

# Subject index

## Issues 110-113, Jan-Dec 2024

Revista Facultad de Ingeniería Universidad de Antioquia

### A

#### Asphalt pavement

Effect of binder type and application rate on asphalt layer bonding evaluated by LCB test/ G. A. Dorado-Jurado, M. M. Martínez-Ramos and L. C. Rosero-Pepinosa// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 28-36.

### B

#### Biodiesel

Assessment of the mechanical and environmental behavior of diesel engines operating with biodiesel mixtures/ C. Morales-Bayetero, E. A. Llanes-Cedeño, C. Mafla-Yépez and A. Rodríguez-Rodríguez// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp.9-20.

#### Biomass

Comparison of treatments for cellulose pulp from agro-industrial wastes from the Amazon region/ G. Panduro-Pisco, A. S. Amasifuen-Rengifo, E. E. Rubina-Arana and D. León Moreno// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 77-85.

#### Bridge Inspection

Flaw recognition in reinforced concrete bridges using infrared thermography: A case study/ J. H. Aquino-Rocha, Y. Vieira-Póvoas and P. I. Bezerra-Batista// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 99-109.

### C

#### CFD Simulation

CFD modeling and modal analysis for research of energy harvesters by wind loads/ C. Montes-Rodríguez and M. Herrera-Suárez// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 21-30.

#### Computational fluid dynamics

Performance of an Archimedes screw turbine with spiral configuration for hydrokinetic applications/ A. I. Montilla-López, L. I. Velásquez-García, J. Betancour, A. Rubio-Clemente and E. L. Chica-Arrieta// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 55-63.

Hydrodynamic behavior of the oscillating water column resonant chamber/ J. D. Parra-Quintero, A. Rubio-

Clemente, and E. L. Chica-Arrieta// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 9-18.

#### Computer vision

Enhancing facial recognition in surveillance systems through embedded super-resolution/ A. D. Gómez-Bautista and F. C. Calderón-Bocanegra// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 98-110.

#### Concrete

Use and effect of fly ash in concrete: a literature review/ S. P. Muñoz-Pérez, J. J. Lozano-Sánchez, D. M. Ramírez-Silva, J. E. Vallejos-Medianero and J. de D. Malpartida-Iturregui// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 105-118.

#### Cooling systems

Performance of ejector refrigeration cycle using a steady flow mode/ L. Pacheco-Sandoval, C. A. Díaz-González, G. D. Acebedo-Roncancio and M. Á. Rodríguez-Camacho// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 19-27.

### D

#### Displacement time histories

Effects of shear wave velocity and soil structure interaction on the structural pounding during earthquakes/ B. Djebbar, M. Zoutat, M. Mekki and M. Bensafi// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 9-22.

### E

#### Economic evaluation

"Including operational costs in warehouse location problems: A case study in USA/ L. F. Cardona and L. Rivera-Cadavid// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 88-104.

#### Energy Efficiency

Optimum design of an acetylated starch plant from Manihot esculenta Crantz, variety INIVIT-Y-93-4/ A. Acosta-Solares, O. Pérez-Navarro, E. Sánchez-Cabrera and J. L. Pérez-Díaz// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 34-44.

### F

#### Fluid dynamics

Comparative CFD analysis of six VAWT turbines in the Chicamocha Canyon/ J. D. Rosero-Ariza, J. L. Chacón-Velasco and G. González-Silva// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 58-70.

## Fly ash

Heat flow modeling in the alkaline activation process of fly ash/ M. Echeverri-Aguirre, J. S. Rudas-Flórez, J. E. Molina-Mosquera and A. A. Hoyos-Montilla// redin-Revista Facultad de Ingeniería. No. 111. [Apr-Jun]; pp. 31-37.

## G

### Gaseous fuels

Estimation of the degree of internal recirculation in Internal Combustion Engines/ L. Matiukhin// redin-Revista Facultad de Ingeniería. No. 110. [Jan-Mar]; pp. 48-55.

### Grain moisture

Energy and economic characterization of the traditional drying of cocoa beans in greenhouses/ J. F. Vásquez-Urbe, J. S. Vásquez-Alzate, J. A. Urrego-Pabón, J. F. Pérez-Bayer and E. L. Chica-Arrieta// redin-Revista Facultad de Ingeniería. No. 113. [Oct-Dec]; pp. 114-124.

### Greenhouse gases

Emissions and trajectories of atmospheric pollutants from mobile sources in a Colombian intermediate city/ U. A. Bush-Felipe, A. A. Murillo-Villamizar, J. L. Rodríguez-Castilla, L. C. Díaz-Muegue, L. C. Angulo-Argote// redin-Revista Facultad de Ingeniería. No. 113. [Oct-Dec]; pp. 50-57.

## H

### Heat sinks

Experimental and numerical investigation of flat plate fins and inline strip fins heat sinks/ W. D. Pires-Fonseca and C. A. Carrasco-Altemani// redin-Revista Facultad de Ingeniería. No. 110. [Jan-Mar]; pp. 86-98.

### High protein

Extruded snacks from rice, green lentil, chickpea and tomato powder finished with frying/microwave roasting/ P. Singh, H. Vatankhah and H. S. Ramaswamy// redin-Revista Facultad de Ingeniería. No. 112. [Jul-Sep]; pp. 23-33.

### Hydration

Commercial turpentine oil enriched with  $\alpha$ -terpineol using an acid heterogeneous catalyst/ I de J. Aguas-Cabellero, A. L. Villa-Holguín and E. A. Alarcón-Durango// redin-Revista Facultad de Ingeniería. No. 112. [Jul-Sep]; pp. 78-85.

### Hydrogen evolution

Methods for evaluation of corrosion rate on magnesium alloys: a review/ J. G. Castaño-González, L. F. Berrío, F. Echeverría, E. Correa and A. A. Zuleta// redin-Revista Facultad de Ingeniería. No. 112. [Jul-Sep]; pp. 111-131.

## Hydrological cycle

Spatial distribution of  $\delta^{18}\text{O}$  in rainwater and groundwater to identify areas of recharge in the Colombian Northwest/ G. J. Ossa-Valencia, T. Betancur-Vargas and A. K. Campillo-Pérez// redin-Revista Facultad de Ingeniería. No. 113. [Oct-Dec]; pp. 37-49.

## I

### Intermittency

Chaotic intermittency with non-differentiable  $M(x)$  function/ S. Elaskar, E. Del Rio and M. Grioni// redin-Revista Facultad de Ingeniería. No. 110. [Jan-Mar]; pp. 56-64.

## L

### landslide susceptibility

Landslide susceptibility assessment in scarce-data regions using remote sensing data/ E. V. Aristizábal-Giraldo and D. Ruiz-Vásquez// redin-Revista Facultad de Ingeniería. No. 112. [Jul-Sep]; pp. 45-59.

## M

### Methane emissions

Estimation of methane emissions from reservoirs for hydroelectric generation in Costa Rica// redin-Revista Facultad de Ingeniería. No. 110. [Jan-Mar]; pp. 110-119.

### Municipal solid waste management

Reciclacentros: a sustainable municipal solid waste management initiative in a Mexican city/ J. Alvarado-Ibarra, K. C. Ochoa-Cabrera and H. Burrola-Núñez// redin-Revista Facultad de Ingeniería. No. 111. [Apr-Jun]; pp. 48-54.

## P

### Photoreduction

Titanium modifications with fluoride, sulfate, and platinum for photochemical reduction of chromium (VI)/ J. J. Murcia, M. S. Hernández-Laverde, I. A. Correa-Camargo, H. A. Rojas-Sarmiento, J. A. Navío, M. del C. Hidalgo-López// redin-Revista Facultad de Ingeniería. No. 112. [Jul-Sep]; pp. 86-97.

### Photoreduction of Cr(VI)

A comparative analysis of Cr(VI) reduction with  $\text{C}_{60}\text{O}$ , ZnO and  $\text{Fe}_2\text{O}_3$  coatings grown by PEO/ F. Gordillo-Delgado and J. Alexander García-Giraldo// redin-Revista Facultad de Ingeniería. No. 110. [Jan-Mar]; pp. 65-76.

### Pollution of water resources

Unified matrix for environmental impact assessment applied to water resources, Chicamocha River case study/ C. A. Corregidor-Fonseca, B. E. Rocha-Gil, J. S. Chiriví-

Salomón and G. A. Gómez-Siachoque// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 76-87.

## R

### Rainfall

Regionalization of Maximum Daily Rainfall in the Boyacá department/ L. N. Garavito-Rincón, C. A. Caro-Camargo, and J. C. Casallas-Chaves// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 106-113.

### Remote sensing

Evaluating the IMERG precipitation satellite product to derive intensity-duration-frequency curves in Colombia/ E. Rodríguez, C. García-Echeverri, A. González, J. Sandoval, M. Patarroyo-González and D. E. Agudelo-Duque// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 31-47.

### Renewable energy sources

Everything you need to know before working with a pump as a turbine/ F. J. Botero-Herrera, D. F. Tobón-Espinosa and R. Moreno-Sánchez// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 89-105.

## S

### Seismic risk

Seismic vulnerability assessment of bridges. The case of the Oran region, Algeria/ F. Z. Baba-Hamed, F. Rahal and F. Guenanou// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 23-30.

### Smart microgrid

Integration of LFP-second life batteries as a storage in a smart microgrid/ O. Izquierdo-Monge, N. Alonso González and P. Peña-Carro// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 9-22.

### Student dropout proportion

ADHE: A tool to characterize higher education dropout phenomenon/ O. D Rivera-Baena, C. E. Patiño-Rodríguez, O. C. Úsuga-Manco and F. Hernández-Barajas// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 64-75.

### Sustainable concrete

Utilization of treated water for building construction: A case study in Egypt/ A. M. Mohammed-Hassanien, M. M. Badawy, A. El-Romy and S. Adel// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 132-142.

## T

### Traffic control

Characterization of traffic accidents for urban road safety/ M. A. Espinoza-Mina and A. M. Colina Vargas// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 60-77.

## Turbulent fluid

Explicit pipe friction factor equations: evaluation, classification, and proposal/ M. López-Silva, D. S. Carmenates-Hernández, N. Delgado-Hernández and N. Chunga-Bereche// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 38-47.

## W

### World economy

Contrast between traditional productivity measurement models and a transdisciplinary one/ G. P. Monsalve-Fonnegra and S. M. Álvarez-Gallo and R. Navarrete-Reynoso// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 71-88.

## Authors Index

### Issues 110-113, Jan-Dec 2024

Revista Facultad de Ingeniería Universidad de Antioquia

## A

### Acebedo-Roncancio, Germán David

Performance of ejector refrigeration cycle using a steady flow model// redin-Revista Facultad de Ingeniería. No. 112. (Oct-Dec); pp. 19-27.

### Acosta-Solares, Amanda

Optimum design of an acetylated starch plant from Manihot esculenta Crantz, variety INIVIT-Y-93-4// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 34-44.

### Adel, Sherihan

Utilization of treated water for building construction: A case study in Egypt// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 132-142.

### Aguas-Caballero, Iván de Jesús

Commercial turpentine oil enriched with  $\alpha$ -terpineol using an acid heterogeneous catalyst// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 78-85.

### Agudelo-Duque, Daniela Estefanía

Evaluating the IMERG precipitation satellite product to derive intensity-duration-frequency curves in Colombia// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 31-47.

## **Alarcón-Durango, Edwin Alexis**

Commercial turpentine oil enriched with  $\alpha$ -terpineol using an acid heterogeneous catalyst// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 78-85.

## **Alvarado-Ibarra, Juana**

Reciclacentros: a sustainable municipal solid waste management initiative in a Mexican city// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 48-54.

## **Álvarez-Gallo, Sandra Milena**

Contrast between traditional productivity measurement models and a transdisciplinary one// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 71-88.

## **Amasifuen-Rengifo, Angie Stefani**

Comparison of treatments for cellulose pulp from agro-industrial wastes from the Amazon region// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 77-85.

## **Angulo-Argote, Luis Carlos**

Emissions and trajectories of atmospheric pollutants from mobile sources in a Colombian intermediate city// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 50-57.

## **Aquino-Rocha, Joaquín Humberto**

Flaw recognition in reinforced concrete bridges using infrared thermography: A case study// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 99-109.

## **Aristizábal-Giraldo, Edier Vicente**

Landslide susceptibility assessment in scarce-data regions using remote sensing data// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 45-59.

## **B**

### **Baba-Hamed, Fatima Zohra**

Seismic vulnerability assessment of bridges. The case of the Oran region, Algeria// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 23-30.

### **Badawy, Mohamed M.**

Utilization of treated water for building construction: A case study in Egypt// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 132-142.

### **Becerra-Batista, Pedro Igor**

Flaw recognition in reinforced concrete bridges using infrared thermography: A case study// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 99-109.

## **Bensafi, Mohammed**

Effects of shear wave velocity and soil structure interaction on the structural pounding during earthquakes// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 9-22.

## **Berrío, Luisa Fernanda**

Methods for evaluation of corrosion rate on magnesium alloys: a review// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 111-131.

## **Betancour, Johan**

Performance of an Archimedes screw turbine with spiral configuration for hydrokinetic applications// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 55-63.

## **Betancur-Vargas, Teresita**

Spatial distribution of  $\delta^{18}\text{O}$  in rainwater and groundwater to identify areas of recharge in the Colombian Northwest// redin-Revista Facultad de Ingeniería. No. 112. (Oct-Dec); pp. 37-49.

## **Botero-Herrera, Francisco Javier**

Everything you need to know before working with a pump as a turbine// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 89-105.

## **Burrola-Núñez, Heidý**

Reciclacentros: a sustainable municipal solid waste management initiative in a Mexican city// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 48-54.

## **Bush-Felipe, Uriah Aron**

Emissions and trajectories of atmospheric pollutants from mobile sources in a Colombian intermediate city// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 50-57.

## **C**

### **Calderón-Bocanegra, Francisco Carlos**

Enhancing facial recognition in surveillance systems through embedded super-resolution// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 98-110.

### **Campillo-Pérez, Ana Karina**

Spatial distribution of  $\delta^{18}\text{O}$  in rainwater and groundwater to identify areas of recharge in the Colombian Northwest// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 37-49.

## Cardona, Luis Felipe

Including operational costs in warehouse location problems: A case study in USA// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 88-104.

## Carmenates-Hernández, Dayma Sadami

Explicit pipe friction factor equations: evaluation, classification, and proposal// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 38-47.

## Caro-Camargo, Carlos Andrés

Regionalization of Maximum Daily Rainfall in the Boyacá department// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 106-113.

## Carrasco-Altemani, Carlos Alberto

Experimental and numerical investigation of flat plate fins and inline strip fins heat sinks// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 86-98.

## Casallas-Chaves, Johana Catherine

Regionalization of Maximum Daily Rainfall in the Boyacá department// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 106-113.

## Castaño-González, Juan Guillermo

Methods for evaluation of corrosion rate on magnesium alloys: a review// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 111-131.

## Chacón-Velasco, Jorge Luis

Comparative CFD analysis of six VAWT turbines in the Chicamocha Canyon// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 58-70.

## Chica-Arrieta, Edwin Lenin

Performance of an Archimedes screw turbine with spiral configuration for hydrokinetic applications// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 55-63.

Hydrodynamic behavior of the oscillating water column resonant chamber// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 9-18.

Energy and economic characterization of the traditional drying of cocoa beans in greenhouses// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 114-124.

## Chiriví-Salomón, Juan Sebastián

Unified matrix for environmental impact assessment applied to water resources, Chicamocha River case study//

redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 76-87.

## Chunga-Bereche, Nataly

Explicit pipe friction factor equations: evaluation, classification, and proposal// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 38-47.

## Colina-Vargas, Alejandra Mercedes

Characterization of traffic accidents for urban road safety// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 60-77.

## Correa, Esteban

Methods for evaluation of corrosion rate on magnesium alloys: a review// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 111-131.

## Correa-Camargo, Iván Alexander

Titania modifications with fluoride, sulfate, and platinum for photochemical reduction of chromium (VI)// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 86-97.

## Corregidor-Fonseca, Camilo

## Alejandro

Unified matrix for environmental impact assessment applied to water resources, Chicamocha River case study// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 76-87.

## D

## Djebbar, Badiaa

Effects of shear wave velocity and soil structure interaction on the structural pounding during earthquakes// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 9-22.

## Del Río, Ezequiel

Chaotic intermittency with non-differentiable  $M(x)$  function// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 56-64.

## Delgado-Hernández, Nancy

Explicit pipe friction factor equations: evaluation, classification, and proposal// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 38-47.

## Díaz-González, Carlos Alirio

Performance of ejector refrigeration cycle using a steady flow model// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 19-27.

## Díaz-Muegue, Luis Carlos

Emissions and trajectories of atmospheric pollutants from mobile sources in a Colombian intermediate city// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 50-57.

## Dorado-Jurado, Gerardo Andrés

Effect of binder type and application rate on asphalt layer bonding evaluated by LCB test// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 28-36.

## E

## Echeverri-Aguirre, Mauled Yesenia

Heat flow modeling in the alkaline activation process of fly ash// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 31-37.

## Echeverría, Félix

Methods for evaluation of corrosion rate on magnesium alloys: a review// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 111-131.

## Elaskar, Sergio

Chaotic intermittency with non-differentiable  $M(x)$  function// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 56-64.

## El-Romy, Ahmed

Utilization of treated water for building construction: A case study in Egypt// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 132-142.

## Espinoza-Mina, Marcos Antonio

Characterization of traffic accidents for urban road safety// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 60-77.

## G

## Gaitán-Angulo, Mercedes

Estimation of methane emissions from reservoirs for hydroelectric generation in Costa Rica// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 110-119.

## Garavito-Rincón, Laura Natalia

Regionalization of Maximum Daily Rainfall in the Boyacá department// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 106-113.

## García-Evecherry, Camila

Evaluating the IMERG precipitation satellite product to derive intensity-duration-frequency curves in Colombia//

redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 31-47.

## García-Giraldo, John Alexander

A comparative analysis of Cr(VI) reduction with  $C_{u_2}O$ , ZnO and  $F_{e_2}O_3$  coatings grown by PEO// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 65-76.

## Gómez-Bautista, Andrés David

Enhancing facial recognition in surveillance systems through embedded super-resolution// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 98-110.

## Gómez-Caicedo, Melva

Estimation of methane emissions from reservoirs for hydroelectric generation in Costa Rica// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 110-119.

## Gómez- Siachoque, Guisett Adelina

Unified matrix for environmental impact assessment applied to water resources, Chicamocha River case study// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 76-87.

## González, Ana

Evaluating the IMERG precipitation satellite product to derive intensity-duration-frequency curves in Colombia// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 31-47.

## González, Nicolás Alonso

Integration of LFP-second life batteries as a storage in a smart microgrid// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 9-22.

## González-Silva, Germán

Comparative CFD analysis of six VAWT turbines in the Chicamocha Canyon// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 58-70.

## Gordillo-Delgado, Fernando

A comparative analysis of Cr(VI) reduction with  $C_{u_2}O$ , ZnO and  $F_{e_2}O_3$  coatings grown by PEO// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 65-76.

## Grioni, Mauro

Chaotic intermittency with non-differentiable  $M(x)$  function// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 56-64.

## Guenanou, Farida

Seismic vulnerability assessment of bridges. The case of the Oran region, Algeria// redin-Revista Facultad de



Ingeniería. No. 110. (Jan-Mar); pp. 23-30.

## H

### Hernández-Barajas, Freddy

ADHE: A tool to characterize higher education dropout phenomenon// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 64-75.

### Hernández-Laverde, Mónica Sirley

Titania modifications with fluoride, sulfate, and platinum for photochemical reduction of chromium (VI)// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 86-97.

### Herrera-Suárez, Miguel

CFD modeling and modal analysis for research of energy harvesters by wind loads// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 21-30.

### Hidalgo-López, Maria del Carmen

Titania modifications with fluoride, sulfate, and platinum for photochemical reduction of chromium (VI)// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 86-97.

### Hoyos-Montilla, Ary Alain

Heat flow modeling in the alkaline activation process of fly ash// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 31-37.

## I

### Izquierdo-Monge, Oscar

Integration of LFP-second life batteries as a storage in a smart microgrid// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 9-22.

## L

### Llanes-Cedeño, Edilberto Antonio

Assessment of the mechanical and environmental behavior of diesel engines operating with biodiesel mixtures// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 9-20.

### López-Silva, Maiquel

Explicit pipe friction factor equations: evaluation, classification, and proposal// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 38-47.

### Lozano-Sánchez, Jaime Jamill

Use and effect of fly ash in concrete: a literature review// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 105-118.

## M

### Mafla-Yépez, Carlos

Assessment of the mechanical and environmental behavior of diesel engines operating with biodiesel mixtures// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 9-20.

### Malpartida-Iturregui, Juan de Dios

Use and effect of fly ash in concrete: a literature review// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 105-118.

### Martínez-Ramos, Magda Milena

Effect of binder type and application rate on asphalt layer bonding evaluated by LCB test// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 28-36.

### Matiukhin, Leonid

Estimation of the degree of internal recirculation in InternalCombustion Engines// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 48-55.

### Mekki, Mohammed

Effects of shear wave velocity and soil structure interaction on the structural pounding during earthquakes// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 9-22.

### Mohammed-Hassanien, Amera Marey

Utilization of treated water for building construction: A case study in Egypt// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 132-142.

### Molina-Mosquera, Jarol Esneider

Heat flow modeling in the alkaline activation process of fly ash// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 31-37.

### Monsalve-Fonnegra, Gisela

#### Patricia

Contrast between traditional productivity measurement models and a transdisciplinary one// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 58-70.

### Montes-Rodríguez, Carlos

CFD modeling and modal analysis for research of energy harvesters by wind loads// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 21-30.

### Montilla-López, Ana Isabel

Performance of an Archimedes screw turbine with spiral configuration for hydrokinetic applications// redin-Revista

Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 55-63.

## **Morales-Bayetero, César**

Assessment of the mechanical and environmental behavior of diesel engines operating with biodiesel mixtures// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 9-20.

## **Moreno, David León**

Comparison of treatments for cellulose pulp from agro-industrial wastes from the Amazon region// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 77-85.

## **Moreno-Sánchez, Ricardo**

Everything you need to know before working with a pump as a turbine// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 89-105.

## **Muñoz-Pérez, Sócrates Pedro**

Use and effect of fly ash in concrete: a literature review// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 105-118.

## **Murcia, Julie Joseane**

Titania modifications with fluoride, sulfate, and platinum for photochemical reduction of chromium (VI)// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 86-97.

## **Murillo-Villamizar, Alex Andrés**

Emissions and trajectories of atmospheric pollutants from mobile sources in a Colombian intermediate city// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 50-57.

## **N**

## **Navarrete-Reynoso, Ramón**

Contrast between traditional productivity measurement models and a transdisciplinary one// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 71-88.

## **Navío, José Antonio**

Titania modifications with fluoride, sulfate, and platinum for photochemical reduction of chromium (VI)// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 86-97.

## **O**

## **Ochoa-Cabrera, Kelly Cassandra**

Reciclacentros: a sustainable municipal solid waste management initiative in a Mexican city// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 48-54.

## **Ossa-Valencia, Juliana**

Spatial distribution of  $\delta^{18}\text{O}$  in rainwater and groundwater to identify areas of recharge in the Colombian Northwest// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 37-49.

## **P**

## **Pacheco-Sandoval, Leonardo**

Performance of ejector refrigeration cycle using a steady flow model// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 19-27.

## **Panduro-Pisco, Grober**

Comparison of treatments for cellulose pulp from agro-industrial wastes from the Amazon region// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 77-85.

## **Parra-Quintero, Juan David**

Hydrodynamic behavior of the oscillating water column resonant chamber// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 9-18.

## **Patarroyo-González, Manuel**

Evaluating the IMERG precipitation satellite product to derive intensity-duration-frequency curves in Colombia// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 31-47.

## **Patiño-Rodríguez, Carmen Elena**

ADHE: A tool to characterize higher education dropout phenomenon// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 64-75.

## **Peña-Carro, Paula**

Integration of LFP-second life batteries as a storage in a smart microgrid// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 9-22.

## **Pérez-Bayer, Juan Fernando**

Energy and economic characterization of the traditional drying of cocoa beans in greenhouses// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 114-124.

## **Pérez-Cedeño, Rhonmer Orlando**

Estimation of methane emissions from reservoirs for hydroelectric generation in Costa Rica// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 110-119.

## **Pérez-Díaz, Jorge Luis**

Optimum design of an acetylated starch plant from Manihot esculenta Crantz, variety INIVIT-Y-93-4// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 34-44.



## Pérez-Navarro, Omar

Optimum design of an acetylated starch plant from *Manihot esculenta* Crantz, variety INIVIT-Y-93-4// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 34-44.

## Pires-Fonseca, William Denner

Experimental and numerical investigation of flat plate fins and inline strip fins heat sinks// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 86-98.

## R

### Rahal Rahal, Farid

Seismic vulnerability assessment of bridges. The case of the Oran region, Algeria// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 23-30.

### Ramaswamy, Hosahalli S.

Extruded snacks from rice, green lentil, chickpea and tomato powder finished with frying/microwave roasting// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 23-33.

### Ramírez-Pisco, Rodrigo

Estimation of methane emissions from reservoirs for hydroelectric generation in Costa Rica// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 110-119.

### Ramírez-Silva, Diana Marelina

Use and effect of fly ash in concrete: a literature review// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 105-118.

### Rivera-Baena, Oscar Daniel

ADHE: A tool to characterize higher education dropout phenomenon// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 64-75.

### Rivera-Cadavid, Leonardo

Including operational costs in warehouse location problems: A case study in USA// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 88-104.

### Rocha-Gíl, Biviana Esperanza

Unified matrix for environmental impact assessment applied to water resources, Chicamocha River case study// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 76-87.

### Rodríguez-Camacho, Miguel Ángel

Performance of ejector refrigeration cycle using a steady flow model// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 19-27.

## Rodríguez-Castilla, José Luis

Emissions and trajectories of atmospheric pollutants from mobile sources in a Colombian intermediate city// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 50-57.

## Rodríguez, Erasmo

Evaluating the IMERG precipitation satellite product to derive intensity-duration-frequency curves in Colombia// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 31-47.

## Rodríguez-Rodríguez, Alberto

Assessment of the mechanical and environmental behavior of diesel engines operating with biodiesel mixtures// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 9-20.

## Rojas-Sarmiento, Hugo Alfonso

Titanium modifications with fluoride, sulfate, and platinum for photochemical reduction of chromium (VI)// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 86-97.

## Rosero-Ariza, Juan Diego

Comparative CFD analysis of six VAWT turbines in the Chicamocha Canyon// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 58-70.

## Rosero-Pepinosa, Laura Carolina

Effect of binder type and application rate on asphalt layer bonding evaluated by LCB test// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 28-36.

## Rubina-Arana, Edinson

Comparison of treatments for cellulose pulp from agro-industrial wastes from the Amazon region// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 77-85.

## Rubio-Clemente, Ainhoa

Performance of an Archimedes screw turbine with spiral configuration for hydrokinetic applications// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 55-63.

Hydrodynamic behavior of the oscillating water column resonant chamber// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 9-18.

## Rudas-Flórez, Juan Sebastián

Heat flow modeling in the alkaline activation process of fly ash// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 31-37.

## Ruiz-Vásquez, Diana

Landslide susceptibility assessment in scarce-data regions using remote sensing data// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 45-59.

## S

### Sánchez-Cabrera, Ernesto

Optimum design of an acetylated starch plant from Manihot esculenta Crantz, variety INIVIT-Y-93-4// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 34-44.

### Sandoval, John

Evaluating the IMERG precipitation satellite product to derive intensity-duration-frequency curves in Colombia// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 31-47.

### Singh, Prabhjot

Extruded snacks from rice, green lentil, chickpea and tomato powder finished with frying/microwave roasting// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 23-33.

### Suárez-Matarrita, Leonardo

Estimation of methane emissions from reservoirs for hydroelectric generation in Costa Rica// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 110-119.

## T

### Tobón-Espinosa, Daniel Felipe

Everything you need to know before working with a pump as a turbine// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 89-105.

## U

### Urrego-Pabón, José Alejandro

Energy and economic characterization of the traditional drying of cocoa beans in greenhouses// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 114-124.

### Úsuga-Manco, Olga Cecilia

ADHE: A tool to characterize higher education dropout phenomenon// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 64-75.

## V

### Vallejos-Medianero, Joice Elizabeth

Use and effect of fly ash in concrete: a literature review// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 105-118.

## Vásquez-Alzate, Juan Sebastián

Energy and economic characterization of the traditional drying of cocoa beans in greenhouses// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 114-124.

### Vásquez-Stanescu, Carmen Luisa

Estimation of methane emissions from reservoirs for hydroelectric generation in Costa Rica// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 110-119.

### Vásquez-Urbe, Juan Felipe

Energy and economic characterization of the traditional drying of cocoa beans in greenhouses// redin-Revista Facultad de Ingeniería. No. 113. (Oct-Dec); pp. 114-124.

### Vatankhah, Hamed

Extruded snacks from rice, green lentil, chickpea and tomato powder finished with frying/microwave roasting// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 23-33.

### Velásquez-García, Laura Isabel

Performance of an Archimedes screw turbine with spiral configuration for hydrokinetic applications// redin-Revista Facultad de Ingeniería. No. 111. (Apr-Jun); pp. 55-63.

### Vieira-Póvoas, Yêda

Flaw recognition in reinforced concrete bridges using infrared thermography: A case study// redin-Revista Facultad de Ingeniería. No. 110. (Jan-Mar); pp. 99-109.

### Villa-Holguín, Aída Luz

Commercial turpentine oil enriched with  $\alpha$ -terpineol using an acid heterogeneous catalyst// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 78-85.

## Z

### Zoutat, Meriem

Effects of shear wave velocity and soil structure interaction on the structural pounding during earthquakes// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 9-22.

### Zuleta, Alejandro A.

Methods for evaluation of corrosion rate on magnesium alloys: a review// redin-Revista Facultad de Ingeniería. No. 112. (Jul-Sep); pp. 111-131.