Engineering and physical-mathematical Sciences 2016

In the area of physical-mathematical sciences, the award is for the student **Luis Alejandro Sánchez Pérez,** from the **Computer Research Center,** whose productivity is:

PhD thesis (Diploma examination January 2016):

"Computational model for classifying aircraft based on space-time patterns of noise at takeoff".

8 ARTICLES

- Luis A. Sánchez-Pérez, Luis P. Sánchez-Fernández, Adnan Shout, Sergio Suárez-Guerra. *"Airport take-off noise assessment aimed to identify responsible aircraft classes".*
- José J. Carbajal-Hernández, Luis P. Sánchez-Fernández, Ignacio Hernández-Bastida, José J. Medel-Juárez, Luis A. Sánchez-Pérez. *"Classification of Unbalance and Misalignment in Induction Motors using Orbital Analysis and Associative Memories".*
- Luis A. Sánchez-Pérez, Luis P. Sánchez-Fernández, Sergio Suárez-Guerra, María G. López-Pacheco. *"Dynamic Hierarchical Aggregation of Parallel Outputs for Aircraft Take-off Noise Identification".*
- Luis A. Sánchez-Pérez, Luis P. Sánchez-Fernández, Sergio Suárez-Guerra, Miguel Márquez-Molina. *"Geo-reference flight path estimation based on spatio-temporal information extracted from aircraft take-off noise".*
- Miguel Márquez-Molina, Luis P. Sánchez-Fernández, Sergio Suárez-Guerra, Luis A. Sánchez-Pérez. *"Aircraft take-off noises classification based on human auditory's matched features extraction".*
- Luis A. Sánchez-Pérez, Luis P. Sánchez-Fernández, Sergio Suárez-Guerra, José J. Carbajal-Hernández. *"Aircraft class identification base on take-off noise signal segmentation in time".*
- Luis P. Sánchez-Fernández, José J. Carbajal-Hernández, Luis A. Sánchez-Pérez, Roberto Herrera-Charles. *"Control neuronal combinado para generar espectros de oleajes".*
- Luis P. Sánchez-Fernández, Luis A. Sánchez-Pérez, José J. Carbajal-Hernández, Arturo Rojo-Ruiz. *"Aircraft Classification and Acoustic Impact Estimation Based on Real-Time Take-off Noise Measurements".*

CONTACT

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Distinctions

The distinctions to the polytechnic merit are given as a recognition that the polytechnic community identifies in relation to a behaviour, career, service or an exemplary/outstanding action, with the object to highlight the prestige of the Instituto Politécnico Nacional (IPN), to support the implementation of its aims, to foster the development of the technique education in Mexico or in order to benefit humanity.

Among other distinctions, the Lázaro Cárdenas award is certainly the greatest honour that a Polytechnic student can receive. The students that get this award are those that based on their relevant academic activity and their outstanding academic performance, are chosen of each academic unit from this Institute.

Medical-Biological Sciences 2017

In the area of Medical-Biological Sciences the award is for the student **Stefany Cárdenas Pérez,** from the **National School of Biological Sciences (ENCB)**, whose productivity is:
PhD Thesis (Graduation Exam December 2016):

• Studies of the nanomechanical properties at the cellular level of climacteric fruits and their correlation with physicochemical, biochemical and microstructural parameters.

TWO ARTICLES

- Cárdenas-Pérez, S., Chanona-Pérez, J., J. V. Méndez-Méndez, Calderón-Domínguez, G., López-Santiago, R., Arzate-Vázquez 1. 2016. *Nanoindentation Study on Apple Tissue And Isolated Cells by Atomic Force Microscopy, Image and Fractal Analysis. Innovative Food Science and Emerging Technologies..*
- Cárdenas-Pérez, S., J. V. Méndez-Méndez, Chanona-Pérez, J, Artur Zdunek, N. Güemes-Vera, G. Calderón-Domínguez, F. Rodríguez-González. 2017. *Prediction of the Nanomechanical Properties of Apple Tissue During its Ripening Process From its Firmness, Color and Microstructural Parameters. Innovative Food Science and Emerging Technologies. In process of review.* Innovative Food Science and Emerging Technologies.

FOUR CHAPTERS IN BOOKS

- *2016 Principles of Mass Transfer by Molecular Difussion*. Cárdenas-Pérez, S., Neri-Torres, E. E., Chanona- Pérez, J. Calderón-Domínguez.
- *2013 Chemical and Physical Properties, Structure, Biological Activity, Uses and Appllcations af Castor Seed (Ricinus Communis L.)* Functional Foods Components In Seeds, Nova Science Publlsher.
- *2013 Industrial Appllcations and Potential Pharmaceutical Uses of Mango (Mangifera Indica)* Kernel, Functional Foods Components In Seeds.
- *2013 Description of The Enzymatic Browning in Avocado Sllce Using Glcm Image Texture, Image and Video Technology Psivt 2013* Workshop Fay Huang, Akihiro Sugimoto.

Engineering and physical-mathematical Sciences 2017

In the area of physical-mathematical sciences, the award is for the student **Carlos Alberto Aguilar Avelar,** from the **Center for Research and Development of Digital Technology (CITEDI),** whose productivity is:

10 ARTICLES

- Javier Moreno-Valenzuela, Roger Miranda-Colorado and Carlos Aguilar-Avelar, *"A MATLAB-based identification procedure applied to a two-degrees-of-freedom robot manipulator for engineering students"*
- Carlos Aguilar-Avelar and Javier Moreno-Valenzuela, *"A MRAC Principle for a Single-Link Electrically Driven Robot with Parameter Uncertainties".*
- Sergio A. Puga-Guzmán, Carlos Aguilar-Avelar, Javier Moreno-Valenzuela and Victor Santibáñez, *"Tracking of Periodic Oscillations in an Underactuated System via Adaptive Neural networks".*
- Javier Moreno-Valenzuela, Carlos Aguilar-Avelar, Sergio A. Puga-Guzmán and Victor Santibáñez, *"Two adaptive control strategies for trajectory tracking of the inertia wheel pendulum: neural networks vis a vis model regressor".*
- Javier Moreno-Valenzuela, Carlos Aguilar- Avelar, Sergio A. Puga-Guzmán and Victor Santibáñez, *"Adaptive Neural Network Control for the Trajectory Tracking of the Furuta Pendulum".*
- Carlos Aguilar-Avelar and Javier Moreno-Valenzuela, *"New Feedback Linearization-Based Control for Arm Trajectory Tracking of the Furuta Pendulum".*
- Carlos Aguilar-Avelar and Javier Moreno-Valenzuela, *"A composite controller for trajectory tracking applied to the Furuta pendulum".*

Medical-Biological Sciences 2016

In the area of Medical-Biological Sciences the award was for the student **Julián Hernández Cruz**, from the **Interdisciplinary Research Center for the Integral Regional Development (CIIDIR, Oaxaca)**, whose productivity is:

7 ARTICLES

- *"Description of the larva Phyllophaga lenis (Coleoptera: Melolonthidae) in Santa Cruz Xoxocotlán, Oaxaca, Mexico, with notes about its biology".*
- *Two new species of Phyllophaga Harris (Coleoptera: Melolonthidae; Melolonthinae) from Oaxaca, Mexico*. Julián Hernández-Cruz, Miguel Ángel Morón, José Antonio Sánchez-García.
- *Specific richeness of Phyllophaga (Coleoptera: Melolonthidae) in San Nicolás Yaxe, Oaxaca, Mexico*. Julián Hernández-Cruz, Miguel Ángel Morón, José Antonio Sánchez-García, Laura Martínez-Martínez, Sergio Girón Pablo, Roselia Jarquín López
- *New state registration of Mexico of Gologa (Mixigenus) pusilla (Coleoptera: Melolonthidae; Dynastinae)*. Julián Hernández-Cruz, Miguel Ángel Morón, José Antonio Sánchez-García, Laura Martínez-Martínez. Mexican. Bionomy of species Phyllophaga (Coleoptera: Melolonthidae) in Santa Cruz Xoxocotlán, Oaxaca, Mexico".
- *Species richness of the genus Phyllophaga (Coleoptera: Melolonthidae) in the North of the state of Veracruz, Mexico (Scientific Note)*. Julián Hernández-Cruz, Miguel Ángel Morón, José Antonio Sánchez-García.
- *(2013) "New species of Phyllophaga Harris (Coleoptera: Melolonthidae; Melolonthinae) de la Mixteca Oaxaqueña, Mexico*. Miguel Ángel Morón, Julián Hernández-Cruz Dugesiana.