

# Curriculum Vitae

## 1. Personal Information:

**Name:** EFRAIN VIZUETE  
**Current Address:** Tempe, Arizona  
**e-mail:** evizute@asu.edu

## 2. Current employment and past positions:

Laboratory Manager, Arizona State University (ASU). Center for Hydrologic Innovations, Tempe, Arizona. **2024-Current.**

Research associate, Technological Institute of Sonora (ITSON). Department of Water and Environmental Science. Obregon, Mexico. 2022-2024.

Academic technician, Technological Institute of Sonora (ITSON). Department of Water and Environmental Science. Obregon, Mexico. 2017-2018.

Environmental technician, VERYGLOBE CIA LTDA. Quito, Pichincha, Ecuador. 2013-2014.

## 3. Degrees:

Ph.D., Engineering Sciences, Department of Engineering, Technological Institute of Sonora (ITSON), 2022.

M.S., Natural Resources, Department of Water and Environmental Science, Technological Institute of Sonora (ITSON), 2017.

B.S., Environmental engineering, Department of Engineering Sciences, Technological Equinoctial University of Ecuador (UTE), 2014.

## 4. Scholarly Areas:

Use of ion exchange resins to quantify nutrients in natural areas.

Quantification of heavy metals in soil and rainwater using ion exchange resins in urban areas.

Analysis of the efficiency of green infrastructure and urban infrastructure in the retention and removal of pollutants.

Field sampling of soil and water samples for physical-chemical analysis.

Use and application of geographic information systems (GIS) to solve environmental, social and public health problems.

Clustering techniques (Hot spot analysis)

Watershed hydrology & Rainfall-runoff modeling.

## 5. Web resources and databases:

ORCID: <https://orcid.org/0000-0001-8786-3885>

Google scholar: <https://scholar.google.com.mx/citations?user=TXmciXIAAAA&hl=es>

LinkedIn: <https://www.linkedin.com/in/efravzt/>

## 6. Honors and Awards:

CONACYT Fellow, Mexican National Council for Science and Technology. Scholarship awarded to pursue Ph.D. in Engineering Sciences at Technological Institute of Sonora, 2018-2022.

Awarded with the first place as a poster exhibitor with the theme "Evaluation of the Availability of Nutrients through the Use of Ion Exchange Resins in a Seasonal Period in the Cuchujaqui River Basin". UNIVERSIDAD ESTATAL DE SONORA, Hermosillo, Mexico, 2017.

CONACYT Fellow, Mexican National Council for Science and Technology. Scholarship awarded to pursue M.S. in Natural Resources at Technological Institute of Sonora, 2015-2017.

**7. Other professional activities:**

Environmental consultant, Obregon, Mexico. **2021-Current.**

**8. Teaching:**

Assistant professor, Fundamentals of Environmental Engineering, undergraduate level, ITSON-ICA, 2017, 2018, 2019, 2020, 2021, 2022.

**9. Workshops:**

1. Staff of the FUTURE SCENARIOS workshop held in 2016 in Hermosillo, Sonora as part of the National Science Foundation (SES-1444755) project: "Urban Resilience to Extreme Events Sustainability Research Network (UREx-SRN).
2. Organizer and presenter of the Geochemistry, multivariate statistics, spatial analysis and GIS Workshop for the technicians of the Mexican Geological Survey Federal Agency (Servicio Geologico Mexicano). 2022. Held from October 17 to 20 at the facilities of the State University of Sonora, Hermosillo Unit, Mexico.

**10. Peer-reviewed publications:**

1. **Vizuite-Jaramillo, E.**; Robles-Morua, A.; Meza-Figueroa, D.; Schiavo, B.; Gonzalez-Grijalva, B. Seasonal quantification of Zn<sup>2+</sup>, Pb<sup>2+</sup> and Cu<sup>2+</sup> in urban dusts in a semiarid city in northwest Mexico, Atmospheric Pollution Research, Volume 15, Issue 5, 2024, 102074, ISSN 1309-1042, <https://doi.org/10.1016/j.apr.2024.102074>.
2. Jacinto-Maldonado, M.; Lesbarreres, D.; Rebollar, E. A.; Basanta, M. D.; Gonzalez-Grijalva, B.; Robles-Morua, A.; Alvarez-Bajo, O.; **Vizuite-Jaramillo, E.**; Paredes-Leon, R.; Meza-Figueroa, D. Batrachochoytrium dendrobatidis and Hannemania mite's relationships with Mexican amphibians in disturbed environments, Frontiers in Amphibian and Reptile Science, Volume 2, 2024, ISSN=2813-6780, <https://doi.org/10.3389/famrs.2024.1372993>.
3. Schiavo, B., Meza-Figueroa, D.; Morton-Bermea, O.; **Vizuite-Jaramillo, E.**; Robles-Morua, A. Seasonal variation of mercury in settled dust from brick kiln pollution in Sonora, Mexico: Ecological risk and human health implication (2023). Atmospheric Pollution Research. <https://doi.org/10.1016/j.apr.2023.101787>
4. Schiavo, B.; Meza-Figueroa, D.; **Vizuite-Jaramillo, E.** et al. Oxidative potential of metal-polluted urban dust as a potential environmental stressor for chronic diseases. Environ Geochem Health (2022). <https://doi.org/10.1007/s10653-022-01403-9>
5. **Vizuite-Jaramillo, E.**; Meza-Figueroa, D.; Reyes-Castro, P.A.; Robles-Morua, A. Using a Sensitivity Analysis and Spatial Clustering to Determine Vulnerability to Potentially Toxic Elements in a Semiarid City in Northwest Mexico. Sustainability 2022, 14, 10461. <https://doi.org/10.3390/su141710461>
6. **Vizuite-Jaramillo, E.**, Grahmann, K., Mora Palomino, L. et al. Using ion-exchange resins to monitor nitrate fluxes in remote semiarid stream beds. Environ Monit Assess 194, 376 (2022). <https://doi.org/10.1007/s10661-022-10041-8>

**11. Books and book chapters:**

1. Robles-Morúa, A., Hinojosa-Robles, Eduardo., Navarro-Estupiñán, Javier., Meza-Figueroa, D., **Vizuite-Jaramillo, E.**, Peñúñuri, M.G. Operational guidelines for the identification of green

infrastructure in a semiarid city. Collaborating for Climate Equity, 67-84 (2022). ISBN: 9781003208723

## **12. Graduate Thesis supervision and advising:**

*Undergraduate Students:*

Alondra Encinas Arballo (B.S. Environmental Engineering, 2014-2018, Co-Chair). Graduated.

## **13. Summer research programs:**

1. Short stay research at Arizona State University (ASU). 2019. School of Life Sciences – SOLS. Tempe Campus, Arizona. Monitoring of heavy metals in urban and semi-arid ecosystems.
2. Short stay research at New Mexico Technological University (NMT). 2016. Contaminant and Fluid Transport Laboratory. Research on modeling and movement of nutrients in semiarid ecosystems.

## **14. Technical skills:**

Windows.

MATLAB.

Distributed (tRIBS), SWAT and HEC-HMS Hydrological modeling.

Operation of Segmented Flow Autoanalyzer (SEAL) (Certified by SEAL Analytical)

Operation of 797 VA Computrace (Metrohm) (Certified by Metrohm)

Geographic Information Systems (ESRI ArcMap, ArcGIS Online, ArcGIS Pro, Story Maps).

Creation of professional maps for publication of scientific articles

Google Earth Engine

Remote sensing (Sentinel, Landsat, NLDAS, Alos Palsar, SRTM)

Processing and analysis of remote sensing data

Adobe Illustrator, Adobe Photoshop, Adobe After Effects, Adobe Premiere Pro, Microsoft office.

HTML, web design

## **15. Languages:**

Fluent in Spanish and English. TOEFL IBT 520-548 points. Last tested in May 2018. Capable of conducting simultaneous professional translations.

## **16. Conference presentations:**

1. **Vizuite-Jaramillo, E;** Meza-Figueroa, D., Gonzalez-Grijalva, B., y Robles-Morúa, A. 2023. Distribución espacial y análisis de vulnerabilidad ante la exposición de agentes tóxicos prioritarios en comunidades del Río Sonora. XXXIII Congreso Nacional de Geoquímica, Universidad de Sonora, Hermosillo, Mexico.
2. **Vizuite-Jaramillo, E.** 2023. Conferencia Muestreo en campo y análisis espacial de datos para el monitoreo de la contaminación atmosférica. Caso de estudio del derrame en el Río Sonora. Instituto Tecnológico de Sonora.
3. **Vizuite-Jaramillo, E.** 2022. Conferencia magistral “Retos y Estrategias para el Monitoreo Ambiental Urbano en el Antropoceno”. Universidad Tecnológica Equinoccial del Ecuador.
4. **Vizuite-Jaramillo, E.** 2021. Retos del monitoreo Ambiental Urbano en la actualidad. Universidad Tecnológica Equinoccial del Ecuador. Quito, Pichincha, Ecuador.
5. **Vizuite-Jaramillo, E.** 2021. Taller “Aplicación de SIG a las Ciencias Ambientales”. Instituto Tecnológico de Sonora. Obregon, Sonora, Mexico.
6. **Vizuite-Jaramillo, E.** 2020. Conferencia magistral “Impacto en los suelos y en la infraestructura verde en mitigar y retener la contaminación por metales pesados en las ciudades”. Universidad Tecnológica Equinoccial del Ecuador.

7. **Vizuite-Jaramillo, E;** Grahmann, K; Mora-Palomino, L; Méndez-Barroso, L y Robles-Morúa, A. 2018. Disponibilidad de nutrientes en un área natural con distintos grados de conservación durante un periodo estacional en un bosque tropical seco en el Noroeste de México. Unión Geofísica Mexicana. Reunión Anual 2018. Puerto Vallarta, Jalisco, Mexico.
8. **Vizuite-Jaramillo, E;** Grahmann, K; Mora-Palomino, L y Robles-Morúa, A. 2018. Evaluación de la metodología de resinas de intercambio iónico para la cuantificación de flujos de nutrientes en ecosistemas naturales. IX Simposio Internacional del Carbono en México. Alamos, Sonora, Mexico.
9. Grahmann, K. **Vizuite-Jaramillo, E** y Robles Morúa A. 2016. Evaluación de disponibilidad de nutrientes en el suelo en la cuenca del Cuchujaqui con cajas acumuladoras de iones. Congreso Internacional de Ingeniería Ambiental. Guaymas, Sonora, Mexico.
10. **Vizuite-Jaramillo, E.** 2015. Impacto de la contaminación visual en la competitividad de la ciudad latinoamericana. Congreso Internacional de Ingeniería Ambiental. Universidad Estatal de Sonora. Hermosillo, Sonora, Mexico.
11. **Vizuite-Jaramillo, E.** 2015. Impacto de la contaminación visual en la competitividad de la ciudad latinoamericana. Congreso Internacional de Ingeniería Ambiental. Universidad Tecnológica Equinoccial. Santo Domingo de los Colorados, Ecuador.