



# International Commission of Agricultural and Biosystems Engineering

## Newsletter 117

June 2019

*"...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..."*

**Call for Abstracts**  
**5<sup>TH</sup> CIGR International Conference**  
**June 14-18, 2020**  
**Quebec, Canada**  
**Submit abstract (click here) by Oct 25<sup>th</sup>, 2019**

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Web: [www.CIGR.org](http://www.CIGR.org)

Journal: [www.CIGRjournal.org](http://www.CIGRjournal.org)

Contact us: [secretarygeneral@CIGR.org](mailto:secretarygeneral@CIGR.org)

## Working Groups Coordinator Message



**Prof. Claus Sørensen**  
Workgroups Coordinator  
CIGR

It is an honor for me to take up the role of CIGR Working Groups Coordinator and work to promote, facilitate, and advance CIGR activities through these bodies. I am very happy with this assignment and I am ready to contribute at my best to this task. I have been involved in international organizations like CIGR and EurAgEng for many years, and I have always taken great pleasure and pride in working in these international organizations – it has provided motivation for my research within Agricultural and Biosystems Engineering, great networking and the making of many colleagues and friends.

The world and our profession faces many challenges in terms of improving agricultural productivity and efficiency and at the same time sustain the environment, food security and food quality. The globalization of markets has increased the competitiveness whereas the consumers' needs for healthy, safe and locally produced products highlighting the need for high quality production. According to Food Agriculture Organization (FAO), in the next 20 years world food production must increase by 50%, while 80% of that increase must come from intensification. I see CIGR as a key player in promoting the development and researching of advanced technologies for the future bioproduction. Agricultural and Biosystems Engineering is unique in its pursuit of a sustainable food production through the application of advanced technologies in biological production systems.

The CIGR Working Groups are key parts of the whole CIGR organization and play a pivotal role in the growing of the awareness of the uniqueness of CIGR. A new focus toward developing digital and smart farming systems require a system of systems

approach, where diversified and interconnected biological and technical parameters must be studied and assessed as part of an integrated system. This again requires researchers and other stakeholders to collaborate, and work across disciplines, countries, regions, etc. Here, CIGR working groups are uniquely positioned to take up the role of supporting and encouraging international and inter-regional collaboration for scientific, technical and strategic developments on emerging Agricultural and Biosystems Engineering topics and applications.

CIGR working groups enable the formalization and bringing together of key researchers within specific areas and create a global community around specific challenges and topics. In order for the working groups to be successful, both in terms of organizational setup and scientific achievements, a range of promotional and active measures must be used. This includes increasing group visibility, firmer establishing of links with the 7 CIGR Sections, the sponsoring and co-organization of CIGR Section Symposiums, the organization of national or international workshops in the working groups, the creation of joint publications like peer reviewed articles, publication of CIGR Booklets/Handbook, publication of special issues of the CIGR Journal, or other relevant dissemination activities.

As working group coordinator, I commit to facilitate, to listen and to respond to your needs as members and to work closely with the governance bodies to advance the working groups. This will include actively encouraging members to use the CIGR working groups as intermediate for research collaborations, knowledge exchange preventing redundant research, facilitate cooperation between developed and developing countries, facilitate consortia creation and project funding, etc. Also, invitations to create new working groups and networks for emerging topics will be encouraged and supported. I am sincerely looking forward to the cooperation with the working groups and CIGR as a whole in order to advance our contribution to tackle the challenges of sustainable intensification of global biological production systems.

## An Invitation to Join or Create a CIGR Workgroup.

Interested in establishing a network promoting an emerging science or technology that advances the goals of the Agricultural and Biosystems Engineering profession, creating a network of engineering professionals with common interests, improving education and outreach, or augmenting the impact of the profession, joining an existing working group?

Please contact CIGR Work Group Coordinator Prof. Claus Grøn Sørensen at [WGCoordinator@CIGR.org](mailto:WGCoordinator@CIGR.org)

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## Call for Abstracts: 2020 CIGR International Conference



**Stephane Goodbout**  
Chair, 2020 CIGR  
International Conference

The call for abstracts for the 5th CIGR International Conference is now officially open! Under the theme “Integrating Agriculture and Society through Engineering”, the primary goal of this conference is to bring together elite scientists from all over the world, and to provide a unique forum for exchange

on the challenges and opportunities in agricultural and biosystems engineering.

The conference will take place from June 14th to the 18th 2020 in Québec City, Canada. Québec City offers a blend of culture and history that is unique in North America. Located along the majestic Saint-Lawrence River, Quebec City is the only walled city north of Mexico and the old part of the town is a UNESCO World Heritage treasure.

See the full Call for Abstracts on our website at:

<https://cigr2020.ca/en/papers/call-for-abstracts>.

The submission deadline is October 25<sup>th</sup>, 2019.

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## Announcement of New Senior Editor for the CIGR Journal

Prof. Zhao Fengming succeeds Prof. Yongkang Cheng as Senior Editor of the CIGR Journal: Agricultural Engineering International.

Prof. Zhao received a bachelor's degree in Food Engineering from the Beijing Agricultural Engineering University, followed by a Master of Science degree in Agricultural Product Process Engineering from the China Agricultural University, and a Ph.D. in Mechanical design and theory from CAAMS. She has held engineering and administrative positions. Some of her professional achievements include:

- Technology and product development, engineering design and production line construction of food, agricultural products and related products.
- Presided and participated in and completed more than 30 national research topics, including “ninth five years”, “15”, “11th five-year plan”, “twelfth five-year”, major national projects and international cooperation projects in ministry of science and technology, national natural fund project, science and technology achievement transformation fund projects in the ministry of agriculture, commonwealth science and technology

projects in the ministry of agriculture, national potato industry system projects, etc., made a series of scientific research achievements with independent intellectual property rights

- The potato quick-frozen products, fried potato chips, whole grain powder, snow powder and other products have been industrialized
- Author of more than 80 academic papers, including 3 SCI papers, 10 EI papers, 4 invention patents and 2 utility models

Prof. Zhao received numerous awards, including: Second prize of the national science and technology progress award, two first prizes of the China machinery industry science and technology progress award, and one third prize.

In 2012, she was awarded as "outstanding young science and technology expert" of China National Machinery Group.

*Fedro S Zazueta, CIGR Secretary General*

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## CIGR Journal Editor's Report



**Prof. Zhao Fengming**  
CIGR Journal Editor  
Vice Secretary General  
CSAM

From the May 29th, 2018 to April 30th, 2019, 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. Thanks to the whole experts and editorial team, the new submissions and registered users to CIGR Journal in 2019 continue to grow steadily. The table below shows the statistics of the CIGR Journal from May 29th, 2018 to April 30th, 2019, using Open Journal System (OJS).

As CIGR Journal already set up its goal to enter Thomson Reuters' citation, 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 19 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. Unfortunately, in the past two years, 5 Associate Editors resigned their position, which seriously affect the review process of CIGR Journal. Therefore, I'm writing to request assistance from Presidium to recommend new Associate Editors, especially in Section IV (Postharvest Technology and Process Engineering).

Note: 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 May 29th, 2018 to April 30th, 2019 is 268, 24 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 268 new submissions, 77 (28.7%) have finished peer reviewing and are in editing,

among the 92 manuscripts in editing, the other 15 of them were submitted before May 29th, 2018. Of newly submitted 268 papers, 96 are in the review process and 27 (28.1%) 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 or didn't send back comments timely. It is also notable that 32(11.9%) 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 past 11 months, five normal issues of CIGR Journal, Vol. 20, No. 1 to No.4 and Vol. 21, No.1 with 29, 25, 28, 28, 27 manuscripts separately were published on time. Besides, a Special Issue "Animal Housing in Hot Climate" for the 8th European Conference on Precision Livestock Farming, held in 12-14 September 2017 in Nantes, was also published with 7 manuscripts successfully. We greatly appreciate Associate Editors from Section II (Farm Buildings and Construction) for their contributions and supports of finishing the Special Issue.

By May 29th, 2019, the total number of registered users in CIGR Journal through OJS reached 11898 with 815 new users compared to the statistics accounted last time on May 29th, 2018. The number of registered readers is 9963 with 695 new compared to the database of May 29th, 2018. 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 Journal website of <http://www.cigrjournal.org/index.php/Ejournal/index>, and registering as an author, reader and reviewer.

As of now, there are 387 manuscripts in total, with 92 papers accepted and in editing, the rest are still in process--under review or revision.

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## Plant Factory and Intelligent Greenhouse (PFIG) Working Group Report



**Dr. Hirokazu Fukuda**  
PFIG Chair  
Osaka Prefecture University

The plant factory and intelligent greenhouse have a completely different agricultural production strategy from the traditional arable agriculture. Hence, it is not easy to understand the significance of agricultural production in plant factory and

intelligent greenhouse for researchers with different backgrounds, farmers, consumers, and government. In addition, plant factory and intelligent greenhouse mostly have a strong motivation of commercial success as an industrial activity. Our vision is to establish a global community on plant factory and intelligent greenhouse, in which we will conduct an intensive study and discussion to enhance the unique value of plant factory and intelligent greenhouse through industry-academia-government collaboration and ensure the stable, high quality and high value-added food supply to human being.



## **Mission Statement**

- Improve understanding of the uniqueness of agricultural production including facilities, instrumentations, energy and water use in plant factory and intelligent greenhouse.
- Improve understanding of plant's environmental response under artificial growing conditions, which must be investigated from the point of view of plant physiology and ecology.
- Improve understanding of the importance of mechanization and automation to improve labor productivity in plant factory and intelligent greenhouse.
- Improve understanding of the effectiveness of computing and modeling to find a way to increase productivity in plant factory and intelligent greenhouse.
- Improve understanding of the availability of cutting-edge information technologies, i.e. artificial intelligence and bioinformatics, in plant factory and intelligent greenhouse.

## **Objectives and Aim**

The objective of this working group is to provide an open platform for researchers who are interested in the agricultural production of plant factory and intelligent greenhouse. And this working group aims to promote R&D, communication and education in this field by enhancing information sharing among the researchers, relevant professionals, and consumers and eventually promote the international standing of the CIGR's plant factory and intelligent greenhouse working group in the field. Furthermore, younger generation play an important role in such a new agricultural production in plant factory and intelligent greenhouse, therefore the younger generation initiated researches and communications are strongly encouraged.

## **Work Plan**

The plant factory and intelligent greenhouse (PFIG) working group is responsible for all the activities relating to plant factory and intelligent greenhouse in

CIGR with close relationships with the existing TSs and WGs. The relevant TSs are TS II, TS III and TS VII. The TS II "Structure and Environment" put attention on traditional structure and environment for animal husbandry and cattle housing (our PFIG working group can provide a specific information on plant factory and intelligent greenhouse), the TS III provides technology and equipment for wide-range of plant production (our PFIG working group can promote the plant production under artificially controlled environment), the TS VII covers all the information technology (our PFIG working group intensively deals with application and implementation of information technology to plant factory and intelligent greenhouse). The chairs and the key steering committee members will create and activate a new PFIG working group to accomplish the above mentioned purposes through the following activities:

**Workshops/Seminars:** The events will be held every two years, covering the main trends and new developments in the field worldwide. Internationally prominent experts in the field will be invited as invited speakers. Some sessions might be organized by younger generation researchers. Generally, the events will be held in the form of on-site meetings.

**Website:** The website of PFIG working group will be created on the web server of the research center for high-technology greenhouse plant production in Ehime University (JAPAN) and linked to the main CIGR website. The PFIG working group website consist of R&D trends, technical reports, events, networks, information on trainings and courses, case studies, links to relevant websites.

**Working group activities:** Regular group meeting is conducted by skype and email to discuss the action plan of working group and share the latest information.

Administration support for the development of outreach materials/activities, partnerships and collaborations.

## **Expected Outcomes**

By organizing workshops and seminars on plant factory and intelligent greenhouse, effective collaborative R&D among industry-academia-

government must be accelerated. Furthermore, activity of younger generation researchers in this field would be enhanced.

By publishing special issues in CIGR-Journal on plant factory and intelligent greenhouse, understanding of agricultural production in plant factory and intelligent greenhouse will be improved. By updating the working group website, prompt sharing of up-to-date knowledge in this field is ensured.

Increase in the number of individual member associate with CIGR.

## **Activities**

### **2017 activities**

The 1st International Workshop named as “2017 CIGR World Workshop in Matsuyama, Japan” organized by PFIG-WG was held at Ehime University in Japan (Date: 2nd-4th Sept. 2017). The most important objective of this workshop is to share the current situation on “Innovative but feasible technologies for plant factory and intelligent greenhouse”.

The workshop consisted of an international symposium of “ICT on Plant factory and intelligent greenhouse”, three organized sessions (OS) and one general session (GS).

### **2018 activities**

Publication of the special issue “Current Technologies and Researches on Plant Factory and Intelligent Greenhouse” in Journal of Environmental Control in Biology (Vol. 56(4), 2018) to share the contents of “2017 CIGR World Workshop in Matsuyama, Japan”.

### **2019 activities**

The Workshop organized by PFIG-WG will be held at Toyohashi University of Technology in Japan (Date: June 2019). The most important objective of

this workshop is to share the current situation on “Sensor, IoT and Robotics for plant factory and intelligent greenhouse”.

The 2nd International Workshop organized by PFIG-WG will be held at Wageningen University in Netherlands (Date: Nov. 2019). The most important objective of this workshop is to share the current situation on “Phenotyping technologies for plant factory and intelligent greenhouse”.

Website <http://jsabees.org/CIGR-PFIG/index.html>

## **Members**

Chair: Dr. Hirokazu Fukuda (Osaka Prefecture University, Japan),

E-mail: [fukuda@bioinfo.osakafu-u.ac.jp](mailto:fukuda@bioinfo.osakafu-u.ac.jp),

Vice-chair: Dr. Esteban José Baeza Romero (Wageningen University, The Netherlands)

Website: <https://www.wur.nl/nl/Personen/Esteban-EJ-Esteban-Baeza-Romero-PhD.htm>

Secretary: Dr. Kotaro Takayama (Ehime University, Japan)

E-mail: [takayama.kotaro.mk@ehime-u.ac.jp](mailto:takayama.kotaro.mk@ehime-u.ac.jp)

Vice-secretary: Dr. Noriko Takahashi (Ehime University, Japan)

E-mail: [takahashi.noriko.mm@ehime-u.ac.jp](mailto:takahashi.noriko.mm@ehime-u.ac.jp)

Vice-secretary: Dr. Ryosuke Endo (Osaka Prefecture University, Japan)

Steering Committee Members (in alphabetical order by surname)

Dr. Chun, Changhoo (Seoul National University, Korea)

Prof. Dongxian He (China Agricultural University, China)

Prof. Eldert van Henten (Wageningen University, The Netherlands)

Dr. Jong-seok Park (Chungnam National University, South Korea)

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## ASABE's Biosystems Engineering Digital Library (BEDL)

[Thank you for completing the survey! \(click here\)](#)



**Mary Leigh Wolfe**  
ASABE Fellow  
Virginia Tech  
Blacksburg, Virginia, U.S.A.

Many of you received an email from Darrin Drollinger, ASABE Executive Director, in early April about ASABE supporting development of the open access Biosystems Engineering Digital Library (BEDL). BEDL will include a variety of digital content (e.g. images, data, video) and, most importantly, link that content to metadata describing context and use. The context of BEDL is both educational (a place to find materials for use in

developing and delivering courses) and professional (a place to find examples, data, specifications, etc.) linked to metadata providing geographical context. You were invited to complete a survey to let the BEDL development team know how you might use BEDL and what features would be helpful. We have received 170 responses to the survey. Thank you to all who completed the survey! The BEDL development team is using your responses to inform final design of BEDL. Thank you also to those of you who volunteered to participate in testing BEDL and/or receive BEDL updates. We will be in touch in the coming months.

If you did not complete the survey, we would still be glad to hear from you. Please click [here](#) for more information and to complete the brief survey. If you would like to participate in testing BEDL and/or receive BEDL updates, please send an email to [bedl@asabe.org](mailto:bedl@asabe.org) with your name and contact information.

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## Report from The Russian Academy of Science



**Prof. Maksim Moskovskiy**  
Representative  
Russia Academy of Science

Dear colleagues, thank you for your confidence in choosing me as a representative of the CIGR community in Russia and the base

organization (Federal Scientific Agro-engineering Center VIM ).

Before starting the review of the Russian branch of CIGR, I would like to convey some unpleasant news. The oldest member of CIGR, prof. Oleg Marchenko has died after short illness. This is a great personal loss for us and the global scientific community. Let God bless him!

In accordance with the task and the approved CIGR development plan in Russia, the first steps were to provide information and to involve active Russian scientists in our work. The specificity of



work in our country are huge rural areas, different cultivation crops, different natural climatic zones and various applied technologies.

We have involved different researchers in this work, and we have created regional offices in southern Russia, where more than half of the agriculture products are produced.

In the Don State Technical University on the base of the department «Design and Technical Service of Transport and Technological Systems», the head is a young professor, Ph.D. Andrey Butochenko.



Prof. Oleg Marchenko

*Prof. Marchenko, Oleg to his friends, was an important contributor to Agricultural and Biosystems Engineering worldwide. He will be missed.*

In the Kuban State Agrarian University on the base of the department «Processes and Machines in Agribusiness», the head is young Ph.D. Sergey Belousov.

In Moscow, the oldest university, Russian State Agrarian University named after KA Timiryazev on the base of the department «Engineering and Computer Graphics», the head is young doctor of technical sciences, and corresponding member of the Russian Academy of Sciences, Alexey Dorokhov.

Active representatives of the CIGR Russian department participated with reports and publications in the following conferences:

-XIX CIGR World Congress, 2018, Antalya, Turkey  
- IEEE East-West Design & Test Symposium 2018 (EWDTS 2018), Baku, Azerbaijan.

-VIII International Congress « Low and Superlow Fields and Radiations in Biology and Medicine» 10-14.09.2018, Saint-Petersburg, Russia.

### **In Memoriam of Oleg Marchenko.**

Prof. Marchenko actively participated in CIGR for 25 years. From 1989 to 2002, he was elected as Vice-Chairman of Technical Section III of CIGR, in 2002 he was elected as Chairman of this section, he was awarded the honorary title “CIGR FELLOW”, and in 2006 for many years of work in the governing bodies of CIGR he was awarded Vice-President and Honorary Chairman of Technical Section III of CIGR

In 1998-2000 with the participation of Prof. Marchenko, the Euro-Asian Regional Association CIGR (Russia, Belarus, Ukraine) was established with the aim of exchanging scientific and technical information in these countries, the Baltic countries, Eastern Europe, Central Asia and their integration into the global agro-engineering science.

Oleg Marchenko published 264 scientific works, including 167 scientific articles, books and brochures, 97 copyright certificates and patents of the Russian Federation and the Republic of Belarus.

- Results of research were published in 72 papers from 2018 to 2019.

I am glad to inform you that the Executive Board of the Federal Scientific Agro-engineering Center VIM has provided experimental fields with the technical equipment and the necessary machinery for conducting field experiments.

If you wish to conduct research on new machinery and technology, you are welcome. We are ready to organize your reception and accommodation.

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## X Latin American and the Caribbean Congress of Agricultural Engineering Students (CLEIA)



Cristina Porras Zuñiga  
Secretary  
Latin American and the  
Caribbean Association of  
Agricultural Engineering  
Students (ALEIA)

The Latin American and the Caribbean Association of Agricultural Engineering Students (ALEIA), the Mexican Association of Agricultural Engineering Students and the Chapingo Autonomous University invites to X Latin American and the Caribbean Congress of Agricultural Engineering Students (CLEIA) from November 04 to 08 of 2019.

ALEIA is committed to the Agricultural Engineering Guild to develop high-quality conferences of a technical-scientific nature in which students from throughout Latin America and the Caribbean participate.

The objective of CLEIA is to promote the identity of the professional agricultural engineering

career to present and analyze the various current problems, positioning it as a career of the future.

The main thematic axes of X CLEIA are agro-industry, post-harvest, precision agriculture, biosystems, agricultural sciences, agricultural economics, geomatics, irrigation and rational use of water, mechanics of agricultural automation, natural resources and the environment.

The CLEIA, ensures to be a space for students and professionals to present their research and receive and strengthen knowledge in the area of Agricultural Engineering. The date of receipt of research abstracts is until August 9, 2019.

During X CLEIA, there will be two new countries: Bolivia and Guatemala, along with Mexico, Costa Rica, Colombia, Brazil, Peru, Chile, Paraguay, Argentina and Ecuador will be part of the student delegations that will participate in an unforgettable conference.

If you wish to receive more information, please contact [agricola.aleia@gmail.com](mailto:agricola.aleia@gmail.com), or on the official website of CLEIA 2019: <http://web.chapingo.mx/cleia>

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## Report on The XXXVIII CIOSTA & CIGR V International Conference held in Rhodes, Greece, 24-26 June

The XXXVIII CIOSTA & CIGR V International Conference aiming at promoting the exchange of knowledge on “Research and Innovation for the Management of Agricultural and Forestry Systems” was held in Rhodes, Greece, 24-26 June, 2019. The specific topic of the conference was “Sustainable

Decisions in Bio-Economy” addressing academics, researchers, entrepreneurs, decision and policy makers from public authorities, members and representatives of business associations, undergraduate and postgraduate students in the fields of the conference topics.



*Participants in the CIOSTA and CIGR V Meeting*

The event was promoted by the conference chairmans, Profs. Claus Grøn Sørensen and Dionysis Bochtis, the CIOSTA 2019 President and CIGR – Section V Chair, respectively, and with the support of a number of associations, universities, and scientific organizations that promote research and education in this field, including CIGR, EurAgEng, iBO, Aarhus University, International Hellenic University, and American Farm School, Thessalonik, Greece. A special thank you to the organizing team from iBO/Certh (Institute for Bio-Economy and Agri-Technology, Center for Research and Technology – Hellas (CERTH)) for their excellent work with a smooth planning and execution of the conference.

The number of participants reached 61 from 21 countries and featured a total of 40 presentations including both key-notes, presentations and discussions in plenary, scientific and poster sessions, as well as informal meetings. The conference and presentations focused on how the central themes of CIOSTA (labor, ergonomics, safety and health, system engineering, operations management and traceability, logistics, etc.) can address the core challenges that bio-production is facing today – at the same time maintaining the productivity internally within the production system and at the same comply

with the external demands from consumers, society, etc. in the form of sustainability. We saw at the same time see a continuation of the traditional row of celebrated CIOSTA conferences highlighting the core activities of CIOSTA and CIGR V activities. CIOSTA has always been focused on effective production systems but now we also see intelligent and sustainable production systems coming into focus. CIOSTA is an independent organization but it has always been a very important and integral part of CIGR V activities. And as part of this it also goes to the core of key topics that global agriculture is facing – smart farming, digital farming, sustainability, etc.

Our profession of Biosystems Engineering faces many challenges in terms of improving agricultural productivity and efficiency and at the same time sustains the environment, food security and food quality. The globalization of markets has increased the competitiveness whereas the consumers' needs for healthy, safe and locally produced products highlights the need for high quality, and traceable, production. In the next 20 years, world food production must increase by 50%, while 80% of that increase must come from sustainable intensification. Meeting these challenges requires the implementation of innovative tools and techniques currently being researched. We have to move from managing sub-systems to managing and optimising the complete systems as well as reinventing the “human” in the loop in terms of usability, user-centric approach, ergonomics in the digitized age, etc. And here Section V of CIGR and CIOSTA stand strong with its focus on Systems Management, human machine interaction, ergonomics, etc. The methodologies of CIGR V/CIOSTA remains but adapted to this paradigm shift in agriculture.

The next Cioستا Conference 2021, will be held in Kracow, Poland and its President will be Dr. Karolina Trzyniec from University of Agriculture in Krakow, Institute of Machinery Exploitation, Ergonomics and Production Processes.

*Claus Grøn Sørensen, CIOSTA 2019 President*



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## Excerpt from the Opening Speech by Section VII Chair at the Joint WCCA/HAICTA/EFITA Meeting



CIGR Section VII is a co-sponsor of the International Network for IT in Agriculture's (INFITA's) World Conference on Computers in Agriculture and Natural Resources (WCCA). This year WCCA was held jointly with the European Federation for IT in Agriculture Meeting (EFITA) and the Hellenic Association for ICT in Agriculture (HAICTA) in Rhodes, Greece.

The following are excerpts from the chair of CIGR's Section VII, Prof. Patrizia Busato, address during the opening session of the conference:

“It has been now several decades ago that ICT emerged as an important player in research, education, extension and commercial applications in agriculture and biosystems. Although our community used computers in limited ways since their inception, the development of the personal computer in the 1980's and the commoditization of the Internet in the 1990's led to an explosion of tools.

These developments brought telecommunications, networking and computers together into what we now refer to as ICT.

*Patrizia Busato, CIGR Section VII Chair, address during the opening of the conference*

We have over the past few years witnessed the impact these technologies, from simple spreadsheets to better manage agricultural production, going through many types of applications such as expert systems and simulation, to complex intelligent autonomous machines and controlled environments.

Today we are at a stage in which drivers such as machine and artificial intelligence, big data, social



media and the internet of everything are creating new challenges and opportunities. Consequences of these technological changes and the opportunities they present are sometimes unexpected. We see, for example, the emergence of the new discipline of Analytics and the related Data Science that responds to the changing information landscape.

Although there are many current developments that are applicable to Agriculture and Biosystems we must also look towards the future. There are at least two domains in which technology will be a driver for deep transformation.

First and most important, in education. We are experiencing firsthand how technology is transforming education by making it possible to implement transformative pedagogies such as the active learning and the flipped classroom. In my own research, I have seen how learning improves when using ICT in a well-structured manner when compared to traditional pedagogy. These developments have important implications in a world

driven by constantly changing information and knowledge. There are great contributions to be made on how we use technology to establish a competent workforce through higher education, extension education and lifelong learning.

Second, we are also on the threshold of engineering applications of quantum technology. The potential that quantum biology, computing and quantum sensors have will surely revolutionize the tools that we as agricultural and biosystems

engineers apply in search of a better way of achieving our mission and goals.

In the end, these opportunities that result from advancing information science and technology will allow us to contribute to the production of wholesome food and other biological materials used in medicine, and many industries. More importantly, to contribute to ensure a quality sustainable future for coming generations.”

*Fedro Zazueta, CIGR Secretary General*

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CIGR Conferences

## 5<sup>th</sup> Interregional Conference on Land and Water Challenges. "CHALLENGES OF WATER MOBILIZATION AND SOIL CONSERVATION IN BETTER ADAPTING TO CLIMATE CHANGE"

in conjunction with

2<sup>nd</sup> Conference of the Pan African Society for Agricultural Engineering on

"THE ROLE OF AGRICULTURAL ENGINEERING IN MEETING THE CHALLENGES OF GLOBAL FOOD SECURITY"

Conferences supported by CIGR Section I and PASAE - AfroAgEng

IAV Hassan II Rabat, Morocco: 10 -13 September 2019



ANAFIDE is pleased to invite you to a joint international meeting organized in collaboration with the international Commission of Agricultural Engineering (CIGR) and the Pan African Society for Agricultural Engineering (AfroAgEng) and composed of the two following important conferences: (i) 5<sup>th</sup> Interregional conference on "Challenges of water mobilization and soil conservation in better adapting to climate change" in collaboration with CIGR First Section, and (ii) 2<sup>nd</sup> conference of the Pan African Society for Agricultural Engineering on "The role of Agricultural Engineering in meeting the challenges of global food security. For more information please visit: [www.5interreg-2ndpanafricconf.ma](http://www.5interreg-2ndpanafricconf.ma). Looking forward to welcoming you there!

**Prof El Houssine BARTALI (Conference Chairman)**

### Important Dates

<b>1<sup>st</sup> May 2019</b>	<b>Deadline for abstract submission</b>
<b>31<sup>st</sup> May 2019</b>	<b>Notification of abstracts' acceptance</b>
<b>15<sup>th</sup> July 2019</b>	<b>Deadline for full paper submission</b>
<b>20<sup>th</sup> August 2019 Final Conference Program available</b>	

Abstracts to be sent to : [5inter.2ndpanafric@gmail.com](mailto:5inter.2ndpanafric@gmail.com) or [bartali.h@gmail.com](mailto:bartali.h@gmail.com)

### THEMATIC AREAS

#### 5<sup>th</sup> Interregional Conference

**Water Mobilization:** Geospatial technologies as tools for decision support; Techniques for implementation, management and maintenance of conventional and unconventional water mobilization infrastructures; Mechanisms for financing water mobilization infrastructures; Impacts of climate change on water resources and hydraulic structures; Risk analysis models related to climate change: flood, flood, drought, erosion and related topics.

**Soil Conservation:** Conservation agriculture in rainwater harvesting; Soil conservation constraints in irrigation; Conservation techniques in forestry; Techniques for improving pastoral routes; Tools for planning, managing and monitoring soil quality

**Cross-cutting Themes:** Impact of climate change on the conservation of water and soils; Development of adaptation approaches to climate change; Design of rural infrastructures, hydraulic structures, watershed management, agricultural planning; Improving the effectiveness of water and soil; monitoring systems, warning and response to extreme events; Public-private partnership for hydro-agricultural development projects and water resources management; Governance, regulation and community and transboundary management of water resources.

#### 2<sup>nd</sup> AfroAgEng Conference

Challenges of population growth and growing demands, water shortages and climate change; Development of irrigation as a sustainable approach to increase food production; Increasing productivity reducing environmental impacts; Maintaining food safety and quality assurance; Building environmentally aware watershed models; Considering the balance of food, water, and energy usage in developing countries seeking to adapt to climate change; Provide infrastructure, logistics and institutions needed to reduce post-harvest losses; Applications of precision agriculture in rural communities; Engineering controlled environments for agriculture production for a sustainable future.

#### IAV Hassan II - RABAT : Venue of the Conference

The conference will be held in the capital city of Rabat characterized by a mild climate and where participants can visit historical places such as 12<sup>th</sup> Century old Hassan Tour, and old city shopping streets. The meeting place is Hassan II Institute of Agronomy and Veterinary Medicine (IAV). This is one of the outstanding academic and research institutions in Africa having very broad cooperation links with several universities in Africa, Europe, North America and Asia. It is easily accessible by TRAM line from the hotels of Rabat.

**Conference address: ANAFIDE, 2 rue Haroun Errachid Agdal  
Rabat 10090 Morocco Tel: +212661152805 or +212661094175**



## International MID-TERM AIIA Conference 2019

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The International [MID-TERM AIIA Conference 2019](#)  
will be held in Matera (Italy), September 12-13, 2019  
at "[University of Basilicata - Matera Campus](#)"



The aim of the Conference is to stimulate contributions related to the engineering technological applications to the agriculture, forestry, and agro-food sectors.

Researchers involved in activities related to Biosystems and Agricultural Engineering, as well as Agricultural, Forestry and Food Engineers, farm and food company managers are warmly invited to attend the Conference.

### [Conference Topics](#)

The Conference will deal with the following major topic:

### **Innovative biosystems engineering for sustainable agriculture, forestry and food production**

The specific subjects will include (but not will be limited to)

- Agricultural hydraulics
- Water resources management in agriculture and forestry ecosystem
- Design and management of Farm and District-Scale Irrigation Systems
- Remote Sensing in agricultural and forestry systems
- Monitoring and modelling of the interactions among soil hydrological, plant and atmosphere processes, and agricultural management practices
- Soil and contaminant hydrology
- Forestry hydraulics and hydraulics protection of agricultural and forestry systems
- Bioengineering Techniques for soil protection and slope stabilization
- Rural buildings, facilities and territory
- Spatial and landscape analysis
- Planning and design of rural areas
- Mechanization and technologies for agricultural production
- Agricultural electrification and energy usage
- Ergonomics and work organization
- Computer and communication technologies
- Machines and facilities for agricultural products and food processing

The [Conference Final Programme](#) has been completely scheduled and the preliminary [Conference Book of Abstracts](#) is also available.

X International Scientific Agriculture Symposium "Agrosym 2019" 3-6 October 2019, Jahorina (Bosnia and Herzegovina)



**X International Agriculture Symposium "AGROSYM 2019"**

**CIHEAM** Bari is one of the three organisers of AGROSYM's 10th edition jointly with the University of East Sarajevo - Faculty of Agriculture, and the University of Belgrade - Faculty of Agriculture, in collaboration with **32 International Institutions** (Universities and Research Centres) from 19 countries.

**AGROSYM** is nowadays considered the most important scientific event in the field of agriculture and rural development in the Balkan area. It is also increasingly becoming a scientific platform for exchange of knowledge and good practices related to agriculture, food, rural development, environment and forestry in the Mediterranean area.

**AGROSYM 2019** will cover the following thematic areas: (1) *Plant production*; (2) *Plant protection and food safety*; (3) *Organic agriculture*; (4) *Environmental protection and natural resources management*; (5) *Animal husbandry*; (6) *Rural development and agro-economy*; (7) *and Forestry and agro-forestry*.

Parallel to AGROSYM 2019 working sessions, some thematic side events will focus on *Coastal areas management*; *Climate change mitigation*; *Aliens pests*; *Youth and innovation in the agri-food sector*; *Gender mainstreaming and research...*etc.

The Symposium's **10th edition** will take place in the magnificent Termag Hotel, located in Jahorina mountain, near Sarajevo.

In 2018, during the four days of AGROSYM's 9th edition (4-7 October 2018), we welcomed over **1200 participants** from over **85 countries** to the event. Moreover, **1300 papers** were

presented, and we were proud and honoured to achieve such a broad participation.

**Please note:** Registration deadline for abstract submission is **May 10th, 2019** through this online address.

[Read here for detailed information about the Symposium.](#)

The Scientific Committee of AGROSYM 2019 will grant the Excellent Paper Award for oral presentations and the Excellent Poster Award for poster presentations. Certificates and gifts will be delivered.

Please share this call with your network and colleagues who may be interested by forwarding [this announcement](#).

Looking forward to meeting you in Jahorina (Bosnia and Herzegovina) in October 2019 we send our best regards.

**The Organizers:**

For any additional information, please feel free to contact:

**Dr. Sinisa Berjan**, Symposium Secretary  
General, [agrosym2019@gmail.com](mailto:agrosym2019@gmail.com)

**University of East Sarajevo-Faculty of Agriculture**  
and

**Dr. Nouredin Driouech**, Coordinator of CIHEAM Bari Alumni Network (FTN), [infoftn@iamb.it](mailto:infoftn@iamb.it) **CIHEAM-Mediterranean Agronomic Institute of Bari**

- Download [Symposium 1<sup>st</sup> announcement](#)

- Visit our website: <http://www.agrosym.rs.ba/>

- Follow us on

Facebook: <https://www.facebook.com/AgrosymSymposium>



# 2019 IEEE INTERNATIONAL WORKSHOP ON METROLOGY FOR AGRICULTURE AND FORESTRY



 24-26 OCTOBER 2019

 **PORTICI – ITALY**  
University of Naples Federico II  
Department of Agricultural Sciences

## CALL *for* PAPERS



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.



### WORKSHOP TOPICS

Sensor networking and integration  
Approaches and tools for measuring Food Quality  
Soil analysis, mapping and monitoring  
Crop analysis, mapping and monitoring  
Precision agriculture, forestry and livestock farming  
Measurements for agriculture, forestry and environment  
Agroclimatic measurements

Accepted papers will be published in the proceedings of the Workshop and the proceedings will be submitted for indexing in the **IEEE Xplore Digital Library**.

IEEE content is indexed by Google and has agreements in place with other publishers and services to include IEEE papers in their online and print indexes.

### SPECIAL SESSIONS

Special sessions have the main aim of creating a mini-workshop on a specific topic, where researchers working on the same argument can make knowledge, familiarize, exchange ideas, create cooperation. Special Sessions are being developed by designated chairs.

Please find more information at the following URL:

[www.metroagrifor.org/special-sessions](http://www.metroagrifor.org/special-sessions)

### ORGANIZERS

#### ONORARY CHAIR

Enrico Primo Tomasini, *Polytechnic University of Marche, Italy*

#### GENERAL CHAIRS

Leopoldo Angrisani, *University of Naples Federico II, Italy*

Pasquale Daponte, *University of Sannio, Italy*

Matteo Lorito, *University of Naples Federico II, Italy*

### IMPORTANT DATES

**Extended Abstract Submission**

May 20, 2019

**Notification of Acceptance**

July 20, 2019

**Final Paper Submission**

September 1, 2019

### MORE INFORMATION



[www.metroagrifor.org](http://www.metroagrifor.org)



[info@metroagrifor.org](mailto:info@metroagrifor.org)







## Call for Abstracts

Submit abstract ([click here](#)) by Oct 25<sup>th</sup>, 2019

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/>



## The XX CIGR World Congress 2022

**HOME** COMMITTEES ORGANIZATION REGISTRATION & ACCOMMODATION GENERAL INFORMATION

***Sustainable Agricultural Production  
– Water, Land, Energy and Food –***

**December 5(Mon)–9(Fri), 2022**

Venue: **Kyoto International Conference Center, Japan**

The theme of this CIGR World Congress "Sustainable Agricultural Production - Water, Land, Energy and Food" will underpin the need for collaboration and cooperation of individuals from a wide range of professional backgrounds. This congress will provide an excellent international

platform for academicians, researchers, engineers, industrial participants, and students from around the world to share their research findings with global experts in all areas related to agricultural engineering. For information please see <http://CIGR2022.org>.