Editorial

The vehicle of communication between the academy and society is the scientific publication. Indeed, it is here that the results that emerge from the research projects are revealed and disseminated.

According to Colciencias, the body that regulates research in Colombia, 31% of official research groups in the country focus on human sciences while 17% focus on engineering. Meanwhile the 18% of books and scientific papers published in the country correspond to scientific production. Despite the efforts of various institutions, both public and private, the creation of new knowledge and innovative processes is still low in comparison with other countries.

One of the most important aspects we need to work on is educating our youth in science, technology, innovation and writing. In doing so, we can strengthen the creation and communication of research and thus allow the country to position itself as an innovative developing country.

With the aim of becoming a worldwide reference in the areas of engineering and natural sciences, the ECCI University, through its scientific journal TECCIENCIA, introduces the following studies. Here, some valuable manuscripts were chosen for their scientific quality through a peer review process.

From Medellin, the National University of Colombia, the Metropolitan Institute of Technology (ITM) and Lasallista University Corporation presented the paper "Color prediction in ceramic enamels using the Kubelka Munk Model".

The University of Pamplona and ECCI University carried out a study called "Compressive Sensing hardware in 1D signals", where signal compression is employed in order to use the least amount of data in communications systems by recording of EMG electromagnetic voice signals and ECG electrocardiography.

The Industrial University of Santander and Bogotá's Antonio Nariño University present a study entitled "Phoneme Recognition System Using Articulatory-Type Information," which uses the MOCHA-TIMIT database. They evaluated the system performance using voice recognition, demonstrating that the recognition of phonemes based on hidden Markov chains can be improved.

Nueva Granada Military University presents a paper called "Determination of the probability and rate of corrosion on reinforced concrete specimens through a remote corrosion monitoring system," in which they developed equipment for monitoring the state of corrosion of concrete infrastructures using an electrochemical test based on the ASTMC879-9 standard.

The District University of Bogotá presented the manuscript entitled "Images compression process in the radiological service unit as an infrastructure component in the colombian health model." Here, they reviewed different techniques of image compression in the area of radiology. The study included the different imaging modalities, which were then introduced into the system of compression achieving results through Mathlab simulations.

The District University also presented "Acoustic Tracking System for Autonomous Robots based on TDE and Intensity," in which an autonomous acoustic system for robots was developed based on TDE and signal strength. For voice identification module, VR Easy module by Tigal KG was used. This was programmed with a series of commands in Spanish and also recognized by a module for further analysis.

The Metropolitan Institute of Technology in Medellin introduced us to their study "Comparison and validation of turbulence models on numerical study of heat exchangers." In this paper, numerical heat exchange models, developed with ANSYS commercial package, were validated and compared with experimental results and mathematical modeling studies.

Likewise, La Salle University, the Autonomous University of Colombia (FUAC) and the Los Libertadores University Foundation presented their paper "Swimming Pool heating systems: A review of applied models," a noteworthy review of swimming pool heating systems.

These are some of the studies you can find in this issue. We would like to acknowledge you participation as a reader of this journal; meanwhile, we hope to know more about your further research so soon.

Sincerely:

M.Sc. Fernando Arturo Soler López
Rector

UNIVERSIDAD ECCI