



International Commission of Agricultural and Biosystems Engineering

Newsletter 113

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"...to serve - on a world-wide basis and through its members - the needs of humanity by fostering mutual understanding, improvement and rationalisation of sustainable biological production systems while protecting nature and environment and managing landscape through the advancement of engineering and allied sciences..."

Web: www.CIGR.org

Journal: www.CIGRjournal.org

Contact us: secretarygeneral@CIGR.org

President's Message



Prof. Cheng Zhi
President, CIGR

CIGR has been the most influential organization in the field of Agricultural and Biosystems Engineering. In the past eighty-eight years, the Presidium and Secretary-generals played very important roles. I feel very honored to become a member of them and work with all colleagues in CIGR. I will undertake my responsibility and serve CIGR earnestly during my tenure.

The quadrennial CIGR World Congress is a significant event for our organization and Agricultural professionals around the world. The Turkish organizers whose work is appreciated has paid all efforts to guarantee the success of this Congress. As a non-government and non-profit organization, CIGR provides a free and creative atmosphere and a strong platform for Academic activities for all professionals.

To serve CIGR better and develop it comprehensively stronger, it is important to keep pace with the trend of Agricultural and Biosystems Engineering. Thus, I will define my service-objects clearly, and then making work plans accordingly. At present, based on the recent experience and for a better situation in the future, an efficient information-system should be highlighted which can guarantee the utilization and storage of important information. We need explicit principles and security assurance for our important documents and database. Meanwhile, generalizing CIGR to young professionals is another point. Building a platform for young professionals for absorbing

quintessence and making contributions is significant for related subjects and fields which can make CIGR dynamic and sustainable. Through working hard on the current issues, we would reach a new stage.

China and Asia are the most populous country and region in the world. Agricultural economy is a big part and agricultural population accounts for a large proportion. Agricultural Engineering-technology plays a very important role in rational utilization of agricultural resources (including cultivated land, fresh water and agricultural waste), protection of rural environment, exploitation of rural resources, transformation of rural production system, application of new agricultural technology and solution to starvation and poverty. In the past, CIGR was continuing addressing the issues of resources, environment and poverty in less developed regions with responsibility. And in the future, we will insist our intention.

Spreading the technology and experience of Agricultural and biological systems engineering from developed countries to underdeveloped regions and making it fit in these places is a broad road. CIGR has sufficient terms for this. Excellent professionals from developed, developing and underdeveloped countries gather in our organization. Through activities like international conferences, the World Congress and so on, and based on joint efforts of every sections of CIGR, including professional boards, technical boards, workshops and all, we can realize the exchanging of people, information, technology and experience, and what's more, to reach the prospect with harmony and common prosperity of the Earth, our shared homeland.

Finally, I would like to express my sincere gratitude to those who trust me. I will work with the Presidium, Prof. Fedro Zazueta and all CIGR members to make CIGR better and stronger.

CIGR Strategic Planning Effort

CIGR has engaged in a strategic planning effort towards better fulfilling its mission and serving its members. This effort is to take place in two major steps: 1) Identify a set of clearly defined, measurable and achievable goals for CIGR, and 2) develop a strategy that defines a set of actions to achieve these goals.

During the CIGR World Congress in Antalya a strategic planning session was organized by the CIGR presidium. The session was open to all CIGR members wishing to participate. The aim of the session was to discuss the strategic goals of CIGR. The overarching question for this meeting focused was: What do we want to achieve in the next five years? The participants held a brainstorming session to generate potential goals followed by several rounds of consolidation and voting to establish a priority list.

Once these goals are identified the CIGR Presidium will appoint a working group that will address the next important question: What

actionable strategic actions will lead to achievement of these goals?

During the first meeting in Antalya the following draft set of six ranked strategic goals emerged as most important:

- 1 Enhance the visibility, impact and participation in CIGR to include policy makers, industry, NGO, foundations, and others.
- 2 Play a leadership role in global issues related to agricultural and biosystems engineering.
- 3 Align the Working Groups and Sections to address important, emerging issues, and innovation.
- 3 Improve access to knowledge and information by the education, research, and extension community and less privileged communities (Inward facing).
- 5 Connect to young academics and professionals, make CIGR more attractive and accessible.
- 5 Increase the value of the CIGR Journal.



Participating CIGR Members in the Antalya 2018 Strategic Planning Session

Invitation to the CIGR Strategic Planning Effort

The CIGR presidium invites all CIGR members to support this process by providing their ideas. Strategic Planning efforts currently conducted are focusing on strategic goals (what) for CIGR. All members are invited to participate

and provide their ideas. Please send any suggestions and/or if you are interested in participating in the strategic planning sessions to secretarygeneral@cigr.org.

Second Call for 2024 CIGR International Conference

Venues for the 2020 International Conference and the 2022 World congress are Quebec, Canada and Kyoto Japan respectively. At this time the CIGR Presidium is requesting a statement of interest from member societies for

hosting the 2024 CIGR International Conference and the 2026 World Congress.

For more information please contact Prof. Fedro Zazueta at secretarygeneral@cigr.org.

XIX. CIGR World Congress Report



Prof. Can Ertekin
*Akdeniz University,
Antalya, Turkey*

The Union of Chambers of Turkish Engineers and Architects, the Chamber of Agricultural Engineers, the Departments of Agricultural Machinery and Technologies Engineering of the Faculty of Agriculture of Akdeniz and Ege University organized XIX CIGR World Congress in Antalya, Turkey with the theme of "Sustainable Life For Children" between 22 to 26 April, 2018. There were 325 participants from 38 different countries. Participants were from Turkey, China, Japan, South Korea, United States, Spain, Denmark, Iran, Italy, Hungary, Poland, South Africa,

Belgium, Brazil, Czech Republic, Netherlands, Portugal, Turkish Republic of Northern Cyprus, Austria, Colombia, Morocco, Oman, Romania, Russia, Taiwan, Uruguay, Australia, Canada, Estonia, Finland, Germany, Ireland, Kenya, Malaysia, Mexico, New Zealand, Nigeria and Pakistan. During the congress, Section I: Land and Water, Section II: Structures and Environment, Section III: Plant Production, Section IV: Energy in Agriculture, Section V: System Management, Section VI: Bioprocesses, Section VII: Information Technology related papers were presented in oral or poster sessions.

[Book of Abstracts Available Here](#)

[Congress Photos Available Here](#)

In addition, there was a Workshop on Image Analysis and Spectroscopy in Agriculture conducted at the same time. Totally, there were 142 oral and 91 poster presentations in the congress and workshop.

There were some meetings as Presidium, Executive Board and Technical Section Meetings on 22 April 2018. At the evening there was a Welcome Cocktail with the participants in music accompaniment.

The XIX. CIGR World Congress officially opened on 23 April 2018 with Nehir Demir and Efe Ertekin's as masters of ceremonies, who are of the age of 9 and studying in primary school. April 23 National Sovereignty and Children's day was bestowed to the children of the World by the founder and first president of the Republic of Turkey by Mustafa Kemal Atatürk. This feast, the opening of Parliament in the first year begin to celebrate the April 23 National Day.

First, three secondary school students of Akdeniz University Antalya State Conservatory were presented small concert with their instruments. Opening Ceremony continued with the speech of Mr. Ozden Gundor, President of Union Of Chambers Of Turkish Engineers And Architects, Chamber of Agricultural Engineers, Prof. Dr. Can Ertekin, Organising Committee member, Prof. Dr. Tadeusz Juliszewski, CIGR President, Prof. Dr. Fedro Zazueta, CIGR Secretary General, Prof. Dr. Stephen W. Searcy, ASABE President, Prof. Dr. Claus Grøn Sørensen, EurAgEng President, Prof. Dr. Davut Karayel, Dean of Agriculture Faculty, Akdeniz University, Mr. Orhan Saribal, 26 Period Bursa Member of Parliament Republic of Turkey, Mr. Hasan Ozlu, Vice Undersecretary of Ministry of Food, Agriculture and Husbandry, Mr. Erkut Sahali, Minister of Agriculture and Natural Resources of Turkish Republic of Northern Cyprus. The Organization Committee than officially opened the congress.

Immediately after opening, the Secretary General of CIGR Prof. Dr. Fedro Zazueta and the President of International Academy of Agricultural and Biosystems Engineering (IAABE) Prof. Dr. Da-Wen Sun announced the Induction Ceremony. Prof. Dr. Fedro Zazueta is the next President of the IAABE

and Prof. Dr. Yoshisuke Kishida, Prof. Dr. El Houssine Bartali, Prof. Dr. Yohei Sato, Prof. Dr. Tadeusz Juliszewski, Prof. Dr. John K. Schueller and Prof. Dr. Lalit Verma were the members of the IAABE.



Nehir Demir and Efe Ertekin, CIGR Masters of Ceremony.

After Opening Ceremony, there were 5 papers in Section I, 5 papers in Section II, 5 papers in Section III, 5 papers in Section IV and 11 papers in Workshop were orally presented, in addition, 8 papers in Section I, 9 papers in Section II, 6 papers in Section III, 5 papers in Section VII and 7 papers in Workshop were presented as poster. In the afternoon, CIGR Technical Boards, Journal and Working Groups Meeting were organised in different meeting rooms.

On 24 April 2018, the presentations started with keynote speakers, Prof. Dr. Istvan Szabo (Hungary) "Agriculture in the Age of Information Technology" and Prof. Dr. Umezurike Linus OPARA (South Africa) "Engineering a new agriculture for the 21st Century to build a sustainable life for children". During the day, there were 8 papers in Section I, 5 papers in Section II, 5 papers in Section III, 5 papers in Section IV, 11 papers in Section V, 16 papers in Section VI and 10 papers in Section VII presented orally. In addition, 5 papers in Section III, 14 papers in Section IV and 9 papers in Section V were presented as poster. Additionally, some

meetings on CIGR Strategic Directions and ASABE Global Initiative were done on the second day of congress. CIGR High Merit Awards were presented by CIGR Secretary General Prof. Dr. Fedro Zazueta, CIGR Presidents Prof. Dr. Tadeusz Juliszewski, Prof. Dr. Remigio Berruto, Prof. Chen Zhi and Prof. Dr. Linus Opara to Prof. Dr. John K. Schueller, Prof. Dr. Elisabeth Quendler, Prof. Dr. Pietro Catania, Prof. Dr. Michael Ngadi, Prof. Dr. Patricia Busato, Prof. Dr. Can Ertekin, Prof. Dr. Amauri Rosenthal, Prof. Dr. Remigio Berruto, Prof. Dr. Seishi Ninomiya and Prof. Dr. Gerrit J. Carsjens. There was a Gala Dinner with Turkish music accompaniment at night.

The keynote speakers Prof. Dr. Mikio Umeda (Japan) "Development of Mechanized and Smart Farming in Asia" and Prof. Dr. Margarita Ruiz Altisent (Spain) "Innovative Technologies in Postharvest" made their oral presentations in the morning session. During the day, 9 papers in Section II, 6 papers in Section III, 7 papers in Section IV, 17 papers in Section VI, 12 papers in Section VII were orally presented. There were also 2 papers in Section II, 1 paper in Section IV, 18 papers in Section VI and 7 papers in Section VII in poster presentations. At the end of all presentations, there was Closing Ceremony. In this ceremony, CIGR General Secretary Prof. Dr. Fedro Zazueta, CIGR

Presidents Prof. Dr. Tadeusz Juliszewski, Prof. Dr. Linus Opara, Prof. Dr. Chen Zhi ve Prof. Dr. Remigio Berruto presented "Plaque of Thanks" to Congress General Co-Chairs Mr. Ozden Gungor (Chair of the Union of The Chambers of Turkish Engineers and Architects, Chamber of Agricultural Engineers), Prof. Dr. Ibrahim Akinci (Akdeniz University), Prof. Dr. Erdem Aykas (Ege University), Organizing Committee Co-Chairs Prof. Dr. Can Ertekin (Akdeniz University) and Prof. Dr. R. Cengiz Akdeniz (Ege University), Scientific Committee Co-Chairs Prof. Dr. R. Cengiz Akdeniz (Ege University) and Prof. Dr. Osman Yaldiz (Akdeniz University). At the end of the Closing Ceremony, the announcements of 5th CIGR Conference in Quebec City, Canada in 2020 and 20th CIGR World Congress in Kyoto, Japan in 2022 were done by the organizers.

In 26th April 2018, early in the morning with the group of about 80 participants, the Technical tour started with the visit of tomato cultivation in soil-free environment (Sural Greenhouse Plants) and seedlings and ornamental plants (Titiz Agrogroupp Plants) in the morning and a visit to Tunektepe region by cable cars with the height of 605 m from sea level with scenery of Antalya city and Antalya Aquarium having the biggest tunnel aquarium of the World.

Winner of the Armand Blanc Prize



Hao Wang receiving the Armand Blanc Prize.

The CIGR Armand Blanc Prize is awarded to the author, under 30 years of age, of the best paper presented at a CIGR Conference or World Congress. The winner of the 2018 Armand Blanc Award was Mr. **Hao Wang** for his work titled "Precise Point Positioning for a Robot Tractor using LEX Signal Transmission from Quasi-Zenith Satellite System". Mr. Wang is a student at the Graduate School of Agriculture in Hokaido University. This year's award included a certificate and US\$1,000.

New iAABE Fellows Induction

The International Academy of Agricultural and Biosystems Engineering recognizes individuals distinguished by their scientific and professional contributions to agricultural and biosystems engineering. As a learned society, the Academy is composed of elected Fellows from all parts of the world. Elected Fellows are agricultural and biosystems engineers, who have made exceptional contributions in research, education and industry for advancing agricultural and biosystems engineering. During the meeting in Antalya Turkey the following 2018 Nominees were inducted into the academy:

Yoshisuke Nakano, Emeritus Professor, Kyushu University, Japan. Highlights of his contributions

include research in water consumption mechanisms under partial wetting and shaded conditions.

John K. Schueller, Professor, Mechanical and Aerospace Engineering, University of Florida USA. Highlights of his contributions include the early research in yield mapping and agricultural robotics.

Prof. Lalit Raj Verma, Professor and Head, University of Arkansas, USA. Highlights of his contribution include leadership of the Global Initiative, past President of ASABE, and research in rice and forage post-harvest engineering.

Transfer of iAABE Presidency

During the XIX CIGR Congress Professor Da-Wen Sun was recognized as the founding president of the International Academy of Agricultural and Biosystems Engineering. The main purpose of the Academy is to: “identify and recognize individuals distinguished by their scientific and professional contributions to agricultural and biosystems engineering. Other purposes of the Academy include fostering international cooperation and exchange of information, promoting agricultural and biosystems engineering and other sciences and technology of importance for this area, and stimulating international education and training in agricultural and biosystems engineering.” In addition, the transfer of the iAABE Presidential Gavel to Prof. Fedro Zazueta was conducted.



Prof. Da-Wen Sun, Founding President of iAABE being recognized for his role in the establishment of iAABE by Prof. Fedro Zazueta, CIGR Secretary General and iAABE incoming President.

CIGR Journal Report



Prof. Yongqiang Cheng
Editor-in-Chief
China Agricultural
University

Submit manuscripts for peer review to
www.CIGRjournal.org (ISSN 1682-1130)

From the beginning of 2017 to May 29th, 2018, the Editorial Office of CIGR Journal has continually been working hard and achieved progresses under the guidance of CIGR Presidium, with strong support of Prof. Fedro Zazueta, the instruction of Prof. Cheng Yongqiang, the Editors-in-Chief of CIGR Journal, the active volunteering work of all the Associate Editors (AE), the enthusiastic support and efforts of the reviewers and the authors. Prof. Cheng Yongqiang undertook the work as the new Editor-in-Chief of CIGR Journal since the early April of 2017 due to retirement of Prof. Zhang Lanfang. Thanks to the solid foundation Prof. Zhang has laid, the new submissions and registered users to CIGR Journal in 2017 continue to grow steadily. The table below shows the statistics of the CIGR Journal from the beginning of 2017 to May 29th, 2018 using Open Journal System (OJS).

As CIGR Journal already set up its goal to enter Thomson Reuters' citation in 2-years' time, improving both the technical level and paper quality has been the primary task of the Editorial Office of CIGR Journal. Authors, reviewers, Associate Editors, Editors-in-Chief and CIGR Presidium members are the keys to ensure upgrading the quality of CIGR Journal. I want to particularly call for the sustained support from the Associate Editors for the publication of CIGR Journal, also welcome recommendation of devoted Associate Editors by all people who are concerned about the development of CIGR

Journal. The total number of Associate Editors of CIGR Journal is 20 at present. They are from 14 countries of the Netherlands, Spain, Egypt, Iran, Turkey, China, the United States, Italy, Portugal, Serbia, Hungary, New Zealand, Greece and Bulgaria.

Note that percentages for peer-reviewed submissions sometimes may not add up to 100% as items resubmitted are either accepted, declined or still in the process of review.

The number of total submitted papers from Jan 1st, 2017 to May 29th, 2018 is 644, 38 submissions per month on average. The average time to complete the review process, editorial process to publish a manuscript is more than 90 days. Among the 644 new submissions, 82 (12.7%) have been peer reviewed and are in editing, among the 91 manuscripts in editing, the other 9 of them were submitted before Jan 1st, 2017. Of newly submitted 644 papers, 154 are in the review process and 49 (31.8%) are with reviewers' comments. Some Associate Editors need to assign the manuscripts to more reviewers in order to speed up the review process since the selected reviewers did not accept the reviewing invitation sent by the Associate Editors. It is also notable that 375 (58.2%) of newly submitted manuscripts were archived by the Editor-in-Chief before assigning to the Associate Editors because of their incompatibility with the author's guideline, not in scope of the CIGR Journal and poor English level. It is the responsibility of Editor-in-Chief to filter unqualified manuscripts, sustain and improve the quality of our Journal. During the 17 months, four normal issues of CIGR Journal, Vol. 19, No. 1 to No.4 with 27, 27, 28, 28 manuscripts separately were published on time. Besides, a special issue for International Conference "Advanced Technologies and their Applications in Agriculture" held in Egypt was also published with 40 manuscripts successfully. Vol. 20, No. 1 will be published at the end of June 2018 with

about 30 manuscripts. Due to transfer of work and unfamiliarity to the journal work, the publication frequency has been affected; the Editorial Office will spare no efforts to get familiar with our work and push forward the publication of CIGR Journal and will continue its endeavor of maintaining the manuscript statistics and prompt communications with all the Associate Editors.

By May 29th, 2018, the total number of registered users in CIGR Journal through OJS reached 11083 with 760 new users compared to the statistics accounted last time on May 31th, 2017. The number of registered readers is 9268 with 572 new compared to the database of May 31th, 2017. Also, owing to the incomplete registration information, particularly without

clearly indicating the review areas of the reviewers, it is hard for the Associate Editors to select proper reviewers according to their expertise. Some reviewers have little interest in reviewing the papers and that prolonged the time of peer-review process. The CIGR Journal warmly welcomes the participation of its members as well as the scientists and engineers engaged in agricultural and biosystems engineering worldwide. We appreciate your journal work and your support. If you have not registered in CIGR Journal, please do so by visiting the [CIGR Journal's Website](#) and registering as an author, reader and reviewer. At this time, there are 353 manuscripts in total, with 91 papers accepted and in editing, the rest are still in process--under review or revision.

2018 Statistics for the CIGR Journal (January 1st, 2017 to May 29th, 2018)

Issues	Published 5 (Vol.19, No.1-No. 4; Special Issue: Agri-food and biomass supply chains)
Items (Research papers)	27 in Vol.19, No.1 and No.2; 28 in Vol.19, No.3 and No.4; 40 in Special Issue
Total new submissions	644
Peer reviewed	154
In review with some review comments	49 (31.8%)
In review without review comments	105 (68.2%)
Papers were held by Associate Editors	90 (14.0%)
Accepted as new submissions, including published and in editing	107 (16.6%)
Declined as new submissions	375 (58.2%)
Total manuscript in handling (including the ones submitted before)	353
Days from submission to complete review	Over 60
Days from submission to publication	Over 90

ASABE Global Initiative: CIOSTA/CIGR Workshop



**Lalit Verma, Claus
Soerensen, Tadeusz
Juliszewski, Remigio
Berruto and Fedro
Zazueta.**

[ASABE's Global Initiative](#) is focused on providing engineering and technological solutions that contribute to a sustainable world with abundant food, water, and energy, and a healthy environment. Specifically, to:

1. Improve food productivity.
2. Reduce food losses and waste.
3. Enhance energy conservation and efficiency.
4. Develop adaptable renewable energy systems.
5. Improve water availability, conservation, and efficient use.
6. Provide clean water for multiple uses.

During the 2017 CIOSTA/CIGR meeting held in Palermo, a session was held to increase awareness and participation of ASABE's Global Initiative amongst the international Agricultural and Biosystems Engineering community. In addition, during the 2018 CIGR World Congress in Antalya Turkey the Presidium resolved to support this important effort.

The challenge brought to the profession by ASABE can be summarized as the use of engineering and technology to improve sustainability of food, energy, and water. These affect people in different ways, with different levels of urgency and have become existential threats to some societies.

Although these issues are complex, touching many domains of human activity, action that brings contemporary agricultural and biosystem engineering to produce positive outcomes is essential to the solution to these multifaceted problems.

Our profession has amassed a substantial body of knowledge and technology that can contribute to the production and delivery of food, water, energy and other resources in a sustainable, effective and efficient way. Yet, serious challenges must be overcome to realize the vision of meeting all of people's needs in harmony with the environment. To identify critical strategic investments the profession needs to transcend its traditional roles and focus on innovation while considering economic, social, legal and bioethical issues. In addition to be effective, members of the profession must participate at the highest level of policy making and leadership.

A European Perspective:

EurAgEng (European Society of Agricultural Engineers) strives to enhance the scientific potential, capability and achievements of the Agricultural & Biological Engineering profession and the associated industries, as well as specifically address European research challenges and agricultural engineering solutions.

Main challenges for European agricultural research, forestry and food research by 2020 include 1) Improving production efficiency and coping with climate change, while ensuring sustainability and resilience, 2) Providing ecosystem services and public goods, 3) Empowering rural areas and supporting policies and rural innovation, 4) Fostering sustainable forestry, 5) Developing a sustainable and competitive agri-food industry, 6) Support development for bio-based products and processes (circular economy).

These challenges are met by a) Produce more with less, b) Embrace smarter farming technologies and sustainable food production systems, where smart farming technologies include high-precision satellite positioning systems and a multitude of sensors which closely monitor and record farm operations, smart

machines help farmers to optimize and increase crop yields while reducing the use of agricultural inputs (such as fertilizer, pesticides or irrigation water), and smart farming technologies will pave the way for autonomous systems (robots, self-awareness, supportive IT systems, etc.).

Key issues in terms of implementation and insufficient adoption involve working in harsh environments, while network connectivity in rural areas can be challenging. There is an urgent need to show/quantify clear benefits of implemented technologies. Example of European initiative to support and accelerate adoption include the project: Internet of Farms 2020, H2020, 30 mil. Euro, 73 partners (research and companies). The project will develop innovative IoT solutions by fostering co-creation in iterative improvement cycles focusing on user acceptability and business models to boost technology and market readiness levels.

Other important issues:

Unique agricultural environments

Agriculture as a human activity is one that has adapted to diverse environmental and cultural conditions throughout the world. However, experience has clearly shown that for engineering solutions to be effective and persistent, they must also be in harmony with the conditions in which the technology is to be applied. A single condition, such as steep slopes, can profoundly change agricultural practice and viable technical solutions. Very often, the success of a solution to a problem in agriculture is overshadowed by issues that appear to be unrelated to the technology. Thus, a clear understanding of the environment in which the technology is to be applied is essential to success.

Competent workforce

Essential to the effective use of engineering solutions is that of a competent workforce. This includes researchers, engineers, related practitioners and farmers. It is important to ensure that education and adoption programs be of high relevance to agriculture, while maintaining high quality. Coupled with an understanding of the “user”, opportunities exist

that need to be exploited using IT and new pedagogies to provide an education that is far reaching and available to numerous populations. The availability of wireless communications in remote areas needs to be better exploited to deliver relevant education to the point of consumption, whether it's a high-end researcher, a practicing engineer or a farmer in a remote area. A challenge for education is to deliver knowledge to improve the quality of life of the farmer that is well supported by engineering practice and good science. Furthermore, this can only be achieved through a participatory educational process that empowers the end user of the science and technology, particularly for extension audiences.

Innovation and entrepreneurship

Agriculture is faced with the constant challenge of solving problems, many of them unintended resulting from the implementation of a technological solution. As science and technology evolve opportunities arise to solve old problems with new solutions. Individuals willing to take the risk of using knowledge and technology in unconventional or new ways should be encouraged and supported. While innovation and entrepreneurship play an important role in improving the outcomes produced by the agricultural community, it is equally important that new solutions do not result in new problems.

Summary:

Issues related to food, energy, and water are at the forefront of satisfying basic needs of humans while ensuring long term sustainability. Engineering science and technology will play an increasingly important role in addressing current and future problems. In this context the agricultural engineering and biosystems profession must be involved at high policy-making levels. In addition, scientific advances must be translated into technology that improves outcomes and solves problems in harmony with the environment. These technologies must also be successfully adopted by the different levels of the workforce stack.

Upcoming CIGR Conferences

ASABE Annual International Meeting



For information please see: <http://www.asabemeetings.org/>



After the successful editions in Germany, Austria and Hungary it is our pleasure to invite you to the **4th BIOGAS SCIENCE conference** which will be held in Torino, Italy, **between the 17th and 19th September 2018.**

The programme will include a wide range of topics: from microbiology to production and utilization of biogas, from digestate post treatment and best use in agriculture to life cycle and life cost assessment. The conference will be

the occasion for networking between industry, research and production sectors.

The Biogas Science 2018 will be organized by the Department of Agricultural Forest and Food Sciences (DISAFA) of the University of Torino and will be held at the Lingotto Conference Center - few metro stations away from Torino downtown.

For information please see: <http://www.biogas-science2018.it/>



MetroAgriFor intends to create an active and stimulating forum where academics, researchers and industry experts in the field of measurement and data processing techniques for Agriculture, Forestry and Food can meet and share new advances and research results. Attention is paid, but not limited to, new technologies for agriculture and forestry environment monitoring, food quality

monitoring, metrology-assisted production in agriculture, forestry and food industries, sensors and associated signal conditioning for agriculture and forestry, calibration methods for electronic test and measurement for environmental and food applications. For more information please see: <http://www.metroagrifor.org/>.



Effective and efficient management of water resources is vital to agricultural productivity worldwide, making water security and food security inexorably linked in sustaining human well being.

Demand for fresh water is expected to outpace availability, threatening food production, public health, biodiversity, and energy generation, as well as foreign policy and international security. Strategies to increase the efficiency of water use and enhance agricultural productivity are in critical need and require a systematic approach that involves actions at all levels, from production techniques to land use management, sustainable intensification, climate smart agriculture, and collaboration among governmental agencies, private industry, and academia.

The American Society of Agricultural and Biological Engineers, in collaboration with the Indian Society of Agricultural Engineers, is proud to present Global Water Security for Agriculture and Natural Resources, to bring together farmers, researchers, practitioners, entrepreneurs, and policy makers on a common platform to discuss current and future water security problems, share research, and discuss creative solutions that can be applicable at various scales in different regions. The conference will specifically focus on water security for producing food, fiber, and energy crops as well as maintaining water quality and quantity needed for ecosystem health and services. For more information see: <https://asabewater.org/>



Call for Papers

12TH CIGR SECTION VI INTERNATIONAL SYMPOSIUM

(Postharvest Technology & Bioprocess Engineering)

Innovation and Technologies for Sustainable Agricultural Production and Food Sufficiency

Monday 22 – Thursday 25 October, 2018

Institute for Tropical Agriculture (IITA), Ibadan, Nigeria

The Symposium Organizing Committee extends to all CIGR members and related professionals an invitation to submit abstracts on any of the

conference sub-themes. For information on paper submissions please visit www.cigrvinigeria2018.org



AFITA/WCCA 2018 Conference

Research Frontiers in Precision Agriculture

October 24 - 26, 2018

Victor Menezes Convention Centre, VMCC, IITB

This joint global conference, organized by Asia-Pacific Federation for Information Technology (AFITA), International Network for Information Technology in Agriculture (INFITA) and Indian Society for Agricultural Information Technology (INSAIT), on 'Research Frontiers in Precision Agriculture' is scheduled from October 24th to 26th, 2018 at Indian Institute of Technology Bombay (IIT Bombay), Mumbai, India. We sincerely invite you to join AFITA/WCCA2018

conference, which aims to be a premier international forum for academicians, researchers, entrepreneurs and executives to present the state of the art of Precision Agriculture.

Please download the [Event Brochure](#) and [visit website](#) for conference details and updates.



XXXVII CIOSTA & CIGR V International Conference

Rhodes, Greece | June 24-26, 2019

CIOSTA, CIGR V and the Institute of Bio-Economy and Agri-Technology (iBO) of the Centre for Research & Technology Hellas (CERTH) would like to invite you at the **XXXVIII CIOSTA & CIGR V International Conference**, to be held in Rodos, **Greece**, in 24-26 June, 2019. The

conference aims at promoting the exchange of knowledge on “Research and Innovation for the Management of Agricultural and Forestry Systems”. For more information please see <http://ciosta2019.com/>



2019

EFITA INTERNATIONAL CONFERENCE

Rhodes, Greece | June 27-29

EUROPEAN FEDERATION FOR INFORMATION TECHNOLOGY IN AGRICULTURE, FOOD AND THE ENVIROMENT

The European Federation for Information Technology in Agriculture, Food and the Enviroment (EFITA) and the Institute of Bio-Economy and Agri-Technology (iBO) of the Centre for Research & Technology Hellas

(CERTH), would like to invite you at the 12th EFITA International Conference, to be held in Rodos, **Greece**, in 27-29 June, 2019. For more information please see <http://efita2019.com/>



The primary goal of this conference is to bring together the elite scientists from all over the world, and to provide a unique forum for exchange on agricultural and biosystems challenges and

opportunities. For information please see <http://www.cigr2020.ca/en/>