by Marek Jasinski, Jacek Ruminski, Tushar Sharma, Paulo Leitao, Roberto Oboe, Qing-Long Han, and Péter Korondi

Projects and Papers Internationally Honored

At the IEEE 27th International Symposium on Industrial Electronics (ISIE) 2018, held in Cairns, Australia (Figure 1), 11 of 17 applications submitted to the IEEE Industrial Electronics Society (IES) Students & Young Professionals (S&YP) Paper Assistance (IES-SYPA) were selected to receive a recognition diploma plus up to US$2,000 reimbursement for travel costs. The symposium, 13–15 June, was chaired by Qing-Long Han and Yousef Ibrahim. The 11 IES-SYPA top papers and their authors were as follows:

FIGURE 1 – IEEE IES 3-min session speakers with IES officers at the IEEE 27th ISIE 2018 in Cairns, Australia. (Photo courtesy of Iman Mousavinejad.)

1) "Cyber Attack Detection in Platoon-Based Vehicular Networked Control Systems," by Eman Mousavinejad, Fuwen Yang, Qing-Long Han, Quanwei Qiu, and Ljubo Vlacic; Griffith University, Australia

2) "Problem of Wireless Fingerprint Duplication in Fingerprinting-Based Indoor Localization," by Umair Mujtaba Qureshi, Zuneera Umair, and Gerhard Petrus Hancke; City University of Hong Kong, Hong Kong

3) "Advanced Direct Torque Control of Four Switch Fed Two-Phase Symmetric Induction Motor," by M. Haseeb Arshad and Muhammad Khalid; King Fahd University of Petroleum and Minerals, Saudi Arabia

4) "Stability of a New Adaptive Full-Order Observer with an Auxiliary Variable," by Mateusz Korzonek and Teresa Orlowska-Kowalska; Wroclaw University of Science and Technology, Poland

5) "Hardware-in-the-Loop Simulation for the Design and Testing of Motor in Advanced Powertrain Applications," by Mohamed Awadallah, Peter Tawadros, Paul Walker, and Nong Zahang; University of Technology Sydney, Australia

6) "Optimal Analysis and Design of dc–dc Converter to Achieve High Voltage Conversion Gain and High Efficiency for Renewable Energy Systems," by Waqas Hassan, Dylan Lu, and Weidong Xiao; University of Sydney, Australia

7) "Charging Control of Vanadium Redox Battery Based Energy Storage Systems with Variable Input Power," by M. Parvez Akter, Yifeng Li, Jie Bao, Maria Skyllas-Kazacos, Faz Rahman, John Fletcher, and Xinan Zhang; School of Chemical Engineering, University of New South Wales, Australia

8) "Contouring Control of Linear Motor Direct-Drive X–Y Table via Chattering-Free Discrete-Time Sliding Mode Control," by Zhian Kuang, Zhiyuan Yu, Guanghui Sun, Weiyang Lin, and Huijun Gao; Harbin Institute of Technology, China

9) "Position and Trajectory Fuzzy Control of a Laboratory 2 DOF Double Dual Twin Rotor Aero-Dynamical System," by Mohammad Javad Fotuhi and Zafer Bingul; Kocaeli University, Turkey

10) "An LPV H∞ Control Design for the Varying Rotor Resistance Effects on the Dynamic Performance of Induction Motors," by Syed Muhammad Nawazish Ali, Athar Hanif, Muhammad Jahangir Hossain, and Vivek Sharma; Macquarie University, Australia

11) "Review of Current Balance Mechanism in Multiphase LLC Resonant Converters," by Mostafa Noah, Jun Imaoka, Yuki Ishikura, Kazuhiro Umetani, and Masayoshi Yamamoto; Nagoya University, Japan.

First Time for S&YP Papers at the International Conference on Human–System Interaction

For the first time, the IEEE Industrial Electronics Society (IES) supported best-paper awards at the International Conference on Human–System Interaction (HSI) and the International Summer School on Deep Learning (ISSonDL; Figure 2). Both events took place this summer in Gdańsk, Poland. The 11th HSI took place 4–6 July. ISSonDL took place 2–6 July. The chairs for both events were Jacek Ruminski and Luis Gomes.

The HSI conference series [1] has emerged as an especially important international conference in this field. The conferences cover the theory, design, and application of human–system interaction in such areas as science, education, business, industry, services, the environment, health, and government. In addition to the regular track of sessions, six special sessions were offered, including "Human–Computer Interaction in Service of Rehabilitation and Disability."

ISSonDL, a parallel event, was organized to make the HSI Conference more appealing to students and YPs. Almost 200 people, mostly young participants, from 20 countries attended both events.

Every year, HSI has presented best-paper awards. This is the first time, however, that the competition among S&YPs was supported by IEEE IES. Three reviewers evaluated each paper. The four winning papers each received scores of over eight out of a possible ten. Winning papers were as follows:

1) "Concept Verification of Antagonistic Pneumatic Driven and Inflatable Arm Joint," by Hirofusa Ogasawara, Sho Yokota, Akihiro Matsumoto, Daisuke Chugo, and Hiroshi Hashimoto; Toyo University, Japan
2) "ANFIS Post-Processing for Real Time Gait Detection and Classification," by Jakub Dabros, Marek Iwaniec,

FIGURE 2 – IEEE IES S&YP Best Paper Recognition ceremony at the International Conference on HSI 2018, Gdańsk, Poland. (Photo courtesy of Mariusz Kaczmarek.)

Mateusz Patyk, Xavier Sulkowski, and Jacek Wesol; Akademia Górniczo-Hutnicza University of Science and Technology, Poland

3) "Speaker Recognition Using Convolutional Neural Network with Minimal Training Data for Smart Home Solutions," by Mingshan Wang, Tejaswini Sirlapu, Alicja Kwasniewska, Maciej Szankin, Marko Bartscherer, and Rey Nicolas; Gdańsk University of Technology, Poland, and Intel, United States
4) "Deep Self-Organizing Maps for Visual Data Mining," by Chathurika Wickramasinghe, Kasun Amarasinghe, Daniel Marino, and Milos Manic; Virginia Commonwealth University, United States.

Milos Manic, Aleksander Malinowski, and Jacek Ruminski presented diplomas to winners during the conference's gala dinner. In 2019, the conference will take place in Richmond, Virginia, United States, 25–27 June (hsi2019 .welcometohsi.org).

IEEE IES Backs YPs in Space

Thanks in large part to Tushar Sharma, an IEEE Young Professional, IEEE IES supported YPs in Space 2018, which took place in Barcelona, 17–21 July (Figure 3). Other supporters included the IEEE Spain Section Joint Chapter, which is chaired by Enrique Romero-Cadaval. Partnering in the event were the IEEE Geoscience and Remote Sensing Society; IEEE Systems,

Man, and Cybernetics Society; IEEE Microwave Theory and Techniques Society; IEEE Antennas & Propagation Society; IEEE Industrial Electronics Society; IEEE Aerospace and Electronic Systems Society; Region 8 YPs; and IEEE YPs.

Winners from China and Finland in Porto

A team from Shanghai Jiao Tong University, China, and a team from Aalto University, Finland, each won IES-SYPA awards at the IEEE 16th International Conference of Industrial Informatics 2018, which took place 18–20 July in Porto, Portugal. The conference chairs were Mario de Sousa and Paulo Leitao (Figure 4). The award winners were as follows:

1) "A Cloud-Based Training and Evaluation System for Facial Paralysis

FIGURE 3 – An activity during YPs in Space 2018, Barcelona, Spain. (Photo courtesy of YPs in Space 2018.)

FIGURE 4 – The IES-SYPA diploma ceremony in Porto, Portugal, at the International Conference of Industrial Informatics 2018 (from left): Xinghuo Yu, Zeqing Jiang, Mario Sousa, and Paulo Leitao. (Photo courtesy of the International Conference of Industrial Informatics 2018.)
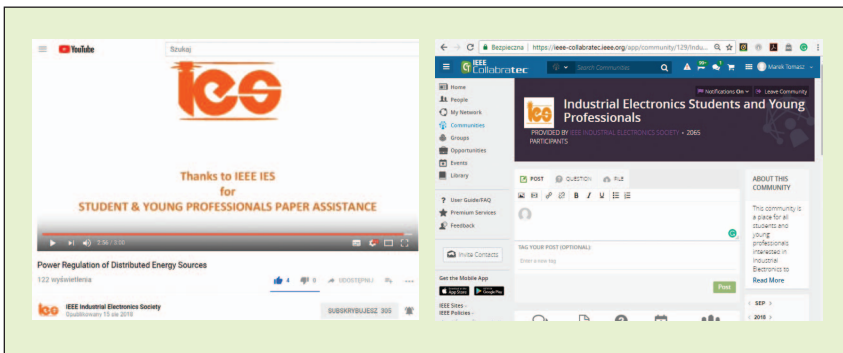

FIGURE 5 – Screenshots of IES-SYPA 3-min video presentations at the 18th IEEE International Power Electronics and Motion Control Conference 2018 in Budapest, Hungary [2], [3].
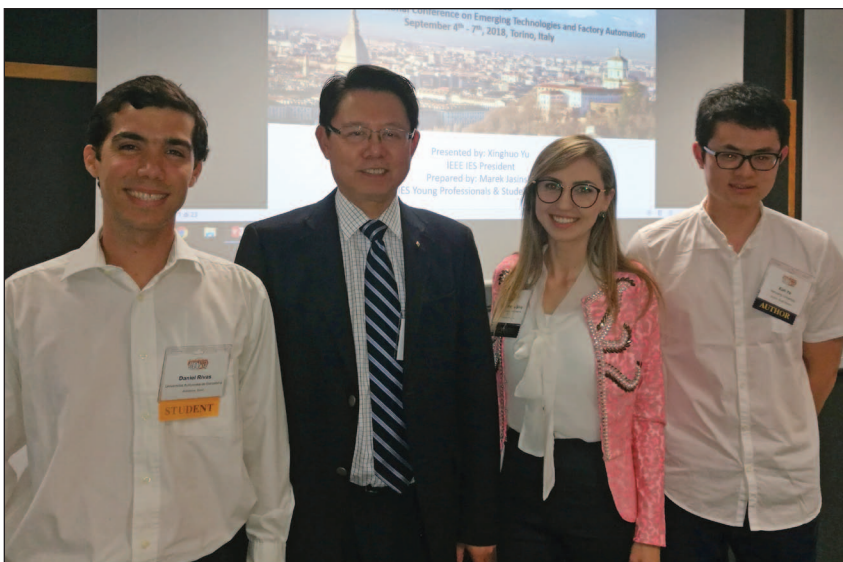

FIGURE 6 – The IES-SYPA diploma ceremony at the IEEE 23rd International Conference on Emerging Technologies and Factory Automation in Torino, Italy (from left): Daniel Rivas, Xinghuo Yu, Karila Palma Silva, and Xun Ye. (Photo courtesy of the IEEE 23rd International Conference on Emerging Technologies and Factory Automation.)

THE FOUR WINNING PAPERS EACH RECEIVED SCORES OF OVER EIGHT OUT OF A POSSIBLE TEN.

Rehabilitation," by Zeqing Jiang, Wenbin Dai, Wenjin Wang, and Wei Wang; Shanghai Jiao Tong University, China

2) "MeDI: Measurement-Based Device Identification Framework for Internet of Things," by Narges Yousefnezhad, Manik Madhikermi, and Kary Framling; Aalto University, Finland.

Winners from Australia and Algeria in Budapest

Teams from the University of New South Wales, Australia, and the University of Sciences and Technology of Oran, Algeria, each won IES-SYPA awards at the 18th IEEE International Power Electronics and Motion Control Conference 2018, chaired by Péter Korondi and Pavol Bauer, 26–30 August (Figure 5), in Budapest, Hungary. The winners were as follows:

1) "Output Power Regulation of a Virtual Oscillator Controlled Inverter," by Muhammad Ali, Hendra I. Nurdin, and John E. Fletcher; University of New South Wales, Australia

2) "Outer Race Fault Diagnosis by Comparison between the Power Spectral Density and the Kurtogram," by Mohammed-El-Amine Khodja, Ameur-Fethi Aimer, Ahmed-Hamida Boudinar, and Azeddine Bendiabdellah; University of Sciences and Technology of Oran, Algeria.

Teams from Korea, Brazil, and Spain Honored in Torino

At the IEEE 23rd International Conference on Emerging Technologies and Factory Automation in Torino, Italy, 4–7 September, teams from South Korea, Brazil, and Spain were each awarded US$6,000 for papers they submitted. The conference chairs were Luca Durante, Lucia Lo Bello, and Roberto Oboe (Figure 6). The winners were as follows:

1) "An AutomationML/OPC UA-based Industry 4.0 Solution for a Manufacturing System," by Xun Ye and Seung Ho Hong; Hanyang University, South Korea

2) "An Empirical Study on the Adequacy of MBPTA for Tasks Executed on a Complex Computer Architecture with Linux," by Karila Palma Silva, Luis Fernando Arcaro, Daniel Bristot de Oliveira, and Romulo Silva de Oliveira; Federal University of Santa Catarina, Brazil

3) "Synthesis of Controllers from Finite State Stack Machine Diagrams," by Daniel Rivas, Pragna Das, Joaquín Saiz-Alcaine, and Lluís Ribas-Xirgo; Universitat Autònoma de Barcelona, Spain.

References

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[3] IEEE Collabratec. (2018). Industrial Electronics Students and Young Professionals. [Online]. Available: https://ieee-collabratec.ieee.org/app/community/129/Industrial-Electronics-Students-and-YoungProfessionals/activities