Presentation

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The 23rd edition of Lámpsakos journal has valuable contributions in different areas of engineering. From the publisher's direction, which exposes the fine line that exists between the research generated by the academy, as a driver of innovation in the productive sector and technological development.

From the field of electronic engineering and telecommunications, readers will find two manuscripts. The first one, presents a proposal to perform the dynamic assignment of a spectrum in an OPS Flex Grid network, by means of a voracious algorithm, based on the pendulum movement, precisely called "pendulum algorithm", it is capable of assigning wavelengths on a network RSA (Routing and Spectrum Allocation), the authors focus on demonstrating the versatility and advantages compared to other proposals in the literature, with some open problem guidelines, which can be delineated from the pendulum algorithm. The second article reports the impact that the traffic generating seed together with a burst assembly algorithm has on the performance of an optical burst switching network -OBS For this purpose, the authors carry out an analysis of the functional scheme of the classic algorithm, compared to the proposed one, highlighting in the

latter the application of fuzzy logic, using the triangular membership function. n the proposal of a distributed network topology, an exhaustive analysis of the proposed assembly algorithm is carried out by varying the seed, to end in the comparisons of evaluating the impact of the proposed algorithm with the classical algorithm.

Two articles are referenced from systems engineering and computer science; The first is represented in a proposal that presents a solution to the problem of scheduling preventive maintenance, from an optimization model, with the objective of minimizing the maximum weekly maintenance time, solved from a novel genetic algorithm. With this work the authors demonstrate that their proposal is more balanced in computational costs, compared to other proposals.

The second manuscript consists of a mobile application as an ICT tool, which helps determine the CO_2 (carbon dioxide) index produced by a specific activity, from the business sector. The mobile application and web platform were developed with the agile SCRUM framework, which contains sprints and activities that were grouped into 4 stages. The results allowed to have a calculation of the CO_2 emissions generated, being

even more relevant the opportunity to compensate them by means of the good practices adopted by agroforestry systems with introduced or native species.

Two valuable contributions appear from civil engineering. The first presents the processes for biomass use and the environmental benefits of using this energy resource, which has been booming in different countries. The authors highlight, in the development of their manuscript, the comparisons of Co2 emission with various current systems and biomass, including the level of water consumption; Finally, in their discussion they admit that, although biomass can be obtained in different ways and its inclusion for the energy supply is viable, guidelines for sustainable use are still lacking, citing in one of its sections the Colombian case.

The second contribution is represented by a new approach to structural theory, defined by the Cross-Hardy method, as this calculation methodology has been commonly called, in this the author shows the relevance of the Cross method, as well as its early implementation in Spain., through the use of teaching bibliography of the time. The work specifically presents how the method was explained in Spanish technical teaching institutions, and how the information in the teaching bibliography was used to train professionals and technicians in the area.

Finally, in the field of automotive engineering, the writers present a manuscript that analyzes the influencing variables in the thermal gradient of the vehicle interior. For this, the parameters of the elements are established in order to determine the transfer function of the system, so that temperature control is maintained in said space. The work is valuably enriched with operational drivers, math functions, and equations that attempt to stabilize the susceptible changes in temperatures in the vehicle's enclosure.

REFERENCES

[1] G. López Quintero, "Investigación orientada a la innovación empresarial y al desarrollo tecnológico", *Lámpsakos,* (23), pp. 10-11. (enero-junio, 2020). DOI: 10.21501/21454086.3543

[2] S. D. Ossa Hernández, J. A. Vargas Gutiérrez y G. Gómez Agredo, "Propuesta de un algoritmo para la asignación dinámica de espectro en redes ópticas elásticas (EON)", *Lámpsakos,* (23), pp. 15-24. (enero-junio, 2020). DOI: 10.21501/21454086.3145

[3] N. Jiménez Pinzón y J. G. López Perafán, "Análisis del desempeño de un algoritmo de ensamble mixto dinámico", *Lámpsakos,* (23), pp. 25-36. (enero-junio, 2020). DOI: 10.21501/21454086.3204

[4] M. E. Montoya Arias, J. A. Arango Marín, y S. León Rosero Otero, "Programación de mantenimiento preventivo usando algoritmos genéticos", *Lámpsakos*, (23), pp. 37-44. (enero-junio, 2020). doi: 10.21501/21454086.3112

[5] J. Londoño Gallego, S. Londoño Marin, C. López Romero, J. D. Vahos Montoya, L. A. Escobar Castrillón y S. Rendón Pareja, "Desarrollo de un aplicativo móvil y web que calcule la huella de carbono en el sector educativo y transporte". Lámpsakos, (23), pp. 45-55. (enero-junio, 2020). DOI: 10.21501/21454086.3302

[6] J. F. Galvis Martinez, L. M. Torrado Gomez, M. F. Serrano Guzmán, N. C. Solarte Vanegas y D. D. Perez Ruíz, "Energy from biomass: alternative for the reduction of atmospheric emissions", *Lámpsakos,* (23), pp. 70-78. (enero-junio, 2019). DOI: 10.21501/21454086.3457

[7] J. M. Pons, "The Hardy Croos method and its implementation in Spain", *Lámpsakos*, (23), pp. 56-69. (enero-junio, 2020). DOI: 10.21501/21454086.3402

[8] V. Rojas Reinoso, J. Néjer-Guerrero, J. Pancha-Ramos, y V. Romero-Hidalgo, "Control de la temperatura en el interior del habitáculo de un vehículo", *Lámpsakos,* (23), pp. 79-91. (enero-junio, 2020). DOI: 10.21501/21454086.3462