYT (National Council of Science and Technology), Mexico

- Level II (2025–2029)
- Level I (2013–2024)
- Candidate Level (2010–2012)

Desirable Profile Recognition

PRODEP (Program for the Professional Development of Professors), Mexico

2022–2025, 2016–2022, 2013–2016, 2010–2013, 2003–2006

2024 Research Award

Area: Earth and Agricultural Sciences

Autonomous University of Nuevo León

Best Researcher Award

6th Edition of the International Research Awards on Sustainable Agriculture and Food Systems

Scifax, 2023

Consolidated Research Group (PRODEP)

PRODEP (Program for the Professional Development of Professors), Mexico

2021–2025, 2016–2021, 2010–2016

Recognition for the International Accreditation of the Bachelor's Degree Program in Food Industries Engineering by ABET

(2009–2029)

Recognition for the Strengthening of Graduate Programs

(M.Sc. in Food Industries Engineering or Biosystems Engineering, and Ph.D. in Agricultural Sciences)

Part of the National Quality Postgraduate Program (PNPC) of CONACYT

Recognition as Leader of the Academic Body “Environment and Sustainability”

Recognized as a consolidated body by PRODEP, Ministry of Education, Mexico (2010–2025)

Member of Sigma Xi Scientific Research Honor Society (USA)

Fields: Agricultural Engineering and Artificial Intelligence (2023–present)

Evaluator of Undergraduate and Master's Degree Programs
Accreditation Board for Engineering and Technology (ABET), USA
(2021–present)

Estancias de investigación

1. Estancia sabática, Kyushu University (2016-2017).
2. Asistente de Investigación, Kyushu University (2006-2008).
3. Profesor visitante, Iwate University (2005-2006).
4. Curso de Diseño de Automatización de Maquinaria Agrícola, JICA Obihiro, Japón (2002)
5. Curso de Diseño de Maquinaria Agrícola, JICA Tsukuba, Japón (1996)

Research Projects

1. Techno-Economic Evaluation of Thermal Imaging Technology to Detect Water Stress in Edible Nopal (*Opuntia ficus-indica*) CONAHCYT Academic Stay, 2024–2025
2. Response of Spinach Varieties Grown in a Plant Factory with Artificial Lighting 2023–2025, Autonomous University of Nuevo León, Mexico
3. Vegetation Indices of Edible Nopal Calculated from Drone Images for Correlation with Water Stress. Scientific and Technological Research Support Program, 2022, Autonomous University of Nuevo León, Mexico
4. Grape Quality Assessment Using Hyperspectral Imaging and Machine Learning
5. Scientific and Technological Research Support Program, 2021, Autonomous University of Nuevo León, Mexico
6. Growth Evaluation of Stevia Plants Fertilized with an Innovative Bioelectrochemical System. Scientific and Technological Research Support Program, 2020, Autonomous University of Nuevo León, Mexico
7. Development of an Intelligent Module with Hyperspectral Imaging System for Drought Phenotyping in *Opuntia ficus-indica* 2019
8. Classification of Species and Genus Based on Image Processing with a Trained Software Program Scientific and Technological Research Support Program, 2019, Autonomous University of Nuevo León, Mexico
9. Development of a Rotating Platform to Detect the Presence of Salmonella in Tomatoes Using Hyperspectral Imaging. Scientific and Technological Research Support Program, 2017, Autonomous University of Nuevo León, Mexico
10. Carbon Capture and Moisture Regime Changes in Pedogenetic Processes in Traditional Sustainable and Mechanized Intensive Open-Field Agricultural Production Systems. Mexico
11. Design of an Alpha-Beta Stirling Engine Powered by Solar Energy for Energy Generation and Application in the Agroindustry. Scientific and Technological Research Support Program, 2015, Autonomous University of Nuevo León, Mexico
12. Evaluation of Quality Parameters of Fourth-Range Nopal; Organic Shelf Life of Organically Grown Nopal; Productivity and Nutritional Mineral Quality of Edible Nopal (*Opuntia ficus-indica*). Scientific and Technological Research Support Program, 2015, Autonomous University of Nuevo León, Mexico
13. Cultivation of *Chlorella* spp. for Biofuel and Protein Production under Hydroponic Conditions. Scientific and Technological Research Support Program, 2015, Autonomous University of Nuevo León, Mexico
14. Hyperspectral Imaging to Determine Ripeness and Infection (by *Salmonella typhimurium*) in Tomatoes. PROMEP (National Program for Faculty Improvement), Ministry of Public Education of Mexico, Projects 103.5/11/424 and 103.5/09/7344, 2009–2010, Mexico

15. Development of a Stirling Engine Prototype Powered by Solar Energy to Generate Electricity. National Council of Science and Technology (CONACYT), Project SA/1625/2011–2015, Mexico
16. Development of an Intelligent Robot for an Agricultural Production Ecosystem. Government of Japan, 2006–2010
17. Design, Manufacturing, and Calibration of a Monolithic Circular Ring-Type Load Cell for Drawbar Testing in Agricultural Tractors. Scientific and Technological Research Support Program, 2000, Autonomous University of Nuevo León, Mexico

Publications

Scientific papers

1. Zárate, M. F. R., Flores-Breceda, H., Arredondo-Valdez, J., Luna-Maldonado, U., Apollon, W., & **Luna-Maldonado, A. I.** (2025). Design, Manufacture, and Performance Testing of a Water Hammer Pump with Five Different Air Chambers. *Turkish Journal of Agriculture-Food Science and Technology*, 13(5), 1215-1222.
2. Reinoso, E. H., Sinagawa-García, S. R., Costilla, D. S. R., **Luna-Maldonado, A. I.**, Treviño, N. E. G., Girón, E. F., & Zamora, G. M. (2025). Efecto del aceite de orégano en la vida de anaquele de carne de bovino. *CIENCIA ergo-sum*, 32(1), 19.
3. Valenzuela-García J.R., **Luna-Maldonado A.I.**, Méndez-Dorado M.A., Cadena-Zapata M, Arredondo-Valdez J, &, et al. (2024). Precision Farming Drones: Advances and Future Directions. *Agri Res & Tech: Open Access J.* 29(1): 556432. DOI: 10.19080/ARTOAJ.2024.28.556432.
4. Rojas-Pérez, H., Zazueta-Torres, N. D., Román-Román, L., **Luna-Maldonado, A. I.**, & Sanhouse-García, A. J. (2024). Effect of branch girdling on the alternate bearing, yield, and fruit quality of grapefruit (*Citrus paradisi* Macf.). *Agro Productividad*. DOI: [10.32854/agrop.v17i11.3112](https://doi.org/10.32854/agrop.v17i11.3112).
5. Mendez-Zamora, G., Sinagawa-García, S. R., **Luna-Maldonado, A. I.**, Kawas, J. R., Rico-Costilla, D. S., Castillo-Velázquez, U., ... & Martínez-Rojas, J. (2024). Avocado peel by-product in cattle diets and supplementation with oregano oil and effects on production, carcass, and meat quality. *Open Agriculture*, 9(1), 20220361.
6. Apollon, W., Kamaraj, S. K., Rodríguez-Fuentes, H., Gómez-Leyva, J. F., Vidales-Contreras, J. A., Mardueño-Aguilar, M. V., & **Luna-Maldonado, A. I.** (2024). Bio-electricity production in a single-chamber microbial fuel cell using urine as a substrate. *Biofuels*, 15(6), 665-675.
7. Ochoa-Chantaca, C. A., Márquez-Reyes, J. M., Aguirre-Loredo, R. Y., **Luna-Maldonado, A. I.**, & García-Gómez, C. (2024). Phytochemical and antioxidant evaluation of Moringa oleifera and Aloe vera in the fermentation of kombucha. *Acta Scientiarum Polonorum Technologia Alimentaria*, 23(2), 257-265. <https://doi.org/10.17306/J.AFS.001227>.
8. Apollon, W., Rusyn, I., Kuleshova, T., **Luna-Maldonado, A. I.**, Pierre, J. F., Gwenzi, W., & Kumar, V. (2024). An overview of agro-industrial wastewater treatment using microbial fuel cells: Recent advancements. *Journal of Water Process Engineering*, 58, 104783.
9. Sato, C.; Apollon, W.; **Luna-Maldonado, A.I.**; Paucar, N.E.; Hibbert, M.; Dudgeon, J. Integrating Microbial Fuel Cell and Hydroponic Technologies Using a Ceramic Membrane Separator to Develop an Energy–Water–Food Supply System. *Membranes* 2023, 13, 803. <https://doi.org/10.3390/membranes13090803>
10. Apollon, W., **Luna-Maldonado, A. I.**, Kamaraj, S. K., Vidales-Contreras, J. A., Rodríguez-Fuentes, H., Gómez-Leyva, J. F., ... & Ortiz-Medina, R. A. (2023). Self-sustainable nutrient recovery associated to power generation from livestock's urine using plant-based bio-batteries. *Fuel*, 332, 126252. <https://doi.org/10.1016/j.fuel.2022.126252>
11. Apollon, W., Vidales-Contreras, J. A., Rodríguez-Fuentes, H., Gómez-Leyva, J. F., Olivares-Sáenz, E., Maldonado-Ruelas, V. A., ... & **Luna-Maldonado, A. I.** (2022). Livestock's Urine-Based Plant Microbial Fuel Cells Improve Plant Growth and Power Generation. *Energies*, 15(19), 6985. <https://doi.org/10.3390/en15196985>.

12. Apollon, W., **Luna-Maldonado, A. I.**, Vidales-Contreras, J. A., Rodríguez-Fuentes, H., Gómez-Leyva, J. F., Kamaraj, S.-K., Maldonado-Ruelas, V. A., & Ortiz-Medina, R. A. (2022). Performance of electrical energy monitoring data acquisition system for plant-based microbial fuel cell. *Journal of Experimental Biology and Agricultural Sciences*, 10(2), 387–395. [https://doi.org/10.18006/2022.10\(2\).387.395](https://doi.org/10.18006/2022.10(2).387.395)
13. Flores-Breceda, H., **Luna-Maldonado, A. I.**, Ojeda-Zacarias, M.A., Rodríguez-Fuentes, H., Vidales-Contreras, J. A., Rodríguez-Romero, B.A. & Burgaya-Ribell, M.(2022). Hyperspectral signatures and reflectance models related to the ripening index in four grape varieties. *Journal of Experimental Biology and Agricultural Sciences*, 10(4), 781–788.
14. Flores-Breceda, H., Luna-Maldonado, A. I., Ojeda-Zacarias, M.A., Rodríguez-Fuentes, H., Vidales-Contreras, J. A., Rodríguez-Romero, B.A. (2022). Modelación de la dormancia invernal de un viñedo en Linares, Nuevo León. *Agraria*. Número 1.31-39.
15. Lecea-Ocañas, R. **Luna-Maldonado, A. I.**, Gómez-Leyva, J.F., Rodríguez-Romero, B.A., Rodríguez-Fuentes, H., Vidales-Contreras, J.A. (2022). Efecto de los antioxidantes en la calidad poscosecha de dos variedades de nuez pecana. *Agraria*. Número 1.25-30.
16. Apollon, W., **Luna-Maldonado, A. I.**, Kamaraj, S.-K., Vidales-Contreras, J. A., Rodríguez-Fuentes, H., Gómez-Leyva, J. F. (2022). Desarrollo de un sistema bioelectroquímico empleado para el crecimiento de *Stevia rebaudiana*. *Agraria*. Número 1.94-99.
17. Valadez-Pineda, A., López-Puga, J. C., Rico-Costilla, D. S., **Luna-Maldonado, A. I.**, Hernández-Martínez, C. A., Flores-Girón, E., Rentería-Monterrubio, A. L., & Méndez-Zamora, G. (2022). Goat kid meat in the formulation of Vienna-type sausage. *Agro Productividad*. <https://doi.org/10.32854/agrop.v14i6.2244>
18. Sánchez-Zamora, N., Cepeda-Rizo, M. D., Tamez-Garza, K. L., Rodríguez-Romero, B. A., Sinagawa-García, S. R., **Luna Maldonado, A. I.**, ...& Méndez-Zamora, G. (2022). Oregano essential oil in panela-type cheese: its effects on physicochemical, texture and sensory parameters. *Revista mexicana de ciencias pecuarias*, 13(1), 258-271.
19. Apollon, W., Rusyn, I., González-Gamboa, N., Kuleshova, T., **Luna-Maldonado, A. I.**, Vidales-Contreras, J. A., & Kamaraj, S. K. (2022). Improvement of zero waste sustainable recovery using microbial energy generation systems: A comprehensive review. *Science of The Total Environment*, 153055.
20. Apollon, W., Jean-Baptiste, Y., Wagner, B. J., Luna-Maldonado, A. I., & Silos-Espino, H. (2022). Effect of organic and inorganic fertilization on the production and quality of *Brachiaria brizantha*. *Revista mexicana de ciencias agrícolas*, 13(1), 1-13.
21. Arredondo-Valdez, J., **Luna-Maldonado, A. I.**, Valdez-Cepeda, R. D., Rodríguez-Fuentes, H., Vidales-Contreras, J. A., Grajeda-González, U. F., & Flores-Breceda, H. (2022). Characterization of Mature Cladodes of *Opuntia ficus-indica* L. Using Morphological and Colorimetric Descriptors. *Journal of Experimental Biology and Agricultural Sciences*, 10(2), 335–343. [https://doi.org/10.18006/2022.10\(2\).335.343](https://doi.org/10.18006/2022.10(2).335.343).
22. Márquez-Reyes, J. M., García-Gómez, C., Maldonado, A. I. L., Rodríguez-Fuentes, H., & Vidales-Contreras, J. A. (2022). Treatment system integrated a reactor with sulfate-reducing activity and a constructed wetland for contaminant removal. *Desalination and Water Treatment*, 278, 23-30.
23. Rodríguez-Fuentes, H., Arredondo-Valdez, J., Apollon, W., Luna-Maldonado, U., Flores-Breceda, H., Grajeda-González, U. F., & **Luna-Maldonado, A. I.** (2022). Design and Manufacture of a Dryer for Corn Grains, Ears and Cobs. *Turkish Journal of Agriculture-Food Science and Technology*, 10(2), 142-146.
24. Apollon, W., **Luna-Maldonado, A. I.**, Kamaraj, S. K., Vidales-Contreras, J. A., Rodríguez-Fuentes, H., Gómez-Leyva, J. F., & Aranda-Ruiz, J. (2021). Progress and recent trends in photosynthetic assisted microbial fuel cells: A review. *Biomass and Bioenergy*, 148, 106028.
25. Tuda, M., **Luna-Maldonado, A.I.** (2020) Automated image-based insect species and gender classification by trained supervised machine learning algorithms. *Ecological Informatics* .60, 101135.
26. Avendano-Abarca, V. H., Gonzalez-Sandoval, D. C., Munguia-Lopez, J. P., Hernández-Cuevas, R., **Luna-Maldonado, A. I.**, Vidales-Contreras, J. A., ... & Rodríguez-Fuentes, H.

- (2020). Growth and total nutrimental absorption of baby romaine lettuce cultivated with led lighting under plant factory system. *ITEA*, 116(4), 280-293.
27. Herrera-Balandrano, D. D., Martínez-Rojas, D., **Luna-Maldonado, A. I.**, Gutiérrez-Soto, G., Hernández-Martínez, C. A., Silva-Vázquez, R., ... & Méndez-Zamora, G. (2020). Conservation of chicken breasts with mexican oregano essential oil. *Biotechnia*, 22(2), 119-127.
 28. Avendaño-Abarca, V. H., Nino-Medina, G., Rodríguez-Fuentes, H., Munguía-Lopez, J. P., **Luna-Maldonado, A.I.**, Vidales-Contreras, J. A., & Márquez-Reyes, J. M. (2019). Influence of light-emitting diodes on phenolic content and antioxidant capacity level in romaine lettuce (*Lactuca sativa* L. var. longifolia lam). *Fresenius Environmental Bulletin*, 28(11), 7945-7950.
 29. Cázares- Gallegos, R., Vidales-Contreras, J. A., **Luna-Maldonado, A. I.**, Hume, M. E., Silva-Vázquez, R., Quintero-Ramos, A., and Méndez-Zamora, G. (2019). Design of an electrochemical prototype to determine relative NaCl content and its application in fresh cheeses. *Revista Mexicana de Ciencias Pecuarias*, 10(1).
 30. Perales-Jasso, Y. J., Gamez-Noyola, S. A., Aranda-Ruiz, J., Hernandez-Martinez, C. A., Gutierrez-Soto, G., **Luna-Maldonado, A. I.**, Vázquez-Silva, R., Hume, H. and Mendez-Zamora, G. (2018). Oregano powder substitution and shelf life in pork chorizo using Mexican oregano essential oil. *Food science & nutrition*, 6(5), 1254-1260.
 31. Grajeda-González, U.F., Tuda, M., Medina-Aguirre, N.A., Flores-Breceda, H., Rodríguez-Fuentes, H., Luna-Maldonado, U. Vidales-Contreras, J.A. **Luna-Maldonado, A.I.** (2018). Digital Counting and Dispersion of Sugarcane Aphids on Sorghum Leaves. *Transylvanian Review*. 25(24):6329-6337.
 32. Luna-Maldonado U., Flores-Breceda H., Vidales-Contreras J.A. Rodríguez-Fuentes H., **A.I. Luna-Maldonado**. (2016). Technological skills in the academic performance of students.2016. *International Journal of Education and Practice*, 4(9):234-242.
 33. **Luna-Maldonado A.I.**, Vidales-Contreras J.A., H. Rodríguez-Fuentes H. (2016) Editorial: Advances and Trends in Development of Plant Factories. *Frontiers in Plant Science*.7:1848.
 34. **Luna-Maldonado A.I.**, Rodríguez- Fuentes H., Rodríguez-Ortiz J.C., Vidales-Contreras J.C., Márquez-Reyes J.M., H. Flores-Breceda.(2016). Cultivation of *Rosmarinus officinalis* in Hydroponic System. *Journal of Experimental Biology and Agricultural Sciences*, 4 (6), 637-643.
 35. Rojas-Pérez H., Martinez-de la Cerda J., Benavides-Mendoza A., Olivares-Saenz E., Aranda-Ruiz J., Gutierrez-Diez A., **Luna-Maldonado A.I.**, Rivas-Martinez E.N.2016. Fructose concentration in fruit development in grapefruit (*Citrus paradisi* Macf.), *Tecnociencia Chihuahua*, 10(1): 6-11.
 36. Rodas-Gaitán H.A., Rodríguez- Fuentes H., **Luna-Maldonado A.I.**, Alcalá-Jáuregui J., Vidales-Contreras J.A, H. Flores-Breceda.(2016). Biomass Production and Quality Estimation of *Chlorella vulgaris* (CLV2) under Large Scale Production Conditions.. *Journal of Experimental Biology and Agricultural Sciences*, 4 (5), 493-498.
 37. Grajeda-González U.F., Flores-Breceda H., Aranda-Ruiz J., Vidales-Contreras J.A. Rodríguez-Fuentes H., and **Luna-Maldonado, A.I.** (2016). Modeling of Corn Grain Drying by Runge- Kutta Method. *Journal of Experimental Biology and Agricultural Sciences*, 4 (5),462 466.
 38. Torres-Cerón, M., Vidales-Contreras J.A., Rodríguez-Fuentes, H., **Luna-Maldonado A. I.**, Sánchez-Alejo, E.J., D. J. González-Mille. (2015). Phytotoxicological Assessment of Treated Wastewater Effluent in Oxidation Lagoons used for Irrigation. *Química Hoy Chemistry Sciences* 05/2015; 5(2):20-24.
 39. F. Grajeda-González, Contreras-Salazar E.A., and **Luna-Maldonado, A.I.** (2015). Image Processing System to obtain the Color Parameters in Fruits of Two Tomato Varieties. *Academia Journals* pp: 1156 - 1161.
 40. Vidales-Contreras, J. A., Rodríguez-Fuentes, H., **Luna-Maldonado, A. I.**, & J.J. Hernández-Escareño. (2015). Displacement of Br⁻ and P22 in a Wetland Environment. *Water, Air, & Soil Pollution*, 226(6), 1-9.

41. Pequeño-Granado, I. L., Vázquez-Alvarado, R. E., Santos-Haliscak, J. A., **Luna-Maldonado, A. I.**, Moreno-Degollado, G., Iracheta-Donjuan, L. & Ojeda-Zacarias, M. C. (2015). Organogenic induction of *Jatropha curcas* L. from young leaves. *Polibotánica*, (39), 79-89.
42. H. Rodríguez- Fuentes, Cadena-Zapata M., Esparza- Renteria J.A., Vidales-Contreras J.A., Ojeda-Zacarias M.C. and **A.I. Luna-Maldonado**. 2014. Design, manufacturing and calibration of a circular ring type monolithic load cell addressed to drawbar pull testing of the farm tractor. *Journal of Experimental Biology and Agricultural Sciences*. V (2) Number (IV), pp: 373 - 379.
43. Vidales-Contreras J.A, Pissani-Zúñiga J.P., Rodríguez-Fuentes H., Olivares- Sáenz E., Aranda-Ruiz J. and **A. I. Luna-Maldonado**. 2014. Regimens of Ecological Flow Rates on the Pilón River, *Journal of Experimental Biology and Agricultural Sciences*, V(2) Number(IV).pp: 380 - 386.
44. Niño-Medina G., Rivera-Castro J.C., Vidales-Contreras J.A, Rodríguez-Fuentes H., **A.I. Luna-Maldonado**. (2013). Physicochemical Parameters for Obtaining Prediction Models in the Postharvest Quality of Tomatoes (*Solanum lycopersicum* L.). *Transactions on Machine Learning and Data Mining* Vol. 6, No.2 (2013) 81-91
45. Garza-Vara S.F., Pissani-Zuñiga J. F., **Luna-Maldonado A. I.**, Olivares-Saenz E., Gómez-García D. and J.J. Cortés-Bracho. 2012. Models of the interconnection of pumps to supply water to branched networks. *Paddy and Water Environment*.
46. Rodas-Gaitán, H. A., Rodríguez-Fuentes, H., Ojeda-Zacarias, M., Vidales-Contreras, J. A., **A. I. Luna-Maldonado**. (2012). Macronutrients Absorption Curves in Italian Squash (*Cucurbita pepo* L.). *Revista Fitotecnica Mexicana*, 35(SPE5), 57-60.
47. Rodas-Gaitán, H. A., Rodríguez-Fuentes, H., Flores-Mendiola, G., Vidales-Contreras, J. A., Aranda-Ruiz, J., **A. I. Luna-Maldonado**, (2012). Effect of inoculation cellular density on *Chlorella vulgaris* CLV2 growth cultivated under mixotrophic conditions. *Revista Fitotecnica Mexicana*, 35(SPE5), 83-86.
48. Nakaji K., **Luna Maldonado A.I.** and Yamaguchi Y. 2011. Advances in the Vision System of an Intelligent Robot for an Agricultural Production Ecosystem. *Journal of Machinery Science*. Turkey.1: 37-42.
49. **Luna Maldonado A.I.** (2010). Automation and robots for handling, storing and transporting fresh produce. *Stewart Postharvest Review* 2010. The United Kingdom. 3:14 .2-6.
50. Yamaguchi Y., A.I. **Luna-Maldonado** and K. Nakaji. (2010). Development of an Intelligent Robot for an Agricultural Production Ecosystem (VIII) - Improvement of Predator-Prey Model and Analysis of the Activity of Snail in Paddy by Image Processing -. *Journal of the Faculty of Agriculture, Kyushu University*. 55:101-105.
51. Yamaguchi Y., **A.I. Luna-Maldonado** and K. Nakaji. (2009). Measurement Method of Degree of Activity of Golden Apple Snail by Image Processing. *Japanese Journal of Farm Work Research*. 2009, 44: 121-122 Extra Issue.
52. Yamaguchi Y., **A.I. Luna-Maldonado** and K. Nakaji. (2009). Rice Plant in a Production ecosystem- Weed Competitive Model and Golden Apple Snail- Construction of Prey Model. *Japanese Journal of Farm Work Research*. 2009, 44: 119-120 Extra Issue.
53. Yamaguchi Y., **A.I. Luna-Maldonado** and K. Nakaji. (2009). Development of an Intelligent Robot for an Agricultural Production Ecosystem (VII) - Image Processing and Analysis of the Activity of Snail in Paddy-. *Journal of the Faculty of Agriculture, Kyushu University*, 2009. 54: 247-250.
54. **Luna-Maldonado, A.I.**, Y. Yamaguchi and K. Nakaji. (2009). Development of an Intelligent Robot for an Agricultural Production Ecosystem (VI) -Counting of Snails in Laboratory and Paddy Field by Using Developed Programs of Image Processing -. *Journal of the Faculty of Agriculture, Kyushu University*. 2009, 54: 241-245
55. **Luna-Maldonado, A.I.**, Y. Yamaguchi and K. Nakaji. (2009). Development of an Intelligent Robot for an Agricultural Production Ecosystem (V) - Experiments on Predation of Paddy by Golden Apple Snails-. *Journal of the Faculty of Agriculture, Kyushu University*. 2009, 54: 235-239.
56. **Luna-Maldonado, A.I.**, Y. Yamaguchi and K. Nakaji. (2009). Development of an Intelligent Robot for an Agricultural Production Ecosystem (IV) - Experiments on

- Growth and Competition of Rice Plants against Weeds -. *Journal of the Faculty of Agriculture, Kyushu University*. 2009, 54: 231-233.
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Book chapters

1. Salazar-Manzanares, M. I., Márquez-Reyes, J. M., Rodríguez-Romero, B. A., Méndez-Zamora, G., & **Luna-Maldonado, A. I.** (2024). Decreasing the Contaminant Load of Compounds Present in Whey by Using Microorganisms Capable of Generating Microbial Cellulose. In *Microbial Nexus for Sustainable Wastewater Treatment* (pp. 322-338). CRC Press.
2. Apollon, W., Flores-Breceda, H., Méndez-Zamora, G., Gómez-Leyva, J. F., **Luna-Maldonado, A. I.**, & Kamaraj, S. K. (2022). Importance of Genetically Engineered Microbes (GEMs) in Bioremediation of Environmental Pollutants: Recent Advances and Challenges. *Omics for Environmental Engineering and Microbiology Systems*, 203-219.
3. Apollon, W., **Luna-Maldonado, A. I.**, Vidales-Contreras, J. A., Rodríguez-Fuentes, H., Gómez-Leyva, J. F., & Kamaraj, S. K. (2022). Application of microbial fuel cells and other bioelectrochemical systems: a comparative study. In *Microbial Fuel Cells: Emerging trends in electrochemical applications*. IOP Publishing.
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7. Gallo-De La Paz, N., Martínez-Ávila, C., Rodríguez-Fuentes, H., **Luna-Maldonado, A. I.**, & Rojas, R. (2022). Effect of LED Light on Plants and Microgreens Production in a Plant Factory System. In *Biocontrol Systems and Plant Physiology in Modern Agriculture* (pp. 257-269). Apple Academic Press.
8. Torres-Cerón, M., Vidales-Contreras, J. A., Rodríguez-Fuentes, H., **Luna-Maldonado, A. I.**, González-Mille, D. J., & Napoles-Armenta, J. (2022). Physical and Chemical Water Quality from a Hybrid System for Wastewater Reclamation for Agricultural Purposes. In *Biocontrol Systems and Plant Physiology in Modern Agriculture* (pp. 125-142). Apple Academic Press.
9. Ordoñez-López, L. E., Rodríguez-Fuentes, H., **Luna-Maldonado, A. I.**, Márquez-Reyes, J. M., & Rojas, R. (2022). Effect of LED Light in Biomass Production and Presence of

Metabolites in Medicinal Plants. *In Biocontrol Systems and Plant Physiology in Modern Agriculture* (pp. 201-220). Apple Academic Press.

10. **Luna-Maldonado, A. I.**, Márquez-Reyes, J. M., Flores-Breceda, H., Rodríguez -Fuentes, H., Vidales-Contreras, J. A., & Luna-Maldonado, U. (2019). Automation and robotics used in hydroponic system. In *Urban Horticulture-Necessity of the Future*. IntechOpen.
11. Grajeda-González, U. F., **Luna-Maldonado, A. I.**, Rodríguez-Fuentes, H., Vidales-Contreras, J. A., Contreras-Salazar, E. A., and Flores-Breceda, H. (2018). Models Fitting to Pattern Recognition in Hyperspectral Images. In *Hyperspectral Imaging in Agriculture, Food and Environment*. IntechOpen.
12. Torres-Cerón, M., Vidales-Contreras J.A., Rodríguez-Fuentes, H., **Luna- Maldonado, A.I.**, Sánchez-Alejo, E.J., Aranda-Ruiz J., D. J. González-Mille. 2015. Construction and operation of a hybrid system for municipal wastewater treatment. Solution to Water Problems in Mexico: Proposals for Young Researchers. First Edition, University of Guanajuato. ISBN: 978-607-441-404-2, Mexico.
13. **Luna-Maldonado, A. I.**, Vigneault, C., and Nakaji, K. (2012). Postharvest Technologies of Fresh Horticulture Produce. In Horticulture. IntechOpen.
14. Rodríguez-Fuentes, H., Vidales-Contreras, J. A., **Luna-Maldonado, A. I.**, & Rodríguez-Ortiz, J. C. (2012). Total growth of tomato hybrids under greenhouse conditions. In Horticulture. IntechOpen.

Books

1. Solankey, S. S., Akhtar, S., **Luna-Maldonado, A. I.**, Rodríguez-Fuentes, H., Vidales-Contreras, J. A., & Márquez-Reyes, J. M. (Eds.). (2020). *Urban Horticulture: Necessity of the Future*. BoD–Books on Demand.
2. **Luna- Maldonado, A.I.**, Rodríguez-Fuentes, H., and J.A. Vidales-Contreras (2018). *Hyperspectral Imaging in Agriculture, Food and Environment*. IntechOpen.
3. **Luna-Maldonado, A. I.**, Vidales-Contreras, J. A., and Rodríguez-Fuentes, H. (2016). Advances and trends in development of plant factories. *Frontiers in plant science*, 7, 1848.
4. Rodríguez-Fuentes, H., J.A. Vidales-Contreras, J.C. Rodríguez-Ortiz and **A.I. Luna-Maldonado**. 2016. *Manual of Hydroponic Production of Bulbous for flower cutting and in pot*. 2014.Trillas Book Company.
5. **Luna- Maldonado A.I.** 2012. *Horticulture*. Intech Publishing. ISBN 979-953-307-435-0.

Standards

ANSI/ASABE S516.2014. Terminology for Forest Operations and Equipment. Approved October 2014 as an American National. American Society of Agricultural and Biological Engineers

Thesis Supervision and Advising

Undergraduate Level (Bachelor's Degree)

1. Gabriel Eliel Saucedo Reyes (2024). *Analysis of the Physicochemical Properties and Antioxidant Activity of Mexican Honeys*. Bachelor's Degree in Food Industries Engineering
2. Diego Francisco Díaz Gómez (2022). *Agave Fructans as an Acidification Accelerator in the Production of Oaxaca Cheese*. Bachelor's Degree in Food Industries Engineering
3. Andrea Lizeth Sandoval Suárez (2022). *Use of Ostrich Meat in the Formulation of Cooked Ham* Bachelor's Degree in Food Industries Engineering
4. Valeria Elizabeth Porras Castañeda (2022). *Statistical Analyses Applied in Food Industries*. Bachelor's Degree in Food Industries Engineering
5. Alondra Valadez Pineda (2022). *Goat Meat in the Formulation of Vienna-Type Sausage*. Bachelor's D. egree in Food Industries Engineering

6. Alondra Guadalupe Moreno Camacho (2021). *Pitaya as a Natural Colorant in the Formulation of Meat Pastes*. Bachelor's Degree in Food Industries Engineering
7. Cynthia Lizbet Medereza Lara (2021). *Himalayan Salt as a Color Enhancer and Salt Substitute in Frankfurt Sausage Formulation*. Bachelor's Degree in Food Industries Engineering
8. Genesis Carolina Barraza Santos (2021). *Meat Quality Evaluation of Quail Supplemented with Oregano Oils*. Bachelor's Degree in Food Industries Engineering
9. Rubí Elena Rodríguez Quiroz (2021). *Development and Partial Characterization of Films Based on Microbial Cellulose and Chitosan*. Bachelor's Degree in Food Industries Engineering
10. Saúl Hernández Antonio (2021). *Influence of Powdered Whey on the Stability of Fermented Dairy Beverages*. Bachelor's Degree in Food Industries Engineering
11. Adriana Lucero Pérez Vargas (2021). *Evaluation of Pork Back Fat Replacement with Pecan Paste in Frankfurt Sausage Formulation*. Bachelor's Degree in Food Industries Engineering
12. Analaura Pancardo Zavala (2020). *Characterization of Lactobacillus rhamnosus and Its Evaluation in Petit Suisse Cheese*. Bachelor's Degree in Food Industries Engineering
13. Niriel Sánchez Zamora (2019). *Agave Inulin and Oregano Oil in the Productive Performance and Meat Quality of Broiler Chickens*. Bachelor's Degree in Food Industries Engineering
14. Jesús Anthony Cantú Valdéz (2018). *Effect of Oregano Oils and Butylated Hydroxytoluene (BHT) on the Shelf Life of Ground Beef*. Bachelor's Degree in Food Industries Engineering
15. Cristóbal Abdiel Montemayor Abundiz (2011). *Delimitation and Morphometric Analysis of the Micro-Watershed of "La Amistad" Dam, Marín, N.L.* Bachelor's Degree in Agronomy

Master of Science

1. Emilio Daniel Reyna Ávila (In progress) Response of Spinacia oleracea Varieties Grown in a Plant Factory with Artificial Lighting.
2. Zayd Eliud Rangel Nava (2024) Agave Fructans and Their Effect on the Quality of Panela Cheese, Its Whey, and Ricotta. UANL
3. Cristal Alejandra Ochoa Chantaca (2024) Characterization of Bioactive Bacterial Cellulose Films Produced from Moringa oleifera and Aloe vera Fermentation. UANL
4. Miguel Neftalí Pérez Sánchez (2023) Effect of Milk from Goats Supplemented with Nanoparticulated Oregano Oil on Yogurt Quality. UANL
5. Ronald Lecea Ocañas (2022) Effect of Antioxidants on the Postharvest Quality Extension of Pecan Nuts from Western Schley and Wichita Varieties. UANL
6. Dulce Yesenia Márquez Urobe (2021) Quantification of Water Quality Indicators in Municipal Wastewater Treated in an Oxidation Lagoon System. UANL
7. Natielly Gallo de la Cruz (2020) LED Lighting and Its Relationship with Metabolite Production and Biomass in Broccoli under a Plant Factory System. Master's in Agricultural Production Sciences, Faculty of Agronomy, UANL
8. Milton Torres Cerón (2016) Construction and Evaluation of a Hybrid Wastewater Treatment System. Master's in Agricultural Production Sciences, Faculty of Agronomy, UANL
9. Uziel Francisco Grajeda González (2015) Detection of Salmonella typhimurium in Tomato Fruits (Solanum lycopersicum L.) Using Traditional Techniques and Hyperspectral Image Processing. Master's in Engineering Sciences, Technological Institute of Culiacán, Sinaloa, Mexico
10. Kristian Geancarlo Castillo Castro (2013) Estimation of Growth Curves and Nutrient Uptake in Hydroponic Rosemary Cultivation. Master's in Agricultural Production Sciences, Faculty of Agronomy, UANL

11. Jessica Cecilia Rivera Castro (2011) Physicochemical Parameters for the Development of Predictive Models in Postharvest Quality of Tomato (*Solanum lycopersicum*). Master's in Agricultural Production Sciences, Faculty of Agronomy, UANL

Doctorate

1. Gilbert Fresh López López (In progress) Development and Optimization of a Fertilizer Seeder for Variable Rate Granulated Fertilizer Application Using Prescription Maps.
2. Alfonso Rojas Duarte (In progress) Daily Integral Light Levels and Their Effect on the Production of *Lactuca sativa* L. Using Commercial Luminaires.
3. Héctor Flores Breceda (2024) Maturity Status of Four Grape Varieties Using Physicochemical Parameters, Hyperspectral Image Processing, and Machine Learning.
4. Wilgince Apollon (2023) Evaluation of the Growth of Stevia Plants (*Stevia rebaudiana* Bertoni) Fertilized with a Novel Bio-Electrochemical System.
5. Juan Arredondo Valdez (2022) Acquisition and Processing of RGB and Hyperspectral Images for Drought Phenotyping in *Opuntia ficus-indica* (L.) Miller.
6. Víctor Hugo Avendaño Abarca (2019) Intensive Production of Baby Lettuce (*Lactuca sativa* L.) under a Plant Factory System. Doctorate in Agricultural Sciences, Faculty of Agronomy, UANL
7. Uziel Francisco Grajeda González (2018) Development of Mathematical Algorithms to Detect the Presence of Bacteria, Fungi, and Pests Using Image Processing Systems. Faculty of Agronomy, UANL
8. Héctor Rojas Pérez (2017) Carbohydrate Concentration in Developing Grapefruit (*Citrus paradisi* Macf.).
9. Sergio Zeferino Garza Vara (2012) Mathematical Modeling of Interconnected Pumps in Open Networks for Irrigation and Their Matrix Solution. Doctorate in Agricultural Sciences, Faculty of Agronomy, UANL

Technologies Developed.

- 2016. Hyperspectral Image Acquisition System.
- 2014. Software for $L^*a^*b^*$ Color Space.

Presentations

Congress

1. **Luna-Maldonado, A. I.** (2024). Industria Alimentaria 4.0. Segundo Seminario de Microbiología y Farmacia. Unisimon, Barranquilla, Colombia.
2. **Luna-Maldonado, A. I.** (2024). Artificial Intelligence for the Earth. 2024 IASE/ICE Joint Symposium. Idaho State University. USA.
3. **Luna-Maldonado, A. I.** (2024). XXIX Congreso Nacional y IX Internacional de Fitogenética. Guanajuato, México.
4. **Luna-Maldonado, A. I.** (2024). XXVII Congresp Internacional en Ciencias Agrícola. Mexicali, Baja California.
5. Apollon, W., **Luna-Maldonado, A. I.** (2021). Desarrollo de un sistema bioelectroquímico empleado al crecimiento de *Stevia rebaudiana*. Primer Congreso Internacional de Biotecnología Agropecuaria y el Tercer Simposio Nacional de Micropropagación de Plantas y Automatización. Instituto Tecnológico El Llano Aguascalientes. Buenavista, Saltillo, Coahuila, México. Aguascalientes, Aguascalientes, México.
6. Flores-Breceda, H., **Luna-Maldonado, A. I.** (2021). Modelado de latencia invernal del viñedo y sólidos solubles totales de la uva. Primer Congreso Internacional de Biotecnología Agropecuaria y el Tercer Simposio Nacional de Micropropagación de Plantas y

- Automatización. Instituto Tecnológico El Llano Aguascalientes. Buenavista, Saltillo, Coahuila, México. Aguascalientes, Aguascalientes, México.
7. Flores-Breceda, U.F., **Luna-Maldonado, A. I.** (2021). Modelación de la dormancia invernal de un viñedo en Linares, Nuevo León. XXVII Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Universidad Agraria Antonio Narro. Buenavista, Saltillo, Coahuila, México.
 8. Apollon, W., **Luna-Maldonado, A. I.** (2021). Desarrollo de un sistema bioelectroquímico empleado al crecimiento de *Stevia rebaudiana*. XXVII Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Universidad Agraria Antonio Narro. Buenavista, Saltillo, Coahuila, México.
 9. Lecea-Ocañas, R., **Luna-Maldonado, A. I.** (2021). Efecto de los antioxidantes en la calidad postcosecha de dos variedades de nuez pecana. XXVII Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Universidad Agraria Antonio Narro. Buenavista, Saltillo, Coahuila, México.
 10. Grajeda-González, U.F., **Luna-Maldonado, A. I.** (2015). Modelaje del Secado de Grano de Maíz por el Método de Runge- Kutta. XXIV Congreso Nacional de Ingeniería Agrícola. XXIV Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Universidad Agraria Antonio Narro. Buenavista, Saltillo, Coahuila, México.
 11. González-Gómez, A., **Luna-Maldonado, A. I.** (2015). Desarrollo de Sistemas de Sensoria para Medir Temperatura y Humedad del Suelo en el Cultivo de Frijol. XXIV Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Universidad Agraria Antonio Narro. Buenavista, Saltillo, Coahuila, México.
 12. Arrellano-Alejandro, D.A., **Luna-Maldonado, A. I.** (2014). Construcción de una incubadora automatizada para la elaboración de yogurt. XI Congreso Latinoamericano y del Caribe de Ingeniería Agrícola, XXIII Congreso Nacional de Ingeniería Agrícola. 6 al 10 de octubre de 2014, Cancún, Quintana Roo, México.
 13. Vidales-Contreras, J.A., **Luna-Maldonado, A. I.** (2014). Acreditación Internacional por ABET del Programa Educativo en Ingeniería de los Alimentos. XI Congreso Latinoamericano y del Caribe de Ingeniería Agrícola, XXIII Congreso Nacional de Ingeniería Agrícola. 6 al 10 de octubre de 2014, Cancún, Quintana Roo, México.
 14. González Garza, C.G., **Luna-Maldonado, A. I.** (2013). Determinación del contenido de humedad de rebanadas de manzana con un programa diseñado en Visual Basic 6. XXII Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Campo Experimental Valle de México, INIFAP. Estado de México, México.
 15. Vargas-Valero, M.F., **Luna-Maldonado, A. I.** (2013). Control de posición de un servomotor por la cantidad de luz que una resistencia detecta. XXII Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Campo Experimental Valle de México, INIFAP. Estado de México, México.
 16. Castro López, C., **Luna-Maldonado, A. I.** (2013). Consideraciones de un sensor de calor para aplicaciones en la agricultura e industria alimentaria. XXII Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Campo Experimental Valle de México, INIFAP. Estado de México, México.
 17. Luna-Maldonado, U., **Luna-Maldonado, A. I.** (2013). Viabilidad de las competencias tecnológicas para la obtención de rendimiento académico. XXII Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Campo Experimental Valle de México, INIFAP. Estado de México, México.
 18. **Luna-Maldonado, A. I.** (2011). Parámetros fisicoquímicos para la obtención de Modelos de Predicción en la Calidad poscosecha de Tomates (*Solanum Lycopersicum* L.). XX. Congreso Nacional de Ingeniería Agrícola. Universidad de Guanajuato. Irapuato, Guanajuato, México.
 19. **Luna-Maldonado, A. I.**, Nakaji, K. (2011). Modelos para la competición entre plantas y la depredación en un ecosistema de producción de arroz. III Congreso Latinoamericano de Agroecología, Oaxtepec, Morelos, México.}

20. **Luna-Maldonado, A. I.**, Nakaji, K. (2011). Advances in the vision system of an intelligent robot for an agricultural production ecosystem. International Congress on Mechanization and Energy in the Agriculture. Namik Kemal University. Istanbul, Turkey.
21. Rosales-Maldonado, E., **Luna-Maldonado, A. I.** (2001). Diseño y Construcción de una Cámara para Controlar la Humedad y la Temperatura. XI Congreso Nacional de Ingeniería Agrícola. Universidad de Guanajuato. Guanajuato, Guanajuato, México.
22. Serna-Fernandez, U., **Luna-Maldonado, A. I.** (2000). Mejoramiento del Factor de Potencia en las Instalaciones Eléctricas de la Universidad Agraria Antonio Narro. Congreso Latinoamericano y del Caribe de Ingeniería Agrícola (CLIA) 2000 y X Congreso Nacional de Ingeniería Agrícola. Universidad de Chapingo. Texcoco, Estado de México, México.
23. García-González, R., **Luna-Maldonado, A. I.** (1998). Selección de un Banco de Capacitores para mejorar el Factor de Potencia. VIII Congreso Nacional de Ingeniería Agrícola. Universidad de Guanajuato. Irapuato, Guanajuato, México.
24. **Luna-Maldonado, A. I.** (1997). Diseño y Fabricación de un Secador para Maíz. VII Congreso Nacional de Ingeniería Agrícola y 1er Congreso Latinoamericano de Ingeniería Agrícola. Universidad Agraria Antonio Narro. Buenavista, Saltillo, Coahuila, México.

Symposiums

1. **Luna-Maldonado, A. I.** (2024). Artificial Intelligence for the Earth. The 2024 IASE/ICE Joint Symposium. Idaho State University, USA.
2. **Luna-Maldonado, A. I.** (2021). Herramientas básicas para una agricultura de precisión. Simposio Internacional de Ingeniería Agrónica 2021. Universidad de Guanajuato. Guanajuato, Guanajuato, México.
3. **Luna-Maldonado, A. I.**, Nakaji, K. (2008). Development of the Intelligent Robot of an ecosystem Agricultural Production (Part 2)- Model of the Competition of Weeds and Rice Plants eaten by Golden Apple Snail in Paddy-. 67th Annual Meeting on the Japanese Society for Agricultural Machinery and Food Engineers. Miyazaki, Japan.

Conferences

1. **Luna-Maldonado, A. I.** (2021). Herramientas de la agricultura de precisión. 2º Ciclo de Conferencias “Uso de la tecnología en la agricultura moderna”. Instituto Tecnológico Superior de ElDorado. ElDorado, Sinaloa, México.
2. **Luna-Maldonado, A. I.** (2008). Physicochemical parameters for obtaining prediction models in the postharvest quality of tomatoes. 9th International Conference on Machine Learning and Data Mining MLDM 2024. New York, USA.

Seminars

1. **Luna-Maldonado, A. I.** (2007). Conceptual design of an intelligent robot for an agricultural production ecosystem. International Seminar on Agricultural Structure & Agricultural Engineering, National Taiwan University, Taipei, Taiwan.
2. **Luna-Maldonado, A. I.**, Hoshiba, H. (2002). The US-3A Cooling Test of an Orion BRA-60 Bulk Cooler. Proceedings of Seminar for Automation Technology to Farm Machine in Developing Countries. JICA. Obihiro, Japan.

Workshop

1. **Luna-Maldonado, A. I.** (2007). Development of an intelligent robot for an agricultural production ecosystem: Experiments on the dynamics of a golden apple snail to develop a new conceptual robot. International Workshop on Agricultural and Biosystems Engineering. National Taiwan University, Ho Chi Min, Vietnam.
2. **Luna-Maldonado, A. I.** (2006). Development of an intelligent robot for an agricultural production ecosystem: Experiments on the dynamics of a golden apple snail to develop a new conceptual robot. Environmental Engineering in Agriculture. Tokyo University for Agriculture and Technology, Tokyo, Japan.
3. **Luna-Maldonado, A. I.** (2006). International Workshop on Chaos Informatics and Complex Systems for Ecosystem Prediction. Tokyo University for Agriculture and Technology. Tokyo, Japan.
4. **Luna-Maldonado, A. I.** (1996). The present status and prospects of Agricultural Mechanization in Mexico. Proceedings of 1996 JSAM International Workshop on

Prospectus and Strategies for Agricultural Mechanization in Developing Countries. JICA, Japón.

5. **Luna-Maldonado, A. I.** (1996). Design and Trial Making of a Corn Grain Dryer. Proceedings of the Fourth International Seminar on Farm Machinery for Developing Countries. JICA. Tsukuba, Japón.

Colloquium

1. Apollon, A., **Luna-Maldonado, A. I.** (2021). Producción de bioelectricidad a través de un sistema bioelectroquímico de planta. 2do Coloquio Red de Investigación Aguascalientes. Aguascalientes, Aguascalientes, México.

Memberships

1. Sigma XI. The Scientific Research Honor Society. Member ID 20239993100.
2. ASABE. American Society for Agricultural and Biological Engineers. Member ID 1044449