



# IFEES

INTERNATIONAL FEDERATION OF ENGINEERING EDUCATION SOCIETIES

THE GLOBAL BULLETIN OF ENGINEERING EDUCATION

January 2016, Volume 5, Issue 1

## Index

- 2 Member Briefs
- 3 Five Years of Collaboration with Tsinghua University
- 4 Advancement of Engineering Education in Africa
- 5 Workshops at the Universidad del Valparaíso in Chile
- 6 IX Americas Competitiveness Forum
- 7 Deans Gather in Australia for GEDC 2015 Adelaide
- 8 Engineering Education: A Student Perspective
- 9 Recommended Viewing
- 11 2016 Events

## President's Corner



Dear colleagues from the IFEES community,

One year has passed since I was elected and immediately became the IFEES President. It has been a very active year, which has allowed me to spend very valuable time with many colleagues from all over the world. I've learned a lot from them and I hope that I've been able to serve our community in a meaningful way. However, as we all know, learning is an endless process and I will keep on trying to understand how to better accomplish our collective goals.

This New Year is the one in which we will celebrate our 10<sup>th</sup> anniversary, and it will be a privilege for me to lead the organization of this celebration during the next WEEF, and to commemorate all the good things that IFEES has achieved during this period of time, due to the commitment of a lot of colleagues who have served as Presidents, Executive Committee members and also proactive colleagues who have contributed without being part of any formal structure.

Finally, let me repeat here the message that I have included in my Christmas and New Year salutation message, just in case you haven't received it by mail:

*Usually, the end of a year and the beginning of a new one is a good moment for a balance. When we raise our glasses for a toast, we think of our beloved relatives and friends, we pray for their health and happiness and, at least for that moment, the world is united in a common desire for peace and love.*

*We, engineers, are by definition, those who design bridges, those who build roads, those who make airplanes fly, those who develop new formulas, and much more. So, I invite you today to raise your glasses and imagine a world with bridges between people, roads for encounters, airplanes for reaching our dreams and formulas for a better world.*

Let's make it happen!!!

Best wishes,

Uriel Cukierman  
IFEES President (2014-2016)



## Member Briefs



IFEES would like to welcome the [Research in Engineering Education Network](#) (REEN), who became an observer member in November of 2015 with the support of IFEES leader, Khairiyah Mohd-Yusof.

REEN provides an online platform to facilitate discussions and collaborations in research in engineering education for its international community of nearly 500 researchers and academics.



### Siemens and Georgia Tech Expand Partnership

Image of Atlanta and Georgia Tech by [Hector Alejandro](#)

For nearly twenty years, Siemens and the Georgia Institute of Technology have collaborated on a plethora of joint initiatives to “[pursue] manufacturing innovation through software, [conduct] frontier-pushing research that supports digital product development, and [prepare] students to enter the...STEM workforce of the future”. Georgia Tech will now expand research opportunities as a Siemens Center of Knowledge Interchange (CKI) partner. Gary May, the Dean of Engineering at Georgia Tech, is a member of the GEDC.

For more details, click [here](#) to view the Siemens press release.



### IUCEE and ISTE Hold Annual Conferences

IUCEE’s 3rd International Conference on Transformations in Engineering Education convened from the 8th through 12th of January, 2016 in Pune, India.

Meanwhile, ISTE held their 45th Annual National Convention from the 9th through 11th of January, 2016 in Amravati, India.

The April bulletin will feature more details on both events.

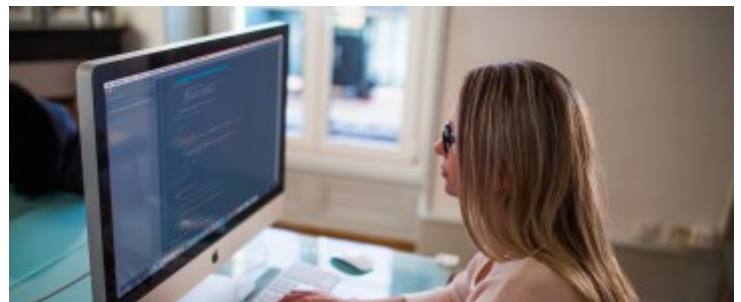


### ASEE Recognizes Podcast Creator in its Year of Action on Diversity Essay Contest

Image by [Mark Hunter](#)

In 2015, ASEE facilitated a contest that encouraged engineering students to share their stories of diversity. Ultimately, Shante Stowell, a recent graduate from MIT, was announced as the winner of the contest for her Podcast “Feeling Raced”. Utilizing the MIT Terrascope freshman learning community, Stowell began the discussion among her peers by asking the question: “When have your actions been influenced by race?”

To listen to the award winning podcast, click [here](#).

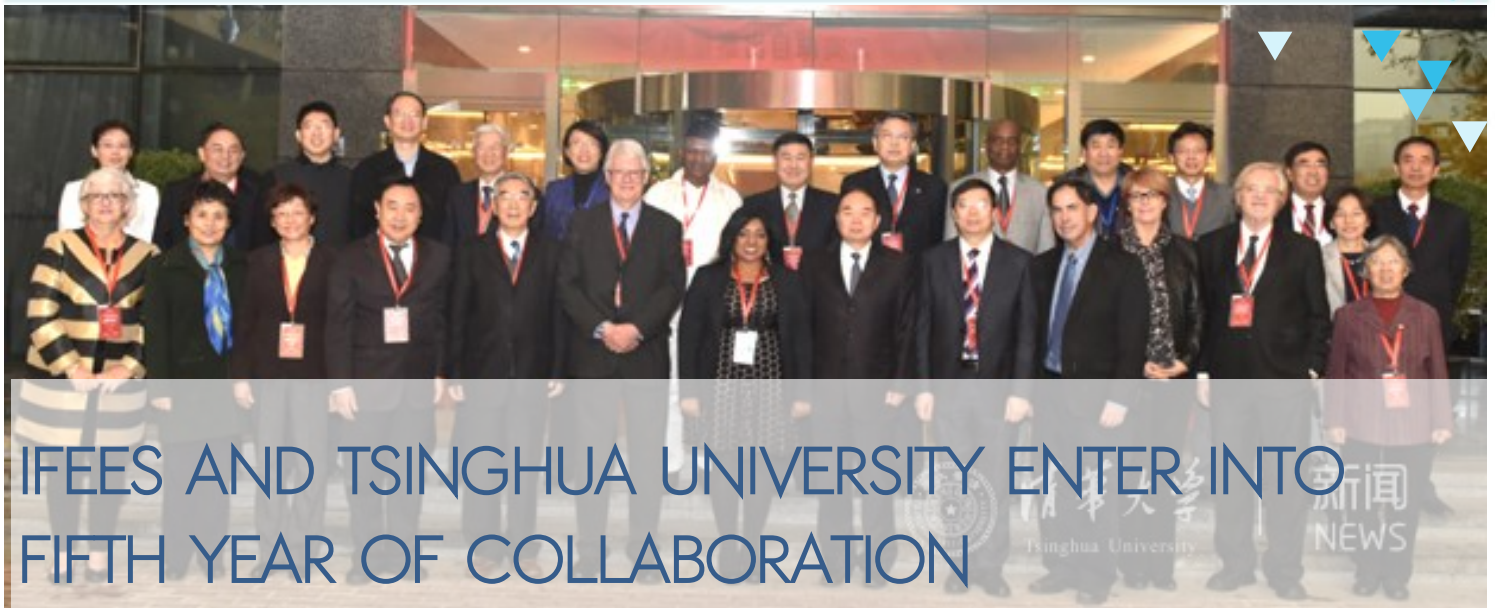


### Tenaris University Receives 2015 Optimas Award for Training from Workforce Magazine

In recognition of Tenaris’ use of MOOC and SPOC technology, which aims at improving corporate education at a reduced cost, Workforce Magazine awarded the 2015 Optimas Award for Training to Tenaris University.

“Through our innovative use of MOOC and SPOC technology, we are not only educating employees, but we are also promoting continuous improvement and a passion for lifelong learning in the workplace,” said Rolando Lange, Tenaris University Director and IFEES Representative.

To read more about this award, visit the [Tenaris website](#).



## IFEEES AND TSINGHUA UNIVERSITY ENTER INTO FIFTH YEAR OF COLLABORATION

In 2016, IFEEES, SEFI and IIDEA enter into their sixth year of collaboration with the Chinese Academy of Engineering (CAE)-Tsinghua Center for Engineering Education (CTCEE). In 2011, a mutual partnership was established between these organizations, resulting in the first of a series of annual workshops at Tsinghua University, and ultimately encompassing a larger initiative promoting engineering education in China and abroad.

Over the past four years, IIDEA has worked with the CTCEE to promote strategic collaborations and cooperation in a series of workshops and courses in Beijing. The partnership has also expanded into research collaborations and consultancy for organizing conferences, sharing best practices, capacity building programs and a variety of other activities.

In July, the fourth annual IIDEA-Tsinghua Workshop convened in Beijing under the auspice of *Authentic Learning in Engineering Education*. The workshop focused on two broad topics: *Training for a Professional Competency* and *Situated Learning Strategies*.

Speakers included Wu Gokai (Deputy Secretary General and Director General of Division One of the CAE), Xie Bingyu (Vice Director of the CTCEE), Yuan Si (Vice Chairman of the Tsinghua University Council), Yu Shouwen (Former Vice President of Tsinghua University and 2012 recipient of the IFEEES Presidential Award for

Pioneering Regional Leader), Lee Yee Cheong (Malaysian Chairman Governing Council), Khariyah Mohd-Yusof (SEEM), Kevin Passiono (Director of the Humanitarian Engineering Center at Ohio State University), Jennifer DeBoer (Purdue University), Rovani Sigmoney (UNESCO Natural Sciences Sector) and Lueny Morell (Former IFEEES President).

On November 19th, 2015, several leaders from IFEEES and the engineering education community, gathered for an International Forum on Engineering Education hosted by Tsinghua University. Presentations included topics such as: *Engineering Education in China: Opportunities, Challenges and Mission* (Qidi Wu, CAE); *Engineering Education Towards 2020—A European Perspective* (Françoise Côme, SEFI), *Advancement of Engineering Education in Africa: an AEEA Perspective* (Funso Falade, AEEA); *Engineering at UNESCO: Post 8671 and the Sustainable Development Goals* (Rovani Sigamoney, UNESCO) and *Developing a Win-Win Strategy for China-Africa Collaboration in Engineering Education* (Adagbonyin Obiazi, African Engineering Deans Council); *Developing the Next Generation of Innovators* (Lueny Morrell, InnovaHiEd) and an overview of IFEEES and GEDC activities and the India 2025 project with IUCEE (Hans-Jürgen Hoyer).

The CTCEE itself was established by the Chinese Academy of Engineering and Tsinghua University and

*Thank you to Weifeng Qiao of the CEE at Tsinghua university for providing background details for this article.*



# ADVANCEMENT OF ENGINEERING EDUCATION IN AFRICA: AEEA PERSPECTIVE

*Written by Funso Falade*

*Photo by Julien Simery/UNESCO*

**E**ngineering education is the training of engineers who are supposed to be the initiators, facilitators and implementers of the technological development of a nation. It focuses on the methodology of teaching and the learning process, assesses the effectiveness of teaching techniques; it evaluates the appropriateness of curricula of engineering programmes, infrastructure and accreditation systems, as well as industry inputs in the training of engineers. Engineering education concerns two principal facets of education namely, teachers and the students, that is, the instructors and the future practitioners of engineering. It entails the development of programmes that will enhance the competence of the teachers and improve their skills while the students are better equipped with knowledge.

In Africa, the training of engineers has witnessed some challenges ranging from poor funding to inadequate facilities—both quantitatively and qualitatively at the training institutions, inadequate and obsolete equipment, non-availability of adequate human capacity, adoption of traditional pedagogy, brain drain and poor staff training and retention profiles. Others include weak university/industry partnership, defective curricula, poor industrial attachment programs, non-availability of local codes and monitoring standards for the training of prospective engineers and an inade-

## About the Author

*Funso Falade serves as the President of the African Engineering Education Association and is AEEA's IFEES representative. He is the Head of the Department of Civil Engineering at the University of Lagos. Dr. Falade received his PhD in Civil Engineering from the University of Lagos (1998) and his M.Sc in Civil Engineering from Moscow Institute of Civil Engineering (1984).*



quate ICT environment, as well as weak linkages with the international engineering community.

The African Engineering Education Association (AEEA) was established in 2006 in Pretoria, South Africa at the end of the 3rd African Regional Conference on Engineering Education (ARCEE 2006). The main objectives of AEEA are to: (i) promote quality engineering education in Africa and (ii) organize a biennial forum for all the engineering stakeholders, with an aim of identifying and proffering solutions to the problems within the compass of engineering education in the region.

The Association aims at addressing all the issues of inadequacies in engineering education in Africa and foster good relationships with both regional and international engineering organizations.

*This article has been shortened for the bulletin. Please click [here](#) to read the full report of the AEEA and their activities.*



## IFEES LEADERS FACILITATE WORKSHOPS AT THE UNIVERSIDAD DE VALPARAÍSO IN CHILE

**F**rom November 9<sup>th</sup> to 13<sup>th</sup>, 2015, the Universidad de Valparaíso hosted a series of workshops organized by the Center for Faculty Training on Curricular Innovation and Good Pedagogical Practice. IFEES President Uriel Cukierman, along with former IFEES President, Lueny Morell, facilitated their own workshops and sessions throughout the event.

Cukierman focused on *Technological Resources for Education Based Competencies*, presenting on *Educational Technology and Application of Information and Communication Technology in Education* and offering a second session, the *Flipped Learning Model*. Additionally, he moderated a discussion about the virtual environment of teaching.

Morell offered two sessions focusing on *Active*



*“The number one challenge in many countries is the lack of support from authorities...the second challenge is an individual calling, which means having the support of leadership and having appropriate training...There must be a desire to accept errors...have the drive to come out of the comfort zone, and try to improve the quality of education that we provide.”*

*- Uriel Cukierman*

*Methodologies of Learning*. The first day comprised of methodologies of learning through problem solving and projects based learning, while shifting to a case study on the second day. On the third, and final day of her sessions, Morell explained pertinent methods of the Experts’ Game and Team Based Learning.

Participant Daniele Soto, Professor of Civil Engineering, valued the interaction and energy of the workshop. She commented on the need for attendees “to be active and participants of a responsibility aimed to form new engineers in a different way, where the Power Point and blackboard are old school”.

In December, additional workshops were held in universities around Chile, further fostering the potential for further collaboration between IFEES and Chile.



## IX AMERICAS COMPETITIVENESS FORUM

*Written by Miguel Angel Sosa*

Photo by [Individuell Människohjälp](#)

**I**ng. Miguel Angel Sosa, in his capacity as a member of the IFEES Executive Committee, was invited by the Government of Guatemala in its role as President Pro Tempore of the Inter-American Competitiveness Network (RIAC) 2015, the Chamber of Industry of Guatemala (CIG) and Organization of American States (OAS), as Technical Secretariat of the RIAC, to participate in the IX Competitiveness Forum of the Americas (FCA), *Stronger institutions × more competitiveness*, which took place from November 16 to 18, 2015 in Guatemala City, Guatemala.

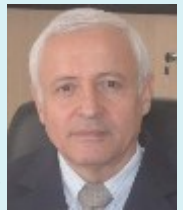
The FCA is the largest annual event in the region on the issue of competitiveness, bringing together more than one thousand mainland authorities, regional and extra-regional partners, prestigious business leaders, renowned scholars and entrepreneurs from member countries of the OAS.

The aim of the Forum is to foster political dialogue, knowledge sharing, and the creation of opportunities for cooperation and trade between the leaders of competitiveness and economic development in the Americas. It seeks to find joint solutions to common challenges of the present, while looking to the future.

In these spaces of dialogue that facilitate the RIAC, representatives from countries in the public and

### About the Author

*Miguel Angel Sosa was elected to the IFEES Executive Committee in 2015, and will serve until WEEF 2017. He serves as a representative of the Consejo Federal de Decanos de Ingeniería (CONFEDI) based in Argentina. He is the Dean of the Faculty Regional Delta and Senior Counselor at the National Technological University in Argentina.*



private sectors met to analyze the competitive landscape of the Americas, define strategies and to agree and approve the annual work plan strengthening the exchange and collaboration between countries. Members also developed and approved resources that guide regional and national efforts to improve competitiveness.

Considering what has been done and the actors involved, it is quite relevant for IFEES to deepen participation in these spaces and even associate IFEES with the RIAC to coordinate activities and establish new relationships regarding issues closely linked to the development of competitiveness and engineering education. This relationship could also involve the possibility of spreading and promoting IFEES and possibly the association of other entities.

*This article has been shortened for the bulletin. Please click [here](#) to read the full report.*



## ENGINEERING DEANS GATHER IN AUSTRALIA FOR GEDC 2015 ADELAIDE CONFERENCE

**F**rom November 30 through December 2, 2015, deans from the global engineering education community, members of the Global Engineering Deans Council (GEDC) and leaders from industry gathered for the GEDC 2015 Adelaide Conference.

The conference kicked off with a New Deans Mentoring Workshop led by Sarah Rajala (Iowa State University) and a panel of prominent engineering deans. ABET's Michael Milligan collaborated with Lincoln Wood (Engineers Australia) on an Introduction to Accreditation Seminar. Participants were able to enjoy the Australian spring afternoon at their leisure, before Monday evening's Welcome Reception, generously sponsored by Total.

Tuesday began with a plenary session on *Engineering Education's Contribution to Economic Development*, before segueing into three panel discussions: *International Consortia for Addressing Grand Challenges*; *Student Centered Learning Paradigms* and *Creating a More Diverse and Inclusive Workforce*.

Tuesday's highlight was the GEDC Airbus Diversity Award Gala Dinner at the National Wine Centre, moderated by Charles Champion (Airbus) and GEDC Immediate Past Chair, John Beynon. Fadi Aloul (American University of Sharjah) received the 2015

GEDC Airbus Diversity Award for his work in developing a first-year Introduction to Engineering and Computing course, using low cost materials and minimal resources, while engaging diverse students in engineering and developing their problem solving skills.

Wednesday's Plenary Session focused on *Innovation and Entrepreneurship*, with two panel discussions covering *Humanitarian Engineering* and *Data Driven Education Models*. The conference concluded with a *Top Tips* session for deans and a session on *New Tools for Engineering Education*. Participants were treated to a closing banquet at the Adelaide Oval Cricket Ground.

Apart from the events of the conference itself, many leaders from the GEDC community, in addition to IFEES President, Uriel Cukierman and IFEES President Elect, Michael Auer, collaborated on a one-day Strategic Planning Session. Participants spent the day reviewing the 2013-2015 GEDC Strategic Plan, examining the goals met and crafting plans for how to implement an updated Strategic Plan and the best methods at catalyzing objectives for the GEDC in the months and years to come. Although the Strategic Plan will continue to be drafted and evolve in the coming months, participants set clear goals into motion to further the GEDC as not only a resource, but to serve more in-depth as an agent of change in engineering education at the global level.



## ENGINEERING EDUCATION: A STUDENT PERSPECTIVE

*Written by Rohit Kandakatla*

**M**y first interaction with Engineering Education (EE) community was through the Student Platform for Engineering Education Development (SPEED) back in 2012. It was here that I was introduced to the field of EE through workshops and the development of action plans. Impressed by my overall enthusiasm and consistent performance, SPEED selected me for a five-member team, as part of which I got the opportunity to travel across India and facilitate five student's workshops in collaboration with the Indo-US Collaboration for Engineering Education (IUCEE) on action plan development focused towards solving EE challenges. IUCEE then sponsored me to attend SPEED's 9th Global Student Forum (GSF) and the 3rd World Engineering Education Forum (WEEF) in Cartagena, Colombia in 2013.

After coming back from Cartagena, I co-founded the 1st Indian Student Forum (ISF), a customized model of the GSF tailored to the Indian study scenario. This gave students a platform to connect with various EE stakeholders and also put a spotlight on the role students can play in radically transforming the engineer-



ing stage that has not seen any reforms in ages. Later, we worked with SPEED leaders across different countries to organize events on a similar model in Austria, Argentina, Colombia and Ecuador. I was then elected as the Global President of SPEED at the 10<sup>th</sup> Global Student Forum in Dubai.

Through SPEED, I got the opportunity to work with IFEES on their global student strategic thrust initiative to identify the key areas to focus in the coming years. I was a part of a four-member team that developed a global student survey and disseminated it to engineering students across the globe to gauge the engineering education scenarios in various countries. In 2015, I was elected as the Vice-President of IFEES for Student Engagement during the 5th WEEF in Florence, Italy.

These experiences have provided me with the opportunity to interact with EE practitioners globally, which gave me an insight into the different areas of EE research happening across the world. This instilled in me a passion for this field which motivated me to start my own social venture, Footsteps ([www.footsteps.in](http://www.footsteps.in)), along with two other colleagues from SPEED. Through this venture, we conduct workshops for students and faculty and introduce them to tools that would help improve their teaching and learning.

I believe that SPEED has given me an opportunity to emerge as a global student leader, which I am sure it will continue doing for many other students in the coming years. More importantly, these experiences will be a motivating factor for students to take up EE as their career, like they were for me. I would like to thank all my colleagues at both SPEED and IFEES for their constant support and encouragement. I strongly



## Recommended Viewing

### The NASA Engineer on a Feminist Voyage



Broadly spends a day with Denisse Aranda, a young female engineer who emigrated to the United States of America from Venezuela in hopes of fulfilling her dream of working for NASA. In Broadly's video, they explore her work with NASA as a Contamination Control Engineer while Aranda provides insights into what it is like to be a female in a male-dominated field.

*[Video](#) is 5 minutes and 32 seconds long.*



### What's Next in the Internet of Things

Dassault Systèmes delves into the future of the "internet of things", which foresees a plethora of physical objects containing sensors and chips intended on making the internet more intuitive and efficient.

*[Video](#) is 5 minutes and 41 seconds long.*

### Carbon Capture & Storage: A Promising Solution?



Total is piloting carbon capture and storage projects using oxycombustion technology. In their video, Total summarizes their efforts, the challenges and why this technology is important in minimizing global warming.

*[Video](#) is 4 minutes and 10 seconds long.*

## Calling Robotics Enthusiasts The Airbus Shopfloor Challenge is Now Open!



The [Airbus Shopfloor Challenge](#) invites robotics teams from around the world to create innovative robotic solutions for real-life aircraft assembly manufacturing challenges.

Teams must design and build an advanced lightweight robotic system able to perform accurate drilling, compliant with the highest aeronautic standards.

Photo by [Airbus Group](#)



**IFEEES**  
INTERNATIONAL FEDERATION OF ENGINEERING EDUCATION SOCIETIES

THE GLOBAL BULLETIN OF ENGINEERING EDUCATION

[www.weef-gedc2016.org](http://www.weef-gedc2016.org)

"Engineering Education for  
Smart Society"



# WEEF & GEDC 2016, Seoul

The World Engineering Education Forum &  
The Global Engineering Deans Council, 2016

Nov. 6 ~ 10, 2016  
COEX, Seoul, Korea

Call for Paper:  
Deadline  
coming soon!!!



[WWW.IFEES.NET](http://WWW.IFEES.NET)





## 2016 Events

Check the [IFEES Calendar](#) for updates on upcoming events.

### SAVE THE DATE!

**IFEES-GEDC Reception & Dinner**

**June 25th in New Orleans, USA**

**IFEES-GEDC Breakfast**

**June 27th in New Orleans, USA**

**Women in Science & Technology: Creating a Sustainable Career**

January 28—30 in Gujarat, India (ISTE)

**Institute of Industrial Engineers Annual Conference**

May 21—24 in Anaheim, USA (IIE)

**International Conference on Engineering & Technology Education**

February 28—March 2 in Salvador, Brazil (COPEC)

**Canadian Engineering Education Association Annual Conference**

June 19—22 in Halifax, Canada (CEEA/ACEG)

*Abstract & Proposals Deadline: February 1*

**Sixth International IEOM Conference**

March 8—10 in Kuala Lumpur, Malaysia

**National Women in Engineering Day**

June 23 (WES)

**7<sup>th</sup> North American Materials Education Symposium**

March 17—18 in Berkeley, USA (Granta Design)

*Abstract Deadline for Posters: January 31*

**ASEE International Forum**

June 25 in New Orleans, USA

*Abstract Submission Deadline: January 22*

**CDIO Asia Meeting and Engineering Education Conference**

March 23-25 in Qinghuangdao, China

**ASEE 123<sup>rd</sup> Annual Conference & Exposition**

June 26—29 in New Orleans, USA

*Final Paper Submission Deadline: March 12*

**2016 Engineering Deans Institute Annual Conference**

March 29—April 1 in San Francisco, USA (ASEE)

**International Conference on Engineering Education**

July in Tomsk & Irkutsk, Russian Federation (AEER)

**8<sup>th</sup> International Materials Education Symposium**

April 7—8 in Cambridge, United Kingdom (Granta Design)

*Abstract Deadline for Posters: January 31*

**Annual Conference of the European Society for Engineering Education**

September 12—16 in Tampere, Finland (SEFI)

*Extended Abstract Deadline: March 13*

*Full Paper Submission: May 15*

**Engineers for a Sustainable World Annual Conference**

April 7—10 in Berkeley, California (ESW)

*Abstract Deadline: February 17*

**ASIIN International Quality Assurance Conference**

May 2—4 in Berlin, Germany

**African Engineering Education Association International Conference**

**African Engineering Deans Council Meeting**

September 20—22 in Bloemfontein, South Africa (AEEA)

*Full Paper Submission: February 15*

**Asian Engineering Deans Summit**

May 16—17 in Hangzhou, China

**Latin American GEDC Annual Conference**

October 3—5 in Cartagena, Colombia

**IACEE World Conference on Continuing Engineering Education**

May 17—20 in Porto, Portugal

*Proposal Submission Deadline: January 31*

**2<sup>nd</sup> Asian Materials Education Symposium**

December 8—9 in Singapore (Granta Design)

*Talk Abstract Deadline: March 31*

*Poster Abstract Deadline: September 30*

**IEEE 2016 International Conference on Robotics & Automation**

May 15—21 in Stockholm, Sweden

**Conference at the South University of Science and Technology**

December in Shenzhen, China



# Thank you to our Corporate Partners



Stay connected with the latest developments in the IFEEES community through Social Media



Hans-Jürgen Hoyer

IFEEES Secretary General

Kayla Hellal

International Programs Associate

**Deborah Donovan**

Consultant

**Stephanie Cheng**

Consultant

**Gifford Cheung**

Consultant



**International Federation of Engineering Education Societies**



Marquette University  
OPUS College of Engineering  
1515 W. Wisconsin Ave.  
Milwaukee, WI 53233  
USA

