



# International Commission of Agricultural and Biosystems Engineering

## Newsletter 123

December 2020

*"...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..."*



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### Contents

Message from the Outgoing CIGR President .....	2
2020 CIGR AWARDS .....	3
Preserving Knowledge: A digital repository for biosystems engineering .....	4
New EU-funded project to make agriculture fossil free .....	6
<i>In Memoriam</i> : Prof. Hiroshi Shimizu .....	7
Prof. Kajita Takaaki Appointed President of the Science Council of Japan .....	8
Climate Change and Food System Global Emissions .....	8
25th Agricultural Equipment Technology Conference: February 8-10, 2021 .....	9
CIGR Opens Account in Twitter .....	9
6th Student Intelligent Agric. Equipment International Innovation Competition .....	10
Join the CIGR Working Group on Rural Landscape Protection and Valorization .....	15
<b>Reminder</b> CIGR 5th International Conference Submission Deadline .....	16
Upcoming CIGR Conferences .....	16
5th CIGR International Conference, 10-14 May 2021. Quebec, Canada. ....	16
ASABE Global Sustainable Energy for Sustainable Future. 17-20 May 2021. San Jose, Costa Rica. ....	17
European Federation of IT in Agriculture Web Conference, 25-26 May. ....	17
XXXIX CIOSTA & CIGR V International Conference. 20-21 June 2021. Krakow, Poland. ....	18
PASAE-NIAE 2021, Date TBA. Abuja, Nigeria. ....	19
EurAgEng Conference. 4-8 July 2021. Evora, Portugal. ....	20
XI Latin American and Caribbean Congress of Ag. Eng. Students. 26-30 July 2021. San Jose, Costa Rica. ....	21
Safety, Health and Welfare in Agriculture - CIGR V Conference Sept. 15-18, 2021, in Ragusa, Sicily. ....	22
International Exposition of Machinery for Agriculture and Gardening, 19-23 October 2021, Bologna, Italy. ....	23
Sustainable Energy for Sustainable Future. 16-19 May 2022. San Jose, Costa Rica. ....	23
XX CIGR World Congress. 5-9 December 2022. Kyoto, Japan. ....	24

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## Message from the Outgoing CIGR President



**Prof. Chen Zhi**  
President CIGR  
Chinese Society for  
Agricultural Machinery

I was recommended as the Chinese candidate for CIGR President by the Chinese Society for Agricultural Machinery (CSAM) and the Chinese Society of Agricultural Engineering (CSAE) on November 2017 and was formally elected as the CIGR President in 2018. As soon as I was appointed as the CIGR President I headed a Chinese delegation of 40 people to attend the XIX World Congress of CIGR in Antalya of Turkey in April 2018. During the past three years, as a member of the CIGR presidium, I cherished the opportunity to communicate with the CIGR Presidium, the executive board members, and member organizations. I thoroughly enjoyed the opportunity to serve CIGR and its members. I participated in all the important activities and fulfilled my duties as the President. Some highlights of my work as President follow, I:

1. Participated in discussions and decisions of issues important to CIGR, including strategy formulation, CIGR Secretariat Office handover, changes to CIGR Governance membership, representation, and other duties.
2. Extended CIGR's influence in China. I invited members of CIGR Presidium to come to China on March, 2018 and October 2019 to attend academic meetings and visit universities, research institutions, and important companies in China.
3. Contributed and assisted in coordinating CIGR's activities in support of students from different countries to participate in the Student International Robotics Competition organized in China.
4. Aligned the management relationship of the CIGR Journal, and transfer of the editorial department from China Agricultural University to CSAM, under the joint leadership of Secretary General of CSAM and myself. The chief editor was appointed, a special editorial team was set up, and financial support is provided for the publication of CIGR Journal. The quality of the journal has been greatly improved.
5. Participated in the draft of CIGR Handbook (Vol. VII) as an editor. With the support of Professor Zhu, a Chinese expert in silk engineering, from Zhejiang Sci-Tech University, the silk chapter in the seventh volume of the CIGR Handbook has been preliminarily completed.

In today's world, the resources we rely on for survival are decreasing and the environment is deteriorating. Food shortages, poverty and backwardness still exist in many countries. As the only multidisciplinary and transnational organization of scientists and engineers in the field of agricultural and biosystems systems engineering in the world, CIGR has played an important role in dealing with these problems. We transfer knowledge and information through academic exchange, technical training, cooperation and collaboration in projects, publications, conferences, and other important ways. This knowledge and information covers all elements of agricultural production and plays a positive role in promoting modern agriculture development worldwide.

Finally, I would like to thank Prof. Tadeusz Juliszewski of Poland, Prof. Umezurike Linus Opara of South Africa, Prof. Remigio Berruto of Italy and Prof. Claus Grøn Sørensen of Denmark for their help. I would like to thank Professor Fedro S. Zazueta. He is a qualified secretary general, who has undertaken most of the daily work of CIGR and helped me to familiarize myself with CIGR's workflow and work focus. I benefited from his help to a great extent in the success of CIGR performance. Thanks to all the colleagues in CIGR. Let us work together to make a better tomorrow for CIGR and the people we serve.

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## 2020 CIGR AWARDS

The International Commission of Agricultural and Biosystems Engineering (CIGR) during the World Congresses and Conferences awards several prizes seeking the recognition of exceptional and meritorious achievement of its affiliated professionals and officers.

### CIGR Honorary Award

The purpose of this Award is to recognize CIGR past officers who made remarkable contributions during their mandate. The following titles may be granted: Honorary President (past presidium members) Honorary Vice President (past technical section chairs), or Honorary Member (past technical section members). The award is given to persons who made extraordinary contributions to the worldwide activity of CIGR. Candidates are presented by the CIGR Presidium.

This year, the Honorary CIGR Vice-president awardee is:

#### **Prof Álvaro Ramírez-Gómez**



Prof. Ramírez-Gómez is being recognized for his leadership of and sustained actions to improve CIGR Technical Section II outcomes. During his tenure as chair, he worked with other board members to promote the goals of the section and the mission of CIGR. He serves as an Associate Editor for Section 2 of the CIGR journal and he led the publication of a special issue about Animal housing in hot climate in the CIGR Journal. Prof. Ramírez-Gómez served as chair of Section 2 starting in 2010.

### CIGR Award of Merit

The purpose of the Award of Merit is to recognize individuals who made remarkable contributions that resulted in outcomes that support the CIGR mission. The award is given to persons who have contributed to various positions and/or roles towards CIGR's success. Candidates are nominated by the Technical Section Boards and the Presidium. 2020 recipients are of the CIGR Award of merit are:

#### **Lisa Armstrong**



Prof. Armstrong is being recognized for her sustained efforts in promoting the use of Information Technology in Agriculture. She is Past President of the Asian Federation of ICT in Agriculture (AFITA), President of the Australia Society of Information and Communication Technologies in Agriculture (ASICTA). She conducted research, education, and outreach activities on the use of IT in agriculture. She serves as a member of CIGR Technical Section 7: Information Technology.

#### **Prof. Dr. Heinz Bernhardt**



Prof. Bernhardt is being recognized for his work in the field of agricultural logistics. His work focuses on agricultural machinery and transportation operation performance. He has served as keynote speaker in many conferences related to agricultural engineering equipment and precision farming. He participate the organization of many CIOSTA-CIGR V Conferences. He serves as a member of CIGR Technical Section V: System Management.

#### **Prof. Michael Oladimeji Faborode**



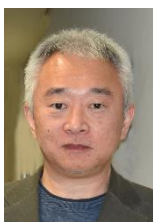
Prof. Faborode contributed to organizing the first CIGR event ever held in Nigeria in September 1988. He was actively involved in the CIGR Technical Section V held in collaboration with Pan Africa Society for Agricultural Engineering (PASAE) in Morocco in September 2019. He provided the necessary guidance and advice for the organization of the CIGR VI conference held in IITA, Ibadan between October 21 and 24, 2018.

### **Prof. Ilda de Fatima Ferreira Tinoco**



Prof. Ilda Tinoco is being recognized for her contributions to the field of sustainable animal building design. She was instrumental in establishing an international network of institutions to enable research collaboration in farm building design. The network extended institutions in Brazil, USA, Colombia, and the EU. She serves as a member of CIGR Technical Section 2: Structures and Environment.

### **Yukiharu Ogawa**



Dr. Yukiharu Ogawa is being recognized for his contributions in to the agricultural and food process engineering. Dr. Ogawa has a sustained list of academic contributions in the field. He organized the 2019 international joint conference of the Japanese Society of Agricultural Machinery and Food

Engineers the Society for Agricultural Structures, Japan, CIGR VI Technical Symposium, CIGR Food Safety Working Group, and CIGR Functional/Wellness Foods & Nutrition Working Group. He as a member of Section 6 Technical Section: Bioprocesses.

### **Dr. Amauri Rosenthal**



Dr. Amauri Rosenthal is being recognized for his contributions in the high pressure and thermal processes focusing on food safety and quality area, and a sustained record of leadership in CIGR. He organized the 10<sup>th</sup> Section VI Symposium jointly with the XXV Brazilian Congress of Food Science and Technology. He serves as the Brazilian Ambassador to the Global Harmonization Initiative. He is active in national and international societies. He serves as a member of CIGR Technical Section 6: Bioprocesses.

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## Preserving Knowledge: A digital repository for biosystems engineering



### **Prof. em. Hermann Auernhammer**

Technical University of Munich  
TUM Emeritus of Excellence,  
CIGR Fellow, IAABE  
Founding Member



Precision Farming, Digital Farming, Smart Farming, and Farming 4.0: These are all terms for the data-driven agriculture of tomorrow, from field to fork. They all convey "the new" and the "unprecedented", combined with the hope that it will solve many of today's and tomorrow's land management problems.

From a research perspective, this is good and righteous, because research constantly needs new challenges to further develop and improve existing systems and to ultimately make land management more sustainable, that is: more economic, socially responsible, and environmentally friendly. Also, to shape the culture around these systems in such a way



that, the environment and its changing society is preserved and remains worth living in for current and future generations.

But as new problems emerge: Are the necessary knowledge and skills to solve them new? Are they so completely different from everything that has been learned in the past? Honestly and without reservation this question is to be answered with a "clear no". For example, if sees "Side-specific Land Management (<https://mediatum.ub.tum.de/710617>)", data and information are at the center of attention, surrounded by information generated from many data sources, including sensors and the control data from actuators in field cultivation technology.

... (a collection of ) ...50,000 images and more than 2,500 documents...are available to everyone ...

There is no doubt that the system networking has become easier and more reliable. It is a fact that vehicle steering systems have made extensive automation up to autonomous units possible. That data processing technology has advanced enormously. In addition, the beneficial uses of data mining in big data and of artificial intelligence are undisputed.

But with all this progress, we will still need the knowledge of yesterday. Drive systems will also be needed tomorrow. The tools used in soil processing will largely be the same. The metering and distribution technology for sowing, fertilizing and crop protection will also be used in its existing form for the envisioned future. The same applies to harvesting technology for a wide variety of crops. However, because much of the related knowledge is predominantly available in analogous form for the digital world of tomorrow the digitizing the cumulative body of knowledge is indispensable.

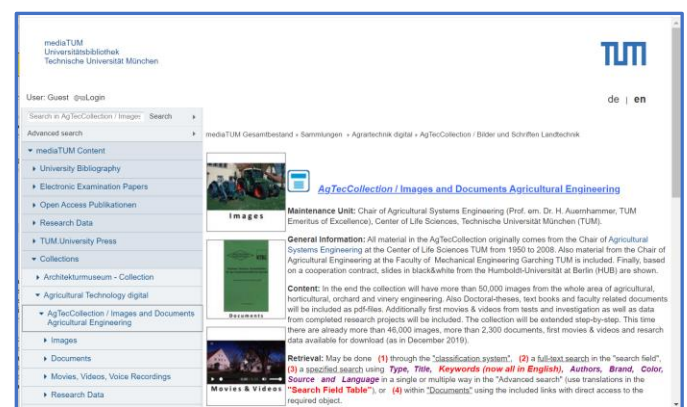
Starting with the digitization of important publications, such as the CIGR-Handbooks, the published background information must be digitally recorded. Images must be described, including

multilingual implementations of technical solutions and the use of these techniques. Technical drawings in the form of overviews, schematic representations, diagrams, and maps that illustrate methods and interrelationships must also be digitized. Moving images in the form of films or videos provide deeper insights into process sequences. Finally, dissertations and research reports reveal methodical procedures and the data thus obtained, which in turn, as research data, allow new conclusions, extended comparisons, and the derivation of deeper dependencies for the knowledge and application of tomorrow.

Approaches to this hitherto little-noticed form of digitization can be found in many places around the world. As "AgTecCollection in mediaTUM (<https://mediatum.ub.tum.de/11274>)" with almost 50,000 images and more than 2,500 documents, a comprehensive contribution to agricultural technology in Central Europe is available to everyone. It is to be hoped that this could become a building block for a worldwide system and that the publications in the CIGR Handbooks would find the necessary digital underpinning.

For more details go to:

[https://cigr.org/sites/default/files/other\\_doc/Digitalized Agricultural Technology AgTecCollection mediaTUM 0.pdf](https://cigr.org/sites/default/files/other_doc/Digitalized Agricultural Technology AgTecCollection mediaTUM 0.pdf)



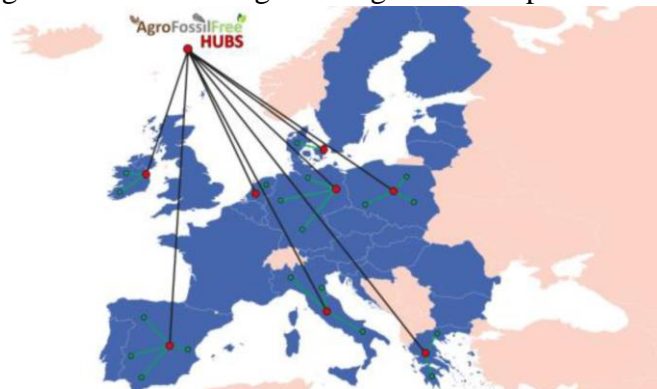
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## New EU-funded project to make agriculture fossil free



**Prof. Claus Grøn Sørensen**  
CIGR Working Groups Coordinator

There are many of green, modern agricultural technologies, but they are used far too little. Several European innovation hubs will now find out how technologies can be promoted and adapted to the users. There is no shortage of sustainable technological possibilities and strategies for energy in the agricultural sector. Over the past many years, a multitude of green technologies have been developed to facilitate a green transformation of the sector. However, these technologies and strategies have not yet really been put into widespread use. Agriculture all over the world still primarily relies on fossil resources for energy and production. For this reason, the EU framework program for research and innovation, Horizon 2020, has now granted a project to coordinate efforts to promote existing green agricultural technologies and get them implemented



**CERTH**  
CENTRE FOR RESEARCH & TECHNOLOGY HELLAS

more widely, as well as to indicate paths for further future research and development. The project is called AgroFossilFree and involves strategies and

technologies to achieve a European Fossil-energy-free agriculture. It consists of several European companies and knowledge institutions, including Professor Claus Grøn Sørensen from AU Engineering, Aarhus University. "We can see a relatively large gap between newly developed technologies and strategies and the actual use of these sustainable technologies in the agricultural sector all over Europe. In this project, we will try to find out about the problems in implementing the technologies, about the barriers, limitations and opportunities, and about how the technologies interact and whether there's something missing," says Claus Grøn Sørensen. Aarhus University is heading the work to identify stakeholders and bring them together to elaborate on the possibilities and limitations of the new technologies. The work will culminate in guidelines that describe any deficiencies in how new technologies are nurtured, as well as policies for policy makers (EU, national, regional) that can ultimately help implement future projects to really boost the use of technologies – particularly for the large number of small and medium-sized European producers with limited access to information. AgroFossilFree is being coordinated by the Centre for Research and Technology (CERTH) and gathers a total of 15 partners from nine countries. The consortium includes researchers, agricultural organizations, industrial partners, and service providers, grouped into eight innovation hubs. The project will run for three years.

For more information, follow us on [Twitter](#), [Facebook](#) and [LinkedIn](#)

AgroFossilFree coordinator: Thanos Balafoutis  
([a.balafoutis@certh.gr](mailto:a.balafoutis@certh.gr))

([Click for Press Release](#))

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## *In Memoriam: Prof. Hiroshi Shimizu*



**Prof. Hiroshi Shimizu**  
(1960-2020)  
Kyoto University, Japan

Prof. Hiroshi Shimizu was a professor at Kyoto University, Japan, and a CIGR member. He worked in the Laboratory of Agricultural System Engineering, Division of Environmental Science and Engineering, Graduate School of Agriculture of Kyoto University. Prof. Shimizu died in March 2020.

Prof. Shimizu is well known for his contributions to both industry and academia in environmental control technology for greenhouse and plant factory systems. He was an active contributor to the International Commission of Agricultural Engineering (CIGR) and the International Federation of Automatic Control (IFAC), where he committed his time and effort to technical committees and the organization of international events that benefited the Agricultural and Biosystems community, and agriculture.

He obtained degrees in agricultural engineering at the University of Kyoto, where he

graduated with a Ph.D. in Agricultural Science in 1995. Early in his career he worked as an engineer for Nippon Denso Co., Ltd. (Currently Denso Co., Ltd.). He joined the faculty at the University of Mie, later the University of Ibaraki, and finally the University of Kyoto, where he achieved the rank of full professor in the Graduate School of Agriculture in 2009.

During his career he made significant contributions to the literature and improving knowledge in his field of expertise. He received important recognitions for his work and contributions to the profession, amongst them:

1. Junior Academic Award of Japanese Society of Plant Factory, 1996.
2. Best Paper Award of Japanese Society of Plant Factory, 2003.
3. President Academic Award of Japanese Society of Plant Factory, 2004.
4. Academic Award of Japanese Society of Plant Factory, 2006.
5. IFAC Outstanding Contribution Award, 2006.
- 6.

In his personal time Prof. Shimizu liked mountain climbing and playing various sports.

Prof. Shimizu will be missed by colleagues and friends.

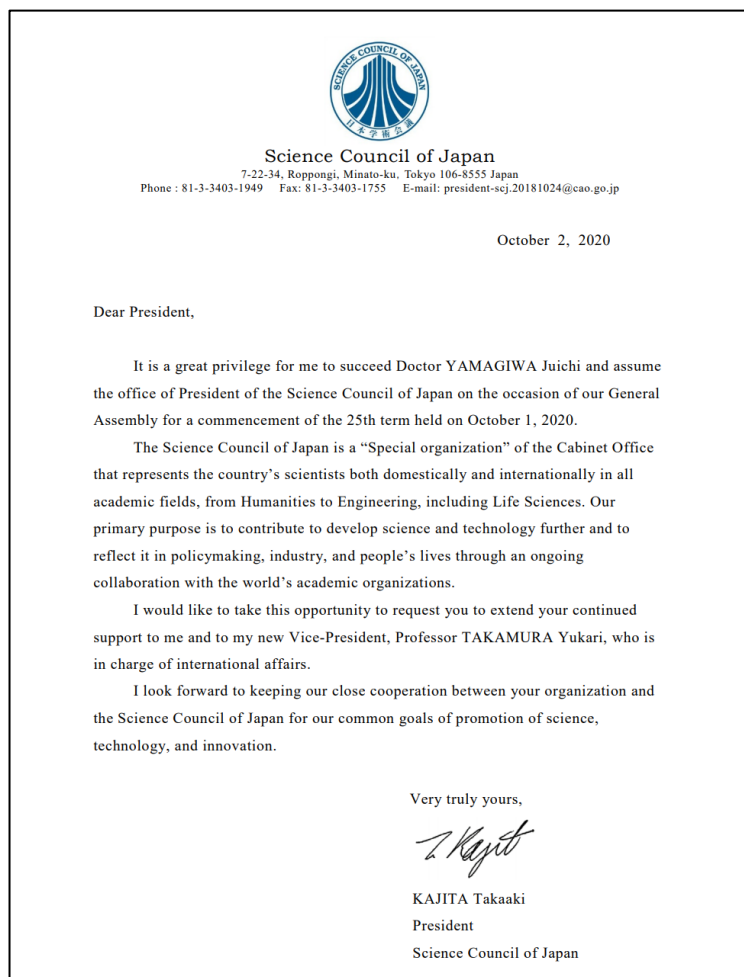
Prof. Shimizu died in the service of CIGR. He is being conferred a Posthumous Meritorious Service Award.

## Prof. Kajita Takaaki Appointed President of the Science Council of Japan

Professor Kajita Takaaki has been appointed as the new President of Science Council of Japan for the 25th term until 2023. He succeeds of Doctor Yamagiwa Juichi who was President of the Science Council of Japan for the 24th term from 2017 until 2020.

The Science Council of Japan is a strong supporter of CIGR. The CIGR presidium wishes to extend its congratulations to President Takaaki and is looking forward to continuing working with biosystems and agricultural scientists, and related professionals and industry in Japan.

At the same the CIGR Presidium wishes to thank Past President Yamagiwa Juichi for his continued support during his tenure.



## Climate Change and Food System Global Emissions



**Prof. Tomas Norton**  
Chair Technical Section 2:  
Structures and Environment

In a recent article published in Science magazine, Clark et. al. raise the issue that Global emissions of current food production systems could preclude achieving goals of the Paris Agreement, even with immediate action being undertaken, due to the current trends in food production.

“The Paris Agreement’s goal of limiting the increase in global temperature to 1.5° or 2°C above preindustrial levels requires rapid reductions in greenhouse gas emissions. Although reducing emissions from fossil fuels is essential for meeting this goal, other sources of emissions may also preclude its attainment. We show that even if fossil fuel emissions were immediately halted, current trends in global food systems would prevent the achievement of the 1.5°C target and, by the end of the century, threaten the achievement of the 2°C target. Meeting the 1.5°C target requires rapid and ambitious changes to food systems as well as to all nonfood sectors. The 2°C target could be achieved with less-ambitious changes to food systems, but



only if fossil fuel and other nonfood emissions are eliminated soon.”

Key recommendations include: Increase yield through better agroecological practices and region-specific Precision Agriculture; Reduce food

waste: by improving refrigeration and infrastructure; Changes to the food system needed to reduce GHG. The Complete article can be found at [Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets | Science \(sciencemag.org\)](https://www.sciencemag.org/doi/10.1126/science.1257578).

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## 25th Agricultural Equipment Technology Conference: February 8-10, 2021



*Come celebrate with us!*  
**25th Agricultural Equipment Technology Conference**  
*February 8-10, 2021*

Join us this coming February for our long-standing annual conference that continues to grow. If you have never had the pleasure of attending AETC, this is your opportunity to understand what makes this event so popular. We will be hosting the event virtually, no travel required!

Attending AETC, you can expect:

- Detailed technical sessions Monday, Tuesday, and Wednesday
- Distinguished Lecture Series
- Continuing Professional Development courses
- Socials and networking options
- The winners of the AE50 Awards will be announced and recognized
- AE50 Awards winner presentations Committee meetings Monday - Friday
- Student Poster Competition, more details will be announced soon
- All technical sessions qualify for Professional Development Hours

All of the details can be found at [asabe.org/AETC2021](https://asabe.org/AETC2021). For the first 100 people that register before January 11, a special commemorative gift will be sent, free! This gift is extended to full registrations that are paid, not sponsored, continental US addresses only.

[Register Now!](https://asabe.org/AETC2021)

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## CIGR Opens Account in Twitter



CIGR has opened a social media account.

You are welcome to follow at: <https://twitter.com/CIGR1930>.

This account will be used by members of CIGR to bring to the attention of other members current topics of interest in agricultural and biosystems engineering. Also, this account will be used to inform the membership on happenings related to CIGR.

## 6th Student Intelligent Agric. Equipment International Innovation Competition

Hosted by [Shandong University of Technology \(SUT\)](#) the event took place the 19<sup>th</sup> and 20<sup>th</sup> of December of this year. Under the theme of “*Intelligent Agricultural Equipment Prepares for a Promising Future*”, the purpose of the competition is to create a platform for students to acquire skills and experience, with the intent to cultivate talent that excels in “professional knowledge, practical skills, and superior innovation and entrepreneurship capabilities” related to modern agricultural equipment innovation and entrepreneurship. This platform is the result of collaboration amongst universities, colleges, enterprises, and industry.



Opening Ceremony

With the support of China Agricultural Machinery Distribution Association (CAMDA), Sponsors and organizers included: The International Commission of Agricultural and Biosystems Engineering (CIGR), the Chinese Society of Agricultural Machinery (CSAM), the Chinese

Society of Agricultural Engineering (CSAE), the Synergistic Innovation Center of Jiangsu Modern Agricultural Equipment and Technology (SICJMAET), and the International University Consortium for Agricultural Engineering (IUCAE).

The competition was divided into two classes:

Class A: Scientific or Technological Inventions in Intelligent Agricultural Equipment, divided into the following:

1. Invention of intelligent tillage equipment,
2. Invention of intelligent planting equipment,
3. Invention of intelligent field management agricultural equipment,
4. Invention of intelligent harvesting agricultural equipment,
5. Invention of intelligent agricultural equipment for preliminary
6. processing in filed,
7. Other intelligent agricultural equipment.

Class B: Agricultural Robotics, Seedling Replenishment Robot Competition.

There were 22 Grand Prize winners, 48 First Prizes, 96 second prizes, and 67 Excellence Awards. The table below summarizes the Grand Prize Winners.

The 7th Competition will be Hosted by [Hebei Agricultural University](#).

### Grand Prize Winners

Class	Team Student Members	Title of the Work	Instructor	University
A	Zhang Junjie, Chen Xuhui, Xie Zhengxiong	Near-spherical seed moving and static bucket shovel type high-speed precision seed metering device	Yang Yuwan	Northwest A&F University
	Li Weihao, Liu Runze, Liu Feng, Zhong Tianyuan	Field pattern seeder based on image processing and variable seeding technology	Liu Cailing	China Agricultural University

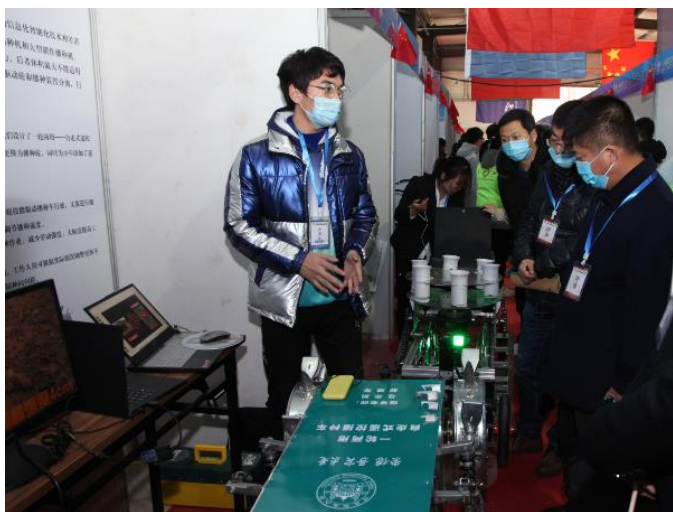
### Grand Prize Winners

Class	Team Student Members	Title of the Work	Instructor	University
	Zhu Lei, Shu Xinyu, Shi Rongkai, Deng Yujia, Huang Xirong	High-range nursery air blower	Qiu Wei	Nanjing Agricultural College
	Liang Jian, Zhang Hanwen, Yang Shuhan, Xu Ruolan	Self-power generation platform based on WeChat applet for inspection and spraying of pests and diseases in vineyards	Xu Liming	China Agricultural University
	Wang Zhengyang, Feng Ri, Jin Yuanxin, Xue Xiaoyan, Zhou Xinqi	Automatic all-in-one machine for flexible positioning, recognition and removal of winter jujube based on convolutional neural network	Cao Jinfeng, Zhang Jianjun	Qingdao Technological University
	Li Ruonan, Wang Qiaofeng, Wang Pengfei, Xiong Yani, Li Rui	Unmanned aerial vehicle self-stabilizing platform for farmland topographic surveying and mapping operations	Du Mengmeng, Gao Chengcheng	Henan University of Science and Technology
	Li Nan, Gao Qi, Lin Hailong, Liu Haotian, Zhu Sitong	Vegetable Cube Automated Stacking Farm	Wang Jun, Wang Hui	Shenyang Agricultural University
	Hui Wenhao, Chen Jin, Lu Wangui, Wei Guomao, Gao Kang	Food microbial contamination nucleic acid detection system	Yang Ning	Jiangsu University
	Huang Rongbiao, Jiang Meng, Dai Lei, Li Fanglin, Gao Zhanpeng	Glue - paper tape precision planter for small grain vegetables	Cai Lingliu	China Agricultural University
	Wu Yutong, Guan Congxin, Wu Zhikun, Li Runfeng, Jin Liyu	A fully automatic intelligent sugarcane planter	Zhang Bo, Li Wentao	Heilongjiang Bayi Agricultural University
	Chen Xinhui, Xu Chunlei, Zhou Yumeng	Automatic ginger harvesting device	Ma Yunhai, Zhuang Jian	Jilin university
	Xue Xingxing, Mao Zibin, Cai Hui, Liu Ce, Wang Jian	3MDZK-3 single line copying cotton topper	Hu Bin, Luo Xin	Shihezi University
	Xu Rui, Xiang Yaodong, Huang Jingcheng, Cheng Shuting, Yang Fengzhen	Based on the broad spectrum of adapter body iot block chain pesticide residue detector and traces the platform	Guo Yamin	Shandong University of Technology
	Wan Long, Chang Jinqiang, Song Fongdan, Bai Jingya, Zhang Mingrui	Integrated intelligent detection system for seed cotton and water mixture	Zhang Ruoyu, Wang Huting	Shihezi University
	Xu Huiqun, Liu Changxin, Mi Xinghan, Shen Dagang, Su Xiaozhe	Dongzao picking sorting machine	Zhang Jianjun, Che Qinglun	Qingdao University of Technology
	Shang Delin, Yu Jinyou, Liu Wenxiu, Xie Yingjie, Zhao Denan	Highland gap electricity functional water ecological eppo unmanned vehicles	Han Xin, Lan A Yubin	Shandong University of Technology
B	Zeng Zijiang, Kuang Zixuan, Zeng Zhaoyong, Zhang Jiamou, Weng Hongwei	Seedling Replenishment robot	Wei Dexian	South China Agricultural University
	Feng Jianwei, Hu Jiarui, Sun Yidan, Chai Yu, Zhou Botao	Seedling Replenishment robot	Ye Xin	Jiangsu university
	Chen Zhi, Xiong Yan, Li Zhouxin, Chi Haotian, SUN Chuankun	Seedling Replenishment robot	Jia Guifeng, Feng Yaoze	Huazhong Agricultural University



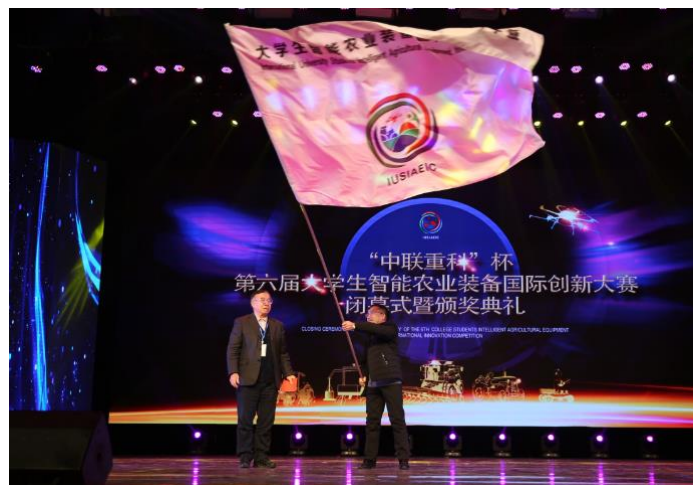
## Grand Prize Winners

Class	Team Student Members	Title of the Work	Instructor	University
	Wang Jiajun, Chen Jiaqi, Yang Shaowen, Li Zhiyan, Lina Yang	Seedling Replenishment robot	Liu Hui, Shen Jifeng	Jiangsu university
	Wang Dingkang, Wang Cheng, Wang Nan, Li Shilong, Bi Zhenpeng	Seedling Replenishment robot	Yu Fenghua	Shenyang Agricultural University



Competing Student Poster Presentations

Intelligent Agricultural Machinery



Robot Competition

Closing Ceremony



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## ERA-NET Cofund on ICT-enabled Agri-food Systems



### **Marijke Hunninck**

*Project Officer  
ICT AGRI FOOD*

For several years, ERA-NET ICT-AGRI has been the pivotal point connecting research, institutions, private and public sector, and all stakeholders in the field of agritech and precision farming. The new ERA-NET Cofund ICT-AGRI-FOOD wants to build upon this legacy and facilitate a strong connection between all actors along the value chain of the agri-food sector. The overall objective of “ICT-enabled agri-food systems” is strengthening the cooperation in research, development and innovation between EU Member and associated States to foster, verifiably and perceptibly, the use of smart digital technology to make European food systems more sustainable, resilient, and secure by:

**Connecting** researchers and engineers with actors from across the entire agri-food systems including farmers, industry, start-ups, SMEs, food processors, food retailers, consumers, and the public sector.

**Enabling** data driven digital technology solutions for a transition towards sustainable and resilient agri-food systems. The developed solutions will make use of data regarding environmental impact, origin, nutrition, safety, and integrity from across the food chain.

**Creating impact by** delivering benefits for the society as a whole and will lead to more sustainable and transparent food systems, with empowered stakeholders who take smarter, healthier, fair, and eco-friendly decisions in their activities in agri-food

systems and consumers who take more personal food and dietary choices.

### **Call for projects**

The first transnational joint call for research projects within the framework of ICT-AGRI-FOOD aimed at the selection of projects that will significantly contribute to enabling digital technology solutions for a transition towards more sustainable and resilient agri-food systems.

Research projects will investigate, develop, and test digital solutions for the rising demand for food, competition for land and other natural resources from other biomass uses, globalisation, and threats from animal or plant diseases, environmental and climatic changes, public health considerations and economic constraints.

The call is funded by 29 institutions from 22 countries, 3 European regions and the European Commission and has an overall budget of more than 20 Mio Euro.

### **Thematic areas**

Topic 1 - Data-driven ICT platforms and solutions to improve the sustainability of agri-food Systems

Topic 2 - Identify and address barriers for adoption of ICT technologies in the agri-food systems

In a two-phase submission process 112 eligible pre-proposals were submitted and those proposals that were eligible (92) were peer reviewed and ranked by a panel of international experts. Based on the ranking and the available national/regional funding, 32 research consortia were invited to submit a full proposal. After peer review and ranking of the full proposals by the same evaluation panel, the Call Steering Committee recommended 19 consortia for funding within the limits of available national/regional and EC funding, shown below.

<b>Project title</b>	<b>Project Acronym</b>	<b>Coordinator</b>	<b>Countries Involved</b>
Advanced Digital Solutions for Professional Food and Nutrition Catering Services	<b>ADCATER</b>	FFX FoodproFix ltd (IL)	<b>IL, RO, DE, IT</b>
A Data-Driven Platform for Site-Specific Fertigation	<b>ADDFerti</b>	UGent Faculty of bioscience engineering, Ghent University (BE)	<b>BE, GR, TR</b>
Multimodal Sensing for Individual Plant Phenotyping in Agriculture Robotics	<b>ANTONIO</b>	AUTH-AESA Laboratory for Alternative Energy Sources in Agriculture, (GR)	<b>GR, IT, DE, CH</b>
Understanding and Anticipating Mechanisms of Honeybee Colony Mortality With Connected Beehives	<b>BeeConnected</b>	UMR EGCE; IRD, CNRS, Univ. Paris-Saclay (FR)	<b>FR, DE, GR</b>
Fast and Intuitive Data Retrieval	<b>FINDR</b>	EMI Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institut, EMI (DE)	<b>DE, NL, PL</b>
A Smart-Sensing AI-Driven Platform for Scalable, Low-Cost Hydroponic Units	<b>GOHYDRO</b>	SCiO - Big Data Analytics in Food Systems (GR)	<b>GR, DK, RO, DE</b>
Innovative ICT Tools for Targeted Monitoring and Sustainable Management of The Brown Marmorated Stink Bug and Other Pests	<b>HALY.ID</b>	Università degli Studi di Perugia (IT)	<b>IT, IE, DE, RO, GR, NL</b>
Integrated Model and Digital Platform for Harvest Prediction of Canned Peaches	<b>IMPPEach</b>	Agrostis Agrostis (GR)	<b>GR, DE, NL</b>
Enhancing Environmental Sustainability of Livestock Farms by Removing Barriers For Adoption Of ICT Technologies	<b>LivestockSense</b>	AgHiTech AgHiTech Ltd (HU)	<b>HU, EE, AT, IL, PL, DK, SE</b>
Multiscale Sensing for Disease Monitoring in Vineyard Production	<b>MERIAVINO</b>	INSA CVL (FR)	<b>FR, RO, GR</b>
Unlocking Data-Driven Innovation for Improving Productivity and Data Sharing in Mushroom Value Chain	<b>MUSHNOMICS</b>	HS Holisun SRL (RO)	<b>RO, DK, HU, IE</b>
Spectral Tools and Digitalization for The Development of Sustainable Structured Food with Plant Proteins	<b>PLAN P</b>	ADRIA ADRIA Développement (FR)	<b>FR, DK, GR</b>
Potential of selective harvest based on mycotoxins content assessment in cereal crops	<b>POSHMyCo</b>	UGent Faculty of bioscience engineering, Ghent University (BE)	<b>BE, GR, SE, LT, ES</b>
Sunburn and heat prediction in canopies for evolving a warning tech solution	<b>SHEET</b>	ATB, Leibniz Institute for Agricultural Engineering and Bioeconomy (DE)	<b>DE, IT, HU</b>
Implementation of soil compaction risk assessment system – end-user's evaluation of potentials and barriers	<b>SoCoRisk</b>	Department of Agroecology (DK)	<b>DK, IT, CH, NO, SE</b>
Agri-food quality estimation using spectral techniques	<b>SPECTROFOOD</b>	Laboratory of Machines and Automation (GR)	<b>GR, IE, DE, BE</b>
Releasing the potential of ICT for sustainable milk and beef cattle value chains	<b>SustainIT</b>	Institute of Economics and Social Sciences (EE)	<b>EE, FI, SE, DE</b>
An ICT-based real-time advisory tool to minimise tail biting in fattening pigs	<b>TailBiteAdvice</b>	Department of Biosystems, Division of Animal and Human Health Engineering (BE)	<b>BE, IE, DK</b>

Project title	Project Acronym	Coordinator	Countries Involved
aUtomaTed Open Precision Farming Platform	[UTOPIA]	Intelligent Autonomous Mobility Center (NL)	NL, TR, BE

More information: <https://ictagrifood.eu>

[marijke.hunninck@ilvo.vlaanderen.be](mailto:marijke.hunninck@ilvo.vlaanderen.be)

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## Join the CIGR Working Group on Rural Landscape Protection and Valorization



### **Prof. Patrizia Tassinari**

Chair, CIGR Working Group on  
“Rural Landscape Protection and  
Valorization”

Dear colleagues,

I hope this message finds you well and safe.

I would have liked to present the new CIGR Working Group “Rural Landscape Protection and Valorisation” *that I am honored to chair* on the CIGR Conference planned in June 2020, but since unfortunately this was not possible due the COVID pandemic, I am writing you this email to start planning our activities without waiting until May 2021.

I would like to invite you to express your (even potential) interest in joining the Working Group (more info are available here [https://cigr.org/view\\_wg5](https://cigr.org/view_wg5)), by filling in this form (it will take only 2 minutes): [click here to fill in the form online](#).

I would also greatly appreciate any suggestion about topics, activities and events that may be addressed by the WG in 2021. I am already working on an idea of organizing a Webinar, and, in relation to the current situation but (mainly) looking at the future of our rural landscapes, healthy and safe rural landscapes, low-carbon rural landscapes, circular systems, energy and climate change and rural landscape protection and valorization may be among the keywords addressed by this first initiative. But any idea and proposal is more than welcome, also about the opportunity of organizing this event as a joint initiative promoted together with ongoing projects or research and education activities. I would also greatly appreciate if the young researchers of our community could give an important contribution in the organization of this event.

Please do not hesitate to get back to me for any further information

With my best wishes for a Merry Christmas and a Happy new year, full of health and serenity,

Best regards,

Patrizia Tassinari

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## Reminder CIGR 5th International Conference Submission Deadline



### **Prof. Stephane Goodbout**

Chair, CIGR 5<sup>th</sup> International  
Conference  
IRDA, Canada

**will be accepted until February 1, 2021.** The conference, originally to take place in 2020 was postponed to May 2021. The program already in place will be maintained and abstracts already submitted will remain in the system. Authors do not need to re-submit an abstract.

We are pleased to remind that **Abstracts for the 2021 CIGR 2020 International Conference**

For current information, visit the website:

<https://cigr2020.ca/>

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## Upcoming CIGR Conferences

5th CIGR International Conference, 10-14 May 2021. Quebec, Canada.



**5<sup>TH</sup> CIGR International Conference in Quebec, Canada  
Postponed to May 2021 due to Government Imposed Restrictions**

**Please visit conference web page for latest updates**

The CIGR2020 conference will be held from May 10-14, 2021. 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 the latest information and news please visit <http://www.cigr2020.ca/en/>

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## ASABE Global Sustainable Energy for Sustainable Future. 17-20 May 2021. San Jose, Costa Rica.

The conference will enable cross-disciplinary dialogues among multi-national scientists, engineers, business owners, and government agents to discuss regional renewable energy innovations and solutions.

Key themes of the conference:

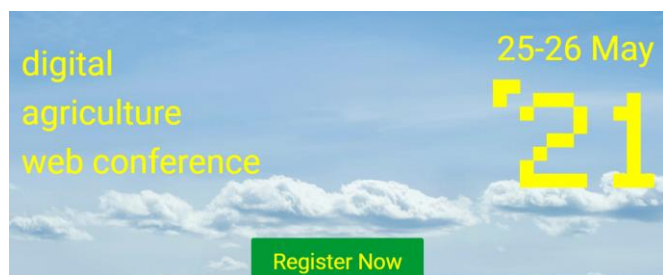
- Novel renewable energy production technologies

- Distributed renewable energy production systems and their economic feasibility
- Energy security and food security
- Regional energy solutions and global climate change
- Regulation and policy for regional and global energy security

Details of the conference will be available at <https://asabe.org/Events>

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## European Federation of IT in Agriculture Web Conference, 25-26 May.



**Prof. Claus Grøn Sørensen**  
EFITA Conference Chairman

The European Federation for Information Technology in Agriculture, Food, and the Environment (EFITA) would like to invite you at the first EFITA International online Conference in 2021. To keep the momentum and engagement of our society, while maintaining the plans for the

2022 physical EFITA conference, this conference and its format are planned as a response to the unpredictable situation created by the COVID-19. This event is an opportunity to bring together engineers, scientists, technicians, academics, and industry people in a new way to exchange knowledge, ideas, to present innovations and to discuss the state-of-the-art and future use of ICT in the agri-food sector and bio-resources production sectors. Important dates:

- 01.11.2020 Opening of online registration
- 10.11.2020 Deadline for abstract submission
- 10.02.2021 Deadline for early bird registration
- 28.04.2021 Deadline for e-poster submission
- 17.05.2021 Conference program announcement
- 25.05.2021 Starting date of conference
- 26.05.2021 Ending date of conference
- 20.06.2021 Deadline for full paper submission

For more information see: <https://efita2021.com>

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**Dr Karolina Trzyniec**  
CIOSTA 2021 President

We are pleased to remind that the XXXIX CIOSTA / CIGR V conference “Agricultural systems management in times of globalization”, will take place in just a few months (June 21-22, 2021). As we mentioned in the newsletter N° 122,

the conference will be held via the Internet. We intend to organize this meeting using the ZOOM communication platform.

All information about the registration method (including the online registration form), instructions for using the ZOOM platform and later - the conference program, can be found on the website: <https://ciosta2021.urk.edu.pl> (access from the second half of January 2021).

We also inform you that the conference will be free of charge. The cost of publishing a chapter in a monograph will be around 70 €.

PASAE-NIAE 2021, Date TBA. Abuja, Nigeria.



**PASAE - NIAE 2020 POSTPONED TILL 2021**

**INTERNATIONAL CONFERENCE**

**FLASH: COVID-19 PANDEMIC**

The PASAE-NIAE Conference is postponed to a more convenient date in 2021 as will be determined later following developments with COVID-19 pandemic.

**Conference Theme and Sub-Themes**

The Conference aims to harness an emerging global movement for Africa's renaissance through knowledge and practice-driven agriculture and agriculture-led industrialization. Africa's potentials in human, agricultural and natural resources is significant but largely underexploited and underutilized. The aim of the conference is to create a new momentum for concerted action through the following theme and sub-themes.

**CONFERENCE WEBSITE:**

Further details, including guidelines for technical papers and other contributions, Exhibitions and Registration details, and Full Conference Brochure are available at <https://pasae-niae2020conference.com/>

Contacts: [conferencesecretariat@pasae-niae2020conference.com](mailto:conferencesecretariat@pasae-niae2020conference.com); [aonwualu@aust.edu.ng](mailto:aonwualu@aust.edu.ng)

Mike +2349056664536; Peter +2348037452497  
Bayo +2348062685363; JC +2348039146246

<https://pasae-niae2020conference.com/>

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EurAgEng Conference. 4-8 July 2021. Evora, Portugal.



<https://ageng2020.com/>

In consideration of the current situation regarding the Covid-19 outbreak, the AgEng2020 Organizing Committee and the EurAgEng society decided to postpone AgEng2020 that will become AgEng2021! The new date is 4 to 8 July 2021. Save the date! Take care and stay safe!

The AgEng2020 Conference will be held in Évora, Portugal, between 5 and 9 of July 2020 with the focus on New Challenges for Agricultural Engineering towards a Digital World. It is our pleasure to host this conference and we want to invite all of you to participate.

This event is an opportunity to bring together engineers, scientists, technicians, academics and industry people to exchange knowledge, ideas, to present innovations and to discuss the state of the art and future perspectives for agricultural engineering as a motor for the sustainable future of agriculture.

Évora is a beautiful city, classified by UNESCO as World Heritage, located in the Alentejo region, essentially a rural landscape, with extensive plains where cereals, vineyards, olive

groves and cork trees (montado system) are predominant.

The gastronomic offer of this region is excellent and diverse, the wine a must, and people are extremely friendly and known by their hospitality.

We believe that you will make the most of your stay in Évora, from the scientific sessions to the technical, cultural and touristic programs that we are preparing for you.

We hope to see you all during the next conference of the European Society for Agricultural Engineers.

***The AgEng2020 Organizing Committee.***

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26 al 30 Julio

**EJES TEMÁTICOS**

- Biotecnología
- Ambientes controlados
- Economía y administración agrícola
- Geo-informática en la agricultura
- Manejo integral del agua
- Maquinaria y mecanización agrícola
- Energías renovables
- Mitigación y adaptación del cambio climático
- Agricultura de precisión
- Poscosecha
- Uso y conservación de suelos

**XI CLEIA**  
*Costa Rica 2021*

**POSTULE SU PONENCIA**

Fecha límite recepción de documento extenso:  
**1 DE NOVIEMBRE DEL 2020**

**Información:**  
[info.xicleia@gmail.com](mailto:info.xicleia@gmail.com)

**ORGANIZA**

 **ALEIA**  
Asociación Latinoamericana de Estudiantes de Ingeniería Agrícola

 **ACREIAB**  
Asociación de Carreristas de Ingeniería Agrícola de la Universidad de Costa Rica

**AUSPICIA**

 **TEC** | Tecnológico de Costa Rica

 **UNIVERSIDAD DE COSTA RICA**

 **ICIEMI**  
Centro de Ingeniería Electrónica, Mecánica e Industrial

[www.facebook.com/XICLEIA2021/](https://www.facebook.com/XICLEIA2021/)



We are pleased to announce the call for abstracts for participating in the VI International Conference on Safety, Health and Welfare in Agriculture and Agro-food Systems " SHWA 2021".

The 5<sup>th</sup> International Conference on “Safety, Health and Welfare in Agriculture and Agro-food Systems - RAGUSA SHWA 2021”, jointly organised with CIGR section V – System management and ergonomics, is postponed to 15th–18th September 2021, and will be held in Sicily, Italy. If the pandemic remains an issue, the conference will be online, adjusting the conference fee.

RAGUSA SHWA regards various environment and areas of interest as Greenhouse, Open Field, Orchard, Vineyard, Forestry, Landscape, Livestock, Building, Private and Public Green Areas, Irrigation and Sewage Treatment and everything you can think about SHWA.

Topics of the conference are the following:

- Assistive Technologies
- WMSDs - Work related to Musculo-Skeletal Disorders
- Machine Milking, Animal Welfare, Sustainable livestock farming
- Work Organisation, Logistic in agro-food supply – chains

- Instrumentation, Equipment, Periodic Procedures and Tests
- Safety Health and Welfare in Building
- Agriculture 4.0, Automation, Remote Control, Robot and Innovative Vehicle
- Noise, vibration, dust, endotoxin, microorganism
- Occupational Health
- Impacts of crops and livestock productions
- Precision farming and traceability
- Effect of landscapes on human health and welfare
- Environment Safety, People Health Protection and Welfare
- ROPS and Stability Research
- 15 SHWA & Augmented reality, Gamification, IoT
- 16 Cyber security: Big data, Trust computing protocols, Blockchain systems
- 17 Food Safety

RAGUSA SHWA encourages Authors to submit papers concerning all areas connected with SHW in Agriculture and Agri-food Systems, including animal welfare, with particular attention to integrated and interdisciplinary aspects. Paper will be published on Book of abstracts, and **accepted papers in the “Proceedings SPRINGER book” (indexed in SCOPUS) with ISBN number.** **Submit your abstract – the deadline is postponed to February 28, 2021.**

For the latest news visit the International Conference Ragusa SHWA 2021 website: <http://www.ragusashwa.it/2021>. You could also send an email: [info@ragusashwa.it](mailto:info@ragusashwa.it)

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International Exposition of Machinery for Agriculture and Gardening, 19-23 October 2021, Bologna, Italy.



The Digital Preview (EDP)

November 11/15, 2020

The Event

October 19/23, 2021 | New Date

EIMA International is the International Exposition of Machinery for Agriculture and Gardening, a biennial event created in 1969 by FederUnacoma, the Italian Agricultural Machinery Manufacturers Federation, and organized by the federation's service division, FederUnacoma Surl, in collaboration with BolognaFiere. The Covid-19 emergency has defined a new economic and social geography with global restrictions. The international trade show calendar

has been completely revised and many events have been cancelled or postponed. EIMA International also had to revise its schedule by moving the Bologna exhibition to February 2021 and planning an important and detailed digital preview of the event for November 2020. In 2022, EIMA will return to its traditional November rendezvous.

<https://www.eima.it/en/index.php>

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Sustainable Energy for Sustainable Future. 16-19 May 2022. San Jose, Costa Rica.



An ASABE Global Initiative Conference

*Sustainable Energy for a Sustainable Future*

May 16-19, 2022 • San Jose, Costa Rica



This conference was postponed to May 16-22, 2022. The planned venue for the meeting is the Intercontinental Hotel, Escazu, San Jose, Costa Rica. Details of the conference are available at <https://energy.asabe.org/>

#### **Program Highlights**

- Novel renewable energy production technologies

- Distributed renewable energy production systems and their economic feasibility security and food security linkages
  - Regional energy solutions and their impacts on global climate change
  - Regulation and policy for regional and global energy security



## 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>.