



EDITORIAL

The discovery of fire, the industrial revolution, world wars, have been events that have changed society and have contributed to technological development, according to the challenges of the times.

Technological progress has not only been a product of its time, but has come to be thanks to brilliant individuals with great ingenuity, creativity and curiosity. These are the qualities that along with knowledge generation, modern Universities seek to foster within their halls. This is why Universities have an important role in human history and human development.

The world is changing constantly, which is why Universities should strive to educate within the economic and social context of their students. Universidad ECCI is now in the forefront of this objective with the recent creation of the Master's programs in Mechanical and Industrial engineering, and Information Technologies Management.

In order to make research efforts even more useful, and give them a greater purpose, it is important to build on top of the already built, in a way that resulting applications derive into new research projects, thus generating a new relationship to knowledge creation.

In this edition of TECCIENCIA, a group from the Fundación Universitaria de Ciencias de la Salud of Bogotá, present Personality Profile of a Group of Cyto-Histotechnology Students, a paper that describes the personality profile and academic performance of a group of Cytology and Histology students at a Health Sciences institution of higher education.

A collaboration between Fundación Universitaria Los Libertadores and the Universidad de Manizales produced the paper Design, Development, and Evaluation of a Laboratory-Scale Phytoremediation System Using Eichhornia Crassipes for the Treatment of Chromium-Contaminated Waters, which shows the design and development of a biological (phytoremediation) treatment system for the removal and uptake of chromium in tannery wastewater in the San Benito sector of southern Bogotá.

A research group from the Instituto Tecnológico Metropolitano de Medellín (ITM) in collaboration with Automatech (a private company) presents Simulation Analysis of a Coanda-Effect Ejector Using CFD where they optimized a Coanda-effect air ejector used widely in industry using computational fluid dynamics. Another group from ITM, along with



researchers from the Universidad Nacional de Colombia present the work Low-Cost Electronic Opening Control Valve, where they developed a functional prototype (in hardware and software) of a competitive, sophisticated, low-cost valve.

Sizing and Study of the Energy Production of a Grid-Tied Photovoltaic System Using PVsyst Software is a study developed by researchers from the Universidad Antonio Nariño, which describes the analysis of the sizing and simulations of a grid-tied photovoltaic system in Bucaramanga, Colombia.

Researchers from the Universidad Autónoma de Barranquilla and the Universidad Nacional de Colombia present a Review of Sentiment Analysis in Spanish, which seeks to show the current state of this topic through a literature review. This is sure to be a highly referenced work in this subject field.

Kernel Methods for Improving Text Search Engines Transductive Inference by Using Support Vector Machines was a paper developed by researchers from the Politécnico Colombiano Jaime Isaza Cadavid, where they present the implementation and testing methodology of transductive support vector machines (TSVM) applied to text searches.

Researchers from the Universidad Pontificia Bolivariana of Bucaramanga along with Unidades Tecnológicas de Santander in their work Experimental Evaluation of a Single Slope Solar Still, describe the process of designing and

building a prototype of a solar still, used to determine the factors influencing performance in harsh weather conditions.

Researchers from Universidad Militar in their work Performance Analysis at Link Level for the Next Generation 802.11 N Wi-Fi Channel present a probabilistic-type mathematical analysis of the type of packet delivery of WiFi technology described in the 802.11 standard and thus seek the possibility of increasing the value of the maximum transfer unit on these networks.

An international collaboration between the Universidad Antonio Nariño, Universidad Santo Tomás and Universidad de Talca, Chile in the paper LMI Control Design of a Non-Inverting Buck-Boost Converter: a Current Regulation Approach, presents an analytical study of an input current-mode control system based on linear matrix inequalities (LMI) for a non-inverting buck-boost converter.

Another international collaboration, this time between the Corporación de Alta Tecnología CODALTEC of Colombia and the Universidad Politécnica de Madrid, Spain show us the paper Development of a Low-Cost, Short-Range Radar System to Measure Speed and Distance, which describes all the hardware and software design, manufacture, and implementation considerations of an educational, low-cost radar system.

We thank the contributors from:



- ✧ Automatech
- ✧ Instituto Tecnológico
Metropolitano de Medellín
- ✧ Fundación Universitaria de
Ciencias de la Salud
- ✧ Fundación Universitaria Los
Libertadores
- ✧ Unidades Tecnológicas de
Santander
- ✧ Universidad Antonio Nariño -
Sede Manizales
- ✧ Universidad Antonio Nariño -
Sede Bucaramanga
- ✧ Universidad Autónoma de
Barranquilla
- ✧ Universidad de Manizales
- ✧ Universidad de Talca, Chile
- ✧ Universidad Militar Nueva
Granada
- ✧ Universidad Nacional of Colombia
- Sede Medellín
- ✧ Universidad Nacional of Colombia
- Sede Bogotá
- ✧ Universidad Politécnica de
Madrid, Spain
- ✧ Universidad Pontificia Bolivariana
- ✧ Universidad Santo Tomás
- ✧ Politécnico Colombiano Jaime
Isaza Cadavid

Sincerely,

Fernando Arturo Soler López, MSc

Rector

Universidad ECCI