



IEEE IES Student and Young Professionals Activity Committee Report

ver. 2017-10-31

by

Chair of IEEE IES Student and Young Professionals Activity Committee

IEEE IES (S&YPs-AC)

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Warsaw, Poland, 2017.

With co-operation with:

IES Officers and Volunteers

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IEEE IES Students and Young Professionals Activity Committee - Activities Summary

I would like also to summarize (briefly) the IES S&YPs-AC based on some data collected since 2000. Of course, this is not possible to write about its activity in one year report but let tray to start the discussion. I have a feeling that we are approaching a new way of supporting interaction between students, YPs, Professors, and finally Well Experiences Industry Representatives.

First of all I have to mention that the activity has been started long time ago and my predecessors: María Inés Valla (FIEEE), Marco Liserre (FIEEE YPs), Mariusz Malinowski (FIEEE YPs) and

Pedro Rodriguez (FIEEE YPs) introduced me for their excellent heritage in the field of S&YPs activities. I hope that in the future they will share with us experiences from their present point of view!

Now please have a look into some numbers presented in Tab. 1. It can be seen that even though the form and name of the young researchers support evaluate since last 17 years the idea remains the same.

I am sure that a lot of present IEEE YPs and IEEE Fellows (which can be also YPs in the same time) received the IEEE IES Paper Travel Awards e.g. myself at the IECON 2003 in Seville for my first paper in the field of Fuzzy Logic [1] or Ryogo Kubo Co-Chair of IEEE IES Student and Young Professionals Forum, Tutorial and Industry Link at the IECON 2015 in Yokohama or Christian Rojas as IECON 2011 [2].

If you have received this recognition, please let us know by e-mail to the gold.ies.ieee.chair@gmail.com. The IES S&YPs-AC is going to prepare some special publications related with this recognition.

From the Tab. 1 it can be seen also that after the IECON 2017 IES is going to distribute c. 550 IES-SYPAs! I would like to thank to all young researchers that there are active and they would like to share with others the results of their work.

Since 2016 the S&YPs-AC introduced some statistics to count also new members in the our Society with just joined us during the application for the IES-SYPA. **The numbers are as follows: we have revied 225 applications in which c. 95 was from new just joined members whereas c. 100 has been supported by IES-SYPA.**

Tab. 1. IEEE IES Student and Young Professionals Paper Assistance (IES-SYPA) statistics since 2000. Since 2016 the paper travel assistance for Authors has been increased to USD 2000.

Year	ISIE	IECON	INDIN	ICIT	ICM	ETFA	DEST	CPE- POWERENG	Optim	PEMC	TOTAL
2000	6										6
2001	2	18									20
2002	9	11									20
2003	7	12	1	2							22
2004	10	9		2	2						23
2005	9	10	2	3	1						25
2006	8	13	2	5	1						29
2007	10	11	2			2	2				27
2008	9	14	2	3		2	1				31
2009	8	11	1	7		2					29
2010	9	11	2	7		2	2				33
2011	6	11	2	3		2	2	2			28
2012	6	15	2	2		2	2				29
2013	8	20	2	2		2	2				36
2014	10	15	4			4					33
2015	11	20	7	14		6		4	2	4	64
2016	8	13	4	6				4		4	39
2017	10	18	3	15	2			6			54
TOTAL	146	232	36	71	6	24	11	16	2	8	548

The detailed information what has been done at IECON16, ISIE17, INDIN17, ICIT17, ICM17, CPE-POWERENG17 please refer to our publication in the IEM [3]-[5] presented in Appendix 4.

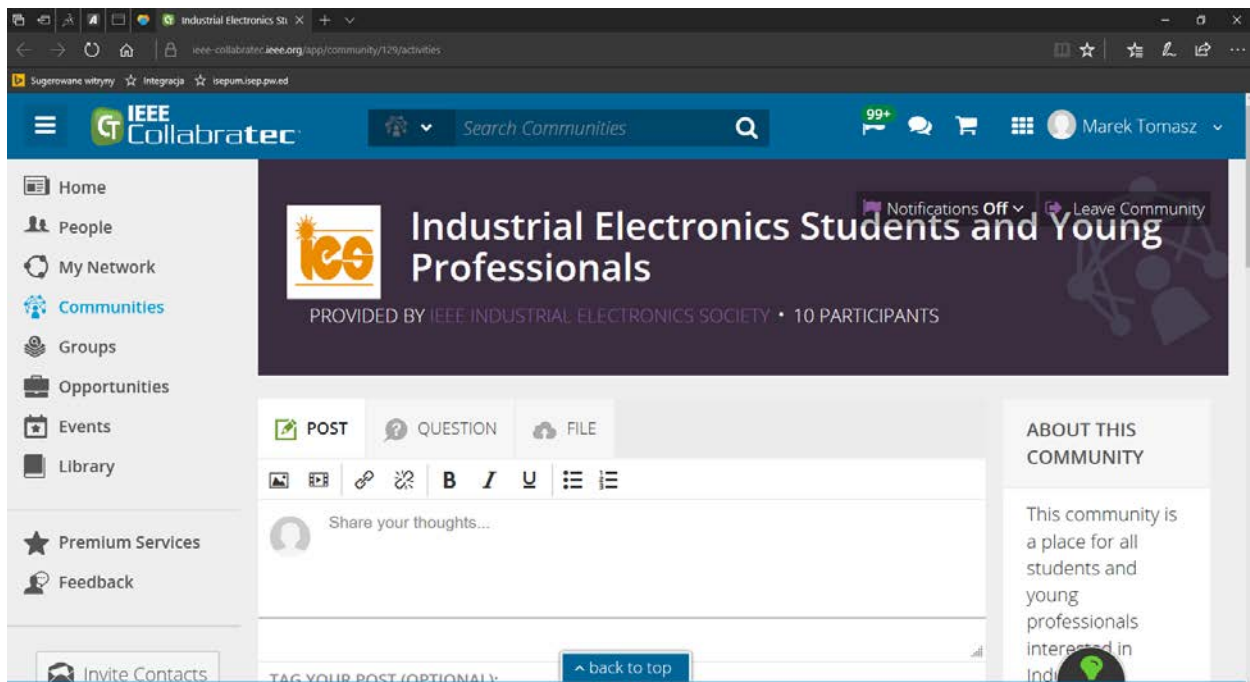
Industrial Electronics Community Setp Up on IEEE Collabratec

Dena Hoffman dena.hoffman@ieee.org just created the community on IEEE Collabratec and you can access it:

<https://ieee-collabratec.ieee.org/app/community/129/Industrial-Electronics-Students-and-Young-Professionals>

Moderators are:

- marek.turzynski@pg.gda.pl
- marek.jasinski@ieee.org
- hani.vahedi@ieee.org



IEEE IES S&YPs-AC – Plans – 7 steps for the future

Based on several discussion with IES President, IES Officers, IES Magazines and Transactions Editors in Chef, S&YPs-AC and also based on our last Membership Skype Meeting the following development programs is going to be implemented since 2018:

1. IEEE IES S&YPs Tutorials and Industry Link - and another students and young professional activity at another (not only mains) IES conferences founds for Invited Speaker.

Travel costs reimbursements up to USD 2000 per speaker.

The speaker for Tutorial should be from Academia.

The speaker for Industry Link should be selected from local Industry.

2. Activate and increase the number IES Student Branch Chapters.

Travel support for IES Volunteers to go for the S&YPs events and help with IES Student Branch Chapters opening.

3. Next stage of the IES-SYPA competition - publication possibility in the IES Magazines and Transactions.

In progress. Need to be disused at IECON17 before our meeting.

4. More IES promotion at the conferences and workshops.

Posters, T-shirt , Presentations and dedicated Workshops with co-operation with IES local Chapters (the best based on proven Workshops at the beginning).

Some funds for this is required. Should be determined after the first year of implementation. For the beginning IES should reserve for this up to USD 3000.

5. Closer cooperation with IEEE YPs and YPs from others Societies.

Meet-UPs, Workshops etc.

IEEE Young Professionals Society/Council Liaisons Summit. (IEEE HQ Celia Desmond)

6. Student and YPs project competition (support students).

Join IES and apply for financial support. The local IES Chapter and IES Student Branch Chapters support should be provided.

7. New documentation for S&YPs-AC.

Preparing documentation about the IES-SYPA rules during the selection process in addition to information distributed on-line at the ieee-ies.org. Some examples are in Appendix 1-3.

IEEE IES S&YPs-AC – Motion proposition

The budget of IES S&YPs-AC in 2017 was \$ 120k.

For 2018 we would suggested this motion:

“

Approve **the allocation of \$135k for student and YPs related activities** including: **student branch chapters support, students’ tutorials and industry link invited speakers**, student and young professionals’ forums, student banquets, student and YPs committee travel support, other student and YPs recognitions and new student member recruitment.

“

References:

- [1] M. Jasinski, M. Liserre, F. Blaabjerg, M. Cichowlas, „Fuzzy Logic Current Controller for PWM Rectifiers”, In. Proc. of the IECON’02, Sevilla, Spain, na CD-ROM SF-006578, 5-8 listopada 2002 r.
- [2] "C. A. Rojas, J. Rodriguez, A. Wilson, A. Iqbal, H. Abu-Rub, and S. M. Ahmed, “A Simple Modulation Scheme for a Regenerative Cascaded Matrix Converter,” in Proc. IECON 2011, 37th Annual Conf. IEEE Ind. Electron. Society, 2011, pp. 4361-4366".
- [3] IEEE Industrial Electronics Magazine, IES The Students and Young Professionals Activity Committee [Students and Young Professionals News], Marek Jasinski, Publication Year: 2017, Volume 11, Issue 1, Page(s):81 – 83.
- [4] IEEE Industrial Electronics Magazine, IES The Students and Young Professionals Activity Committee [Students and Young Professionals News], Marek Jasinski, Publication Year: 2017, Volume 11, Issue 2, Page(s):69 – 74.
- [5] IEEE Industrial Electronics Magazine, IES The Students and Young Professionals Activity Committee [Students and Young Professionals News], Marek Jasinski, Publication Year: 2017, Volume 11, Issue 3, Page(s):61 – 62.

Sincerely yours,

Chair of IEEE IES SYProf Committee

Marek Jasinski (IEEE YProf)

Appendix 1 - Introduction to the IEEE IES Students and Young Professionals Activity Committee (S&YPs-AC) Ver.20171021

S&YPs-AC's people and roles

The Students and Young Professionals Activity Committee (S&YPs-AC) currently consists of:

- Chair of the IEEE IES Student and Young Professionals Activity Committee (S&YPs-AC):

Marek Jasinski (marek.jasinski@ieee.org);

- Co-Chair of the S&YPs Forum:

Christian Rojas (since 2018 c.a.rojas@ieee.org);

Past Co-Chair **Samir Kouro** (samir.kouro@usm.cl);

- Co-Chair of S&YPs Members activities, Cooperation with Web and Information Committee:

Marek Turzynski (marek.turzynski@pg.edu.pl);

- Co-Chair of a S&YPs Tutorial+Industry Link and Banquet;

Dmitri Vinnikov (dmitri.vinnikov@ieee.org);

- Co-Chair of the three minutes' speeches (3Ms)+movies, e-promotion and exhibition:

Hani Vahedi (hani.vahedi@ieee.org);

- Co-Chair of the Student Branch and Student Branch Technical Chapters activity:

Adam Milczarek (adam.milczarek@ee.pw.edu.pl).

Hong Li (hli@bjtu.edu.cn) – are joining us since the IECON 17.

- Past Senior Chairs of the S&YPs-AC:

María Inés Valla (m.i.valla@ieee.org);

Marco Liserre (ml@tf.uni-kiel.de);

Mariusz Malinowski (malin@isep.pw.edu.pl);

Pedro Rodriguez (prodriguez@ulovola.es).

Appendix 2 - IEEE IES Students and Young Professionals Activity Committee Activities Program for the Conferences (ver20171017)

The IEEE IES *Students and Young Professionals Activity Committee (S&YPs-AC)* would like to introduce a project of scientific and social Activities Program for the next year.

The offer is focused, but not limited to the IEEE Students and Young Professionals (S&YPs). Our support indirectly can help Supervisors, Mentors and Professors that would like to promote interesting work of their younger colleagues. Mentors can support their mentee not only by co-authoring scientific papers but also by advising them to join the IEEE IES to be able to attend IES conferences. The support can be divided into the following main point of cooperation:

A flagship program is:

1. The IES Student Paper and Travel Assistance (IES SPTA).

Since the next year, a new name of this type of support is going to be implemented: the **IES S&YPs Paper Assistance (IES-SYPA)**.

The rules generally remains the same but in addition, Young Professionals are going to be supported. Moreover, the distance to the conference is going to be taken into account as one of the coefficient during the selection process.

The goal of the IES-SYPA is to financially support the travel for the IEEE IES Students and Young Professionals to attend the conference. The number and rules of the **IES-SYPA** can be found at the IEEE IES Internet platforms [1]-[4].

To apply for the **IES-SYPA**, please go to the IES Manuscript Submission System provided by the Chairman of supported conference. The list of the conference can be found at IEEE IES website [1]. Generally it is simple. If your paper will be accepted and if at least one co-author is an IEEE IES Student or YPs Member, you will be able to apply for the assistance [1].

Important note: IES Students and Young Professionals' from the IES Student & Young Professionals Forum (IES-SF) have priority in the competition for **IES-SYPA**.

When S&YPs finally reach an IES conference, they may have an opportunity to take a part in:

2. S&YPs scientific and social activities during the conference.

Generally, the conference Chairs with the IES are going to prepare the following activities, but please note that these may change closer to the conference date and depends on the conference.

All information should be available on the conference website and in the conference proceedings:

1.1. Student & Young Professionals Forum Day

According to the General Chair of the conference whiling and needs, the conference may offer:

- ✓ A S&YPs Tutorials and Industry Links like at the IECON 2015 [4] or at the ISIE 2016 [5].

Where Mentors and YPs from an Academia and from an Industry are trying to show the link between each other.

- ✓ A S&YPs Forum (IES-SF).

Where the S&YPs presentations could be oral and/or poster and/or 3-minute talks. The form and timing of presentations is dependent on a conference. Here some competition is between scientists are planned.

- ✓ Student & Young Professionals Banquet.

During this Reception usually, IES Officers including the IES President distribute S&YPs Forum Best Paper & Presentation Recognition diplomas, sponsored by IEEE IES.

After the scientific and social experiences, the IES-SYPA Awardees will have an opportunity to promote their projects additionally within:

1.2. The Conference Gala Dinner Day

- ✓ IES S&YPs Paper Assistance (IES-SYPA) 3 minute presentations with movie (3Ms).

Timing and place of this event will be announced **on the conference website and in the conference proceedings**. At least two weeks prior the conference all supported S&YPs by the IES-SYPA have to publish their project summary in the form of 3Ms on IEEE IES YouTube and Facebook [2]-[4].

- ✓ Diplomas ceremony of the IES-SYPA.

Timing and place of the IES-SYPA ceremony will be announced **on the conference website and in the conference proceedings**. Usually the IES-SYPA diplomas are given to the

S&YPs during the Conference Gala Dinner by IES Official Representatives including IES President.

This is just a short message for you to promote this idea between IES Members and IES Future Members. More details about the Student and Young Professionals activity can be found on the IEEE IES Internet platforms [1]-[3]. Some advice on how to prepare presentation (3-minute speech with three-minute video) can be found through this links [2]-[4].

3. Short version for CFP of an IEEE IES conferences.

This text should be added by all IES conferences supported by IES:

“

IEEE IES Student and Young Professionals Activities Program

The program offers assistance, activities and opportunities for engineering students and young professionals (S&YPs) to present their R&D work in Industrial Electronics, and to help them develop networking connections. See more information on IES electronics channels.

“

References:

- [6] <http://www.ieee-ies.org>
- [7] <https://www.facebook.com/IndustrialElectronicsSociety/>
- [8] <https://www.youtube.com/channel/UCKg8GNii0Q-ieXE56AXosGg> .
- [9] <http://www.ieee-ies.org/students/guidelines>
- [10] Industrial Electronics Magazine, Introducing the IEEE Industrial Electronics Society Students and Young Professionals Activity Committee [Students and Young Professional News], Marek Jasinski, Publication Year: 2016, age(s):71- 73
- [11] Industrial Electronics Magazine, IES Student Paper Travel Awards [Students and Young Professionals News], Marek Jasinski, Publication Year: 2016, Page(s):63- 66,

On behalf of the IEEE IES:

The VP-Membership Activities Yousef Ibrahim,

The VP-Conferences Activities Juan J. Rodriguez-Andina,

The President Kamal Al-Haddad, the President Elect Xinghuo Yu, and Treasurer Terry Martin,

The Chair of the Web and Information Committee, Andres A. Nogueiras Melendez, and Founder, Aleksander Malinowski.

Sincerely yours,

The Chair of the IEEE IES S&YPs-AC

Marek Jasinski (IEEE YPs)

Appendix 3 - How to apply for: The IEEE IES S&YPs Paper Assistance (IES-SYPA) at selected IEEE IES Conferences (ver20171019)

The IEEE IES *Web & Information Committee (WIC) with the Students and Young Professionals Activity Committee (S&YPs-AC)* would like to introduce a draft of manual how to apply for the **IEEE IES S&YPs Paper Assistance (IES-SYPA)** at selected IEEE IES Conferences.

The offer is focused, but not limited to the IEEE Students and Young Professionals (S&YPs). Our support can indirectly help Supervisors, Mentors and Professors that would like to promote interesting work of their younger colleagues. Mentors can support their mentee not only by co-authoring scientific papers but also by advising them to join the IEEE IES to be able to attend the IEEE IES conferences.

1. The applications for the IES-SYPA are collected by the Manuscript Submission System (MSS) of the IEEE IES (Fig. 1) [1]. At least one co-Author should be IEEE, IES, Student or YPs Member.

Manuscript Submission System Test Area

Submit a New Manuscript

NEW		Enter New
Manuscript Number - not assigned yet		

Please use **Access Existing Manuscript** for submitting a newer version of the same paper to ensure that the latest version is considered. In case of duplicate submissions only the first one will be considered, and all other will be removed before the review process starts.

Modify Existing Manuscript, Final Version, and Copyright Form Submission

TSO-		Access Existing
Manuscript Number	Password	

Please use this entrance to update existing manuscript, check review results, submit the final version, and sign the Web-based copyright form.

Lost Password Retrieval

	Retrieve it
Enter any author email here as filled in in the submission form. All authors are searched.	

Advisory regarding plagiarism

"When does plagiarism occur? Is there an established percentage, a rule of thumb, a saturation point that we can use to determine when plagiarism has taken place? Or is it simply that 'plagiarism is plagiarism'? The answer may lie somewhere between the stark (and perhaps too simple) dictum and the convenience of ready-made measures. In most cases, the dictum can be applied appropriately: plagiarism is plagiarism. However, there are in fact degrees of plagiarism: one can steal an entire paper, or a section of a paper, or a page, a paragraph or a sentence. Even copying phrases without credit and quotation marks can be considered plagiarism. In other words, paraphrasing done improperly can qualify as plagiarism." - quoted from the IEEE Web site.

Read more at http://www.ieee.org/web/publications/rights/ID_Plagiarism.html.

Figure 1 The Manuscript Submission System (MSS) of the IEEE IES [1] (Attention: based on TEST example!).

2. During submission, the applicant should check the Student box in Fig.2. It should be noted that even the YPs should check this box to see the application button in next section.
3. The Applicant for the IES-SYPA has to be the **IEEE IES Student and/or YPs active member**. In this case, when conference registration and final version of the manuscript is submitted, the button for application shall be activated (Fig.2b).
4. The deadline for the IES-SYPA application is two weeks after paper acceptance announcement[2].
5. Applicants who are selected for the IEEE IES-SYPA should post their 3 minutes' video on the associated IEEE IES Facebook event page and the IEEE IES YouTube channel [3], [4].
6. The selected students of the IEEE IES-SYPA must follow the guidelines according to the video preparation and publications [5].
7. The selected students of the IEEE IES-SYPA must present the 3 minutes speech and the prepared video at the conference by themselves during the IEEE IES S&YPs 3 min Forum.

they will receive a copy of any automated email notification sent to you.

Title:	First M. Name:	Last Name:	Affiliation:	Affiliation Country:	e-mail:	Please retype e-mail:
Contact: *	Mrs. v	Maria	Skłodowska-Curie	saw University of Technology	Poland	mja@isep.pw.edu.pl

Postal Address: Koszykowa
Warszawa
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Telephone: +4822 460 00 09 * Example: +1-309-677 2776 ext. 0

Fax:

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This information will go to the conference program and the **Table of Contents of the printed proceedings exactly the way you type it** has to be correct. Please use the correct names. Please do double-check your spelling. For affiliation: do not use your title, use your company or university name and choose the country from the list.

Manuscript Title:

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1st Author: *	Mrs. v	Maria	Skłodowska-Curie	saw University of Technology	Poland	mja@isep.pw.edu.pl	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2nd Author:	Prof. v	Mikolaj	Kopernik	Nicolaus Copernicus in Torun	Poland	ziemias@slonice.pl	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3rd Author:	Dr. v	Nikola	Tesla	Graz University of Technology	Austria	nikola@salnik.ac.au	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

b) Then after the successfully reviews:

Figure 2 The possibility for the IES-SYPA application is available if an Author is the IEEE IES Student and/or YPs active member. In this case, when conference registration and final version of the manuscript is submitted, the button for application shall be activated.

References:

- [12] <http://vps.ieee-ies.org/submit/>
- [13] <http://www.ieee-ies.org/students/travel>
- [14] <https://www.facebook.com/IndustrialElectronicsSociety/>
- [15] <https://www.youtube.com/channel/UCKg8GNii0Q-ieXE56AXosGg>
- [16] <http://www.ieee-ies.org/students/guidelines>

On behalf of the IEEE IES:
The VP-Membership Activities Yousef Ibrahim,
The VP-Conferences Activities Juan J. Rodriguez-Andina,
The President Kamal Al-Haddad, the President Elect Xinghuo Yu, and Treasurer Terry Martin,
Sincerely yours,
The Chair of the WIC, Andres A. Nogueiras Melendez, and Aleksander Malinowski,
The Chair of the IEEE IES S&Yps-AC
Marek Jasinski

Appendix 4 – IEEE Industrial Electronics Magazine publications in 2017

by Marek Jasinski



Students and Young Professionals News

IECON 2016 Summary

The year 2016 has passed, so now is a time to summarize the old year and provide some new information for this new year 2017. But before recapping the past year (in the next issue of *IEEE Industrial Electronics Magazine*), please allow me to focus just a bit on the 42nd Annual Conference of the IEEE Industrial Electronics Society (IECON), chaired by Carlo Cecati, Yousef Ibrahim, and Bogdan M. Wilamowski. It was held 24–27 October 2016 in the Palazzo dei Congressi, Piazza Adua, in beautiful Firenze (Florence), Italy. The Students and Young Professionals Activity (S&YPA) Committee was extremely active and provided its highest level of support during the time of the IECON, which is the IEEE Industrial Electronics Society's (IES's) flagship conference and its most important event of the year. There were 82 applicants for the IES Student Paper Travel Assistance (SPTA), and we supported the 13 best. An example of the IES SPTA diploma appears in Figure 1.

The list of the students we supported can be found in Table 1. Please note that applicants from the Student Forum (SF) technical track were given priority over students from the regular technical tracks and the IECON and IEEE International Symposium on Industrial Electronics (ISIE) special sessions. So if you would like to improve your chances in the next IES SPTA competition, please select the SF technical track for your project. But you still have to take into account

that the level of manuscript submitted to the SF is very high, and the competition for IES SPTA will not be easy.

The SF was organized at the beginning of IECON 2016 in two parallel oral sessions. A presentation example is shown in Figure 2, where Han Yu introduces her project. During the SF, two Best Paper and Presentation Recognition Awards were given to Sameer Arora and Han Yu. There is an example of the diploma in Figure 3. The IES supports the travel for selected students and then, during the conference's SF technical session, selects the best two student projects. Usually, the IES SPTA diplomas are presented during the conference gala dinner. The Italian-style dinner during the IECON 2016 was outstanding. The food was delicious and the dancing excellent.

Very important for all students were the 3-min technical session presentations (3Ms) with films about the awarded projects running in the background instead of classical PowerPoint presentations. All IES SPTA awardees had to present their paper during the special 3Ms session. Additionally, each 3-min talk and project film was displayed in the IECON 2016 main atrium (Figure 4). To see all the films presented at IECON 2016, please go to https://www.facebook.com/events/139273556473308/?active_tab=discussion. These films can also be found on the YouTube IEEE IES channel (<https://www.youtube.com/channel/UCKg8GNi0Q-leXE56AXosGg>). If you would like to keep up to date, please subscribe to our channel to follow our activity and learn more about student projects.

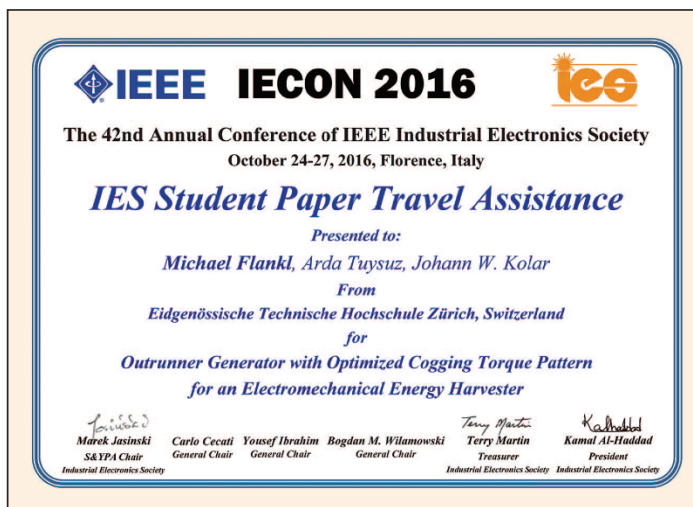


FIGURE 1 – An IES SPTA diploma.

Digital Object Identifier 10.1109/MIE.2017.2652782
Date of publication: 21 March 2017

TABLE 1 – THE LIST OF IES SPTA RECIPIENTS FOR IECON 2016.

APPLICANT NAME AND AFFILIATION	MANUSCRIPT TITLE. 3Ms + FILM (TITLE)
Anna Sarnowska, Warsaw University of Technology, Poland	"Hard and Soft Switching Operation of the Half-Bridge Based on 900-v SiC MOSFETS"
Ehab Salahat, Electrical and Computer Engineering, Khalifa University, Abu Dhabi, United Arab Emirates	"Maximal Ratio Combining Diversity Analysis of Underwater Acoustic Communications Subject to Kappa-Mi Shadowed Fading Channels"
J. Manuel Del Toro, Universidad de Alcalá, Spain	"Robust QFT Current Control Design for dc-ac Grid Converter"
Kenneth Renny Simba, Toyohashi University of Technology, Japan	"Variable-Gain Iterative Learning Contouring Control for Feed Drive Systems"
Xiaochen Xie, The University of Hong Kong	"A Novel Nonlinear Process Monitoring Approach: Locally Weighted Learning Based Total PLS"
Y.V. Pavan Kumar, Indian Institute of Technology, Hyderabad, India	"Improving Power Quality in Microgrids Using Virtual Motor-Generator Set Based Control Scheme"
Satarupa Bal, National University of Singapore	"Comprehensive Study and Analysis of Naturally Commutated Current-Fed Dual Active Bridge PWM dc/dc Converter"
Dietmannsberger Markus, Helmut-Schmidt-Universität, Hamburg, Germany	"Compatibility of Fault-Ride-Through Capability and Anti-Islanding-Detection in Inverters Connected to Low Voltage Distribution Grids"
Michael Antivachis, ETH Zurich, Switzerland	"Analysis of Capacitive Power Transfer GaN ISOP Multi-Cell dc/dc Converter Systems for Single-Phase Telecom Power Supply Modules"
Joris Guerin, ENSAM, Lille, France	"Learning Local Trajectories for High Precision Robotic Tasks: Application to Kuka LBR iiwa Cartesian Positioning"
Anish Ahmad, Indian Institute of Technology, Varanasi, India	"Minimum Phase Hybrid Coupled Inductor Quadratic Boost Inverter"
Michael Flankl, ETH Zurich, Switzerland,	"Outrunner Generator with Optimized Cogging Torque Pattern for an Electromechanical Energy Harvester"
Kyo Kutsuzawa, Saitama University, Japan	"Estimation of Individual Force at Three Contact Points on an End-Effector by a Six-Axis Force/Torque Sensor"

2017 Activities

The IES has allocated 44 SPTAs of up to US\$2,000 each for the 2017 conferences. When a large number of applicants obtain a high score, the committee can reduce the travel assistance to US\$1,000 per applicant. This exceptional measure is meant to support the travel of a greater number of excellent applicants. On the other hand, the number of IES

SPTAs for IECON or other conferences could be increased to follow the need, within budget capability. IES conferences where student travel grants are planned to be distributed are the IEEE International Conference on Mechatronics, IEEE International Conference on Industrial Technology, ISIE, IEEE International Conference on Industrial Informatics, IEEE International Conference on Emerging Technologies and

Factory Automation, IEEE International Conference on Compatibility, Power Electronics and Power Engineering, IEEE International Power Electronics and Motion Control Conference, and IECON. Please visit iee-ies.org to learn more.

To not miss any action, follow us on Facebook and YouTube. Also, join IEEE Collabretec to learn how to publish a good scientific paper



FIGURE 2 – A presentation at the SF session 1. Speaking is Han Yu, and SF Cochair Marek Jasinski is seated.



FIGURE 3 – An SF Best Paper and Presentation Recognition Award diploma.



FIGURE 4 – A group gathers at the conclusion of the 3Ms session, with the students' 3-min speeches and films running on the screen in the background.

(<https://iee-collabratec.ieee.org/app/question/74938>) and more! Please note that starting this year, IEEE S&YPA has their own budget for improving our service and excellence. So good luck in 2017, and let's use our media to communicate with each other, because "... to have communion with the people, that is the most important thing" (<https://www.brainyquote.com/quotes/quotes/p/popejohn/pa162460.html>).



Historical (continued from page 67)

in large-scale turbines, but it has achieved better success in medium and small-size devices, in the H-rotor and helical blade designs.

Until 1970, the standard generator was a squirrel-cage induction machine coupled with a multistage gearbox driven by aerodynamically controlled wind turbines to give a fixed speed system. In the 1970s, a major change derived from the advancements in power electronics that allowed variable speed systems to be developed. Two approaches have emerged: 1) a multistage gearbox with a doubly fed induction generator coupled to a small back-to-back power converter in the rotor circuit, and 2) a direct-drive low-speed synchronous machine coupled to a fully rated power electronic converter. These architectures have resulted in much more versatile wind generators that can provide the needed reactive power and frequency

support in addition to active power. Recently, technology development has resulted in turbines in the class of 8 MW boding that a substantial contribution to a carbon-free energy future will be blowin' in wind.

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Student Paper Travel Assistance Program

The Students and Young Professionals Activity Committee of the IEEE Industrial Electronics Society (IES) offers financial support to IEEE IES student members to attend IES conferences. We have preallocated 54 IES Student Paper Travel Assistance (IES SPTA) grants, at up to US\$2,000 each, for conferences in 2017. It should be noted that, in the case of a large number of high-scoring applicants, the committee can reduce the travel assistance amount to US\$1,000 per applicant. This exceptional measure is meant to support the travel of a larger number of excellent applicants. On the other hand, the number of IES SPTAs for the Annual Conference of the IES (IECON) and other conferences could be increased to help supplement these grants within the budget constraints.

In March 2017 at the IEEE International Conference on Industrial Technology (ICIT), the number of IES SPTA grants was actually increased from five to 15! This year, the IEEE International Conference on Mechatronics (ICM) was supported for the first time [1] (Figure 1). Other IEEE IES conferences where student travel awards are planned for distribution are the IEEE International Symposium on Industrial Electronics (ISIE); IEEE International Conference on Industrial Informatics (INDIN); Emerging



FIGURE 1 – ICM 2017: students, young professionals, and mentors at the IES SPTA ceremony and gala dinner.

IN MARCH 2017 AT THE IEEE INTERNATIONAL CONFERENCE ON INDUSTRIAL TECHNOLOGY, THE NUMBER OF IES SPTA GRANTS WAS ACTUALLY INCREASED FROM FIVE TO 15!

Technologies and Factory Automation (ETFA); IEEE International Conference on Power Engineering, Energy, and Electrical Drives and IEEE International Conference on Compatibility, Power Electronics, and Power Engineering (CPE-POWERENG); IEEE International Power Electronics and Motion Control Conference (PEMC); and IECON (Table 1). In 2018, the IES is planning to support yet more activities for students and young professionals.

The following students and young professionals were selected to receive support.

ICM 2017

- Sayed Royel, University of Technology, Sydney, Australia, "Frequency Shaped Sliding Mode Control of

Magnetorheological Smart Structure Systems"; paper coauthored by Quang Ha

- Wahyono Wahyono, University of Ulsan, South Korea, "A Fuzzy Model-Based Integration Framework for Vision-Based Intelligent Surveillance Systems"; paper coauthored by Alexander Filonenko, Laksono Kurni-anggoro, and Kang-Hyun Jo.

ICIT 2017

- Ye Wang, Texas A&M University, College Station, "Combining Convolutional Neural Network and Self-Adaptive Algorithm to Defeat Synthetic Multi-Digit Text-Based CAPTCHA"; paper coauthored by Yuanjiang Huang, Wu Zheng, Zhi Zhou, Debin Liu, and Mi Lu
- Hao Li, National Active Distribution Network Technology Research Center, Beijing Jiaotong University, China, "An Analysis on Plug-In Electric Vehicle's Operating Cost

TABLE 1 – IES CONFERENCES SUPPORTED BY IES SPTA GRANTS IN 2017.

	CONFERENCES IN 2017 SUPPORTED BY THE IEEE IES SPTA PROGRAM	NUMBER OF IES SPTA GRANTS PLANNED
1	ICM http://www.ieee-icm2017.org/ 13–15 February 2017	2
2	ICIT http://icit2017.org/ 22–25 March 2017	15
3	ISIE http://www.anglia.ac.uk/science-and-technology/about/computing-and-technology/isie-conference 19–21 June 2017	10
4	INDIN To be announced 24–26 July 2017	3
5	ETFA http://www.etfa2017.org/ 13–15 September 2017	3
6	CPE-POWERENG http://www.cpe-powereng2017.org/ 4–6 April 2017	5
7	IEEE PEMC	2
8	IECON http://iecon2017.csp.escience.cn/ 29 October–1 November 2017	14
	Total IES SPTA grants	54

Considering Cost of Battery Capacity Degradation”; paper coauthored by Su Su, Luobin He, and Wenzhong Gao

- Milad Dehghani, Sapienza University, Rome, Italy, “Smart Wearable Technologies: Current Status and Market Orientation Through a Patent Analysis”; paper coauthored by Rosa Maria Dangelico
- Jorge Almaguer, Universidad Autonoma de San Luis Potosi, Mexico, “Power Control of a Multi-Cell Solid-State Transformer with Extended Functions”; paper coauthored by Victor Cardenas, Alejandro Aganza-Torres, Homero Miranda, Janeth Alcala, and Fortino Mendoza-Mondragón
- Mohammad Sleiman, Power Electronics and Industrial Control Research Group, Ecole de Technologie Supérieure, Montreal, “A Simple Control Method for Modular Multilevel Converters”; paper coauthored by Kamal Al-Haddad
- Anwar Ul Haq, Technical University Munich, Germany, “CLEAR: A Circuit Level Electric Appliance Radar for the Electric Cabinet”; paper

coauthored by Thomas Kriechbaumer, Matthias Kahl, and Hans-Arno Jacobsen

- Amir Ahadi, Memorial University of Newfoundland, St. John’s, Canada, “Probabilistic Reliability Evaluation for Power Systems with High Penetration of Renewable Power Generation”; paper coauthored by Syed Enam Reza and Xiaodong Liang
- Eduardo Torres, Tecnológico de Monterrey, Mexico, “Electromagnetic Induction Generator Toward Energy Harvesting for Dynamic Systems”; paper coauthored by Pedro Ponce and Arturo Molina
- Bitu Arabsalmanabadi, Ecole de Technologie Supérieure, University of Quebec, Canada, “Harmonic Power Flow in Unbalanced and Polluted Radial Distribution Systems”; paper coauthored by Alireza Javadi and Kamal Al-Haddad
- Ivan Villanueva, Tecnológico de Monterrey, Mexico, “Stator-Flux-Oriented Sliding Mode Controller for DFIG with Variable Hysteresis Loop for Limiting Switch Frequency of Rotor-Side Power Converter”; paper

coauthored by Antonio Rosales, Pedro Ponce, and Arturo Molina

- T. Sreekanth, Indian Institute of Technology, Madras, India, “A High Gain Grid Connected Single Stage Inverter System with Reactive Power Control”; paper coauthored by N. Lakshminarasamma and Mahesh Kumar
- Olatunji Mumini Omisore, Research Centre for Medical Robotics and Minimally Invasive Surgical Devices, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, “A Geometric Solution for Inverse Kinematics of Redundant Teleoperated Surgical Snake Robots”; paper coauthored by ShiPeng Han, LingXue Ren, Nannan Zhang, and Lei Wang
- Mohamed Selmy, Egypt-Japan University of Science and Technology, Alexandria, Egypt, “Micro/Macro-Positioning Control of a Novel Contactless Active Robotic Joint Using Active Magnetic Bearing”; paper coauthored by Mohamed Fanni and Abdelfatah Mohamed
- Hisayoshi Muramatsu, Keio University, Japan, “A Circle Disturbance Observer Based on Spatial Periodicity for Circle Systems”; paper coauthored by Seichiro Katsura
- Mathew Renny Mukwa, Toyohashi University of Technology, Japan, “Adaptive Nonlinear Sliding Mode Control with a Nonlinear Sliding Surface for Feed Drive Systems”; paper coauthored by Naoki Uchiyama and Ba Dinh Bui.

CPE-POWERENG 2017

- Dr. Yunfei Yin, Harbin Institute of Technology, China, “Sliding Mode Control of Three-Phase Power Converters with Disturbance Attenuation Performance”; paper coauthored by Wensheng Luo, Jianxing Liu, Sergio Vazquez, Ligang Wu, and Leopoldo G. Franquelo
- Md Shafiullah, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, “Optimized Support Vector Machine and Wavelet Transform for

(continued on page 74)

design and, in particular, in partial and dynamic reconfiguration of digital systems and emulation platforms for digital communications.

Author María Dolorés Valdes Peña is an associate professor in the Department of Electronic Technology, University of Vigo, Spain. She has authored more than 120 journal and conference articles. Her research interests include the design of reconfigurable systems based on FPGAs applied to data acquisition and conditioning systems, signal processing, and wireless sensor networks for industrial applications.

FPGAs: Fundamentals, Advanced Features, and Applications in Industrial Electronics is a valuable textbook for all those who want to better comprehend FPGAs and their most recent evolutions to use them relevantly in industrial control systems.

—Eric Monmasson,
Laboratory of Systems and
Applications of Information
and Energy Technologies,
University of Cergy-Pontoise,
France



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Students and Young Professionals News

(continued from page 70)

Distribution Grid Fault Location"; paper coauthored by Muhammad Ijaz, M.A. Abido, and Z. Al-Hamouz (the diploma only, without financial support)

- Sebastian Brueske, Christian-Albrechts-Universität zu Kiel, Germany, "Waveform Peak Shaping by Multi-Frequency Power Transfer in Internal, Single-Phase Distribution Systems"; paper coauthored by Giampaolo Buticchi and Marco Liserre
- Dr. Mattia Rossi, Politecnico di Milano, Italy, "Rotor Position Estimation in a Large Airgap Active Magnetic

Bearing"; paper coauthored by Marco Mauri, Maria Stefania Carmeli, Francesco Castelli-Dezza, and Francesco Braghin

- Ayman Ayad, Technical University of Munich, Germany, "Direct Model Predictive Control of Bidirectional Quasi-Z-Source Inverters Fed PMSM Drives"; paper coauthored by Petros Karamanakos, Ralph Kennel, and Jose Rodriguez
- Victor Arredondo, Universidad Técnica Federico Santa María, Chile, "Capacitor Voltage Ripple Control based on Decoupled Power Analysis in Modular Multilevel Converters"; paper

coauthored by Marcelo A. Perez and Jose R. Espinoza.

Please visit our IES Facebook [2] and YouTube Channel [3] and select the best short movies prepared by the students and young professionals we are supporting.

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The Students and Young Professionals Activity Committee

For the 2017 IEEE International Conference on Industrial Technology (ICIT) [1], General Chair Sheldon Williamson and Conference Secretary Janamejaya Channegowda prepared an excellent event, during which students and Young Professionals (YPs) had a lot of support and fun. A total of 14 students were presented with the IEEE Industrial Electronics Society (IES) Student Paper Travel Assistance (SPTA) during the gala dinner (Figure 1). Moreover, six students were granted the Best Student Video Compilation award. All of the 3-min, short films can be seen on the IES Facebook page under “Events” and “ICIT17” [2] and on the IES YouTube channel [3].

To improve the quality of future submissions, the IES is preparing a new competition for all videos presented at IES SPTA. Hani Vahedi and Marek Jasinski, both YPs, with the cooperation of IES officers (some of them also YPs),

are preparing a new publication, free IES memberships, and other ideas suggested by you!

If you have any suggestions about how to support students and YPs more efficiently, please let us know on the IES Facebook page or YouTube channel by leaving your comments under the IES competition videos already published. We would like to thank Mohammad Sleiman and Mathew Renny Musukawa for their comments and feedback. Please let us know what you think and how we can support your professional activities. This is important, as the IES would like to support more researchers from different countries to give them the opportunity to improve even more. We are going to bring advanced technology to everyone!

Students and YPs Receive Support

At the 2017 IEEE International Symposium on Industrial Electronics

- Morcos Metry, Texas A&M University, for “Model Predictive Control for

Maximum Power Point Tracking of Quasi-Z-Source Inverter Based Grid-Tied Photovoltaic Power System”

- Jiao Jiao, Auburn University, Alabama, for “State Feedback Control for Single-Phase Grid-Connected Inverter Under Weak Grid”
- T. Hima Bindu, BITS Pilani Hyderabad Campus, India, for “Simplified Predictive Torque Control of an IM Drive with Efficient Zero Vector Placement”
- Kenji Ogawa, Kelo University, Japan, for “Robust Force Control with a Novel Gain Tuning Methodology Based on the Stable Margin Theory”
- Yi Zhang, Aalborg University, Denmark, for “Precharge Strategies for Isolated Modular dc-dc Converters Under Two Different Start-Up Conditions”
- Ricardo Hernandez-Vidal, Universidad Tecnica Federico Santa Maria, Chile, for “Sub-Module Photovoltaic Microinverter with

Digital Object Identifier 10.1109/MIE.2017.2726278
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FIGURE 1 – The IES-SPTA ceremony. The students and YPs enjoyed their time during the ICIT 2017 gala dinner.

Cascaded Flybacks and Unfolding H-Bridge Inverter”

- Marija Vujacic, University of Bologna, Italy, for “Evaluation of dc Voltage Ripple in Three-Phase PWM Voltage Source Inverters”
- Stefan Feirer, TU Wien, Austria, for “Seamless Handover in Industrial WLAN using IEEE 802.11k”
- Van-Binh Vu, Newcastle University, United Kingdom, for “A Multi-Output Capacitive Charger for Electric Vehicles”
- Jialin Zhang, Beijing University of Technology, China, for “Indirect Modulation for Current Source PWM Converter.”

At the 15th IEEE International Conference on Industrial Informatics

- Vladimir Mironovich, ITMO University, Russia, for “Automatic Generation of Function Block Applications Using Evolutionary Algorithms: Initial Explorations”
 - Jose Thankachan, Indian Institute of Technology Roorkee, India, for “Solar Powered High Performance Switched Reluctance Motor for EV applications”
 - Latha Karthigaa Murugesan, University of Auckland, New Zealand, for “ECoS: Energy Control System for Smart Homes.”
- Please watch the short films, like or dislike them, and give us your feedback. And

remember, only constructive critiques! Please also visit our website at <http://www.ieee-ies.org>. We hope to see you at an IES conference or work with you on a students and YP publication soon.

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Society News

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The IEEE 2017 Industrial Electronics Society Awards in Edinburgh, Scotland

During the IEEE Industrial Electronics Society (IES) Administrative Committee meeting held in conjunction with the International Symposium on Industrial Electronics (ISIE) 2017 in Edinburgh, Scotland, the following individuals and groups were presented with prestigious IES awards:

- **The IEEE IES A.J. Hornfeck Service Award:** Carlo Cecati, for extraordinary editorial activity and innovation brought to *IEEE Transactions on Industrial Electronics*
- **The IEEE Bimal Bose Award for Industrial Electronics Applications in Energy Systems:** Jose Leon, for contributions on control and modulation techniques of high-power converters

- **The Early Career Award:** Akshay Rathore, for the development of low-voltage, high-current, and low-switching-frequency control of medium multilevel inverters in industrial drives
- **The Best Paper Award for IEEE Transactions on Industrial Electronics:** Liang Zhang, Weihai Chen, Jingmeng Liu, and Changyun Wen, for “A Robust Adaptive Iterative Learning Control for Trajectory Tracking of Permanent-Magnet Spherical Actuator,” *IEEE Transactions on Industrial Electronics*, vol. 63, no. 1, pp. 291–301, 2016
- **The Best Paper Award for IEEE Industrial Electronics Magazine:** Milos Manic, Kasun Amarasinghe, Juan J. Rodriguez-Andina, and Craig Reiger, for “Intelligent Buildings of the Future: Cyberaware, Deep Learning Powered, and Human Interfacing,”

IEEE Industrial Electronics Magazine, vol. 10, no. 4, pp. 32–49, Dec. 2016

- **The Best Conference Paper Award:** QiuHong Liu, Weiming Fu, Jiahnu Qin, Wei Zheng, and Huijun Gao, for “Distributed k-Means Algorithm for Sensor Networks Based on Multi-Agent Consensus Theory,” in *Proceedings, 2016 International Conference on Industrial Technology*, pp. 2114–2119
- **The Student Best Paper Award:** Yuan Liu, for “An Efficient and Robust Hybrid Damper for LCL- or LL-CL-Based Grid-Tied Inverter with Strong Grid-Side Harmonic Voltage Effect Rejection,” *IEEE Transactions on Industrial Electronics*, vol. 63, no. 2, pp. 926–936, Feb. 2016.

—Bimal Bose,
IES Awards and
Honors Committee



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